



California Solar Initiative Overview

San Diego Regional Energy Office
January 31, 2007

San Diego Regional Energy Office

- ▼ SDREO is a nonprofit 501(c)3 corporation focused on fostering public policy and providing programs, services, information and forums that facilitate the adoption of clean, reliable, renewable, sustainable and efficient energy technologies and practice
- ▼ SDREO is the region's independent voice on energy issues and a trusted resource for businesses, consumers, public agencies and local governments

Working for a Sustainable Energy Future

Content

- ▼ General Overview of CSI
- ▼ TOU Tariff Requirements
- ▼ Energy Efficiency Requirements
- ▼ EPBB Calculator Overview
- ▼ CSI Online Database Preview
- ▼ Metering Requirements
- ▼ CSI Inspection Overview
- ▼ What's Next

General Overview of CSI

- ▼ The California Solar Initiative (CSI) program is designed to provide incentives for the installation and operation of solar photovoltaic (PV) projects
 - ▼ Authorized by the California Public Utilities Commission (CPUC) and Senate Bill 1
 - ▼ Total CSI budget of \$2.165 billion authorized by CPUC
 - ▼ CPUC commitment to a long term 10-year program
 - ▼ Provides incentives to residential retrofit and non-residential retrofit and new construction solar projects
 - ▼ Transitions from capacity based incentives to performance based incentives
 - ▼ Formally launched January 1, 2007

History of Solar Incentives

- ▼ California Energy Commission (CEC) Emerging Renewables Program (ERP)
 - ▼ Provided Incentives for PV system (1998-2001)
 - ▼ Provided Incentives for PV system < 30kW (2001-2006)
- ▼ CPUC Self-Generation Incentive Program (SGIP)
 - ▼ Provided Incentives for PV systems \geq 30 kW (2001-2006)
- ▼ CSI integrates the CEC ERP and CPUC SGIP into one solar incentive program, except for:
 - ▼ Residential New Construction Projects which will be funded through the CEC New Solar Homes Partnership

CSI Budget

- ▼ Total authorized CPUC CSI budget is \$2.165 B
- ▼ Regional CSI incentive budgets are as follows:

Pacific Gas and Electric Company	\$946M
Southern California Edison Company	\$996M
San Diego Regional Energy Office	\$223M

Eligible Customers

- ▼ Eligible customer projects must be within the service territory of and must receive retail level electric service from:
 - ▼ Pacific Gas and Electric (PG&E)
 - ▼ Southern California Edison (SCE)
 - ▼ San Diego Gas & Electric (SDG&E)
 - The San Diego Regional Energy Office (SDREO) administers the CSI in the SDG&E Service Territory
- ▼ Municipal electric utility customers are not eligible to receive incentives from the designated Program Administrators

Eligible Projects

- ▼ Residential Retrofit Projects
- ▼ Non-Residential Retrofit and New Construction Projects
- ▼ Minimum System Size of 1 kW
- ▼ Maximum System Size of 5 MW
 - ▼ Incentives will be capped to the first MW
- ▼ Installed capacity at site may not exceed actual energy consumed during previous 12 months
 - ▼ Maximum System Capacity = 12-months previous kWh usage / (0.18 x 8760 hr/year)
 - ▼ New Construction and Future Load Growth must be substantiated

CSI Incentive Rates

- ▼ CSI Incentives will decline over time based on MW Reserved

MW Step	Statewide MW in Step	EBPP Payments (per watt)			PBI Payments (per kWh)		
		Residential	Commercial	Gov't/ Nonprofit	Residential	Commercial	Gov't/ Nonprofit
1	50 ¹	n/a	n/a	n/a	n/a	n/a	n/a
2	70	\$ 2.50	\$ 2.50	\$ 3.25	\$ 0.39	\$ 0.39	\$ 0.50
3	100	\$ 2.20	\$ 2.20	\$ 2.95	\$ 0.34	\$ 0.34	\$ 0.46
4	130	\$ 1.90	\$ 1.90	\$ 2.65	\$ 0.26	\$ 0.26	\$ 0.37
5	160	\$ 1.55	\$ 1.55	\$ 2.30	\$ 0.22	\$ 0.22	\$ 0.32
6	190	\$ 1.10	\$ 1.10	\$ 1.85	\$ 0.15	\$ 0.15	\$ 0.26
7	215	\$ 0.65	\$ 0.65	\$ 1.40	\$ 0.09	\$ 0.09	\$ 0.19
8	250	\$ 0.35	\$ 0.35	\$ 1.10	\$ 0.05	\$ 0.05	\$ 0.15
9	285	\$ 0.25	\$ 0.25	\$ 0.90	\$ 0.03	\$ 0.03	\$ 0.12
10	350	\$ 0.20	\$ 0.20	\$ 0.70	\$ 0.03	\$ 0.03	\$ 0.10

