



April 17, 2008

California **Solar** Initiative Public Forum Hosted by SCE



California **Solar** Initiative

Welcome

Bob Botkin, SCE



California **Solar** Initiative

Program Forum Overview & Demand Statistics

John Supp, CCSE

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California **Solar** Initiative

Program Overview — April 2008

- Program Demand Statistics
- Comparison with Earlier Programs
- Question & Answer



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Program Demand Statistics

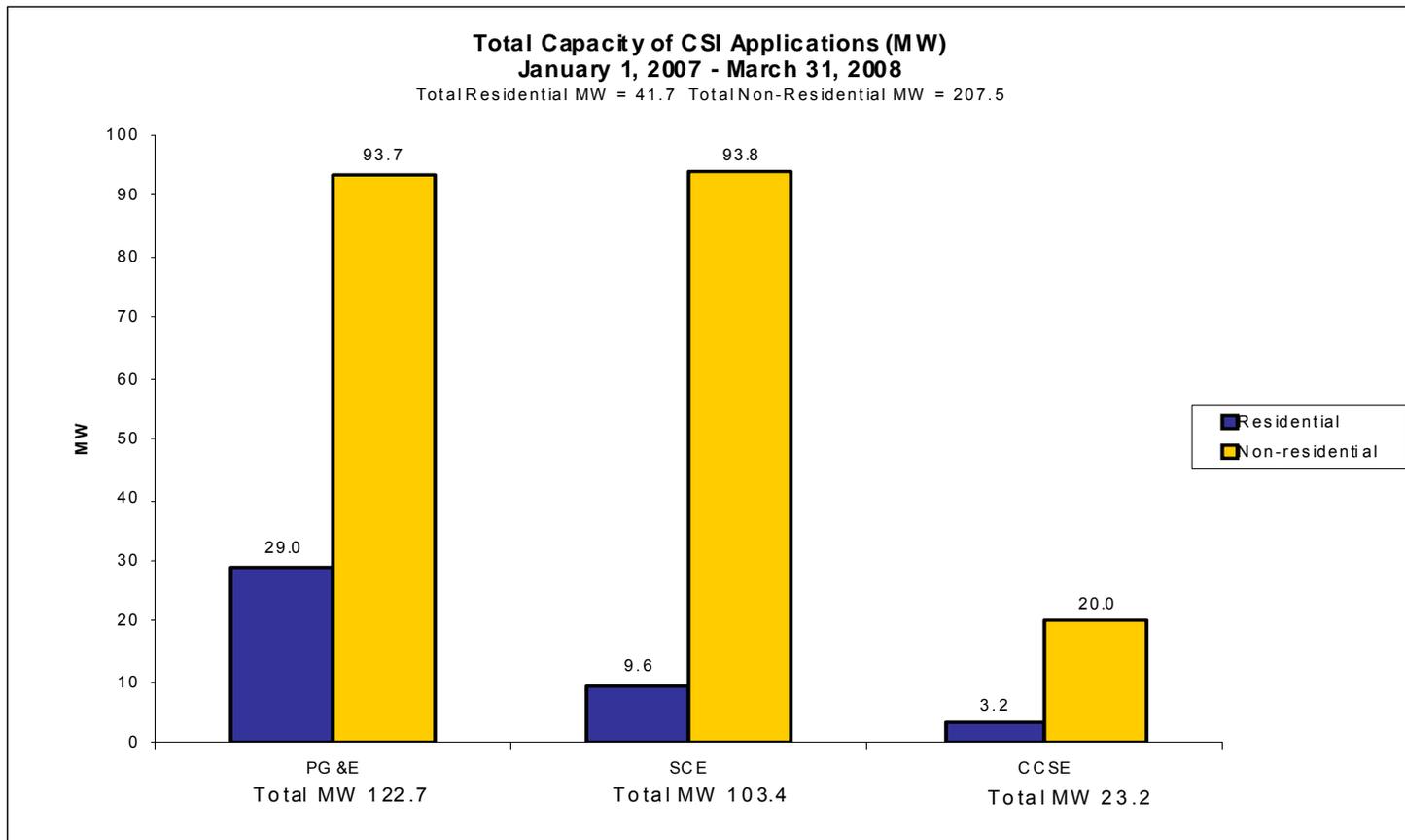
Data from Jan. 1, 2007 – March 31, 2008:

- Capacity of CSI Applications
 - 41.7 MW Residential
 - 207.5 MW Non-Residential
 - 249.3 MW Total
- Number of Applications
 - 8,786 Residential
 - 1,031 Non-Residential
 - 9,817 Total
- Installed Projects
 - 33.4 MW
 - 2,719 Applications



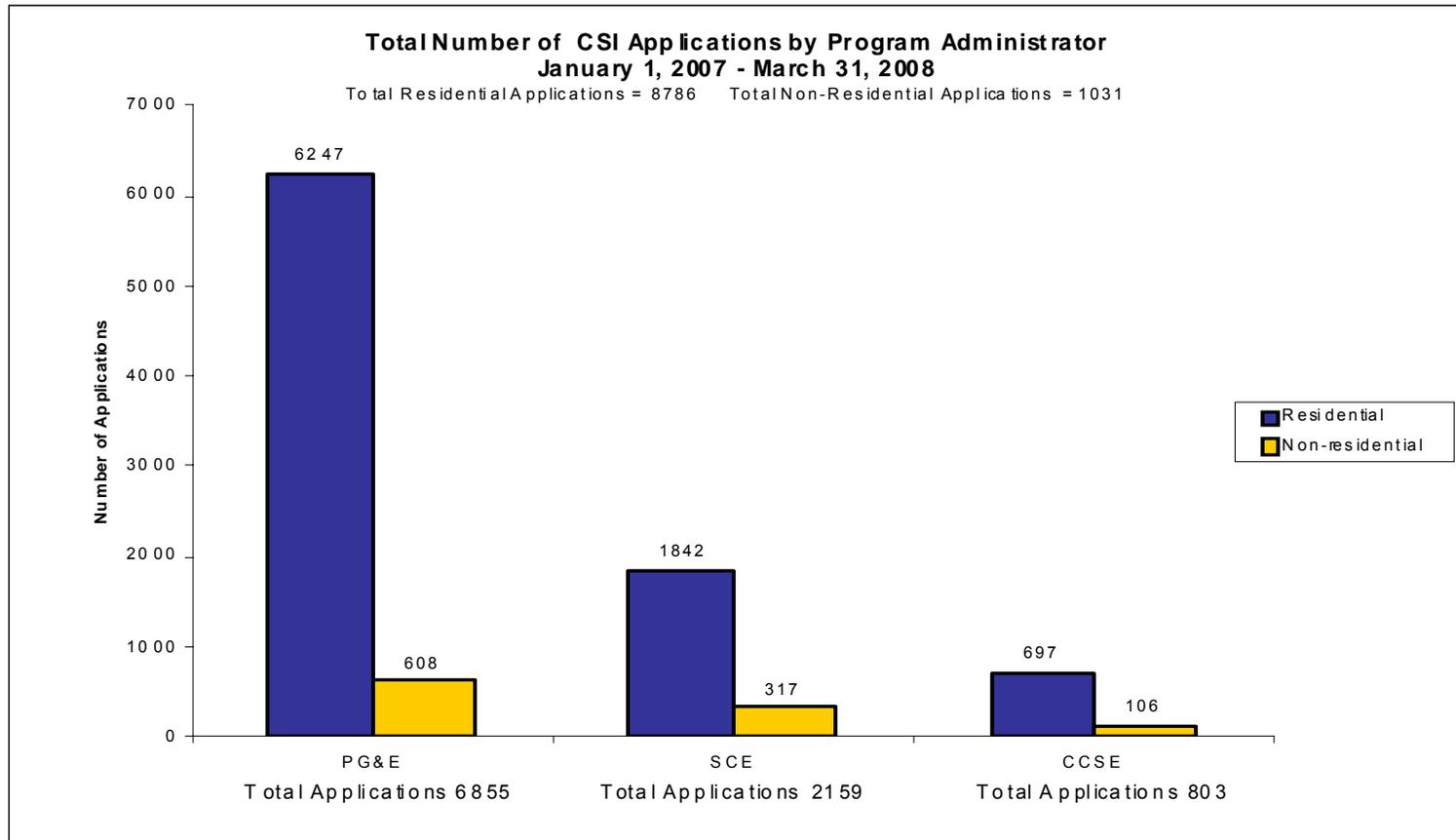
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Total Capacity of Applications



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Total Number of CSI Applications



