

GreenWatts™ SunShare Program Hardware Buydown Agreement

This GreenWatts™ SunShare Program Hardware Buydown Agreement (the “Agreement”) is hereby made and entered into this ____ day of _____, 200_, by and between Tucson Electric Power Company, an Arizona corporation (“Company”), and _____, (“Customer”). Company and Customer may be referred to individually herein as a “Party” or collectively as the “Parties.”

RECITALS

A. Company desires to increase the number of solar electricity generation facilities and the consumption of solar electricity within its service territory, while concurrently reducing the cost of solar electric generation systems for its customers. In support of these objectives and to further Company’s continuing commitment to develop and encourage the use of renewable energy resources, Company has implemented a program to provide financial incentives to its customers to install solar generating equipment (the “SunShare Program”). The SunShare Program was developed under GreenWatts™, the Company’s existing renewable energy program; and

B. Company desires for Customer to participate in the SunShare Program and Customer desires to so participate under the terms and conditions contained in this Agreement.

NOW, THEREFORE, in consideration of these premises and of the mutual promises herein contained, Company and Customer hereby agree as follows:

AGREEMENT

1. **BUYDOWN PROGRAM OPTIONS**

Customer may elect to participate in the SunShare Program under one of the following options:

1.1 **Option One: Third Party System**

1.1.1 System. Under Option One, Customer shall purchase a solar generating system from any third party of Customer’s choice (“Customer System”). To qualify under the SunShare Program, any such Customer System must comply with all requirements set forth in Attachment A “System Qualifications” and Attachment B “SunShare PV Off-Angle & Shading Annual Energy Derating Chart”, both of which are attached hereto and incorporated herein.

1.1.2 Buydown. Under Option One, Customer buydown and Company credits shall be based on the system's AC kW output under PVUSA Test Conditions ("PTC"), as explained in Section 5 below.

1.2 Option Three: Third Party System

1.2.1 System. Under Option Three, Customer shall purchase a Customer System. To qualify under the SunShare Program, any such Customer System must comply with all requirements set forth in Attachment A and Attachment B hereto. Further, if the Customer System is for a Non-Residential Customer, the Customer System must also comply with Attachment C attached hereto. For the purpose of this Agreement, a "Non-Residential Customer" means any Company grid connected Customer not taking electrical service from Company under a residential class rate or tariff.

1.2.2 Buydown. Under Option Three, Customer buydown and Company credits shall be based on the Customer System's manufacturer's nameplate rated DC kW output based on Standard Test Conditions ("STC"), as explained in Section 5 below.

1.2.3 Maintenance. Company shall not provide maintenance under Option Three.

2. SYSTEM INSTALLATION

To qualify for participation in the SunShare Program, all Customer Systems shall be installed by or on behalf of Customer in accordance with the requirements set forth in Attachment A, including, without limitation, a proper interconnection with Company's existing power grid. In addition, if the Customer System is for a Non-Residential Customer, the installation must also be made in accordance with Attachment C. Customer shall be solely responsible for the installation of the Customer System, including all costs and expenses associated therewith.

3. SYSTEM INSPECTION

Following installation of Customer's System, Company shall inspect the Customer System for compliance with the applicable requirements set forth in Attachment A, Attachment B, and if a Non-Residential Customer, with Attachment C. If the Customer System or installation is found to be not in compliance for any reason, Company will notify Customer of the deficiencies causing the noncompliance. Company will have no further obligations under this Agreement until all such deficiencies are remedied by Customer to Company's reasonable satisfaction.

4. SYSTEM ELECTRICAL OUTPUT

Customer hereby assigns to Company all of its rights to all electrical output of the Customer System and all associated environmental credits, specifically including those created under the Arizona Corporation Commission's Environmental Portfolio Standard Program (the "EPS"), which may result from the installation and use of the Customer System. Company will thereafter return any and all such electric output to the Customer at no cost to Customer. Company's right to Customer's power output and credits assigned hereunder shall continue

until December 31st of the 20th full calendar year after completion of the installation of the Customer System and shall survive any termination of this Agreement.