CSI MW Step Allocations

Step	MW in Step	PG&E (MW)		SCE (MW)		SDG&E/SDREO (MW)	
		Res	Non-Res	Res	Non-Res	Res	Non-Res
1	50	-	-	-	-	-	-
2	70	10.1	20.5	10.6	21.6	2.4	4.8
3	100	14.4	29.3	15.2	30.8	3.4	6.9
4	130	18.7	38.1	19.7	40.1	4.4	9.0
5	160	23.1	46.8	24.3	49.3	5.4	11.1
6	190	27.4	55.6	28.8	58.6	6.5	13.1
7	215	31.0	62.9	32.6	66.3	7.3	14.8
8	250	36.1	73.2	38.0	77.1	8.5	17.3
9	285	41.1	83.4	43.3	87.8	9.7	19.7
10	350	50.5	102.5	53.1	107.9	11.9	24.2
Total	1750	252.4	512.3	265.6	539.5	59.5	120.8
Total by Utility		764.8		805.0		180.3	
Percent		43.7%		46.0%		10.3%	

General Overview of CSI

As of January 1, 2007, the CSI program pays:

- ▼ Expected Performance-Based Buydown (EPBB) incentives for PV projects < 100 kW
 - ▼ EPBB is an up-front incentive based on an estimate of the system's future performance
 - ▼ EPBB combines the benefits of rewarding PV System performance with the administrative simplicity of a one-time incentive paid at the time of project installation
- ▼ Performance-Based Incentives (PBI) for PV projects \geq 100 kW
 - ▼ Monthly payments based on measured kWh output of solar power produced over a 5-year period.

Expected Performance Based Buydown (EPBB)

- ▼ Applies to Systems < 100 kW
- ▼ Paid upfront, based on the following incentive rates
 - ▼ \$2.50 per watt for Residential and Commercial installations
 - ▼ \$3.25 per watt for Government and Non-Profit installations
- ▼ **EPBB Incentive** = EPBB Incentive Rate x System Rating x Design Factor
- ▼ **Design Factor** = Simulated solar output of proposed system/Simulated solar output for optimal system
 - ▼ Takes into consideration location, orientation, tilt and shading effects on system performance

Performance Based Incentives (PBI)

- ▼ Applies to systems ≥ 100 kW
- ▼ Paid monthly over a 5-year period, based on the following incentive rates:
 - ▼ \$0.39 per kWh for Residential and Commercial installations
 - ▼ \$0.50 per kWh for Government and Non-Profit installations
- ▼ **PBI Incentive** = PBI Incentive Rate x Measured PV System Energy Output
- ▼ Reservation Amount will vary by capacity factor used
 - ▼ Reservation Amount = PBI Incentive Rate x .18 x 8760 x CSI System Size x 5 year (fixed systems)
 - ▼ Reservation Amount = PBI Incentive Rate x .22 x 8760 x CSI System Size x 5 year (tracking systems)
- ▼ Customers may opt into PBI for systems < 100 kW

Performance Based Incentives (PBI)

- ▼ Building Integrated Photovoltaics (BIPV) are solar electric systems in which the PV panels constitute part of the buildings roof or façade
- ▼ All BIPV projects will be paid PBI per CPUC direction

Current CSI Reservation Status

SDREO CSI Applications Received to date*:

Step	San Diego Regional Energy Office (MW)					
	MW Limits		Reservations Issued		Applications Received	
	Res	Non-Res	Res	Non-Res	Res	Non-Res
1	-	-	-	-	-	-
2	2.4	4.8	0.0	0.8	0.1	1.1
3	3.4	6.9	-	-	-	-
4	4.4	9	-	-	-	-
5	5.4	11.1	-	-	-	-
6	6.5	13.1	-	-	-	-
7	7.3	14.8	-	-	-	-
8	8.5	17.3	-	-	-	-
9	9.7	19.7	-	-	-	-
10	11.9	24.2	-	-	-	-
Total	59.5	120.9	0.0	0.8	0.1	1.1

****Note: 2006 SGIP Reservations over 50MW Step 1 Trigger are included in CSI Step 2.***

2-Step vs. 3-Step Reservation Process

- ▼ 2-Step Reservation Process
 - ▼ Residential System of any size
 - ▼ Non-Residential System size <10 kW
 - ▼ No Application Fee

- ▼ 3-Step Reservation Process
 - ▼ Non-Residential System size ≥ 10 kW
 - ▼ Subject to Application Fee
 - ▼ Customers may opt-in to Expedited 3-Step

- ▼ Reservation Period
 - ▼ 12-months for retrofit projects
 - ▼ 18-months for new construction/government/non-profit

2-Step

Step 1: Reservation Request

- ▼ Application and CSI Program Contract
- ▼ Proof of Electric Utility Service
- ▼ System Description Worksheet
- ▼ Energy Efficiency Audit Documentation (exemptions available)
- ▼ EPBB Tool Calculation Printout
- ▼ Copy of Agreement to Purchase and Install Solar
- ▼ Copy of Application for Interconnection
- ▼ Host Customer Insurance for systems \geq 30 kW
- ▼ Authorization to Receive Customer Information
 - ▼ SDREO/SDG&E Service Territory only

Refer to CSI Handbook, Section 4.1

2-Step

Step 1: Reservation Request

Additional Documentation, if Applicable:

- ▼ Tax-Exempt Status/AB 1407 Compliance (govt/non-profit)
- ▼ Copy of Alternative System Ownership (if 3rd party owned)
- ▼ System Owner Insurance for systems \geq 30 kW
- ▼ Electrical System Sizing (new/expanded load)

Refer to CSI Handbook, Section 4.1

2-Step

Step 2: Incentive Claim

- ▼ Signed Incentive Claim Form
- ▼ Proof of Authorization to Interconnect and Final Interconnection Agreement
- ▼ Copy of Building Permit and Final Inspection sign-off
- ▼ Final Project Cost Breakdown Worksheet
- ▼ Final Project Cost Affidavit
- ▼ Final Authorization to Receive Customer Information
 - ▼ SDREO/SDG&E Service Territory only

Refer to CSI Handbook, Section 4.7.3

3-Step

Step 1: Reservation Request

- ▼ CSI Application
- ▼ Proof of Electric Utility Service
- ▼ System Description Worksheet
- ▼ Energy Efficiency Audit Documentation (exemptions available)
- ▼ EPBB Tool Calculation Printout
- ▼ Application Fee
 - ▼ CSI System Size x Current \$/W Incentive Rate x 1%
 - ▼ Refunded upon Completed Installation
 - ▼ Forfeited if Project is Cancelled or Withdrawn after receipt of a Reservation
- ▼ Authorization to Receive Customer Information
 - ▼ SDREO/SDG&E Service Territory only

Refer to CSI Handbook, Section 4.2

3-Step

Step 1: Reservation Request

Additional Documentation, if Applicable:

- ▼ Tax-Exempt Status/AB 1407 Compliance (govt/non-profit)
- ▼ Electrical System Sizing (new/expanded load)

Refer to CSI Handbook, Section 4.2

3-Step

Step 2: Proof of Project Milestone

- ▼ Completed Proof of Project Milestone Checklist
- ▼ Signed CSI Program Contract
- ▼ Host Customer Certificate of Insurance for Systems \geq 30 kW
- ▼ Copy of Completed Interconnection Application
- ▼ Copy of Executed Contract for System Purchase and Installation
- ▼ Project Cost Breakdown Worksheet