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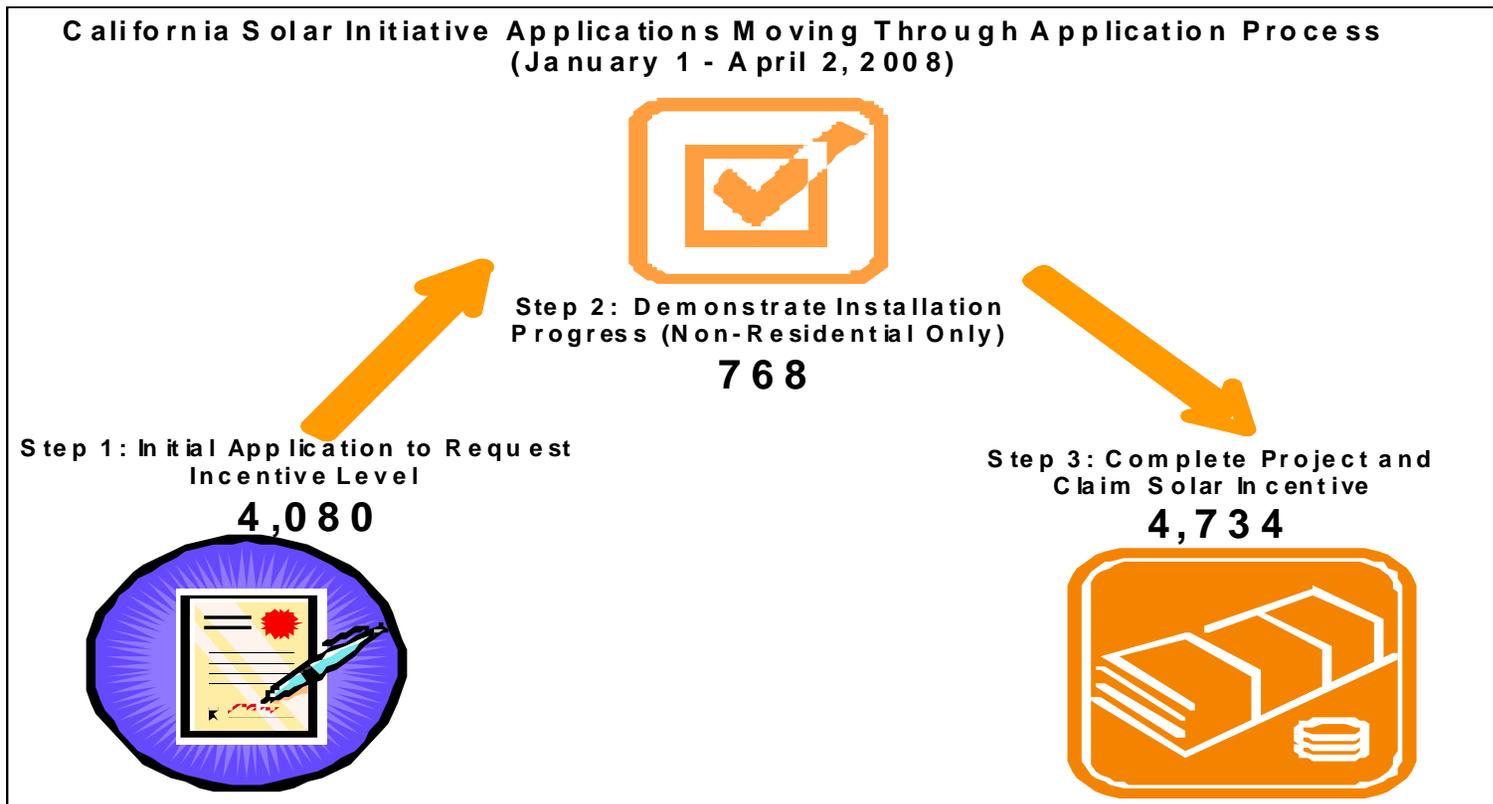
Number of Applications & MW by Customer Type & Administrator

Customer Class	Data	Program Administrator			Total
		CCSE	PG&E	SCE	
Residential	# of Applications	697	6247	1842	8,786
	Applications %	7%	64%	19%	89%
	MW	3.2 MW	29.0 MW	9.6 MW	41.7 MW
	MW%	1%	12%	4%	17%
Commercial	# of Applications	76	455	249	780
	Applications %	1%	5%	3%	8%
	MW	16.0 MW	69.5 MW	75.4 MW	160.8 MW
	MW%	6%	28%	30%	65%
Government/ Non-Profit	# of Applications	30	153	68	251
	Applications %	0.3%	2%	1%	3%
	MW	4.1 MW	24.2 MW	18.3 MW	46.7 MW
	MW%	2%	10%	7%	19%
Total # of Applications		803	6855	2,159	9,817
% of Applications		8%	70%	22%	
Total MW		23.2	122.7	103.4	249.3
% of Total (by Administrator)		9%	49%	41%	



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Applications Proceeding Through Steps



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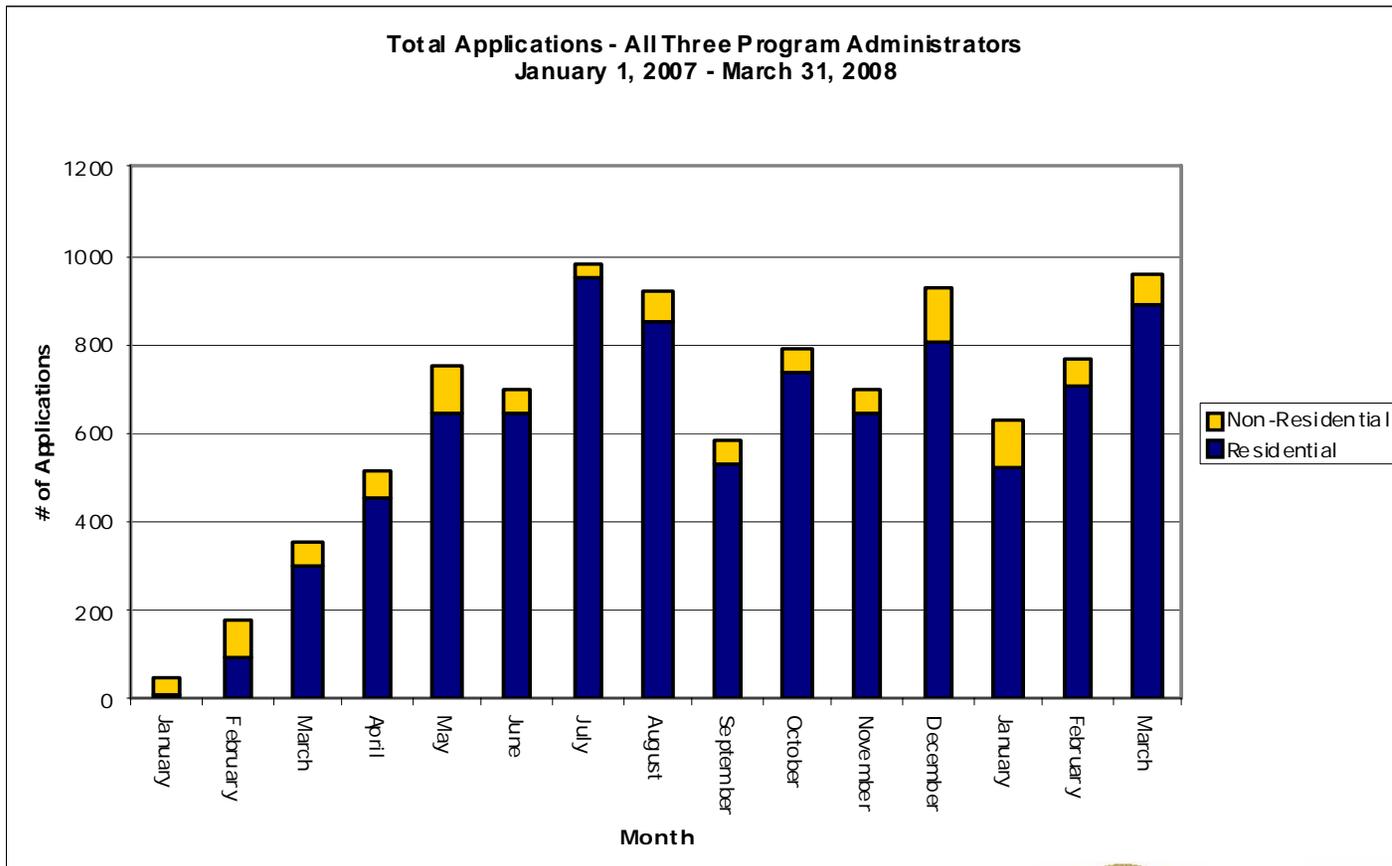
CSI Application Status, MW and Payments

Handbook Step	Application Status	Number of Applications				Total		Total Incentive
		CCSE	PG&E	SCE	Totals	MW	\$	
Application Processing Step 1	Reservation Request Review	13	386	64	463	13.2	MW	\$ 29,481,374
	Reservation Reserved	32	123	58	213	61.3	MW	\$ 146,694,933
	Confirmed Reservation	263	2405	736	3404	80.4	MW	\$ 222,274,784
	Total Applications in Step 1	308	2914	858	4080	154.9	MW	\$ 398,451,091
Application Processing Step 2 (Only applies to non-residential)	Online Proof of Project Milestone Submitted	0	1	0	1	1.0		\$ 2,047,893
	Milestone Review	1	54	9	64	20.5	MW	\$ 54,798,265
	Pending RFP	1	2	0	3	1.5	MW	\$ 4,408,494
	Incentive Claim Request Review	21	613	66	700	11.3	MW	\$ 30,328,001
Total Applications in Step 2	23	669	75	768	34.3	MW	\$ 91,582,653	
Application Processing Step 3 (Step 2 for Residential and Small Commercial)	Incentive Claim Submitted	39	187	39	265	2.8	MW	\$ 7,631,309
	Pending Payment	19	291	116	426	6.7	MW	\$ 18,076,753
	Completed	392	2792	859	4043	24.0	MW	\$ 58,592,879
Total Applications in Step 3	450	3270	1014	4734	33.4	MW	\$ 84,300,941	
	Suspended	22	1	212	235	26.7	MW	\$ 74,695,686
	Drop Outs	21	166	83	270	32.7	MW	\$ 82,288,803
	Total	640	5381	1701	10087	281.9	MW	\$ 731,319,174
	Total w/o Drop Outs	624	5277	1640	9817	249.3	MW	\$ 649,030,371