5. HARDWARE BUYDOWN AND CREDIT

- 5.1. Option One - Residential. Under Option One, subject to the Customer System passing the Company inspection set forth in Section 3 above and to Customer's compliance with the remaining terms and conditions of this Agreement, Company shall pay Customer \$2,000 per AC kW of installed solar generating capacity of the Customer System for which completed Agreements are received and accepted by the Company and which system is operational within 180 days after application acceptance, as prorated by any de-rating for off-angle and shading that may apply by the percentages listed on the chart in Attachment B. The Customer System's AC kW of installed solar generating capacity shall be determined by Company following Company's receipt of a copy of the City or County building permit associated with the installation of the Customer System, successful Customer System inspection and determination of the level of compliance with Attachment B. To ensure accurate test results, Company will correct mathematically to accommodate for a PTC of 68 degrees Fahrenheit ambient temperature, 1,000 Watts/meter squared solar insolation, 2.4 MPH wind speed, and shading factors in conducting such AC kWh testing. Any amounts determined to be owed under this section 5.1 shall be paid by Company to Customer within 30 days following the Company's completion of AC kWh testing hereunder.
- 5.2. Option Three - Residential. Under Option Three - Residential, subject to the residential customer's Customer System passing the Company inspection set forth in Section 3 above and to Customer's compliance with the remaining terms and conditions of this Agreement, Company shall pay Customer up to \$3,000 per STC rated DC kW of installed solar generating capacity of the Customer System for which completed SunShare Agreements and City/County building permits are received and accepted by Company and which system is operational within 180 days after application acceptance. Payment derating for off-angle and shading shall apply by the percentages listed on Attachment B.
- 5.3. Option Three - Non-Residential. Under Option Three - Non-Residential, subject to the non-residential customer's Customer System passing the Company inspection set forth in Section 3 above and to Customer's compliance with the remaining terms and conditions of this Agreement, Company shall pay Customer up to \$2,500 per STC rated DC kW of installed solar generating capacity of the Customer System for which completed Agreements are received and accepted by the Company and which system is operational within 180 days after application acceptance, as prorated by any de-rating for off-angle and shading that may apply by the percentages listed on the chart in Attachment B. Provided, the maximum installed solar generating capacity for any single Customer System eligible for buydown

payments hereunder shall be 100 kW DC regardless of the Customer System's actual nameplate array capacity. Prior to buydown payment under this Section 5.3, Customer shall also be required to provide Company a copy of the City or County building permit associated with the installation of the Customer System.

- 5.4 A single Customer shall not receive more than \$500,000 of buydown payments under Sections 5.1, 5.2 and 5.3 in any single calendar year.

6. SYSTEM SERVICE AND MAINTENANCE

- 6.1. Annual Inspection. *(For Options One and Three)* Company will conduct at least one inspection annually, at no cost to Customer, for each Customer System which qualified for buydown payments under Section 5 above through December 31, 2012. Said annual inspections shall commence in the year following Company's buydown payment to Customer. Customer shall provide Company with reasonable access to its Customer System to conduct said inspections.
- 6.2 Repairs. *(For Option One only; Option Three does not include maintenance).* In the event Company determines that any Customer System subsequently requires repair, Company will provide the maintenance labor for such repair at no cost to Customer through December 31, 2012. This no cost labor shall apply only to repairs resulting from normal Customer System wear and tear and shall not apply to repairs, which, in Company's sole discretion, are required to correct damage caused by Customer misuse, negligence, or abuse of the Customer System, damage caused by third parties or acts of God. Customer shall be responsible for the acquisition and the cost of any materials or parts, including shipping and handling, which Company determines in its reasonable discretion are required to perform any such repairs.
- 6.3 Status. Company performs services under this Agreement as an independent contractor, not as an employee of Customer. Nothing in this Agreement is intended to construe the existence of a partnership, joint venture, or agency relationship between Company and Customer.
- 6.4 Removal. Customer shall not remove the Customer System or any components thereof from the premises until December 31st of the 20th full calendar year following completion of the installation of the Customer System without prior written agreement of Company. If Customer removes the Customer System in violation of this provision, Customer shall immediately reimburse Company all buydown payment amounts paid by Company to Customer under Sections 5.1, 5.2 or 5.3 above.

