Residential New Construction Solar Energy Program Application

To be completed by builder or solar installer

SECTION ONE: General Information

Applicability and Purpose

All Roseville Electric (RE) builders wishing to install and/or receive rebate for solar generating systems (photovoltaic system, PV) greater than 1.0 AC kilowatt of installed capacity on their new homes in parallel with Roseville Electric's electric service must have their installer complete this application.

The new installed system shall at all times comply with Roseville Electric's Rule 21 as well as with all applicable laws, tariffs, electrical codes and applicable requirements of the City of Roseville. Rule 21 may be found at www.roseville.ca.us/Rule21
Under no circumstance may the PV system electric production exceed 100% of the customer's estimated energy use.

This application form is specifically and solely interconnection agreement and/or rebates between new construction builders and Roseville Electric. Rebates are not reserved and are paid on a first come first served basis only or until funds are depleted. If a reservation of funds is required builders are encouraged to utilize the Roseville Electric BEST New Construction Rebate program which will pay a higher incentive rate for solar as well as an incentive for efficient building http://www.roseville.ca.us/electric/developers/residential/best.asp

Rebate application must be made within 60 Days of final building inspection or may be disconnected from Roseville Electric Grid and may forfeit any rebate that is applicable

General Information – Please complete ALL fields

Builder/Customer-generator Information				
Name (as appears on electric bill)			Roseville Electric Account #	
Installation Address (street and Zip)	Village Name	Lot #	Telephone	E-Mail
Solar Lending Company or PPA Provider Information				
Name of Company			Telephone	Fax
Mailing Address (street, city and zip)			City of Roseville Business License #	
Contact Name			Contact Phone	Contact E-Mail
Solar System Installer				
Name of Company			Telephone	Fax
Mailing Address (street, city and zip)			City of Roseville Business License #	Contractor's License #
Contact Name			Contact Phone	Contact E-Mail

Application Type	Initial One Only
The PV system is owned or leased by the RE customer-generator and applying for BOTH a PV rebate and interconnection.	
The PV system is owned or leased by the RE customer-generator and is NOT applying for a rebate, system needs interconnection only.	

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SECTION TWO - Metering

Net Metering

- Net metering for solar generating system requires a Roseville Electric owned bi-directional revenue net meter. This meter is capable of measuring electric flow both into the meter from the Roseville Electric grid and out of the meter from the solar energy system. If the Builder/Customer-generator's existing meter is not a net meter, Roseville Electric must upgrade the meter to account for the bi-directional flow of electricity. The cost for this upgrade is the responsibility of the Builder/Customer-generator.

Meter Upgrade Cost

- Roseville Electric will assess the suitability of the Customer-generator's meter **after** the Customer-generator submits an application, to determine if a net meter upgrade is necessary to gain access to Roseville Municipal Code net metering tariffs.
- If it is determined that a meter upgrade is required, per California state law, the expense of this upgrade is the responsibility of the Customer-generator. This cost must be paid by the Customer-generator prior to gaining access to a net metering tariff and receiving any program rebate.
- Net metering upgrade cost (if applicable) will be paid as part of the project permit process with the City of Roseville.

Billing and Net Metering Tariffs

- Please go to the Roseville Municipal Code Section 14.24.051 for complete information: http://qcode.us/codes/roseville/ or call (916)797-6937 for further assistance.

SECTION THREE - Equipment Information

AC Disconnect Switch: List the AC disconnect switch that will be used for this solar energy system.

Please Note: A separate visible, manually operated and lockable AC disconnect switch (as detailed in Roseville Electric Rule 21) must be installed within 5 ft of the point of interconnection, meeting the criteria as outlined in Roseville Electric Rule 21.

Disconnect Switch Manufacturer	Disconnect Switch Model Number	Disconnect Switch Rating (amps)

Inverters Interconnected to Roseville Electric: List all of the inverters that will be interconnected to Roseville Electric, must be on the California Energy Commission (CEC) list of approved inverters. Use of micro-inverters will require an additional CEC approved performance display for the total installed "system".

No.	Inverter Manufacturer	Micro-Inverter Yes/No	Inverter Model Number	Inverter Nameplate Rating DC kW (per unit)	Inverter CEC AC Rating kW (per unit)	Quantity of Inverters	Inverter Output Voltage	Single or Three Phase
1								
2								

a. Micro-Inverter Performance Monitoring Display The use of micro-inverters will require an additional CEC approved performance monitoring display for the total installed PV system.
Manufacturer Name: _____
Location placement at Customer-generator facility: _____

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Solar Equipment: List the solar/photovoltaic (PV) panel information requested below. Must be an approved PV panel listed by the California Energy Commission.