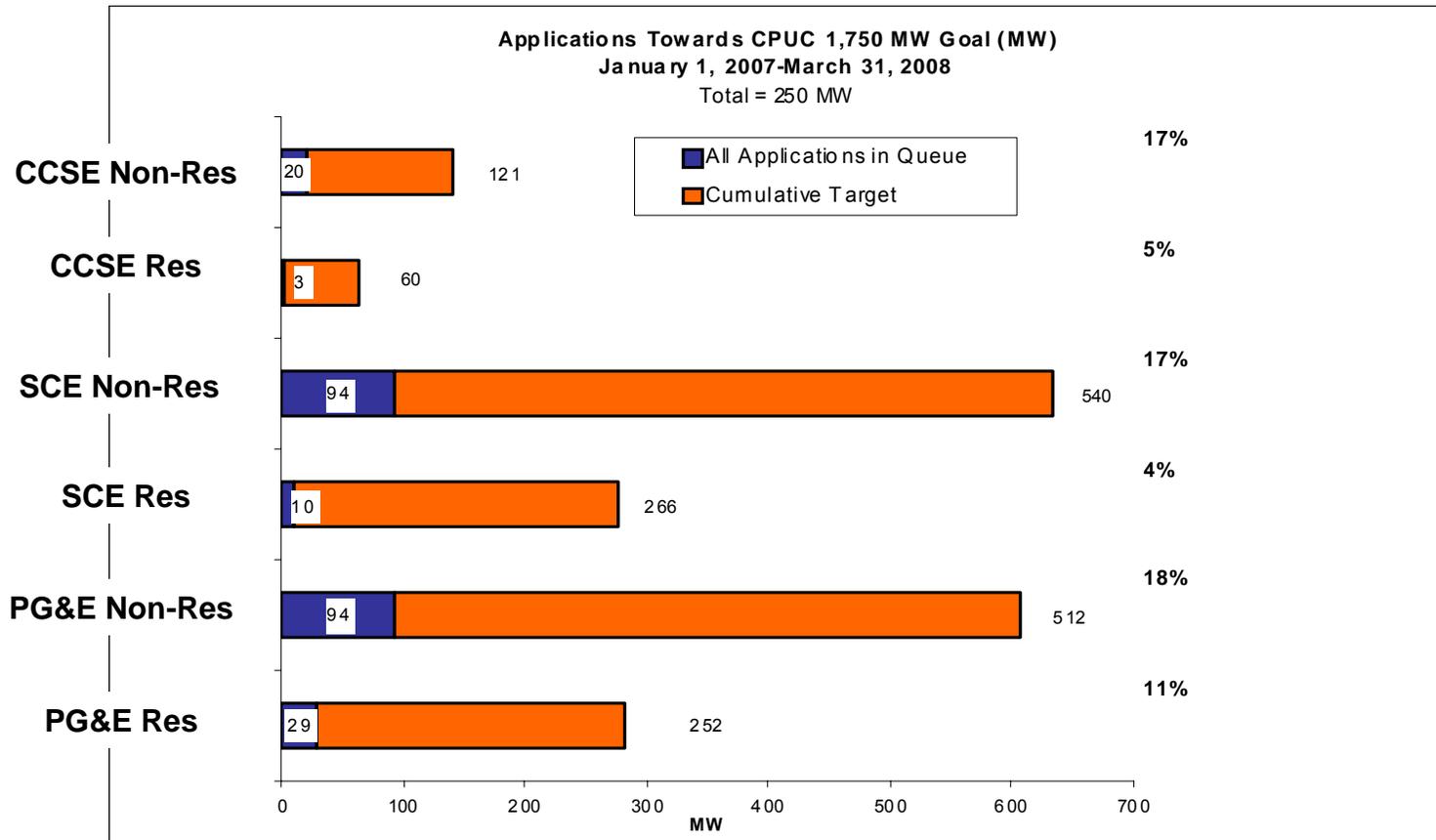
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Applications by Month



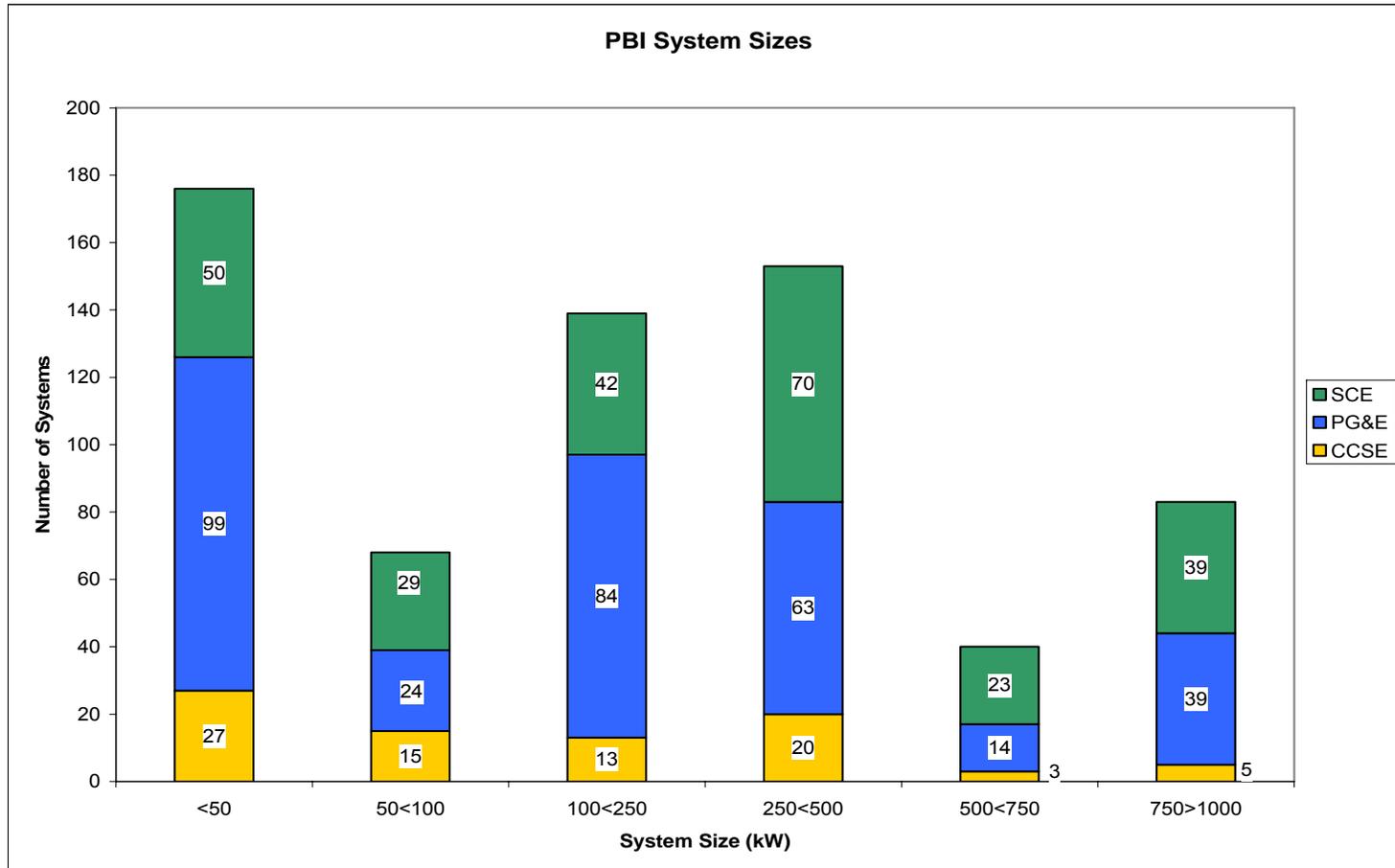
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Progress Toward 1,750 MW Goal



