

SDG&E Customer Distributed Generation Programs

Steve Jaffe
Senior Market Advisor
Customer Innovations Group
September 14, 2009



About SDG&E...

- A regulated public utility that provides service in San Diego and south Orange County
- 1.4 million residential and commercial accounts
- Service area spans 2 counties and 25 communities
- From a solar standpoint through June 2009...

Customer Side PV	YTD 2009	Cumulative
No. PV Systems	~ 900	~ 7,000
MW of PV Capacity Installed	5 MW	55 MW

The Legislative and Regulatory Processes- How Customer DG Programs Originate

- Typically state legislators initiate DG related bills at the request of various DG industry lobbies or government officials
- After numerous reviews and revisions by all interested parties the bill ultimately is signed into law by Governor
- The Governor then determines which State agency (either the CPUC or CEC) will be responsible for implementing the DG program in accordance with the legislative mandate
- Once assigned, the agency commences the regulatory process and then determines if input is needed from constituents (i.e. utilities, industry, etc.)
- After workshops and information is received from interested parties the agency will draft a proposed program
- The regulatory process then allows interested parties to comment and offer reply comments to other parties comments (typically takes 1 month)
- Upon reviewing all parties comments the agency will draft a final decision which instructs the Utilities to implement the program in accordance with CPUC order

Examples of DG Legislation resulting in CPUC Customer DG Programs

The California Public Utility Commission (CPUC) has implemented a number of programs as legislated by the State:

- Self Generation Incentive Program (AB970)
- California Solar Initiative (SB 1)
- Net Energy Metering (AB58)
- Feed-in-Tariff (AB1969)
- CSI –Thermal Program (AB1470)- Currently in progress

Overview of California Solar Initiative

- 2006 Legislative Mandate- Senate Bill1
- Objective:
 - 3000 MWs of PV installed statewide by 2016
- Funded by ratepayers of the three electric IOUs
- Components:
 - New Solar Homes Programs (CEC)
 - Existing Residential and Commercial (CPUC)
 - RD&D Program (CPUC)
- Low Income Set Asides in both new and existing residential programs
- Go Solar California <http://www.gosolarcalifornia.ca.gov/>

CSI Budget

CSI Funding (Millions \$)	
Total SB1 CSI Budget	\$2,166.80
CSI Admin/Marketing/M&E Budget	\$189.71
CSI Incentives	\$1,707.41
Low Income Programs	\$216.68
RD&D Program	\$50.00
CCSE Solar Water Heating Pilot	\$3.00

Budget and Savings Allocations

Existing Residential and Commercial Program Allocations by IOU Territory			
	<u>% of Total Budget</u>	<u>Budget (Millions \$)</u>	<u>MW Goals</u>
SDG&E:	10.30%	\$223	180.3
PG&E:	43.70%	\$946	764.8
SCE:	46.00%	\$996	805
Total	100%	\$2,165	1750

EXISTING RESIDENTIAL & COMMERCIAL PROGRAM

- Incentives for utility customers who install a PV system on existing residences or on all commercial facilities
- Incentives paid on Expected Performance Based Buydown-EPBB or on a Performance Based Incentive (PBI) basis (required if size over 50 kW)
- Systems paid on EPBB basis is based both on the system size rating and a design rating (which incorporates the location, orientation and shading)
- Incentive levels are based on MW goals and will decline over time as MW goals are achieved

EXISTING RESIDENTIAL & COMMERCIAL

SDG&E CURRENT CSI INCENTIVE LEVELS			
<i>Program</i>	<i>Step</i>	<i>EPBB (\$/Watt)</i>	<i>PBI (\$/kWh produced)</i>
Residential	5	\$1.55	\$.22
Commercial	5	\$1.55	\$.22
Govt & Non-Profit	5	\$2.30	\$.22

RD&D PROGRAM

- Administered by ITRON, Inc.
- Grants for research complimenting existing government research programs
- Three priority areas
 - Support commercialization of new PV technologies
 - Improve integration of PV with utility systems
 - Support market and end users

