

Rocky Mountain Power Solar Incentive Program Guidelines

Rocky Mountain Power Company (RPMC) a subsidiary of Pacific Corporation (PacifiCorp) is offering a solar photovoltaic demonstration incentive program called the "Rocky Mountain Solar Incentive Program" (Program). The Program is designed to encourage and facilitate the installation of photovoltaic (PV) systems in the state of Utah by offering an incentive on a "first come first serve" basis to customers of Rocky Mountain Power. A joint venture of Ecos Consulting and Burton Consulting, LLC is administering this Program for Rocky Mountain Power/Pacific Corporation. This Program offers significant incentives on photovoltaic systems installed at customer premises within the Utilities' service territory.

Under the jurisdiction of the Public Service Commission of Utah (PSCU), funding for the Rocky Mountain Solar Incentive Program is provided by the Utah ratepayers of Rocky Mountain Power. This pilot Program is effective beginning September 1, 2007 and will run through December 31, 2011.

P.1 HOW TO APPLY

Applications may be obtained online at the Program web site, www.rockymtnpower.net/solar. All applications must be completed by hand and submitted by mail, fax, or email. Receipt of the application is the responsibility of the applicant. Rocky Mountain Power is not responsible for lost or improperly submitted applications.

P.1.1 Program Steps

Here are the basic steps for participating in the Rocky Mountain Power Solar Incentive Program:

Step 1: Review the entire Program Guidelines.

Step 2: Download, print and submit a completed application, either by fax (1-866-557-5993) regular mail, or email to (only one application per email, fax or envelope will be allowed):

Rocky Mountain Power Solar Incentive Program
P.O. Box 1381
Sandy, UT 84091

Email: solar@rockymountainpower.net

Step 3: Your site will be inspected and an inspection form will be completed by a Program team member to ensure compliance with the Program Policies and Procedures.

Step 4: All applications are reviewed by the Program Administrator.

Step 5: You will receive a written Incentive Commitment/Authorization letter which allows you to proceed or a letter informing you that you are on the waiting list. Please note that the purchase or installation of any equipment before application approval will result in disqualification from the Program.

Step 6: If approved, contract with a qualified Utah (S200, S201, or S202) electrical contractor to install the PV system. Contractor will be required to submit a one line electrical diagram for approval.

Step 7: Inform the Program Administrator that your project is completed by calling 1-866-344-9802, fax 1-866-557-5993, or email to solar@rockymountainpower.net. Send the final documentation to the Program Administrator. This includes a "signed-off" building permit, invoice from your contractor (consisting of cost of labor and materials including equipment make and model), Voltage Verification and Application Change Order Forms.

Step 8: The Utility will complete safety and meter socket inspections and have you execute the Net Metering Agreement specific to your system. To receive the incentive, you are required to sign and return the executed Net Metering Agreements. If your PV system meets all Utility Standards the representative will schedule the installation of the bi-directional (revenue) meter and Generation meter (see the Utility Standards for more information on meters). Once the new meters are set you are ready to energize your new PV system!

Step 9: After successful verification of the installation and receipt of the executed Net Metering Agreements we will mail the incentive check, usually within 60 days. Acceptance of the incentive assigns a portion of the Renewable Energy Credits (REC) derived from operations of the incentives from the PV system to the Utility. The RECs transferred to Rocky Mountain Power will be proportionate to the percentage of cost covered by the utility program incentives relative to the total system project cost ("percentage ownership").

Still have questions? E-mail solar@rockymountainpower.net or call 1-866-344-9802

P.1.2 Discrepancies

If it is determined that there are differences from the Application Form and the on-site inspection, the applicant will receive a letter detailing these findings. This letter provides an opportunity for the applicant (or assigned contractor) to dispute the inspection results. After a period of 10 days, if the applicant has not responded it will be assumed the applicant has accepted the revised incentive level.

P.1.3 Changes after Application Approval

Any proposed changes to an approved application must be submitted to the Program via an Application Change Form. This form is available for download at www.rockymtnpower.net/solar.

Note: Any change resulting in an increase in the system size will not result in an increase in the incentive. Incentives cannot exceed the approved project size and incentive amount.