6.5 Duration. Notwithstanding anything contained herein to the contrary, Company will continue to provide the annual inspection and normal repair labor maintenance services set forth in Sections 6.1 and 6.2 above, for so long as customer-sited renewable generation program funding is sufficient to support such services. If, in Company's sole discretion, funding levels provided for a customer-sited renewable generation program are insufficient to continue said inspection and maintenance services, Company may terminate such services. To the extent possible, Company will notify Customer no less than twelve (12) months prior to such termination. Thereafter, Company will endeavor to offer Customer the option to purchase a Customer System maintenance and inspection program from Company offering comparable services as those previously offered. In no event will any inspection and maintenance programs offered by Company extend beyond December 31, 2012.

7. METER READING

Once per month during the term of this Agreement, Customer shall read the Customer System solar production meter and shall report Customer's name and present meter reading to a Company voice recording device at (520) 745-3252, or by e-mail to banderson@tep.com. In December of each year, the reading should be taken on December 29, 30, or 31st as a representative end-of-the-year reading. Company reserves the right to read, at its option, the Customer System meter. Customer shall provide Company with reasonable access to its Customer System to conduct any such readings.

8. WARRANTY

COMPANY MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND HEREUNDER, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PERFORMANCE OF ANY SERVICES OR PROVISION OF ANY GOODS HEREUNDER.

9. LIMITATION OF LIABILITY

COMPANY'S ENTIRE LIABILITY ARISING OUT OF ITS PERFORMANCE UNDER THIS AGREEMENT SHALL BE LIMITED TO CLAIMS DIRECTLY ATTRIBUTABLE TO COMPANY'S GROSS NEGLIGENCE OR WILFUL MISCONDUCT. IN NO EVENT SHALL COMPANY, ITS EMPLOYEES OR AGENTS BE LIABLE TO CUSTOMER FOR LOSS OF PROFITS OR ANY OTHER SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGE, HOWEVER CAUSED, RESULTING FROM COMPANY'S PERFORMANCE HEREUNDER.

10. TERMINATION

If either Party shall at any time commit any material breach of any covenant or warranty under this Agreement and shall fail to cure the same within 30 days following written notice

thereof, the non-breaching Party may terminate this Agreement, in whole or in part. This Agreement may also be terminated at any time by mutual written agreement of the Parties.

11. MISCELLANEOUS

- 11.1. Modification, Waiver and Severability. This Agreement may not be modified or supplemented except by written instrument signed by the Parties. No waiver of any default or breach hereof shall be deemed a waiver of any other default or breach thereof. If any part of this Agreement is declared void and/or unenforceable, such part shall be deemed severed from this Agreement which shall otherwise remain in full force and effect.
- 11.2. Assignment. This Agreement and the rights, duties, and obligations hereunder may not be assigned or delegated by any Party without the prior written consent of Company.
- 11.3. Governing Law and Venue. This Agreement shall be governed by the laws of the State of Arizona, without regard to the choice of law provisions thereof. Venue for any dispute arising hereunder shall be any court of competent jurisdiction located in Pima County, Arizona.
- 11.4. Entire Agreement. This Agreement is the final integration of the agreement between the Parties with respect to the matters covered by it and supersedes any prior understanding or agreements, oral or written, with respect thereto.
- 11.5. Counterparts. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same Agreement.
- 11.6. Titles and Captions. Titles or captions contained in this Agreement are inserted for convenience and for reference only and in no way define, limit, extend, or describe the scope of this Agreement or the intent of any provision hereof.
- 11.7. Expenses and Attorney's Fees. In the event of a breach or threatened breach of any term or provision of this Agreement, the non-breaching party shall be entitled to all of its remedies available at law or in equity, unless otherwise limited in this Agreement, and in addition shall be entitled to be reimbursed for all of its reasonable costs and expenses in enforcing this Agreement (if successful), including, but not limited to, reasonable attorney's fees. This section shall survive termination or expiration of this Agreement for any reason.
- 11.8. Force Majeure. Neither Party shall be liable to the other for failure to perform its obligations hereunder to the extent such failure results from causes beyond its reasonable control, including strikes, climatic conditions, acts of God,