3-Step

Step 2: Proof of Project Milestone

Additional Documentation, if Applicable:

- ▼ Copy of Executed Contract for System Purchase and Installation
- ▼ Copy of Executed Alternative System Ownership (if Owner is not Host)
- ▼ System Owner Certificate of Insurance (if Owner is not same as Host) for systems ≥ 30 kW
- ▼ Revised System Sizing Calculations (if applicable)
- ▼ Revised Incentive Calculation Worksheet (if applicable)
- ▼ Copy of RFP or solicitation (Govt, Non-profit, public entities)

3-Step

Step 3: Incentive Claim

- ▼ Signed Incentive Claim Form
- ▼ Proof of Authorization to Interconnect and Final Interconnection Agreement
- ▼ Copy of Building Permit and Final Inspection sign-off
- ▼ Proof of Warranty
- ▼ Final Project Cost Breakdown Worksheet
- ▼ Final Project Cost Affidavit

New CSI Requirements

- ▼ Time of Use (TOU) Rates
- ▼ Energy Efficiency Audits
- ▼ Installer Requirements
- ▼ Ten Year Warranty Requirements
- ▼ Metering Requirements
- ▼ Inspection Requirements

Time of Use (TOU) Rate Requirements

- ▼ Customers who install solar are required to take their electric service under applicable TOU tariffs in order to receive CSI Incentives
- ▼ Non-TOU customers can apply to CSI, but must take TOU service prior to incentive payment

Available SDG&E TOU Rates

▼ DR-TOU

- ▼ Available to Residential Customers
- ▼ SDG&E pays for the TOU meter (not monitoring for PBI)
- ▼ Details available online at:
http://www.sdge.com/tm2/pdf/ELEC_ELEC-SCHEDS_DR-TOU.pdf

▼ AL-TOU

- ▼ General Service available to Commercial Customers
- ▼ Details available online at:
http://www.sdge.com/tm2/pdf/ELEC_ELEC-SCHEDS_AL-TOU.pdf

▼ Schedule PA-T-1

- ▼ Available to Agricultural Customers
- ▼ Details available online at:
http://www.sdge.com/tm2/pdf/ELEC_ELEC-SCHEDS_PA-T-1.pdf

Energy Efficiency Requirements

- ▼ Host Customers must perform an energy efficiency audit to be eligible for CSI incentives
- ▼ Host Customer are exempt if they:
 - ▼ Provide documentation of an energy efficiency audit performed at the facility in the last three years
 - ▼ Submit proof of Title 24 energy efficiency compliance within the past three years Measurement & Evaluation
 - ▼ Demonstrate the have one of the following two national certifications of energy efficiency for the facility:
 - Energy Star
 - LEED

Refer to CSI Handbook, Section 2.3

Available Energy Efficiency Audits in San Diego

- ▼ Direct Links to all information Available on SDREO CSI Energy Audit and Tools website
- ▼ Residential Audits:
 - ▼ On line: SDG&E Home Energy Efficiency Survey
 - <http://energyaudit-sdge.sempa.com/index.asp>
 - ▼ Phone Audits: Call SDG&E at (866) 411-SDGE
- ▼ Non-Residential Audits:
 - ▼ On line: SDG&E Energy Challenger
 - <http://www.sdge.com/audit/>
 - ▼ Onsite:
 - SDREO provides free audits for Tax-Exempt Customers
- ▼ Third party provided audits accepted provided:
 - ▼ Entity is CABEC certified
 - ▼ At the customers expense

CSI Installer & Warranty Requirements

▼ CSI Installer Requirements

- ▼ Must be listed with Program Administrators to be eligible
- ▼ Must have active A, B, C-10, or C-46 license
- ▼ Must maintain Commercial General Liability, Workers Compensation and Auto Insurance requirements
- ▼ Refer to CSI Handbook:
 - Section 2.1.4 - Installer Eligibility
 - Section 2.6.2 - Installer Insurance Requirements

▼ CSI Warranty Requirements

- ▼ All systems must have minimum 10-year warranty effective January 1, 2007
- ▼ Refer to CSI Handbook, Section 2.4