Solar Water Heating Pilot

- \$2.6 million pilot administered by CCSE July 1, 2007-December 31, 2009
- Goal to install 750 residential and 150 commercial solar water heaters in SDG&E territory
- Data to be used for design and implementation of statewide program commencing in 2010
- Residential incentives max out at \$1500
- Commercial incentives max out at \$75,000
- Pool and spa heating not eligible
- \$252 k paid to-date
- \$100 k in currently active projects

Single Family Low Income Program

- \$108 million statewide with \$11.2 million with SDG&E service territory
- Administered statewide by Grid Alternatives
- Runs through 2015
- For homeowners who have received housing assistance with family incomes less than 70% of AMI
- 100% of costs for households with income less than 50% of AMI up to 20% of available funding
- \$4.75 to \$7 depending on family income for remainder of program incentives
- Customers qualified for LIEE must enroll in LIEE prior to receiving incentive payments
- IOUs to pay incentives directly to customers

Multi-Family Affordable Solar Housing (MASH)

- \$108 million statewide with \$11.2 million with SDG&E service territory
- Goals of program:
 - Stimulate adoption of solar in affordable housing sector
 - Improve energy utilization and overall quality of affordable housing through solar and EE
 - Decrease electricity use and costs without increasing monthly expenses for tenants
 - Increase awareness of and appreciation for the benefits of solar among tenants and low income developers
- Two separate incentive tracks proposed:
 - First track pays \$3.30/watt for system offsetting common area load, and \$4.00/watt for system offsetting tenant load
 - Second track could pay a grant up to 100% of eligible system costs based on competitive application

Self Generation Incentive Program (SGIP)

- Ratepayer funded incentives for Self Generation created through AB970
- Created in 2001 to increase generation capacity in California in response to Electricity Crisis.
- One of the largest DG programs in the United States
- By end of 2008 over 1270 projects online providing online capacity of 337 MWs
- SGIP provides incentives for the following technologies:
 - Wind Turbines
 - Fuel Cells- Operating on either Renewable or Non-Renewable Fuels
 - Advanced Energy Storage- If installed with either of above technologies

Incentive Levels Focused on “Clean” Resources

2009 Incentives Available for Installation of Qualifying Equipment -- Incentive paid on first 1 Mw

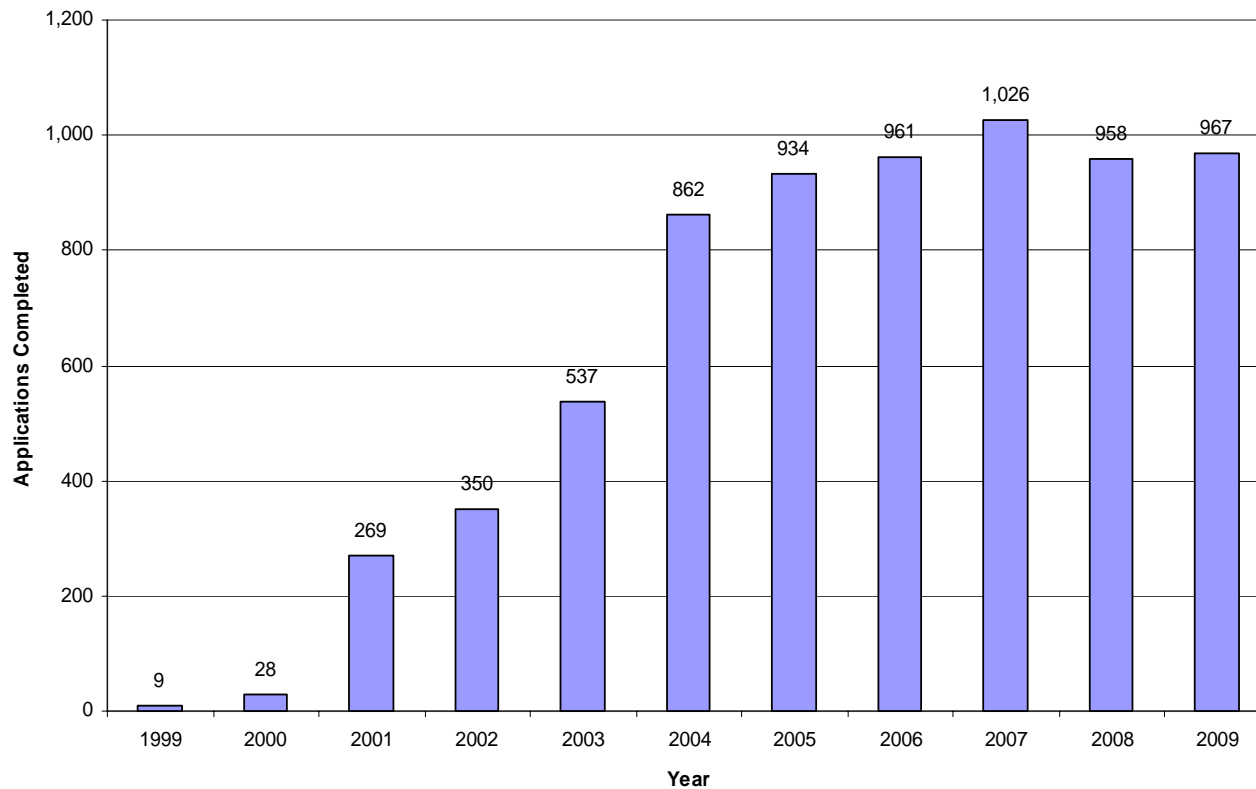
Incentive Level	Eligible Equipment	Incentive	Minimum System Size	Maximum system Size
Level 2 Renewable	Wind Turbines	\$1.50	30 kW	5.0 MW
	Renewable Fuel Cells	\$4.50	30 kW	5.0 MW
Level 3 Non-Renewable	Non-Renewable Fuel Cells ¹	\$2.50	None	5.0 MW