The following items may be submitted for change:

- Customer changes contractors
- Change in equipment
- Change in incentive assignment
- Request change in completion date
- Changes in location of equipment (array, inverter): In addition to the Application Change Form, contractor must submit a revised sketch (downloaded from www.rockymtnpower.net/solar) with the revised equipment location clearly noted.
- Changes in location of disconnect or REC meter: In addition to the Application Change Form contractor must submit a revised sketch (downloaded from www.rockymtnpower.net/solar) with the revised equipment location clearly noted. All such requests must be approved by the Utility before being accepted.
- Exceptions to Utility Standards must be submitted to the Program Administrator prior to construction. Rocky Mountain Power has sole discretion to waive any standard so adherence to this requirement is very important.

P.1.4 Inspections

In addition to local Building Permit Inspections, both a pre- and post-inspection will be conducted by either the Program Administrator or Rocky Mountain Power. Inspections may be conducted at up to 100% of the project sites to determine compliance with Program requirements. Additionally, a Utility Safety Inspection will be conducted at each site prior to final commissioning and operation of the system. All inspections must result in satisfactory approval prior to the project commencing forward through the process. General inspection procedures are detailed below:

Pre-Installation Inspection

The Program team pre-installation inspection may include the following:

- Observation of project location
- PV array site
- Inverter placement
- Solar pathfinder (or equivalent) measurements for shading percentage
- Orientation
- Photographs of the facility including proposed PV array location and existing Utility service
- Other items as necessary to provide a complete report

Any deviation(s) from Program requirements discovered at the pre-installation inspection will accompany a list of recommendations for correcting noted deficiencies. Re-inspection may be required prior to issuing an Incentive Commitment and Authorization to Proceed letter from Rocky Mountain Power. Customer may be required to provide evidence from performing a Solar Pathfinder (or equivalent) inspection to verify compliance with minimum standards for shading.

Post-Installation Inspection

The Program team post-installation inspection may include the following:

Observation and verification of project installation:

- Compliance with application and pre-inspection
- PV array site
- Inverter placement
- PV Module model and quantity verification and documentation
- Inverter(s) model, quantity and serial number verification and documentation
- Execution of the Net Metering Agreement

Any deviation(s) from Program requirements or approved design discovered at the post-installation inspection will accompany a list of recommendations for correcting noted deficiencies. Re-inspection may be required prior to issuing a request for Safety Inspection.

Utility Safety Inspection

Safety inspections will include the following checks:

- AC Disconnect and Generation Meter Socket located within 10 feet of the Utility Revenue Meter
- AC Disconnect is accessible, lockable, visible-blade type, and is manually operated from outside the enclosure
- AC Disconnect actually operates
- Meter and disconnects are properly wired for interface with the Utility grid
- Generation Meter Tag is installed properly
- AC Disconnect Tag is installed properly
- Transformer Tag is installed properly, if applicable

Meters will be set and final system operation may commence only after all required inspections have received final approvals.

P.1.5 Forms

The following forms will be required during the incentive application process.

- **Rocky Mountain Power Solar Incentive Program Application Form**
The Rocky Mountain Power Solar Incentive Program Application Form acts as the enrollment form for the Program funds. The form will provide details on the proposed PV system and provide a basis for the inspection. If the inspection is passed, the form will be the guidance for the reservation of funds.
- **Site Pre-Inspection Form and Site Sketch**
The Site Pre-Inspection Form and Site Sketch provide detailed information about the proposed site for the PV system. The sketch should show the location of major PV equipment on a building site plan (if ground mount, then show the array relative to the building).

Net Metering Agreement

The Net Metering Agreement defines the rules for Utility and customers for operation of the PV system and the associated interconnection requirements. It also assigns the appropriate energy credits to the Utility. The RECs transferred to Rocky Mountain Power will be proportionate to the percentage of cost covered by the utility program incentives relative to the total system project cost ("percentage ownership").

The Net Metering Agreement will be delivered with final inspection.

P.2 EFFECTIVE DATES FOR THE PROGRAM – APPLICATION AND NOTIFICATION REQUIREMENTS

Funding for the Program is administered on a first come, first served basis. The effective dates of the Program and application submittal requirements are as follows:

No project installations are allowed under the Program Guidelines prior to approval by Rocky Mountain Power and PSCU.

