

# Clean Power Markets

## Clean Power Markets



### **Buying and Selling Solar RECs in New Jersey**

---

- - - - -

*Lessons learned and applications for California*

CSC Solar Forum  
September 13, 2005  
Jan Pepper



# The New Jersey Solar Program

---

Two main components:

- Customer On-Site Renewable Energy Program (CORE Program)
- Solar Renewable Energy Certificate Program (SREC Program)

Comprise two incentive payment programs



# New Jersey's CORE Program

<b>2005</b>	<b>Incentive Level</b>
1 to 10 kW	\$5.30/DC watt
>10 kW to 40 kW	\$4.35/DC watt
>40 kW to 100 kW	\$3.75/DC watt
>100 kW to 700 kW	\$3.60/DC watt

Up-front buy-down program for solar electric systems



# New Jersey's SREC Program

---

- Solar owners earn solar renewable energy certificates (SRECs) for solar electricity production
- 1 SREC issued for 1000 kWh (1 MWh)
- Solar owners sell SRECs to NJ load serving entities
- SREC process similar to Performance Based Incentive (PBI) program in California



# New Jersey's RPS

---

- New Jersey Renewable Portfolio Standard includes a solar requirement
- Purchases of SRECs by LSEs meets requirement
- Solar Alternative Compliance Payment = \$300/MWh (30 cents/kWh) - sets maximum value for SRECs
- Launched by NJ BPU's Office of Clean Energy in June 2004
- CPM designed, built, and now administers SREC registry, tracking, & bulletin board for NJ BPU

# S-REC Process

PV System

Monthly Production

Create S-RECs

**S-REC Account Owners:**  
Solar Facility Owners, Aggregators, LSEs, Brokers

- Sell RECs
- Buy RECs
- Retire RECs (to meet RPS)
- Transfer RECs



# Program Highlights

---

- electronic accounts accessible from secure website
- signed attestations from owners
- upload meter / inverter readings/ automated data loggers
- unique serialized SRECs
- bulletin board
- escrow period
- regular training sessions

# SREC Program Home Page

(www.njcep.com/srec)

**New Jersey's Clean Energy PROGRAM™**

Home Residential Commercial & Industrial Renewable Energy

Renewable Energy Home Overview Financial Incentives Eligibility and Guidelines Applications and E-forms Contacts and Resources

## New Jersey Solar Renewable Energy Certificate Program

**Welcome to the New Jersey SREC Program**

[Log In](#) [Secure Login](#)

[Open New Account](#) [Secure New Account](#)

[Public Reports](#)

[Frequently Asked Questions](#)

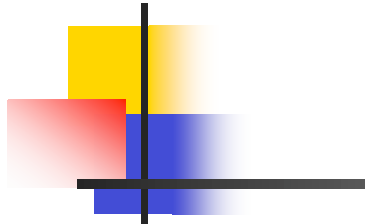
[Background Information](#)

[Listing of SREC Brokers and Aggregators](#)

SREC stands for Solar Renewable Energy Certificate and is a tradable certificate that represents all the clean energy benefits of electricity generated from a solar electric system. Each time a solar electric system generates 1000kWh (1MWh) of electricity, an SREC is issued which can

Internet

# New Jersey Solar Renewable Energy Certificate Program



## User Account for Training as of 09/12/2005

Solar Facilities:

The following solar facilities are registered to this S-REC account holder.

More information on each facility can be found by clicking on the facility ID number.

Solar Facility ID	Solar Facility Name	Monthly Estimates
159	Training	Estimates

Reporting Year:

2006



SRECs Owned:

These are the current S-REC account balances by serial number sequence

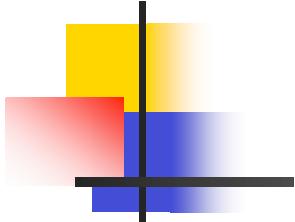
Start serial#	Solar Facility	Number Owned	Reporting Year	Status
0159-S-2005-08-31-NJ-0006	Training	1	2006	Active

SREC Owned Totals:

