Lassen MUD
PV BUY DOWN PROGRAM
Photovoltaic Systems

LMUD's Photovoltaic (PV) Buy Down Program is available to help offset your investment in a PV system and get you on the road to making use of renewable energy. Lassen MUD provides rebates to its customers to reduce the initial system cost.

LMUD is committed to promoting and supporting renewable technologies and is offering its customers rebates to reduce the purchase and installation costs for PV systems and a net metering credit for producing solar electricity.

LMUD's PV Program uses monies set aside from its revenues to provide these solar incentives. To obtain the best value for our customers, Lassen MUD's PV Program is designed to encourage the installation of PV Systems that produce the maximum amount of energy possible, so our Program incentive is calculated based on an Estimated Performance Calculation.

ELECTRICITY FROM THE SUN

Photovoltaics is the direct conversion of light into electricity. Certain materials, like silicon, naturally release electrons when they are exposed to light, and these electrons can then be harnessed to produce an electric current. Several thin wafers of silicon are wired together and enclosed in a rugged protective casing or panel. PV panels produce direct current (DC) electricity, which must be converted to alternating current (AC) electricity to run standard household appliances. An inverter connected to the PV panels is used to convert the DC electricity into AC electricity.

The amount of electricity produced is measured in watts (W). A kilowatt (kW) is equal to 1,000 watts. A Megawatt (MW) is equal to 1,000,000 Watts or 1,000 Kilowatts. The amount of electricity used over a given period of time is measured in kilowatt-hours (KWh).

HOW DOES THE BUYDOWN PROGRAM WORK?

The amount of the rebate is based on the Estimated Performance (kilowatthour production) of the system, and converted to the effective annual AC generating capacity of the PV system measured In AC watts. The residential rebate amount for 2010 is $3.72 per AC watt for systems up to a maximum size of 4 kilowatts, or $14,880 not to exceed 50% of the total cost of the installation. The commercial rebate amount is $2.61 per AC watt up to a maximum size of 100 kilowatts or $261,000 not to exceed 50% of the total cost of the installation. LMUD's yearly budgeted amount is $140,000 for all installations. Rebates are available on a first come, first served basis.(limited by the annual program budget). Customers may apply for multiple incentives over the 10-year lifetime of the program. (1-01-2007 to 1-01-2017)

Commercial rebates in excess of $50,000 to $100,000 will be paid over a five (5) year period, $100,001 to $199,999 will be paid over a seven (7) year period and rebates in excess of $199,999 will be paid over a ten (10) year period. Yearly payments will be calculated by the amount of the rebate divided by applicable years. Rebates will be paid on the anniversary of the completion of the project. Third-Party rebates will be paid to the customer of record (LMUD's customer). Private Power Agreements and or third-party lease agreements must be reviewed and approved by LMUD prior to installation.

Lassen MUD electric customers that abide by the PV program terms and conditions, install a qualifying PV system and enter into an Interconnection Agreement with Lassen MUD Utilities are eligible for a Buy Down incentive.

Lassen MUD PV Buy Down Program

Customer Participant Qualifications

To qualify for the rebate you must:

1. Be a customer receiving electricity distributed by Lassen MUD.

2. Have had (or agree to have) an LMUD Energy Efficiency Audit and implement all measures with less than 3 year payback.

3. Obtain and submit the required building and electric permits to install the PV system from the appropriate County or City Building Department.

4. Complete and submit a signed application for the Lassen MUD PV Buy Down Program to reserve a rebate for installation of a PV system. An application is available from the Lassen MUD.

5. Complete and sign two copies of the Interconnection Agreement with Lassen MUD. The Interconnection Agreement spells out the terms and conditions of your responsibilities as a power producer and delineates the terms of Lassen MUD net metering rate. A copy of the Interconnection Agreement is available from Lassen MUD.

6. Install the PV system that is compliant with the terms and conditions of Lassen MUD's PV Buy Down Program. A minimum 10-year full-system warranty against defective parts, workmanship, or unusual degradation of the system output from the PV retailer or installer is required.

7. Request a PV Buydown Program inspection from Lassen MUD after the installation has been completed and *after* the system has successfully passed the City/County Building/Electrical Inspection.