CSI EPBB Tool and Online Application Tool Overviews

- ▼ CSI EPBB Tool:
 - ▼ Online at: www.csi-epbb.com
 - ▼ Developed by AESC
 - ▼ Overview presented by Ron Ishii
- ▼ CSI Online Application Tool
 - ▼ Clean Power Research PowerClerk
 - ▼ Overview presented by John King

CSI Metering

- ▼ CSI Metering Requirements
 - ▼ EPBB vs. PBI Accuracy Requirements
 - +/- 2% Revenue Grade
 - +/- 5% Non-Revenue Grade
 - Listed on the CEC website
 - ▼ Appendix B: Table 16 Specifications
 - ▼ Cost Caps
 - 1% for 30kW and below, 0.5% above 30kW
 - ▼ Meter Warranty Requirements
 - 2007: One-Year Warranty
 - 2008+: Five-Year Warranty
 - ▼ Remote Communication Capable
 - Unless qualified as exceeding the cost caps for Performance Monitoring and Reporting Service (PMRS), meter must have remote communications capability

Refer to CSI Handbook, Section 2.8 and Appendix B

**Table 16
Metering Summary**

	<u>5% Meter</u> (Inverter Integrated)	2% Meter (Standalone Meter)	PMRS
EPBB < 10kW	Required	Optional	Required*
EPBB ≥ 10kW and <20 kW	N/A	Required	Required*
EPBB > 20 kW	N/A	Required	Required
PBI (All System Sizes)	N/A	Required	Required

Notes:

- PMRS stands for Performance Monitoring and Reporting System

*Required unless the cost of the PMRS fall above the cost cap (the cost of the minimum metering, communication, and reporting system over the first five years for each solar installation size grouping shall be less than 1% of total installed cost for systems up to 30 k and 0.5% for larger systems. See CPUC Decision D.06-08-028). The customer seeking exemption must demonstrate to the Program Administrator that they were not able to satisfy the metering requirements within the applicable cost cap.

N/A = Not Applicable

Refer to CSI Handbook, Section 2.8 and Appendix B

- ▼ Data Requirements
 - ▼ PBI to Utility
 - Monthly reporting of kWh produced
 - Submitted via approved Meter Data Management Agent (MDMA)
 - Check with your Utility service provider on accepted formats
 - ▼ Performance Monitoring
 - Monthly kWh produced and instantaneous kW
 - Data to be maintained by PMRS provider per Handbook requirements
 - PMRS providers listed with the CEC

- ▼ Utility Installed vs. Third-Party Installations
 - ▼ Contracting with utilities to install meters for EPBB and PBI saves the applicant the headache of contracting separately with Meter Service Providers (MSP) and MDMA's.
 - ▼ Participants not contracting with the utilities for installation and PBI data management must obtain the meter from a CPUC certified MSP AND must contract with a Utility approved MDMA to coordinate the transfer of PBI data from the meter to the Utility

CSI Metering

- ▼ Eligible Equipment, MSP's, MDMA's, and PMRS Listings
 - ▼ Eligible Meters – Listed on CEC website:
http://www.consumerenergycenter.org/cgi-bin/eligible_meters.cgi
 - ▼ MSP – Listing on CPUC website:
<http://www.cpuc.ca.gov/static/energy/electric/electric+markets/metering/msps.htm>
 - ▼ MDMA – Listed on CPUC website:
<http://www.cpuc.ca.gov/static/energy/electric/electric+markets/metering/mdmas.htm>
 - ▼ PMRS – Listed on CEC website:
<http://www.consumerenergycenter.org/erprebate/monitors+rsp.html>

CSI Inspections

- ▼ **Systems greater than 1 kW and less than 30 kW:** These systems will have a field verification inspection on a random basis.
- ▼ **Systems greater than 30 kW and less than 100 kW that are participating in EPBB:** 100% of these systems will be inspected
- ▼ **Systems that are greater than or equal to 100 kW but are less than 1 MW, or are participating in PBI:** These systems will have a field verification inspection on a random basis.
- ▼ **Systems greater than 1 MW:** 100% of these systems will be inspected (as the PBI payment will be prorated)
- ▼ A mandatory site inspection is required for all relocated equipment. System Owners that have received an EPBB incentive and have relocated their system must orient their relocated equipment to produce at least the same generation as their initial incentive payment was based upon