No.	PV Panel Manufacturer	PV Panel Model	PV Panel Nameplate Rating DC kW (per unit)	PV Panel CEC AC Rating kW (per unit)	Quantity of PV Panels	Total CEC-AC Capacity (kW)	Inverter Number From Above
1							
2							

SECTION FOUR - Conditions for Interconnection Approval and Rebates

INTERCONNECTION
Application documents are required to ensure safe and reliable operation of Roseville Electric's Distribution System and to confirm that Customer-generators interconnection has been performed in accordance with Roseville Electric's tariffs and Rule 21. This is why it is important for all Customer-generators, even those wishing for interconnection only, to submit a complete application package. **Customer-generators should not delay sending any part of the agreement package to Roseville Electric.**

SECTION FIVE - Rebate Calculation and Payment

REBATE APPLICABILITY
This application form is specifically and solely for rebates and interconnection agreement between new construction builders and Roseville Electric. Rebates are not reserved and are paid on a first come first served basis only. If a reservation is desired builders are encouraged to utilize the Roseville Electric BEST New Construction Rebate program which will pay a higher incentive rate for solar as well as incentive for efficient building http://www.roseville.ca.us/electric/developers/residential/best.asp

Expected Performance Based Incentive (EPBI)	Enter data in this column
ENTER: Results - CSI Rating (kW) from Calculator at: www.csi-epbb.com (*this is found on page 2 of the CSI report, it is a factor of the CEC-AC rating and the design factor*)	
Roseville Electric Incentive Rate ($ per AC Watt) (See Roseville Electric Program Handbook and call Roseville Electric for more information)	**$0.32**
REBATE CALCULATION: A X B	**$**

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SECTION SIX – Interconnection Compliance

Customer-generator shall meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers and accredited testing laboratories such as Underwriters Laboratories. A Customer-generator with a solar generating system that meets those standards and rules shall not be required to install additional controls and/or pay for additional tests.

Required Documents

Complete applications and submit to RE with the following documents:

1. Purchase contract, lease or PPA agreement
2. Equipment/system warranty information
3. Shading Analysis (no minimal shading allowed)
4. CSI Standard PV Calculator printout. Values from the shading analysis must be filled in for **all** projects. The calculator is found at: (www.csi-epbb.com)
5. A single-line diagram showing Customer-generators actual roof top or site installation of the renewable energy system.
    a. The diagram must include
        i. The electrical rating and operating voltages of the significant electrical components such as the service panel.
        ii. The location of the visible open lockable AC disconnect switch (per Roseville Electric Rule 21), inverters, all solar panels, circuit breakers and other protective devices of the renewable energy systems.
        iii. The general location of the Customer-generators loads relative to the renewable energy system, and the interconnection with Roseville Electric's Distribution System.
        iv. A description of how the power output from the inverter is connected to the main service panel via a branch breaker.
        v. The ampere rating of this branch breaker and the main service panel breaker must be compatible with the output rating of the renewable energy system. The output rating is computed based on the total nameplate rating of the inverter.

- Customer may not turn solar generation system on until this application is signed by Roseville Electric and returned; and the net meter has been installed. Customer-generator submits the Payment Request (Form E) to Roseville Electric

Initial here _____	**I have read and understand the terms set forth in the Roseville Electric New Construction Solar Program Interconnection Compliance Section.**
Initial here _____	The Contractor listed in the Roseville Electric Residential New Construction Solar Energy Program Application (authorized by the Builder/Customer-generator to receive confidential Builder/Customer-generator account billing and electric usage information pertaining to this installation.

By initialing the boxes above and signing this agreement, Customer-generator authorizes Roseville Electric to release information to the contractor named in Form A regarding Customer-generator usage and billing information, solar energy system location, size and operational characteristics as requested in the course of this interconnection process. Roseville Electric is granted permission to share information with authorized recipients for a period of three years from the date this agreement is received by Roseville Electric. In addition, Customer-generator authorizes Roseville Electric to release to the California Energy Commission information regarding Customer-generator facility size and operational characteristics (excluding customer-generator name, contact information, other personal information and solar energy system location) as requested from time to time pursuant to the California Energy Commission's rules and regulations.

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SECTION SEVEN - Document Submittal Contact Information

Email or mail the required attachments and Application to:
Roseville Electric
ATTN: Residential New Construction Solar Applications
2090 Hilltop Circle
Roseville, CA 95747
rosevilleelectric@roseville.ca.us

For questions or assistance please contact Roy Gillham at Roseville Electric rgillham@roseville.ca.us

SECTION EIGHT – Terms and Conditions

A. Each of the undersigned declares under penalty of perjury that:

- The site installation is located within the service territory of Roseville Electric.
- The above described PV system is intended primarily to offset part or all of the Applicant's electrical needs at the site of installation.
- The Applicant has read and understands the program requirements set forth in this Application and has agreed to abide by these requirements.
- If a rebate is paid, the Applicant understands that the specified system must be mounted permanently and remain in operation in Roseville for no fewer than 10 years.
- The Applicant understands that program funds are limited, reservations are required and that rebates are available on a first-come-first-served basis.