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PBI Incentive Demand



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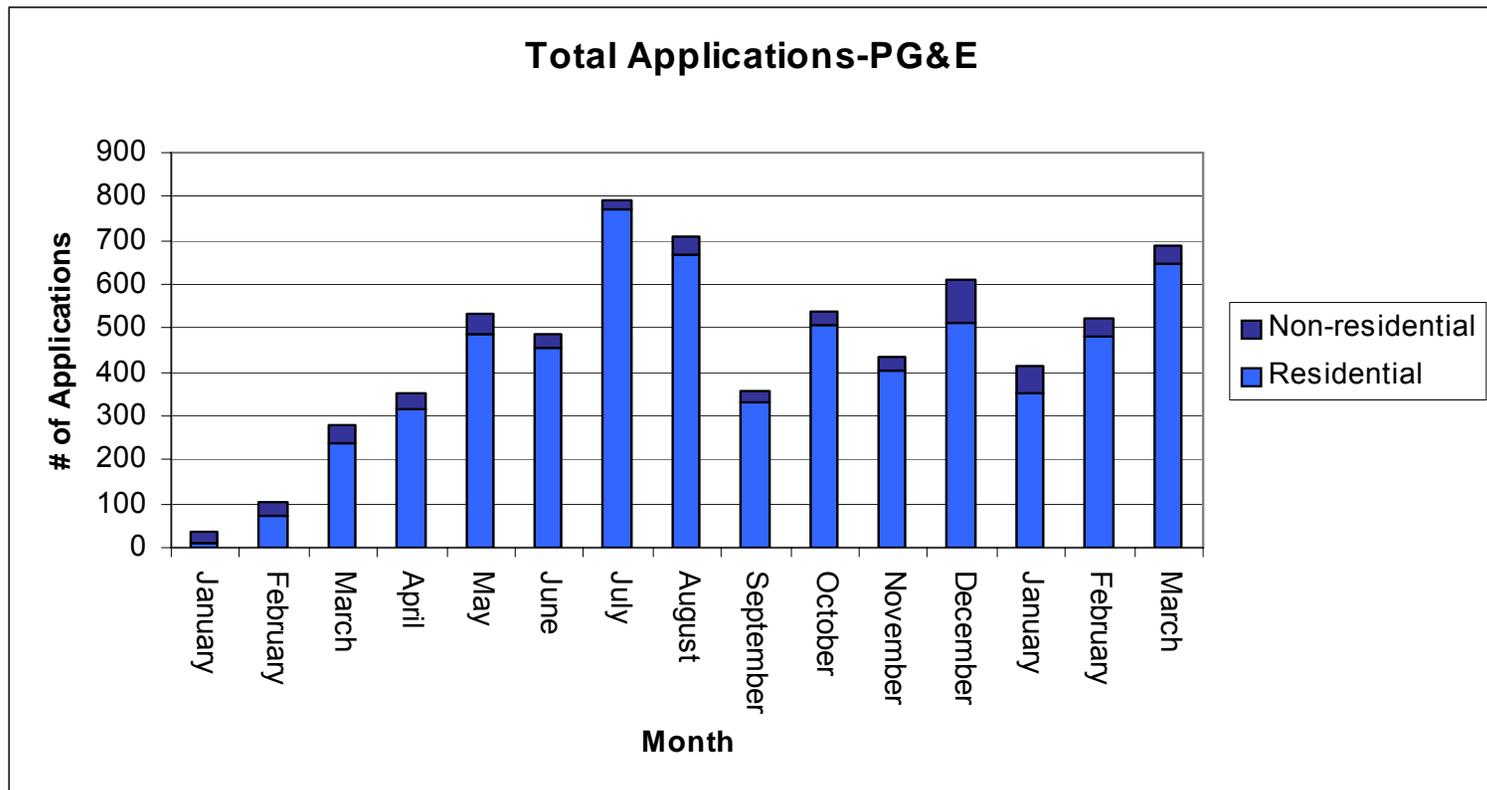
Demand Statistics by Administrator

- Number of Applications
- Capacity of Applications



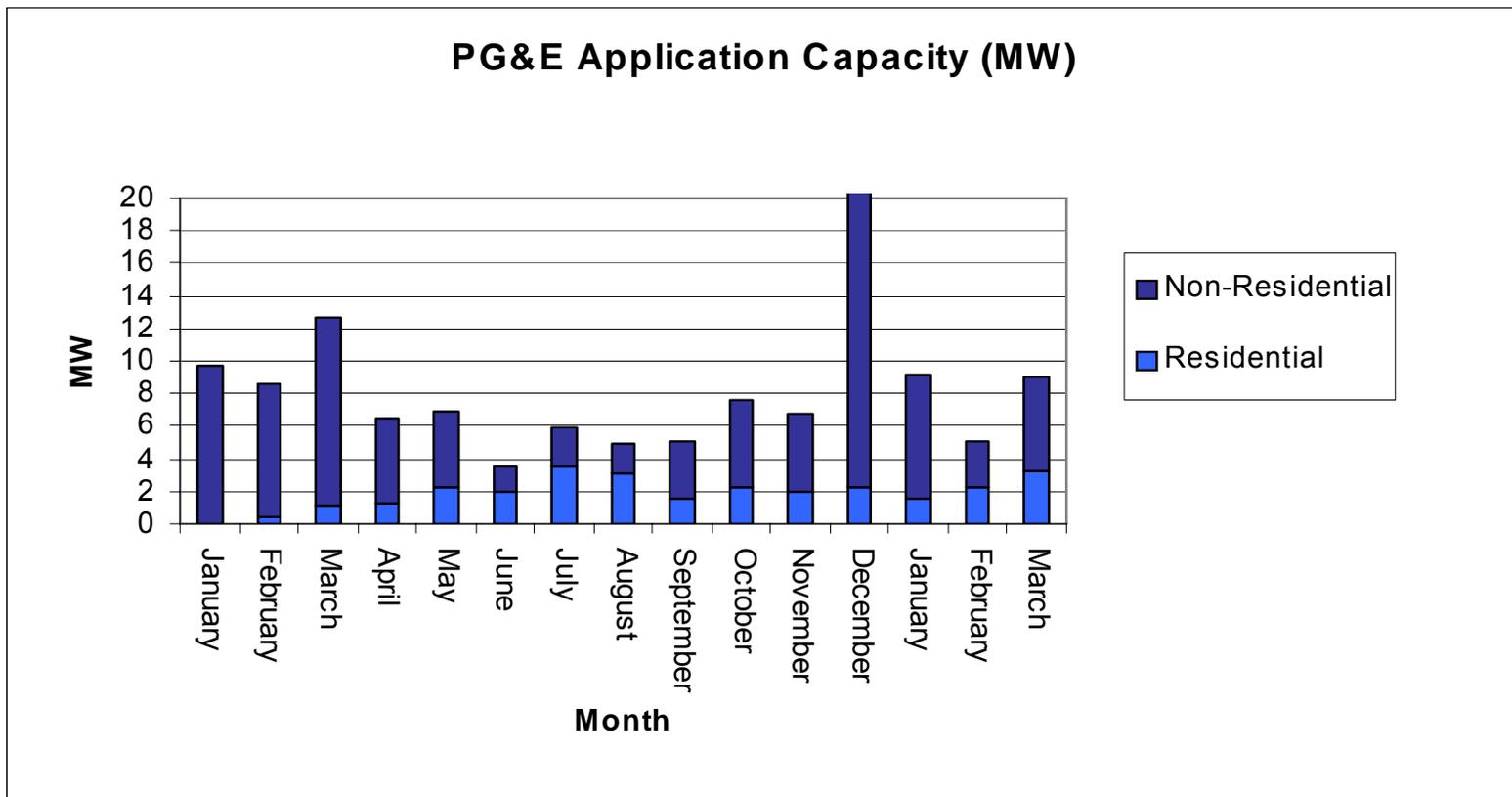
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PG&E Number of Applications



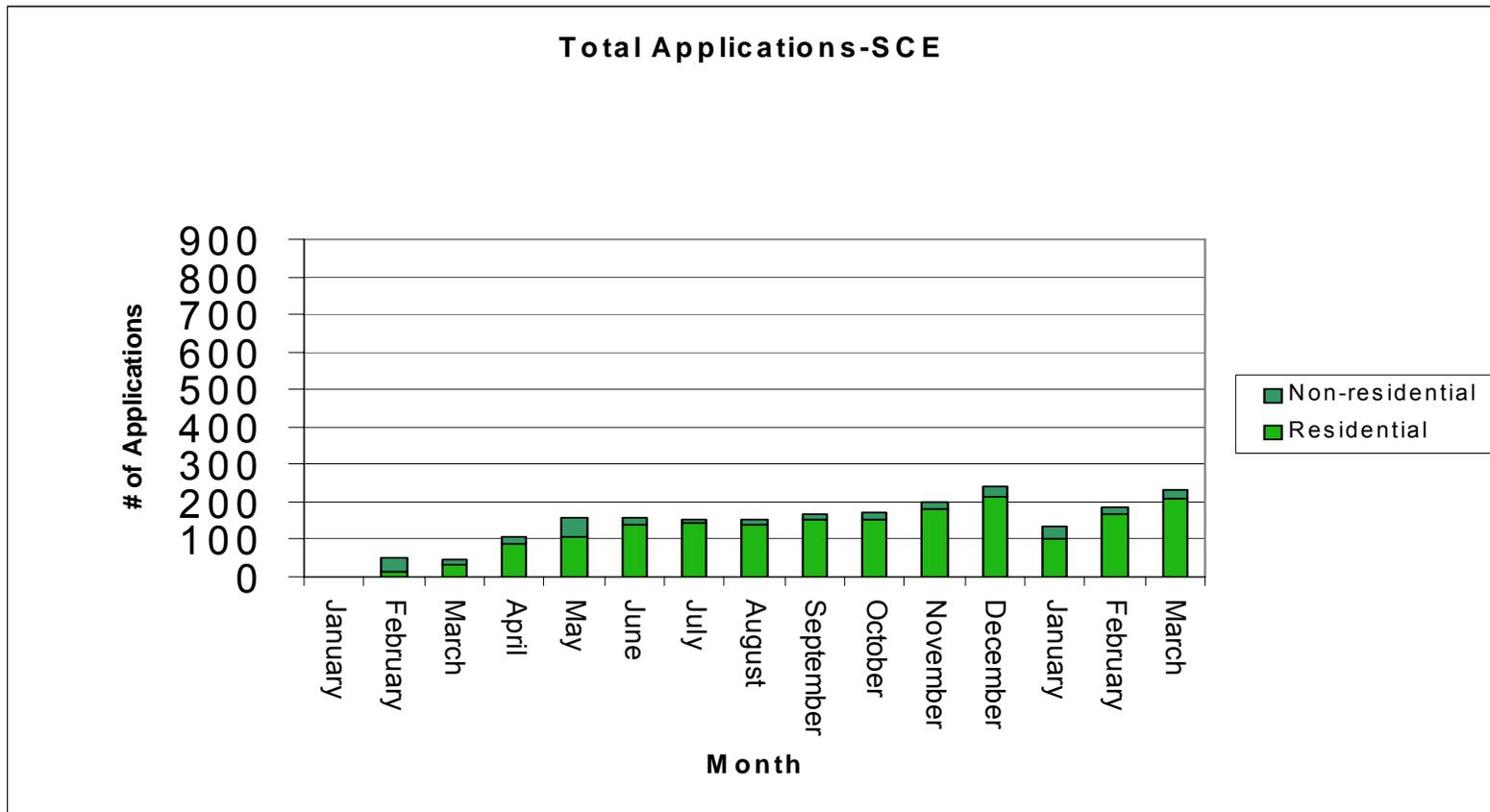
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PG&E Applications by Capacity