Refer to CSI Handbook, Section 2.10

CSI Inspections

- ▼ Inspections will check for:
 - ▼ Verification that equipment nameplates and counts match those submitted on the Incentive Claim Form
 - ▼ Measurements to verify that system tilt, orientation, and shading values are consistent with values used in the EPBB calculator and submitted along with the Incentive Claim Form
 - ▼ Measurement of solar irradiation, ambient temperature, and solar system output to verify system performance against the expected output from the PV Calculator

Failed Inspections

- ▼ **Material mechanical failure:** A failure that results in a decline in the expected performance of the system (i.e., one or more of the system components is not operating properly).
- ▼ **Immaterial mechanical failure:** minor failures that can be corrected within 60 days.
- ▼ **Material compliance failure:** the system as verified does not match the application's stated system and/or the system does not meet the CSI program eligibility requirements (i.e., the EPBB characteristics are incorrect, the system components or number of components are incorrect, etc.)
- ▼ **Immaterial compliance failure:** failures that have no impact on the expected performance of the system and can be corrected within 60 days (i.e. submission of erroneous system data)

Refer to CSI Handbook, Section 2.10.1

Failed Inspections

- ▼ If an entity fails 3 inspections, they will be disqualified from the CSI Program
- ▼ Failed inspection for mechanical failures: 60 calendar days will be allowed to bring the system into compliance after a failed inspection, subject to re-inspection
- ▼ High volume installers (> 200 installed systems per year):
 - ▼ If the installer accumulates two strikes, the entity will be placed on probation. If no additional strikes are accumulated within the first year, their first strike is removed and they continue on probation until the second strike's probation year ends. If they acquire no additional strikes, the second strike is removed, and they will be restored to a zero-strike status.

Refer to CSI Handbook, Section 2.10.1

CSI Inspections Forms

Photovoltaic System Inspection Form Project Name 0
 SDREO CSI Program Application Number 0

<p>Pre-Inspection</p> <p>Design Capacity* <input type="text" value="0.000"/> kW</p> <p>System Operational Date: <input type="text"/></p> <p>Array ID <input type="text"/></p> <p>Photovoltaic Modules</p> <p>Manufacturer: <input type="text"/></p> <p>Model #: <input type="text"/></p> <p>Equipment Location: <input type="text"/></p> <p>Type of PV Cells: <input type="text"/></p> <p>Module Output** <input type="text"/> Watts</p> <p>Number of Modules: <input type="text"/></p> <p>Total Module Output <input type="text" value="0.000"/> kW</p> <p>Inverter / PCU</p> <p>Equipment Location: <input type="text"/></p> <p>Manufacturer: <input type="text"/></p> <p>Model #: <input type="text"/></p> <p>Size (kW): <input type="text"/></p> <p>Peak Inverter Efficiency: <input type="text"/></p> <p>Number of Units: <input type="text"/></p> <p>UL Label: <input type="text"/></p>	<p>On-site Inspection</p> <p>Calc'd Max Power Output* <input type="text" value="0.000"/> kW</p> <p>Power Output at Inspection <input type="text"/> kW</p> <p>System Operational Date: <input type="text"/></p> <p>Array ID <input type="text" value="0"/></p> <p>Photovoltaic Modules</p> <p>Manufacturer: <input type="text"/></p> <p>Model #: <input type="text"/></p> <p>Equipment Location: <input type="text"/></p> <p>Type of PV Cells: <input type="text"/></p> <p>Module Output** <input type="text"/> Watts</p> <p>Number of Modules: <input type="text"/></p> <p>Total Module Output <input type="text" value="0.000"/> kW</p> <p>Inverter / PCU</p> <p>Equipment Location: <input type="text"/></p> <p>Manufacturer: <input type="text"/></p> <p>Model #: <input type="text"/></p> <p>Size (kW): <input type="text"/></p> <p>Peak Inverter Efficiency: <input type="text"/></p> <p>Number of Units: <input type="text"/></p> <p>UL Label: <input type="text"/></p>
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Calculated Field shown as