For Program Year Four (4), all applications must be received between **February 15, 2010** and **December 1, 2010** to be eligible.

- All approved projects must be completed in their entirety no later than **January 31, 2011**.
- Applications for Program Year Five (5) will be received starting on **January 3, 2011** through **December 1, 2011**.

P.3 INCENTIVES AND CAPS

The Program offers a cash incentive of \$2.00 per watt (W) for residential, business, and public buildings of rated alternating current (AC) electricity production on approved projects.

Approved customer applications will receive written approval specifying the kW and incentive amount approved. The Program is limited to 107 kilo-watts (kW) per program year. All applications received after the program cap is reached will be placed on a Waiting List. If an approved application is withdrawn, the next application on the Waiting List will be moved up to approved status and the customer will be notified in writing.

P.3.1 Incentive Calculation

The incentive will be calculated based upon the AC wattage (WAC) production of the PV array. The WAC is calculated using the following considerations:

- Per the Consumer Energy Center list of approved Photovoltaic Modules (solar panels) (<http://www.gosolarcalifornia.org/equipment/pvmodule.html>) and for the approved Inverters (<http://www.gosolarcalifornia.org/equipment/inverter.html>), the following two components are used in the calculation of WAC:
- PV module PV USA Test Conditions (PTC) wattage
- Inverter efficiency at 75% of inverter capacity

WAC is then calculated using the following equation (1):

$$(1) \text{ WAC} = \text{PTC wattage} \times \# \text{ of modules} \times \text{Inverter efficiency}$$

The cash incentive is calculated for Program year four (4) using the following equation (2):

$$(2) \text{ Incentive} = \text{WAC} \times \$2.00 \text{ per WAC}$$

P.3.2 Incentive Funding Levels and Caps

Incentive funding levels are defined in Table 1.

Table 1 – Funding Levels

Beginning Date	Ending Date	Incentive Level
September 10, 2007	January 31, 2008	\$2.00 per watt
January 7, 2008	December 31, 2008	\$2.00 per watt
January 1, 2009	December 31, 2009	\$2.00 per watt
February 15, 2010	December 31, 2010	\$2.00 per watt
January 1, 2011	December 31, 2011	\$2.00 per watt

Table 2 depicts the incentive caps for all residential, business and public facilities. Incentives are capped at the following size systems:

Table 2 – Project Caps

	Size of PV Array (kWAC)	Max \$ Incentive
Residential Customers	3 kW	\$6,000
Business Customers	15 kW	\$30,000

P.4 CUSTOMER ELIGIBILITY

The following rules pertain to customer eligibility for the Program:

Applicants must be an existing grid-connected customer of Rocky Mountain Power, in the state of Utah, at the time of incentive. Customer's account must be active and current at the site of the installation.

P.5 PROJECT ELIGIBILITY

P.5.1 Size Requirements

There is no minimum size of PV system required. Customers outside of the Program may be eligible to Net Meter up to the Net Metering limits of 25 kW. Contact the Program Customer Service Center at 1-866-344-9802 for more information. Maximum system size per meter allowed is 2 mW. Maximum size requirements for Program incentives are as follows:

- Residential customers – 3 kWAC
- Business customers – 15 kWAC

Incentives will only be paid for that portion of a system that does not exceed the aforementioned maximum size requirements and total PV system size is less than 2 mW.

Size requirements are specified per facility/campus/residence, and per meter basis for each Program year. For example, a residential customer that has two different properties could be eligible for funding for up to a 3 kWAC system at each property, up until the Net Metering cap of 2 mW.

P.5.2 Equipment Specifications

A complete PV system installation is defined as a having a PV array, inverter, generation meter socket, grid interconnection, and AC and DC disconnects. The Program specifies the eligible equipment for the PV modules, inverter and generation meter socket. The equipment list for PV modules and inverters is provided by the Consumer Energy Center certified equipment lists.

These lists can be found on the following web sites:

<http://www.gosolarcalifornia.org/equipment/pvmodule.html>

<http://www.gosolarcalifornia.org/equipment/inverter.html>

If a product is removed from the Consumer Energy Center lists after approval of application, the product will remain eligible.