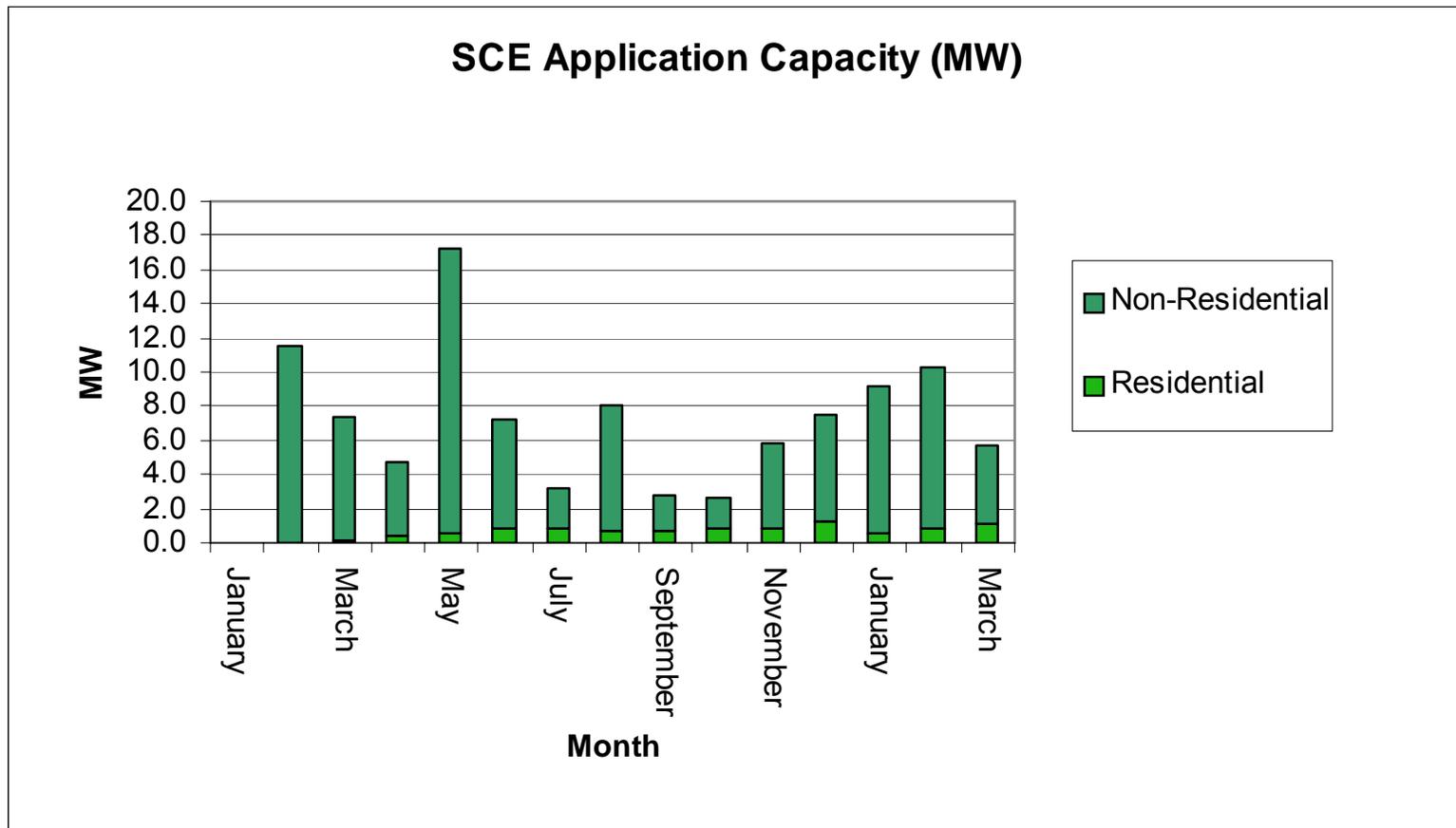
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SCE Number of Applications



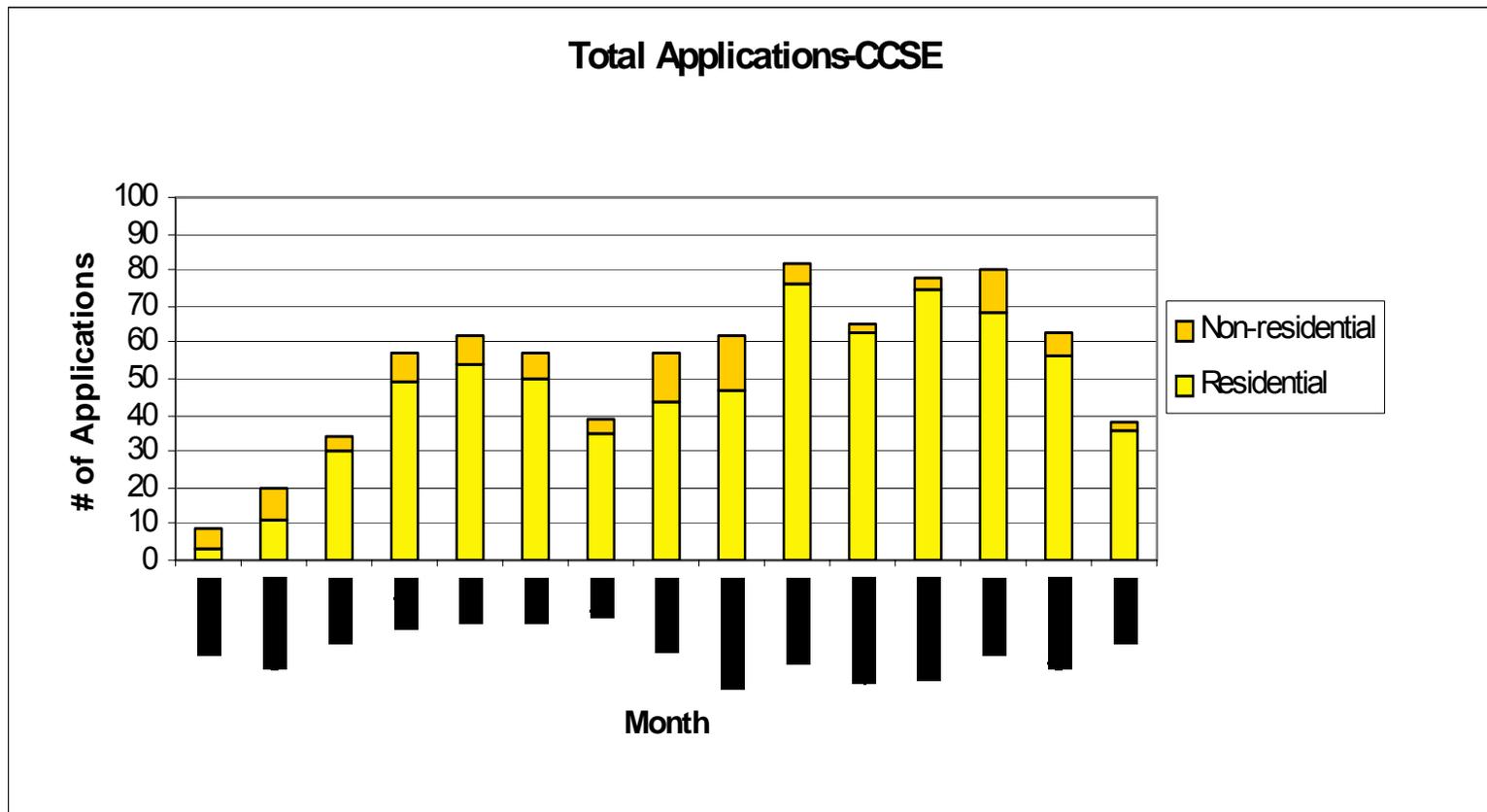
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SCE Applications by Capacity