- The applicant understands that Roseville Electric Residential rates and rate structure may change over time and that current rates will apply.
- The Applicant understands that program funds are not reserved until RE confirms the reservation; a letter will be e-mailed to the customer and contractor with the reservation approval.
- The Applicant agrees that the selection, purchase, and ownership of the equipment is their sole responsibility. Roseville Electric makes no representation as to the safety, reliability, and/or efficiency of the equipment selected or components thereof.
- Roseville Electric makes no warranty, whether expressed or implied, including warranty of merchantability of fitness for any particular purpose, use, or application of the equipment.
- The information provided in this form is true and correct to the best of their knowledge.

Required Application Signature

Builder or Installing Contractor Name (PRINT)	Date
Builder or Installing Contractor Signature	

Residential New Construction Solar Energy Program Application – Installation Verification

Installation certificates are required for each installed solar energy system. When the installation is complete, the installer must perform the field verification and diagnostic testing procedures. The installer shall also provide a copy of the Installation Certificate and any other proof of installation details (such as photographs, product invoices, or solar pathfinder diagram(s)) to the third-party Inspector when requested so that they are able to verify the installation, performance and shading specifications.

SYSTEM INFORMATION								
Equipment Type	**CEC Certified Manufacturer Name and Model Number**							
Inverter							RE Use: Information verified	_____
Modules								_____
Modules Mounting ____ Rack Mount _____ BIPV	# of series modules in each string	_____	# of strings in parallel	_____	Total # of modules	_____		_____

Installation Specifications		Method Used to Determine Value		Value Measured	
		Installing Contractor	**RE Use**	**Installing Contractor**	**RE Use**
1	**The azimuth of the system** (degrees from North)				
2	**The roof pitch/tilt of the system** (Rise : Run / degrees from horizon)				
3	**The mounting height of the system** (ft. from the ground)				
4	**The standoff height of system** (if BIPV, enter "0")				

Performance Specifications		Method Used to Determine Value		Value Measured	
		Installing Contractor	**RE Use**	**Installing Contractor**	**RE Use**
5	**Measurement of Solar Irradiance** (W/m squared)				
6	**Measurement of Ambient Temperature** (F degrees)				
7	**Expected Output from Field Verification Table (FVT)** (W)	**FVT**			
8	**Inverter or other performance display reading** (W)				
9	**The electric production (W) as shown on the inverter or other performance display is equal to or higher than the value on the FVT for the system based on the incident radiation and ambient temperature measured.** (Pass if line 8 > line 7)			Pass Fail	Pass Fail

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Residential New Construction Solar Energy Program Application – Installation Verification

Field Verification Certification Form

Primary Method (Single or Multiple String Arrays)

Irradiance _____ (W/m^2)
Temp _____ (F)
Inv Output _____ (W)

_____ CEC-AC Output (W) X _____ FVT (%) =
Estimated System Output (W)

RE USE

Irradiance _____ (W/m^2)
Temp _____ (F)
Inv Output _____ (W)

_____ CEC-AC Output (W) X _____ FVT (%) =
Estimated System Output (W)

Field Verification Output Table (FVO)