Generation Meter Socket

The Utility reserves the right to install a generation meter after project installation. All projects are required to install a generation meter socket. The installation requirements for the generation meter socket are as follows:

- ANSI Standard 4 Jaw socket
- 120/240 Volts
- 100 amps or 200 amps depending on system size (may be larger on business or public building projects)
- Single phase three wire (may be three phase on business or public building projects)
- UL Listed, NEMA 3R
- Ring Design
- No by-pass mechanism
- AC disconnect and generation meter socket must be located with 10 feet of the Revenue Meter

The Net Metering Design Standards are available for download from the Program web site, from Rocky Mountain Power web page or provided in hard copy by written request to the Program Administrator.

P.5.3 Siting Requirements

Siting a PV system requires many considerations. The most prominent constraint is space and an unobstructed south facing location. Sometimes the ideal location for a system is not the best for producing the maximum output of electricity. It is encouraged to consider the importance of producing peak output during periods of utility peak loads.¹

The three major factors in determining output amount are:

- Orientation (tilt and azimuth (+/- degrees from true south)
- Shading
- System wiring and inverter programming

Local building codes and inspectors will require specific inspections and submittal of plans and other information in order to issue a building permit required under this program. Building inspections and a "signed-off" building permit are required by the Program and must be submitted prior to final inspection by Rocky Mountain Power and setting of the meter. Any inspections performed by Rocky Mountain Power are not to be considered a safety inspection in lieu of inspections required by local building officials.

The siting of a system will be required to meet the standards set forth in this document. Finally, the location of the inverter is a factor in PV system production. Efficiency diminishes substantially when inverters are subjected to heat. It is advised to locate the inverter in a shaded northerly location or inside a garage or other structure. Direct sunlight is not advised.

REQUIREMENTS	RECOMMENDED
Wiring	
No recommendations or requirements are provided. We highly recommend that the installer be familiar with NEC 690 and good installation practices. The wiring greatly contributes to the performance of a PV system. Contractors should be well versed in electrical codes and utility standards.	
Shading	
The application may be rejected if the total annual production of the PV array is reduced by more than 25% relative to an unshaded array.	Shading plays a major role in decreasing the output of a system. PV panels should be exposed to the sun's rays for most or all of the day, with minimal or no shadows from trees, chimneys or cables between 9 a.m. and 4 p.m. To determine actual shading effects, it is recommended to have a good understanding of the percent of shading of the location throughout the year. A contractor may use a Solar Pathfinder (or equivalent) to determine how surrounding objects affect PV output. This calculation can provide a percent reduction in output as compared to an unobstructed system in that latitude and angle of inclination and orientation.
Orientation²	
There must be a location on the property for a system facing +/- 90° true solar South.	Ideally, a system should be sited at +/-15° of true solar South.
Tilt	
No Requirement	Ideal tilt angles are: For northern Utah is between 36° and 51°; For southern Utah, between 39.5° and 54.5°.
Inverter Location	
Inverter should be installed according to manufacturer's recommendations.	It is recommended that the inverter be installed out of the sun. For low voltage (48V or less) inverters, it is recommended to minimize the distance from the PV array to the inverter.

P.5.4 New vs. Old Equipment

All equipment installed must be new to be eligible for an incentive under the Rocky Mountain Power Solar Incentive Program. This must be evident in the documentation (invoice or signed contractor proposal) required by the Program.

P.5.5 Renewable Energy Credits

The signed Net Metering Agreement³ transfers a portion of the Renewable Energy Credits (REC) to Rocky Mountain Power. The RECs transferred to Rocky Mountain Power will be proportionate to the percentage of cost covered by the utility program incentives relative to the total system project cost ("percentage ownership"). For an explanation of REC, please refer to the definitions section at the end of this document.

P.5.6 Contractor Requirements

Electrical contractors must be licensed in the state of Utah General Electrical Contractor (S200, S201, or S202) or Solar Energy Systems Contractor (S200, S201, or S202) license. It is recommended a contractor have experience in the design and construction of PV, and/or possess certification from a nationally recognized program for PV installation⁴. Contractors should be well versed in these Program Guidelines as set forth in this document.