8. Submit the following documents to Lassen MUD: 1) two signed originals of the Interconnection Agreement, 2) a copy of the receipt for the PV system, and 3) a copy of the PV system 10 year warranty. Customer should make and keep on file a copy of the Interconnection Agreement.

9. After the required documents have been submitted to Lassen MUD and have been approved by Lassen MUD to receive the incentive, you will receive your rebate check within thirty (30) days.

Program and System Requirements

Eligible generating systems must meet all of the following requirements:

1. Certified Components or Systems

All flat plate photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of the Underwriters Laboratory Standard 1703, and must appear on the latest California Energy Commission certified photovoltaic modules list available at the following website:

- http://www.consumerenergycenter.org/cgi-bin/eligible_pvmodules.cgi

All inverters must be certified as meeting the requirements of UL 1741 and appear on the latest California Energy Commission certified inverters list available at the following website:

- http://www.consumerenergycenter.org/cgi-bin/eligible_inverters.cgi

2. Qualified and Registered Contractors and Meet all Installation Codes and Standards

Photovoltaic systems must be installed by appropriately licensed California contractors in accordance with rules and regulations adopted by the State of California Contractors' State Licensing Board and must in all cases be installed in conformance with the manufacturer's specifications and with all applicable electrical and other codes and standards. Contractors must possess, or employ subcontractors who possess, an A, B, C-10 or C-46 license.

In addition to the State requirements, contractors wishing to install systems qualifying for the LMUD Buydown incentive must also submit an application (application available from LMUD) listing appropriate licenses, years of experience, PV training, and liability insurance level.

3. Grid Connected

Eligible systems in the PV Buy Down program must be grid-connected. This means simply that the system must be electrically connected (on the customer's premises) to Lassen MUD electrical grid serving the customers electrical load. The interconnection must comply with all applicable electrical codes and interconnection requirements. The system offsets the customer's energy use either directly, by supplying electrical energy otherwise supplied by local utility electrical grid, or indirectly, by supplying electrical energy to the local utility electrical grid which is then available for use by the customer or others.

4. 10 year Full Warranties

All retailers of generating systems that receive a PV Buy Down payment under this program must provide a minimum **ten-year** warranty to the purchaser against breakdown or degradation of output. The warranty must cover all of the components of the generating system that are eligible for the PV Buy Down against breakdown or degradation in electrical output of more than ten percent from their originally rated electrical output. The warranty shall cover the full cost of repair or replacement or defective components or systems. Where the retailer is also the installer or professionally contracts for the installation the warranty must also cover labor costs to remove and reinstall defective components or systems. You will need to provide Lassen MUD with a copy of the full 10-year warrantee (s) in order to process the PV Buy Down incentive.

5. Interconnection Agreement with LMUD

In order to receive a PV Buy Down incentive the customer must agree to the terms of, and enter into, an Interconnection Agreement with Lassen MUD.

6. Purchaser/Retailer/Installer Information Provided

Provide all information on the Purchaser, Retailer and/or Installer as requested. For Purchaser, the Federal Tax ID Number is your Social Security Number. Your Federal Tax Identification number is required if you are going to receive the rebate.

7. Generating System Component Ratings and EPBB Rebate Basis

Information on the generating system (modules and inverter) should be provided by the retailer or installer. The **PTC Module Power Rating** refers to the "PVUSA Test Conditions" watt-rating used by the State of California. This rating for each brand/model of module can be found at:

http://www.consumerenergycenter.org/cgi-bin/eligible_pvmodules.cgi

Total Array Output is the number of the PV modules multiplied by the PTC power rating of each module. **Peak Inverter Efficiency** refers to the level of the efficiency of the inverter to convert from direct to alternating current (DC to AC). Inverter peak efficiency levels are provided by inverter manufacturers and can also be found on the California Energy Commission website at:

http://www.consumerenergycenter.org/cgi-bin/eligible_inverters.cgi .

The **Estimated Performance Based Capacity** is the **Total Array Output** multiplied by the **Peak Inverter Efficiency** (e.g., 94%) multiplied by a **Design Factor**. The Design Factor is the multiple of the **orientation factor**, and **shading factor** for the PV system in our utility service area. The **Orientation Factor** for any tilt oriented *within 45 degrees of true south* is 1.0; for systems oriented from 45 degrees to 90 degrees from true south, the **Orientation Factor** is 0.9.