governmental laws, regulations, orders or requirements, interruptions of power or unavailability of equipment or supplies.

- 11.9 Customer Sale of Residence. In the event Customer sells the residence (or facility in the case of a Non-Residential Customer) where the Customer installed the Customer System, Customer's successor-in-interest shall expressly assume all of Customer's obligations hereunder in writing, and this Agreement shall not be affected, nor shall Company's rights hereunder be disturbed in any way, including, without limitation, Company's continued right to all power output and credits assigned pursuant to Section 4 hereunder.
- 11.10 Notices. All notices under this Agreement shall be in writing and shall be given to the Parties thereto by personal service (including receipted confirmed facsimile), or by certified or registered mail, return receipt requested, or by recognized overnight courier service, to the Parties at the Addresses set forth below. All notices shall be deemed given upon the actual receipt thereof.

Company: **Tucson Electric Power Company**
PO Box 711
Tucson, Arizona 85702
Fax: (520) 571-4014
Attn: Blanka Anderson

[signatures on following page]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of _____, 200_.

TUCSON ELECTRIC POWER COMPANY

By: _____

Title: _____

CUSTOMER

By: _____

Print Name: _____

Address: _____

Phone: _____

Capacity Reserved: _____ kW DC

Date Reserved: _____

Application Process
ATTACHMENT A
System Qualifications

All solar electric generating Customer Systems must meet the following system and installation requirements to qualify for Tucson Electric Power Company's ("TEP" or the "Company") GreenWatts™ SunShare Hardware Buydown Program. Capitalized terms not defined herein shall have the meanings ascribed to them in the GreenWatts™ SunShare Program Hardware Buydown Agreement.

1. A Residential Customer System must have a total solar array nameplate rating of at least 1,200 watts DC and no more than 15,000 watts DC. Any Non-Residential Customer System must have a total solar array nameplate rating of more than 1,200 watts DC.
2. The Customer System components must be certified as meeting the requirements of IEEE-929 - Recommended Practice for Utility Interface of Photovoltaic Systems.
3. The Customer System components must be certified as meeting the requirements of UL-1741 - Power Conditioning Units for use in Residential Photovoltaic Power and be covered by a non-prorated manufacturer's warranty of at least two years.
4. Photovoltaic components must be certified 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 10 years.
5. 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, overcurrent protection, disconnect and labeling requirements.
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.
8. The Customer System installation must meet the TEP Service Requirements 2000 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.”

9. The Customer System photovoltaic panels and modules must face within +/- 90 degrees of real south, and be completely unshaded from three hours after sunrise to three hours before sunset. 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”.
10. The Customer System photovoltaic panels and modules must be fitted at an angle of 10 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”.
11. For Residential Customer Systems, Company will provide a meter and meter socket that will be installed in a readily accessible outdoor location by the Customer between the DC to AC converter and the connection to the overcurrent device in the Customer’s electric service panel. 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 converter and the connection to the overcurrent device in the Customer’s electric service panel.
12. Storage Batteries are not allowed as part of the Customer System unless the inverter is a separate component and TEP 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.
13. Installation must have been made after January 1, 1997.
14. The Customer must be connected to the Company’s electric grid.
15. 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.
16. 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.