*Total System Output = Total Output x Peak Inverter Efficiency
 **Module output rated at PVUSA Testing Conditions

Inspected By
 QC

Photovoltaic System Inspection Form Project Name 0
 SDREO CSI Program Application Number 0

On-site Inspection	
<p>System Checklist</p> <p>Connected to Grid <input type="checkbox"/></p> <p>Permanent installation <input type="checkbox"/></p> <p>Serves One Site <input type="checkbox"/></p> <p>Flush Mounted <input type="checkbox"/></p> <p>Racked <input type="checkbox"/></p> <p>Anchored <input type="checkbox"/></p> <p>Self Ballasted <input type="checkbox"/></p> <p>Battery Backup <input type="checkbox"/></p>	<p>Photograph Checklist</p> <p>Main Components <input type="checkbox"/></p> <p>Equipment Nameplates <input type="checkbox"/></p> <p>Inverter Nameplates <input type="checkbox"/></p> <p>UL Approval Markings <input type="checkbox"/></p> <p>Interconnection Equipment <input type="checkbox"/></p> <p>Obstacles to Sunlight <input type="checkbox"/></p> <p>Questionable Workmanship <input type="checkbox"/></p> <p>Safety Hazards <input type="checkbox"/></p>
<p>Ambient Conditions at time of Measured Output</p> <p>Temperature <input type="text"/> F</p> <p>Solar Irradiation <input type="text"/> W/m²</p> <p>Time <input type="text"/></p>	
<p>Carport Support Structures</p> <p>Structure is new <input type="checkbox"/></p> <p>Structure's uses without PV <input type="checkbox"/></p> <p>Includes walls or roof <input type="checkbox"/></p> <p>Pilot / Demonstration System <input type="checkbox"/> no</p> <p>Used Equipment <input type="checkbox"/> no</p>	
<p><u>Notes / Comments (Discrepancies, Special conditions, safety issues, other observations)</u></p> <p><u>System Location (sketch or describe)</u></p> <p>example provided below</p>	

Photovoltaic System Inspection Form Project Name 0
 SDREO CSI Program Application Number 0

On-site Inspection	
<p>PV Orientation Data Array ID <input type="text" value="0"/></p> <p>Which type of mounting system is used to orient the PV array towards the sun?</p> <p>Fixed <input type="checkbox"/></p> <p>Orientation (i.e., Azimuth): <input type="text"/> see Fig. 1 Tilt from horizontal: <input type="text"/> Degrees</p> <p>Manual, Seasonal Adjustment</p> <p>Orientation Only - Tilt fixed at <input type="text"/> Degrees <input type="checkbox"/></p> <p>Tilt Only - Azimuth fixed at <input type="text"/> see Fig. 1 <input type="checkbox"/></p> <p>Orientation & Tilt adjusted seasonally <input type="checkbox"/></p> <p>Automatic 1-Axis Tracking (e.g., Zome Works TrackRack) <input type="checkbox"/></p> <p>Do you manually adjust tilt? Yes / No (circle one)</p> <p>Automatic 2-Axis Tracking (e.g., WattSun AZ-100) <input type="checkbox"/></p> <p><u>Notes / Comments</u></p>	<p style="text-align: center;">Figure 1: Azimuth Orientations</p>

CSI Policy Perspective

- ▼ CSI Phase II Topics
 - ▼ CSI Marketing, Education & Outreach
 - ▼ Non-PV Solar Technologies
 - ▼ Measurement & Evaluation
 - ▼ Affordable Housing/Low Income
- ▼ CSI Program Forum
- ▼ SDREO Solar Water Heating (SWH) Pilot Program

CSI Program Forum

- ▼ A public venue to identify and discuss ongoing CSI administration and implementation
- ▼ Will provide opportunity to develop consensus-based revisions to CSI Handbook
- ▼ CPUC Energy Division will convene first meeting which are anticipated to be held quarterly.