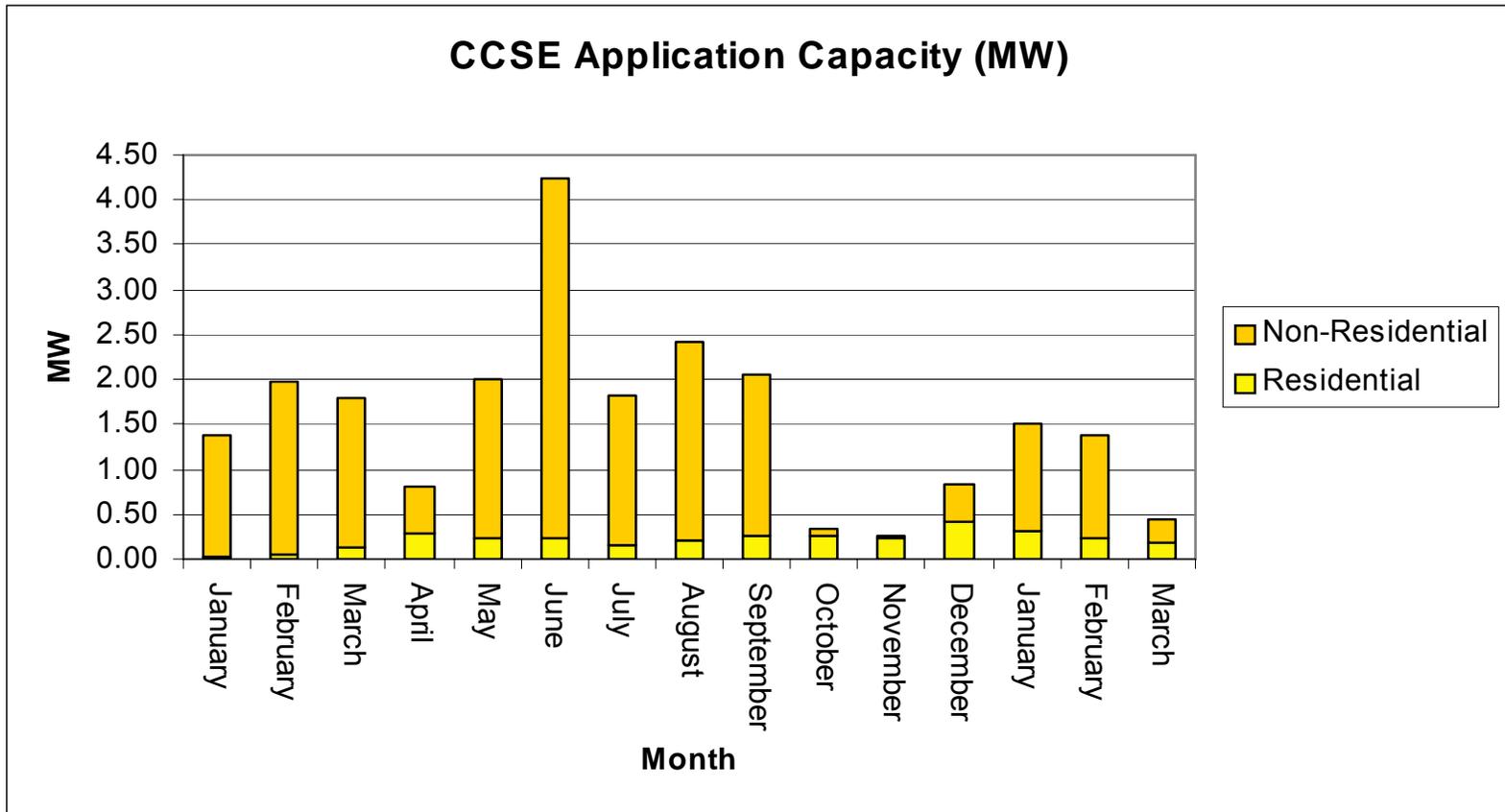
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CCSE Number of Applications



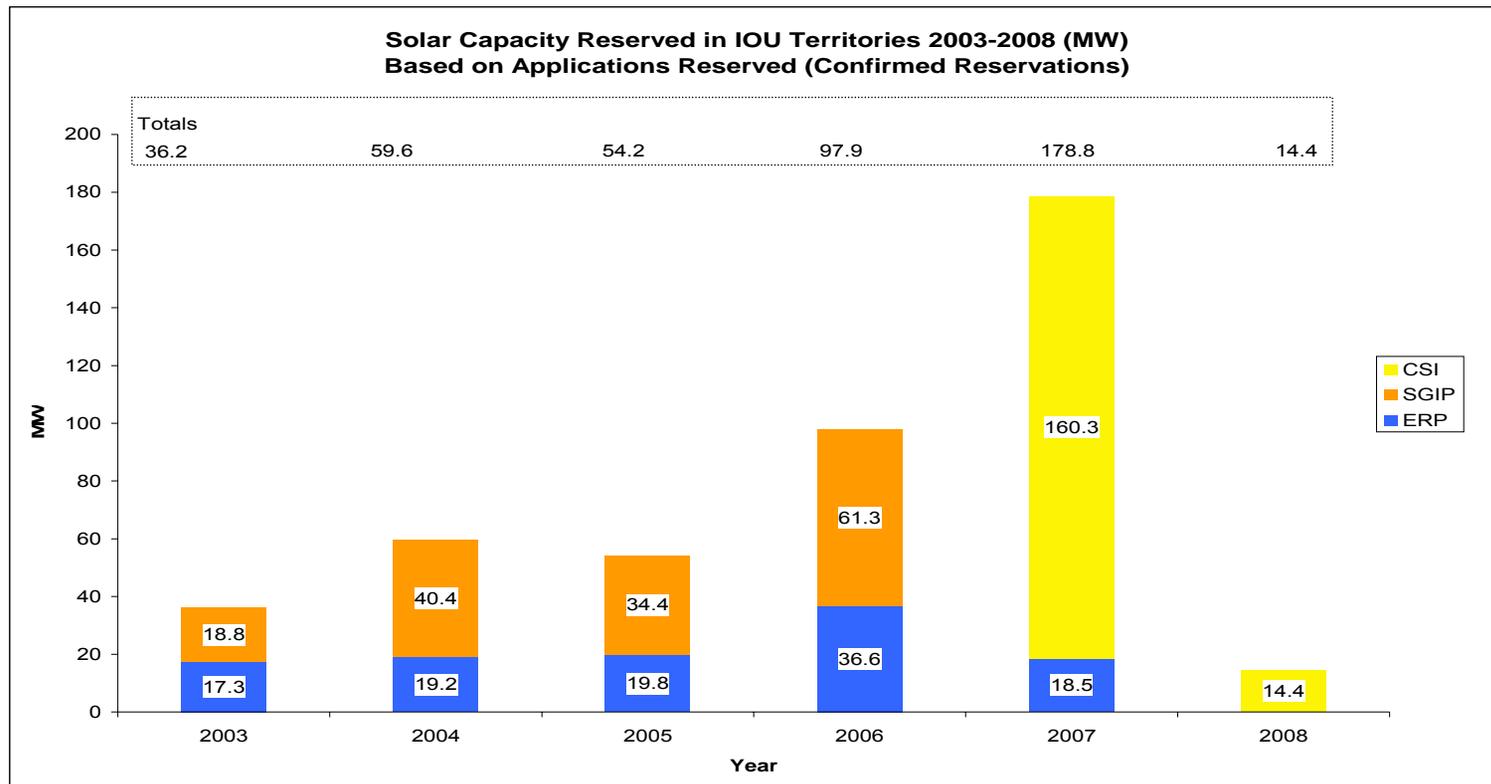
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CCSE Applications by Capacity