Status	Quantity
Active	1
In Escrow	0
Retired	0
Expired	0
Total	1

User Menu

## View Estimates

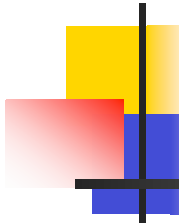


Solar Facility: Training - Started: 2000-00-00

year	month	estimated kWh	number SRECs	kwh forwarded	status
2005	6	322	0	590	Forwarded Used
2005	7	330	0	920	Forwarded Used
2005	8	317	1	237	Processed
2005	9	293	0	0	0
2005	10	264	0	0	0
2005	11	204	0	0	0
2005	12	187	0	0	0
2006	1	219	0	0	0
2006	2	236	0	0	0
2006	3	296	0	0	0
2006	4	313	0	0	0
2006	5	339	0	0	0

User Account

Main Menu



## New Jersey Solar Renewable Energy Certificate Program

### Upload Meter Reading / Production Files

Solar facilities of 10 kW or greater must enter or upload monthly meter-readings/production-files into the SREC database.

Entries or Uploads should be made between the last day of the month and the 3rd day of the next month for SRECs to be created for that month.

The SREC Program Administrator will generate SRECs around the 5th day of the next month.

To report your monthly production, use one of the two methods below:

#### 1) Enter Your Monthly Meter Reading:

Solar Facility	<input type="text" value="Church of the Good Shepherd"/>
Inverter or Meter Reading in kWh	<input type="text"/>
kWh Produced in Month, or since last report	<input type="text"/>
Date of Reading	<input type="text" value="January"/> <input type="text" value="1"/> <input type="text" value="2004"/>
	<input type="button" value="Submit"/>

# SREC Program Bulletin Board

## SRECs for Sale:

owner name	number SRECs	date of post	reporting year	price	contact	phone	email
Conrad III	1	2005-07-05	2006	205	Frank J Conrad III	973-230-6830	send2me@oponline.net
SolarGlenn	1	2005-07-13	2006	250	Glenn Malysz	732-617-1338	malyszg@coned.com
Pannuzzo	1	2005-07-24	2006	\$200	Kevin Pannuzzo	732-223-2163	kevinp@verizon.net
Conrad, Jr	1	2005-08-06	2006	205	Frank J Conrad, Jr	732-295-3803	send2me@oponline.net
Talt	2	2005-08-20	2006	270.00	Douglas Talt	609-492-8230	douglas.talt@gmail.com
Leone	3	2005-08-21	2006	205.00	Charles Leone	(732)477-4706	chucleone@hotmail.com
Weinberger	1	2005-08-25	2006	200.00	Keating Weinberger	609-465-5555	keats@mltice.com
Walker	2	2005-08-27	2006	200.	Rose Walker	609-893-5358	rwalker77@comcast.net
Hughes, Connie	2	2005-08-29	2006	\$200	Connie Hughes	609-466-3421	njgrnm@aol.com
Conner	1	2005-08-30	2006	\$200	Carol Conner	856-451-8791	carawba@bellatlantic.net
Eckert	2	2005-09-02	2006	200.00	Douglas Eckert	609-730-0122	doug Eckert@comcast.net
Schoenberger	3	2005-09-02	2006	221.37	Howard Schoenberger	973-361-3806	silbes@oponline.net
Panzino	1	2005-09-06	2006	210	Rachel Panzino	201-964-0017	rachel.panzino@verizon.net
Conner	2	2005-09-08	2006	\$200	Carol Conner	856-451-8791	carawba@bellatlantic.net
Gallo	3	2005-09-08	2006	205.00	Peter J Gallo	856-768-8027	peter.gallo@worldnet.att.net
Howe	3	2005-09-09	2006	200.00	Erik Howe	732-792-7857	ehowe@oponline.net
Korff	4	2005-09-10	2006	205	Stephen Korff	609-208-1771	mswk@oponline.net

## Requests for SRECs:

owner name	number SRECs	date of post	reporting year	price	contact	phone	email
Camel Canyon Partners LLC	40	2005-08-31	2006	205	Greg Arnold	(858) 625-0008	greg@camelcanyon.com

User Menu

## New Jersey Solar Renewable Energy Certificate Program

### Transact SREC Sale or Transfer

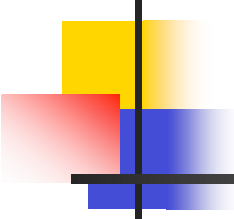
- Select the solar facility from which you want to transfer S-RECs.
- The available number of S-RECs from this facility is shown with the name of the facility.
- Enter the number of S-RECs you want to transfer.
- Select the account holder to whom these S-RECs are to be transferred.
- A price per S-REC (in \$/MWh) is required.
- Then hit the 'Submit' button.