17. All Customer System installations must be completed in a professional, workmanlike and safe manner.
18. Total voltage drop on the DC and AC wiring from the furthest PV module to the AC meter will not exceed 2%.
19. 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. In no case will PV modules be mounted less than 4 inches above any surface and an additional inch of clearance for each foot of continuous array surface beyond four feet in the direction parallel to the mounting support surface.

ATTACHMENT C
Supplemental Non-Residential System Qualifications
(Applicable Only for Customer Systems of Capacity Larger than 15,000 watts DC)

1. All solar electric generating Non-Residential Customer Systems must meet the following additional system and installation requirements to qualify for Tucson Electric Power Company's ("TEP" or the "Company") GreenWatts™ SunShare Hardware Buydown Program. Capitalized terms not defined herein shall have the meanings ascribed to them in the GreenWatts™ SunShare Program Hardware Buydown Agreement.
2. The Non-Residential Customer System shall be operating, substantially complete and have produced an AC output at least 75% of the total array nameplate DC rating at PTC as described below, or the SunShare buydown payment will be reduced to 1.33 times the AC output at PTC conditions.
3. Data Collection System: The Customer shall purchase and install data collection equipment (the "Data Collection System") and update Customer information systems as needed to provide a secure Internet FTP data file retrieval site where Company can retrieve daily production data files consisting of at least the following information: plane of array solar insolation in watts/M², ambient temperature in degrees F., wind speed in miles/hour and actual AC power output in watts of the total Non-Residential Customer System arrays on an average time interval not to exceed five (5) minutes for each data point throughout the day. The data generated by the Data Collection System shall be in *.XLS or *.CSV format unless otherwise agreed by the Parties. The data shall be accessible to Company via the Internet at all times unless Customer is performing network maintenance. Company should be provided notice of said planned maintenance at least 24 hours in advance or within an hour of emergency maintenance. Following execution of the Agreement, the Parties will work in good faith to define any other mutually agreeable Data Collection System needs, formats and interface points. The Data Collection System is included in and considered a part of the Non-Residential Customer System.
4. 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.

5. 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.
6. 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.
7. The utility interactive solar generation Non-Residential Customer System shall deliver an AC output in AC watts at least equal to 75% of the total array nameplate rating in DC watts as measured at performance test conditions (PTC) of 1000 watts/m² irradiance, 68 degrees F. ambient temperature and a maximum of a 2.4 mph wind speed. The Customer will verify performance of the system with a 30 day test using a data acquisition system or make a single point measurement to determine the output of the system.
8. The Customer shall verify and demonstrate to Company the proper calibration and operation through the Data Collection System of the solar insolation sensor, the ambient temperature sensor, the wind speed sensor and the AC power meter within +/- 2% of Company independent sensor data. If performance test data is not available at PTC, the indicated AC power output of the Non-Residential Customer System will be corrected to PTC by the following formula:

$$\text{Power(PTC)} = ((\text{Power(Meter)} * (1000 / \text{SolarSensor(W/M}^2))) * (1 + (((\text{AmbientTempSensor(DegF)}) - 68) * 0.0026)))$$

(On the condition that data used in the formula is taken on a cloudless day at a solar insolation of at least 950 watts per square meter and wind speed is less than 2.4 mph)

9. Company shall have the right to challenge the accurate calibration of the sensors and Data Collection System with proper documentation demonstrating the reasons for the

challenge. The Customer shall resolve the challenged sensor or Data Collection System calibration to the satisfaction of Company prior to the data being used in the performance test being recorded.

10. Customer shall provide Company with no less than ten (10) days prior notice of any planned Customer tests to the Non-Residential Customer System. Company shall have the right to be present at any and all tests of the Non-Residential Customer System. The Customer shall provide Company notice as soon as the Non-Residential Customer System has been installed and has passed all Customer tests.
11. 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.
12. If certified proof can not 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, 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.