In addition, a list of contractors⁵ and equipment suppliers who have expressed interest in the Program can be viewed on the Program web site.

P.5.7 Additional Requirements

The following are additional requirements that must be taken into consideration when applying for an incentive under the Rocky Mountain Power Solar Incentive Program:

- System must be installed by a Utah General Electrical Contractor (S201) or Solar Energy Systems Contractor (S215) license. (Application must include the contractor in order to verify contractor license)
- Completion of Net Metering Agreement (two signed copies)
- The inverter must be UL Listed for grid-interactive operation and anti-islanding (but isolated if grid power is lost)
- Install accessible, externally operable, lockable, visible blade AC disconnect switch within 10 feet of the Utility Revenue Meter.
- Utility may install (at its own expense) additional monitoring of the new PV system with the agreement of the customer
- Systems must meet warranty requirements
- Panels – 20 years
- Inverters – 5 years
- Labor (Labor and materials warranties as required by Utah State law) – 1 year

The Program team will conduct pre- and post-installation inspections at up to 100% of the project sites.

PV incentives under the Program may not be used in conjunction with any other Rocky Mountain Power incentive program.

Customer must have an account in good standing to receive incentive money.

Systems may not go online until the Utility sets the meter. However, a system test may be conducted using a UL listed jumper or customer provided UL rated meter. However, credit for over generation will not be credited to the customer's account until the Utility sets the new bi-directional meter and the system information is noted on the billing account.

¹Summertime Utility peak load periods typically occur between the hours of 1 p.m. and 7 p.m.

²Compasses report magnetic south, +/-13o for Salt Lake City. For west of South, add the correction; east of South, subtract.

³A copy of these agreements can be found at www.rockymtnpower.net/solar.

⁴Additional contractor information is available on www.rockymtnpower.net/solar.

⁵Rocky Mountain Power makes no guarantees or warranties, whether expressed or implied, for either contractor's performance or expertise in designing and installing photovoltaic systems. Rocky Mountain Power is not associated with and does not have a business interest in any of these contractors. Rocky Mountain Power does not attest to their authority, competency or integrity. Rocky Mountain Power requires participants to work with Utah state licensed contractors and to work under the terms of a contract.

P.5.8 Projects NOT Eligible for Incentives

The following projects are not eligible for an incentive under the Program:

- Installations operating prior to the Program start date
- Solar thermal systems
- Off-grid installations
- Systems that utilize equipment not on the list of eligible equipment
- Systems that are rated beyond 25 kWAC
- Incentives will not be paid for the portion of electricity generation that exceeds the Program cap

P.6 PAYMENT PROCESS

Program incentive will be paid directly to the applicant or to their designated assignee as directed by the applicant as noted on the assignment of incentive on application. The incentive will be paid within 60 days of the new PV systems connection to the electrical grid. Payment of the incentive is contingent upon a site inspection confirming the project installation and eligibility, execution of a Net Metering Agreement as well as upon the receipt of all required documentation (see Section P.7).

P.7 PROJECT DOCUMENTATION REQUIREMENTS

P.7.1 Project Application Requirements

Required documentation includes:

- Rocky Mountain Power Solar Incentive Program Application Form
- Site Pre-Inspection Form
- Site Sketch of proposed installation

P.7.2 Final Documentation Requirements

Required documentation includes:

- Net Metering Agreement
- Building permit "signed-off" by appropriate municipal authority (upon final inspection)
- Copies of electrical contractor's itemized invoice(s)
- Application Change Form (when applicable)

Additional documentation requirements include detailed invoices listing specific equipment types and quantities purchased. Invoices must be marked as paid, and are to be itemized with the costs for equipment, labor, supplies and other costs. Location or business name on the invoice must be consistent with the application information. Only expenses incurred during the term of the Program that are directly related to PV equipment purchases can be reimbursed through an incentive payment.

P.7.3 Invoice Requirements

As with the applicant, a third party contractor must submit documentation of their costs (including labor), not the charges to be invoiced to the host customer. Program staff must approve all invoices and final documentation.