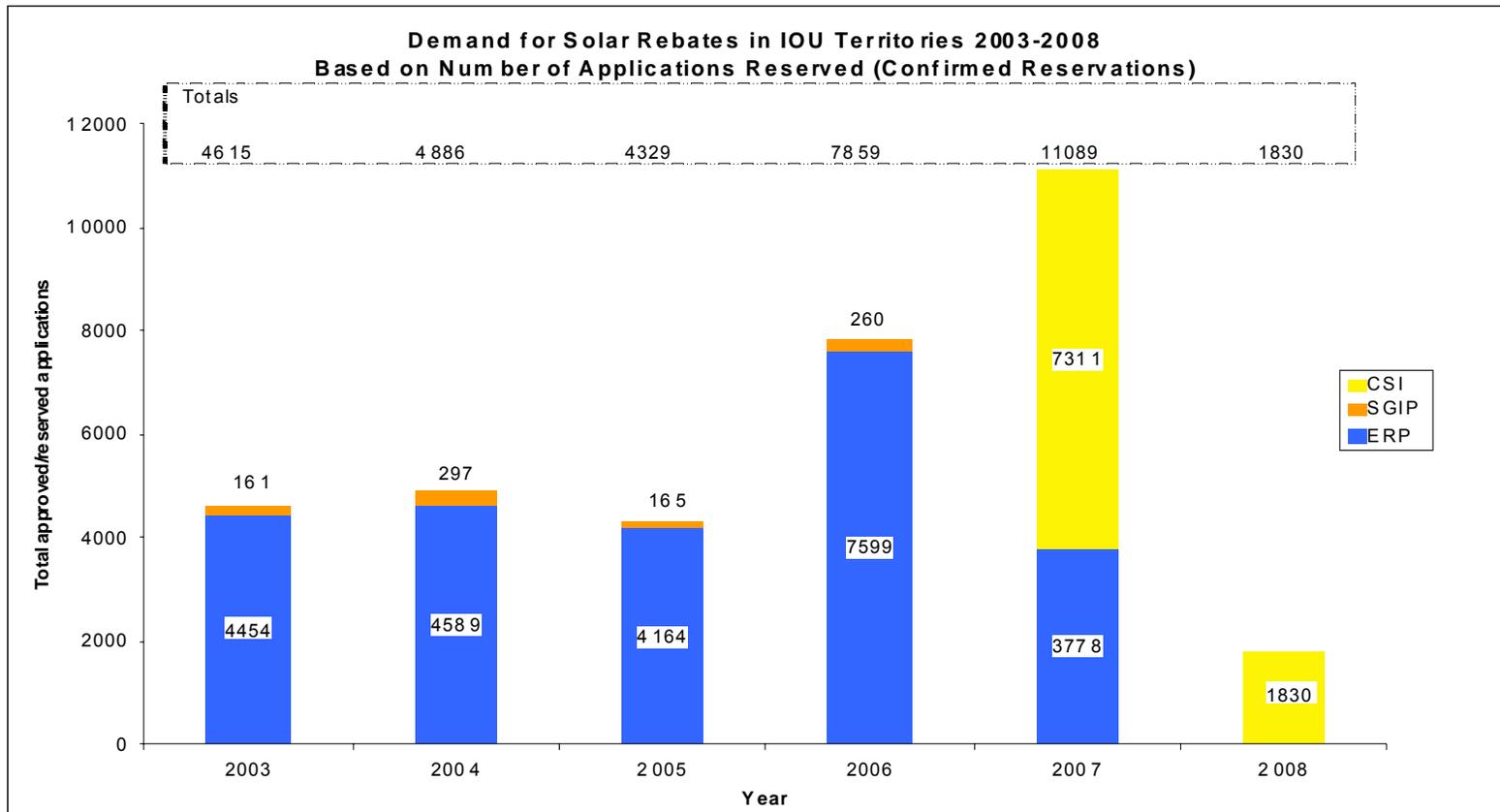
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Historical Comparison: Capacity Reserved



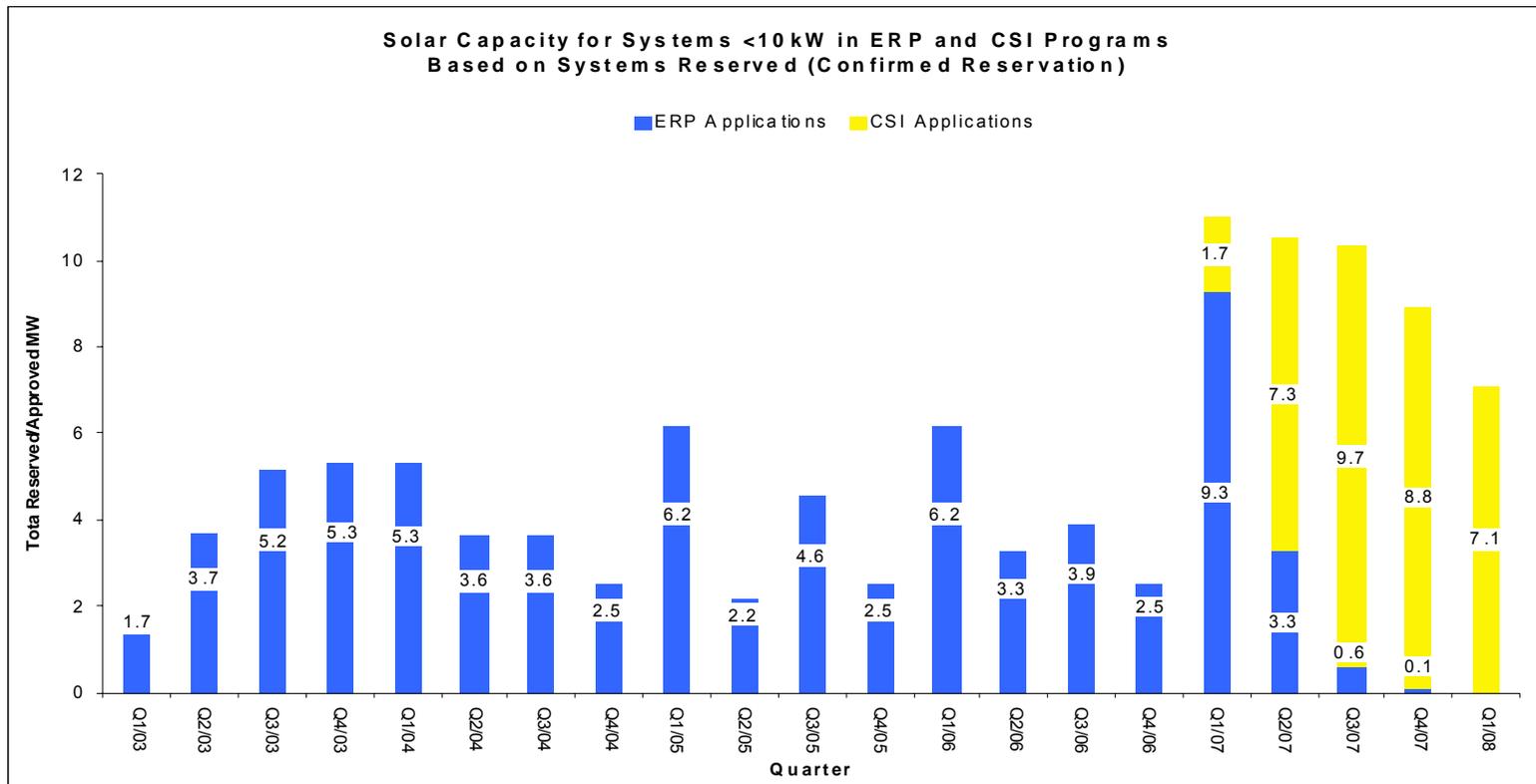
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Historical Comparison: Applications



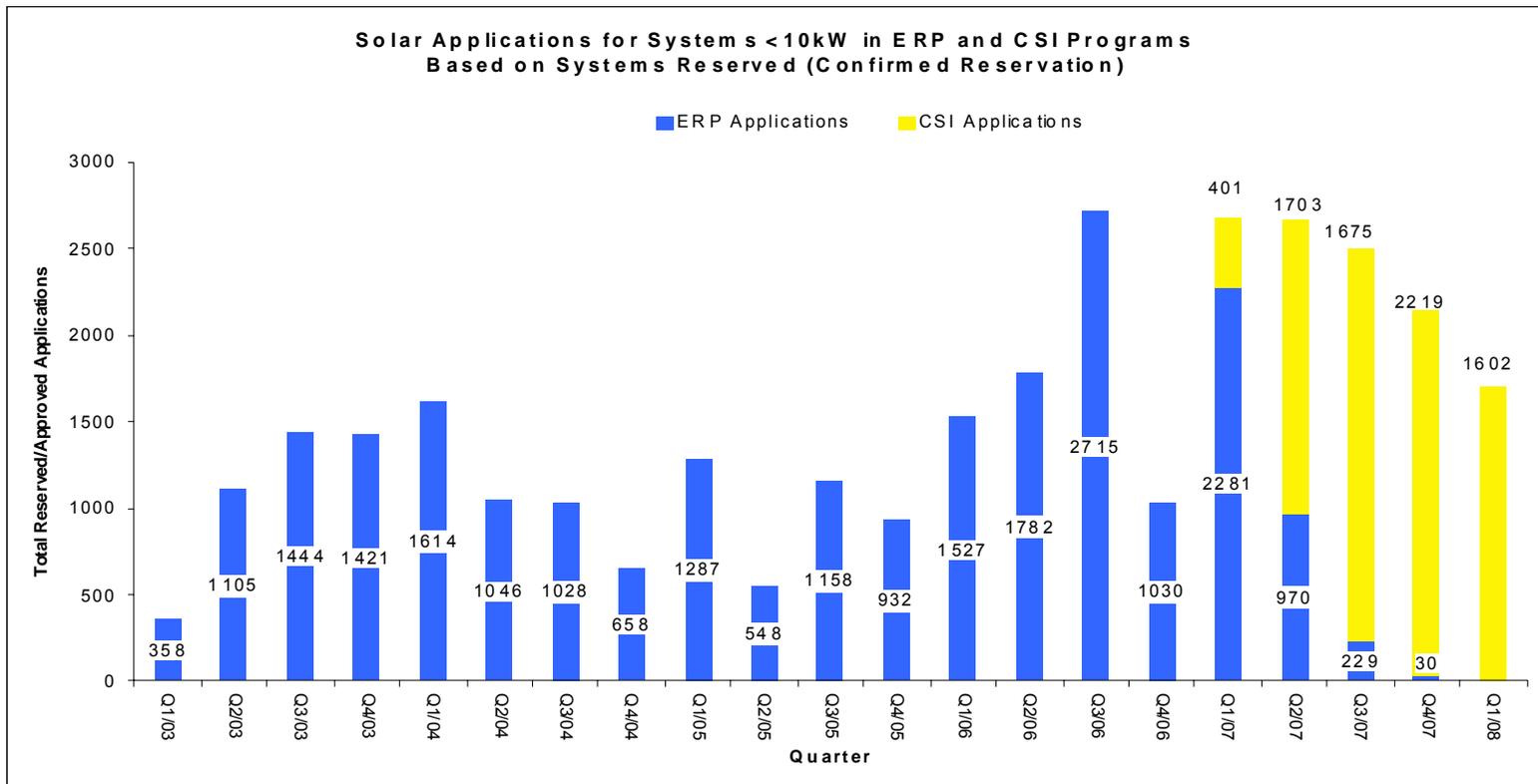
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Historical Comparison <10 kW Capacity