Reporting Year:

Solar Facility Name: # Available	<input type="text" value="Training:1"/>
Number SRECS:	<input type="text"/>
Buyer:	<input type="text"/>
Price per SREC:	<input type="text"/>
<input type="button" value="Submit"/>	

# How many account holders are there in SREC program?

Type	Number	Percent of total
LSE	31	4.5 %
Broker	21	3.1 %
Solar facility	455	66.1 %
Aggregator	38	5.5 %
Other	143	20.7 %
TOTAL	688	100 %



# How many solar facilities are there in SREC program?

Type	Number	Installed Capacity (DC kW)
Active	532	6205
Inactive	221	2598
Total	753	8803



# How many SRECs were issued last year?

---

<b>Reporting Year (June - May)</b>	<b># of SRECs Issued</b>	<b># of SRECs Traded</b>	<b># of SRECs Retired</b>
2005	3422	8991	3322

Reporting Year runs from June 1 to May 31, with a true-up period until August 31



# What do SRECs sell for?

Month	Year	# SRECs Traded in Month	Monthly High (\$/MWh)	Monthly Low (\$/MWh)	Cumulative # SRECs Traded	Cumulative Weighted Average Price (\$/MWh)
Aug	2004	25	*	*	25	\$160.00
Sep	2004	70	\$177	\$177	95	\$172.53
Oct	2004	11	\$200	\$177	106	\$173.21
Nov	2004	8	*	*	114	\$173.47
Dec	2004	58	\$190	\$150	172	\$177.81
Jan	2005	0	*	*	172	\$177.81
Feb	2005	27	\$177	\$110	199	\$169.29
Mar	2005	104	\$190	\$150	303	\$171.47
Apr	2005	125	\$200	\$150	428	\$169.75

\* insufficient price data

The Cumulative weighted average price takes into account all of the SRECs that have been traded for all of the months reported. This number can be used to reflect pricing trends. It is calculated based on  $[(\text{number of SRECs sold at price A} * \text{price A}) + (\text{number of SRECs sold at price B} * \text{price B}) + \dots] / (\text{total number of SRECs sold at price A} + \text{total number of SRECs sold at price B} + \dots)$ .



# Program Verification

---

- A critical component of a successful program is a **proper verification process** to assure credible RECs
- This is critical to maintain the **integrity of the program** and the **integrity of the SREC market**
- A signed **attestation** is required before SRECs are issued
- **CPM audits** facilities to check that
  - Facilities are actually **operating**
  - Reported meter readings are **accurate**
  - Estimated production and actual production is within a reasonable **margin of error**



# Lessons for California

---

- SREC Program Administration is similar to what will be required for the PBI program
- Account visibility for all stakeholders is important
- Program verification process is critical
- Rapid response to customers/users and attention to detail helps assure program success



# Background Info on CPM

---

- Clean Power Markets Experience
  - Build and operate Wisconsin RRC Program to track all renewables for RPS compliance and issue RECs
  - Build and operate NJ SREC Program to track behind-the-meter systems for Class I RPS compliance and issue SRECs
  - Build and operate tracking program for Connecticut Clean Energy Fund to manage RECs and report on program revenues



# Background Info on CPM

---

- Clean Power Markets, Inc., incorporated in 2000, focuses exclusively on the renewable energy market.
- Clean Power Markets' mission: to provide the infrastructure that allows renewable energy to compete cost-effectively and efficiently
- Jan Pepper  
650-949-5719 [pepper@cleanpowermarkets.com](mailto:pepper@cleanpowermarkets.com)  
[www.cleanpowermarkets.com](http://www.cleanpowermarkets.com)