To derive the **Shading factor**, use the Sun Charts for our area to determine percent of annual shading. The installer may also use the on-line EPBB calculator, if available, or other approved software.

Orientation (Compass Direction)	Tilt	**Orientation Factor**
Horizontal	0	1.0
135° to 225° Azimuth	Any	1.0
90-135° and 225-270°	Any	0.9
North of East-West	--	0.0 (no incentive)

Percent Annual Shading (derived from Sun Chart	**Shading Factor**
0% to 15%	1.0
15% to 25%	0.9
25% to 35%	0.75
>35%	0.0 (no incentive)

The Design Factor is the Orientation Factor x Shading Factor.

8. Rebate Calculation

The **Rebate** is equal to the **Estimated Performance** multiplied by $2.61 / wattAC (3.72 per watt residential)

Rebate = Total Array Output x Peak Inverter Efficiency x Design Factor x $2.61 ($3.72 per watt residential)

Note: The rebate per system is limited to $14,880 (4 kW) for residential customers and $261,000 (100kW) for commercial customers, rebates will not exceed 50% of the total cost of the installation. Customers may apply for multiple systems over the 10-year life of the program.

9. Rebate Designee

Lassen MUD will send the rebate to the customer or their designee. Keep a copy of your signed and completed PV Buy Down Program Application and Interconnection Agreement for your records.

Lassen MUD PV Buy Down Program

Application Instructions

Purchaser Information

Provide the name and daytime phone number of the Purchaser of the system. Provide the street address where the system is to be installed and the Utility Account Number for that location. If the Purchaser will be receiving the rebate, a Federal Tax ID number is required.

Seller Information

Provide the name, address, business phone number, and Business Resale Number of the Retailer (seller) of the system. If the Retailer is also the Installer, provide the California license class (A, B, C-10, C-46) and license number.

Installer Information

Provide the Installer's name, if different from the Retailer and the California license class (A, B, C-10, C-46) and license number of the Installing Contractor.

Generating System

Enter the PV manufacturer's name, the PV module model number, and the PVUSA Test Condition (PTC) rating of the modules. The PTC rating is obtainable from the Web site listed below for each module.
Only photovoltaic modules that have been certified by a nationally recognized testing laboratory as meeting the requirements of the Underwriters Laboratory Standard 1703 are eligible for the Rebate Program. A list of certified modules can be obtained from the California Energy Commission (CEC) via their website at:

http://www.consumerenergycenter.org/cgi-bin/eligible_pvmodules.cgi

- Enter the total Array Output (wattsAC), which equals the number of modules multiplied by the PTC module power rating.
- Enter the manufacturer, model, and peak inverter efficiency of the inverter in your system. Inverters must be certified as meeting the requirements of UL 1741 by a nationally recognized testing laboratory. A list of certified inverters can be obtained from the CEC's website at:

http://www.consumerenergycenter.org/cgi-bin/eligible_inverters.cgi

System Rated Output

- Multiply the Total Array Output ($Watts_{DC\text{-}PTC}$) by the Peak Inverter Efficiency to determine the System Rated Output ($Watts_{AC}$) and enter the output in the box provided. Enter information pertaining to meters used for measurement of kilowatthour production of the PV system.

Estimated Performance Based Capacity Calculation

- Enter the Orientation and Shading amounts, and using the table, derive the Orientation and Shading Factors. Multiply these Factors to yield the Design Factor. Multiply the Total Array Output x the Design Factor to yield the Estimated Performance Based Capacity Calculation.

Rebate

- Multiply the Estimated Performance Based Capacity (wattsAC) by $2.80 per watt or $4.00 per watt residential, and enter it on the form.

Sign and Submit

- Review the Terms and Conditions, and Tax Liability
- The Purchaser must sign and date the completed PV Buy Down Program Application.
- Purchaser must attach to the application a copy of either 1) a PV System Proposal, or 2) a Letter of Intent to purchase a PV system.
- Submit application and attachments to:

Lassen MUD Utilities
PV Buy Down Program
Attn: Efficiency Services
P.O. Box 421
Clackamas, OR 97015

Approval from Lassen MUD

- Upon receipt and approval of your application, Lassen MUD will send you a PV Buy Down Program Reservation Confirmation letter to inform you that rebate funds are available and have been allocated for your project.