SDREO Solar Water Heating Pilot

- ▼ Final Approval of \$3M SWH Pilot Program proposed to CPUC still pending
- ▼ Initially available to SDG&E customers only
- ▼ Residential, commercial and industrial SWH systems that offset energy used by an existing natural gas or electric water heater or boiler are eligible
- ▼ Submitted Pilot Program Proposal can be found online at <http://csi.sdenergy.org>

Proposed SHW Incentives

- ▼ **Area Method (Larger Innovative Systems)**
 - ▼ Collectors must be OG100 or FSEC rated
 - ▼ \$15/sqft of open loop, \$20/sqft of closed loop,
 - ▼ Max \$75,000 buildings, \$30,000 for large pools
- ▼ **Prescriptive Approach (Single Family Residences)**
 - ▼ MUST use an OG300 rated system
 - ▼ \$1,500 or less based on orientation and SRCC ratings
 - Minimum Rating (60 therms or 1200 kWh)
 - Upper threshold (160 therms or 3200 kWh)

Future CSI Solar Thermal Incentives

- ▼ SB1 allocates \$100.8M for Solar Thermal and Solar Water Heating (SWH) projects
- ▼ CSI Solar Thermal Incentives will only be available to technologies that displace electric usage
- ▼ CSI Program Administrators directed to hire technical experts to assess incentives and file CSI Handbook changes by April 1, 2007

SDREO CSI Contact Information

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8690 Balboa Ave, Suite 100
San Diego, CA 92123
858-244-1177
<http://csi.sdenergy.org>

Non-Residential Projects

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San Diego Regional Energy Office : California Solar Initiative - Microsoft Internet Explorer

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[Home](#) > PROGRAMS > California Solar Initiative

California Solar Initiative

Through the California Solar Initiative (CSI), the California Public Utilities Commission (CPUC) will provide over \$2.1 billion in solar incentives over the next decade to existing residential plus existing and new commercial, industrial and agricultural solar projects. The California Energy Commission (CEC) will provide incentives to new residential solar projects through its [New Solar Homes Partnership](#). The SDREO has been allocated \$203.5M for incentives in the San Diego region.

[Click here to Apply for CSI Incentives Now!](#)

On January 1, 2007, photovoltaic (PV) rebates previously provided through the CPUC Self-Generation Incentive Program and CEC Emerging Renewables Program will be integrated into the CSI -- shifting from capacity-based payments to performance-based incentive that reward properly installed and maintained solar systems. The incentives will be as follows:

- **Expected Performance Based Buydown (EPBB)** - for PV systems < 100kW in size. EPBB incentives will be a lump sum payment based upon the expected system performance. The expected performance will be calculated based on equipment ratings and installation factors, such as geographic location, tilt, orientation and shading. The incentive rate will begin at \$2.50/W and will decline based on MW installed. Incentives will begin at \$3.25/W for government and non-profit entities that are unable to take advantage of tax credits.
- **Performance Based Incentives (PBI)** - for PV systems \geq 100kW in size and all BIPV systems. PBI payments will be paid monthly based on the actual energy produced for a period of five years. The

Go Solar California!
CSI FAQ
CEC New Solar Homes Partnership
PG&E CSI website
SCE CSI website
SDG&E CSI Website

start 4 Microsoft Office O... 2 Microsoft Office P... CSI Overview 3 Internet Explorer 9:08 PM

Additional SDREO Resources

- ▼ SDREO Energy Resource Center
 - ▼ Provides Energy Education & Outreach
 - ▼ Technical Assistance
 - ▼ Diagnostic Tool Lending Library
 - Solar Pathfinder
 - Solmetric SunEye
 - ▼ Resource Lending Library
 - ▼ <http://erc.sdenergy.org>

SDG&E Contacts and Information

▼ Interconnection & Net-Metering:

- ▼ Ken Parks
- ▼ (858) 636-5585
- ▼ kparks@semprautilities.com

▼ Rate and Tariff Information:

- ▼ http://www.sdge.com/regulatory/tariff/current_tariffs.shtml

▼ General SDG&E Information:

- ▼ (866) 411-SDGE
- ▼ www.sdge.com