Eligible system costs may include cost of labor, permits, sales tax, PV modules, inverters, any performance meter, meter socket, disconnect box, mounting or tracking structures, and interconnection equipment. Costs incurred for equipment used to store electricity (e.g., batteries); tree-trimming, re-roofing, roofing repairs, relocating vent pipes, financing fees, etc. are not eligible.

P.8 DISPUTE RESOLUTION

The Program team will take every possible step to ensure a high level of satisfaction with all aspects of the Program. However, if any problems or concerns should arise, we encourage you to contact the Program immediately at 1-866-344-9802 or email: solar@rockymountainpower.net.

If the dispute cannot be resolved, you can contact the Rocky Mountain Power Solar Incentive Program Manager at the same number, 1-866-344-9802.

P.9 1099 FILING AND REPORTING

The project costs paid by this Program (incentives) may have tax implications for businesses and/or contractors who participate in the Program and receive an incentive. Participating customers are encouraged to consult their tax experts.

The customer will be responsible for any tax liability imposed as a result of incentive payments.

P.10 DEFINITIONS

Alternating Current (AC) is the current received by the utility. AC current is the output from the inverter.

Direct Current (DC) is the current produced by the photovoltaic array and is the input to the inverter.

Disconnects (AC or DC) may either be a breaker in a distribution panel or a fusible switch. Both may be required. Utility personnel must have access to this box.

Generation Meter is the display required for metering to indicate the system production in terms of kWh over time and will be provided by the Utility.

Grid is the distribution network of the utilities.

Incentive is the amount to be paid to the customer, contractor or supplier (see Section P.2 for amounts) once the required project documentation has been received and the completed installation is approved.

Inverter is a device that converts DC power from the PV array into AC electricity for use at the facility where the PV system is located or to sell back to the utility. Only grid-interactive inverters are eligible for participation in the Rocky Mountain Power Solar Incentive Program™. This type of inverter operates in parallel with the grid only when the Utility grid is available. In event of a power outage, the system is designed to disconnect from the grid until the Utility power is restored. This function is to provide protection for field personnel.

Multi-family means separately metered residences in a multi-unit complex.

Net Metering measures the difference between the electricity you buy from your utility and the electricity you produce using your own generating equipment. Your electric meter keeps track of this "net" difference as you generate electricity and take electricity from the electric grid.

Photovoltaic (PV) array is made up of PV modules electrically connected together; creating an electrical supply circuit to power an inverter. Several PV modules can be attached together onto a panel. One or more panels make an array.

PV USA Test Conditions (PTC) is stated to be 20oC ambient temperature, 1000 W/m² solar intensity, and wind speed at 1m/s.

Photovoltaic (PV) module is the equipment that directly converts energy from the sun into DC electricity. The module can be made of several different types of solar cells. Common cell types are: Single Crystalline Silicon (Mono-Csi), Poly Crystalline Silicon (Poly-Csi), Amorphous Silicon (Asi), Cadmium Telluride (CdTe) and Copper Indium Diselenide (CIS). An eligible module must be UL listed and found on the California Energy Commission's web site of eligible products.

Renewable Energy Credits (RECs) is a process of awarding, trading, tracking, and submitting credits as a means of meeting the renewable energy requirements. A REC represents one kilowatt hour (kWh) of renewable energy that is physically metered and verified. The PV systems installed under this Program will qualify for RECs for the both the system owner and the Utility.

Residential Customer is a Utility customer served by a residential meter.

Solar Pathfinder is a device used to assess the percent of time where shading is present at the location of measurement.

Standard Test Conditions (STC) is defined by module (cell) operating temperature of 25oC and 1000 W/m² solar intensity.

True Solar South is the true cardinal direction for south. A compass points to the magnetic position but not to the true position. In determining the ideal position for an array, it is important to know the position in relation to True South. True South is approximately 13° East of Compass South for the State of Utah.

Utility Interconnection is the physical connection between the Utility grid and the customer generation. An Interconnection Agreement (or a Net Metering Agreement) is needed for a customer to have on-site electric generation connected to the Utility Grid.

P.11 CONTACT INFORMATION

- Toll-Free Rocky Mountain Power Solar Incentive Program: 1-866-344-9802
- E-mail: solar@rockymtnpower.net
- Web site: www.rockymtnpower.net/solar