(W/m²)	T=15	T=25	T=35	T=45	T=55	T=65	T=75	T=85	T=95	T=105	T=115
300	26%	26%	25%	24%	24%	23%	22%	22%	21%	20%	20%
325	28%	28%	27%	26%	26%	25%	24%	24%	23%	22%	22%
350	31%	30%	29%	28%	28%	27%	26%	25%	25%	24%	23%
375	33%	32%	31%	31%	30%	29%	28%	27%	27%	26%	25%
400	35%	34%	33%	33%	32%	31%	30%	29%	28%	27%	27%
425	37%	36%	36%	35%	34%	33%	32%	31%	30%	29%	28%
450	40%	39%	38%	37%	36%	35%	34%	33%	32%	31%	30%
475	42%	41%	40%	39%	38%	37%	36%	35%	34%	33%	32%
500	44%	43%	42%	41%	40%	39%	38%	37%	36%	34%	33%
525	46%	45%	44%	43%	42%	41%	40%	38%	37%	36%	35%
550	48%	47%	46%	45%	44%	43%	41%	40%	39%	38%	37%
575	51%	49%	48%	47%	46%	45%	43%	42%	41%	40%	38%
600	53%	51%	50%	49%	48%	46%	45%	44%	43%	41%	40%
625	55%	54%	52%	51%	50%	48%	47%	46%	44%	43%	42%
650	57%	56%	54%	53%	52%	50%	49%	47%	46%	45%	43%
675	59%	58%	56%	55%	54%	52%	51%	49%	48%	46%	45%
700	61%	60%	58%	57%	55%	54%	52%	51%	49%	48%	46%
725	63%	62%	60%	59%	57%	56%	54%	53%	51%	50%	48%
750	65%	64%	62%	61%	59%	58%	56%	54%	53%	51%	49%
775	68%	66%	64%	63%	61%	59%	58%	56%	54%	53%	51%
800	70%	68%	66%	65%	63%	61%	59%	58%	56%	54%	53%
825	72%	70%	68%	66%	65%	63%	61%	59%	58%	56%	54%
850	74%	72%	70%	68%	66%	65%	63%	61%	59%	57%	55%
875	76%	74%	72%	70%	68%	66%	65%	63%	61%	59%	57%
900	78%	76%	74%	72%	70%	68%	66%	64%	62%	60%	58%
925	79%	78%	76%	74%	72%	70%	68%	66%	64%	62%	60%
950	81%	79%	77%	75%	73%	71%	69%	67%	65%	63%	61%
975	83%	81%	79%	77%	75%	73%	71%	69%	67%	65%	63%
1000	85%	83%	81%	79%	77%	75%	73%	70%	68%	66%	64%
1025	90%	85%	83%	81%	78%	76%	74%	72%	70%	67%	65%
1050	90%	90%	84%	82%	80%	78%	76%	73%	71%	69%	66%
1075	90%	90%	86%	84%	82%	79%	77%	75%	72%	70%	68%
1100	90%	90%	90%	86%	83%	81%	79%	76%	74%	71%	69%
1125	90%	90%	90%	90%	85%	82%	80%	78%	75%	73%	70%
1150	90%	90%	90%	90%	86%	84%	81%	79%	76%	74%	71%
1175	90%	90%	90%	90%	90%	85%	83%	80%	78%	75%	73%
1200	90%	90%	90%	90%	90%	90%	84%	82%	79%	77%	74%

For systems that have only one string connected to a single inverter or for systems using micro-inverters, the following applies:

1. Record Temperature and Irradiance
2. Examine Field Verification Output (FVO) table for the percentage shown given the measured temperature and irradiance.
   Always round temperature up to the next block. So, 47 degrees rounds up to 55 degrees on the chart.
3. Multiply the CEC-AC (from EPBB printout) times the FVO percentage to get estimated system output.
4. Compare estimated system output with actual output. If actual system output is higher, system is operating within expectations.
   If estimated output is higher, perform additional diagnostics and correct any issues as the system may not be performing properly.

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Residential New Construction Solar Energy Program Application – Installation Verification

SHADING ANALYSIS

A Shading Analysis is required for all solar projects. Please complete the table below with the values from the shading analysis.

Monthly Shading	Shading Derate Factors (%)
Jan	
Feb	
Mar	
Apr	
May	
Jun	

Monthly Shading	Shading Derate Factors (%)
July	
Aug	
Sep	
Oct	
Nov	
Dec	

PROOF OF INSTALLATION

Contractor must submit accompanying documentation as proof of installation (such as photos, product invoices, or solar pathfinder diagram(s). These items are intended to assist the Third-party Inspector in verifying the installation, performance and shading specifications.

The following item is attached: _____

BUILDER/INSTALLER SIGNATURE

☐ I, the undersigned, verify that equipment listed on this form is the actual equipment installed and the shading criteria are as specified. (check the box box)

Signature:	Date:
Print Name:	

Roseville Electric use only	
Third-party Field Inspector	
Signature:	Date:
Company Name:	Phone:
Findings:	

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Residential New Construction Solar Energy Program Application – Request for Payment

For customer-generators requesting a rebate – after the project has been installed, permit and meter upgrade charges have been paid, inspections completed and passed, and all program criteria to receive a rebate have been met, the customer-generator may apply for the rebate payment.

Rebate Payment Information

Once approved, the EPBI rebate amount will be paid to:

Payment will default to the customer if one of these boxes is not checked

- ☐ The Builder-generator
- ☐ The Installer
- ☐ Solar Lending or PPA Provider
- ☐ Other:
  - Company Name _____
  - Mailing Address _____
  - City State Zip _____
  - Phone (_____)_____

Rebate Level Paid	Final CSI Rating	Rebate Total ($) Requested:
$.32 per CSI Rating Wattage		
Customer-generator Name (PRINT)		
Customer-generator Signature		Date

Please allow 6 weeks for payment.

Roseville Electric use only	
Final CSI Rating – paid	
Rebate total paid	
Date paid	

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