Net Energy Metering- NEM

- What is NEM?
 - NEM involves measuring the difference between the electricity supplied by the Utility and electricity generated by an eligible customer generator that is fed back into the electric grid over a 12 month period. The customer then receives a retail credit (based on their rate schedule) on their bill for the amount of kWhs produced by their solar system.
- Who is eligible for NEM?
 - Technologies eligible are solar, wind or fuel cells no more than 1 mW in system size.
- Does SDG&E lose revenues when customers participate in NEM?
 - No. The California Public Utilities Commission has wisely decoupled revenue requirements from kWhrs sold. Utilities can recover authorized costs regardless of load which allows utilities to advocate for DG, energy efficiency and demand response programs.

NEM Projects Completed

Net Energy Metering Completed
1/20/1999 - 6/30/2009



Feed-In-Tariffs (FiTs)

FiTs have been implemented to encourage further adoption of renewable energy by the Utilities. The utilities purchase this generation at above-market rates set by the CPUC.

- Currently SDG&E has two FiT related tariffs available for its customers:
 - Schedule WATER- for water/waste water customers only
 - Schedule CRE- for all other customers
- Payment Options to Customers
 - Excess- SDG&E only buys energy exported to grid
 - Full buy/sell- SDG&E buys all energy produced at tariff rate set by CPUC
- Customer can not participate in both NEM and FiT- one or other
- Customer can not receive ratepayer funded incentives (i.e. SGIP or CSI)

DG Friendly Tariffs- Schedules DR-SES and AL-TOU-DG-R

- **Schedule DR-SES (Solar Energy Systems)**
 - voluntary tariff that provides Time-of Use (TOU) rates to residential customers with a solar energy system,
 - provides increased rate incentives for the installation of such systems.
 - Since residential Smart Meters are not yet deployed, customers would be provided TOU metering at no up-front cost subject to the availability of TOU meters in inventory.
- **Schedule DG-R (Distributed Generation - Renewable):**
 - voluntary tariff available for non-residential customers with loads equal to or less than 2 MWs, who own operational renewable distributed generation
 - and the capacity of that distributed generation is equal to at least 10% of their annual peak load.
 - Under this voluntary rate schedule, the distribution and commodity on-peak demand charges will be charged on a volumetric basis;
 - the distribution non-coincident demand charges have also been significantly reduced.



Thank you!!

Please contact me with any questions:

Steve Jaffe

Email: sjaffe@semprautilities.com

Phone: 858-654-1798