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Historical Comparison < 10 kW Applications



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Q&A on Data & Program Metrics



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Process Study: SCE Cycle Times

Bob Botkin, P.E., CEM
SCE



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Overview

- SCE internal processing goals
- SCE CSI and Customer Solar Process
- Trend of processing and cycle time
- Next steps



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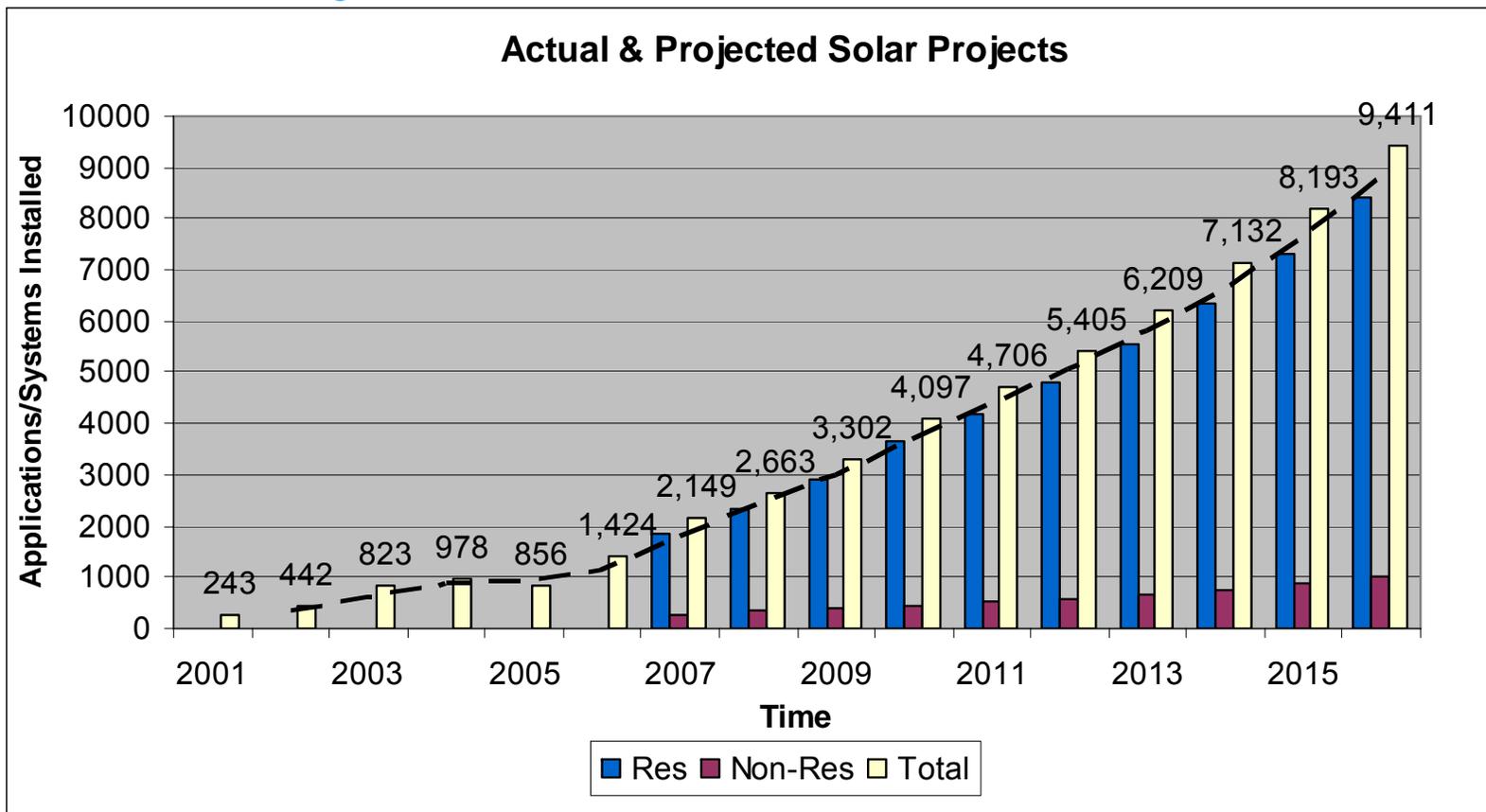
SCE Internal Processing Goals

- Manage the CSI process such that:
 1. 90% of submittals processed in 14 calendar days
 2. 90% of rebate payments processed in 50 calendar days



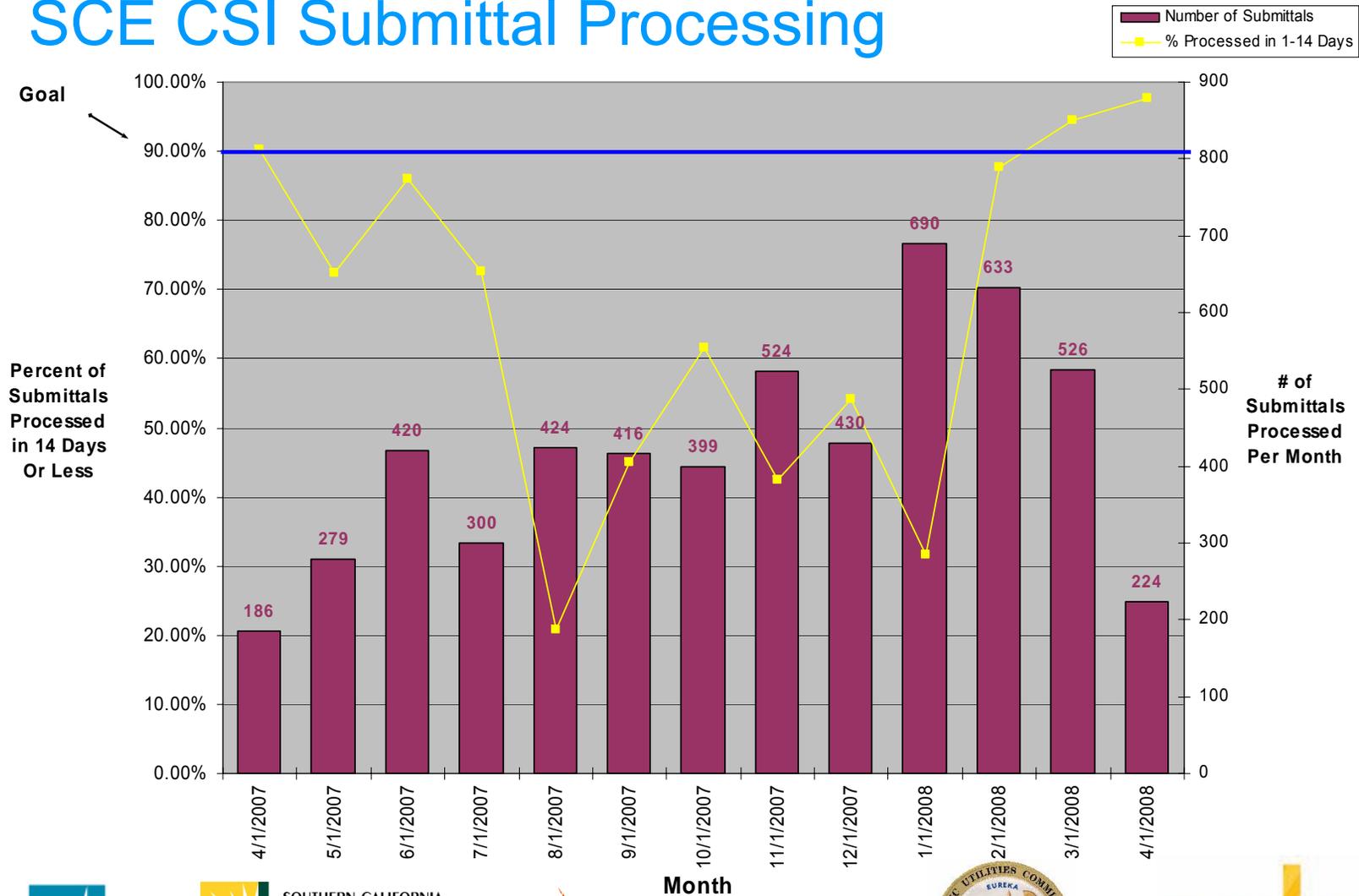
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Historical SCE Solar Customers & Future Projections



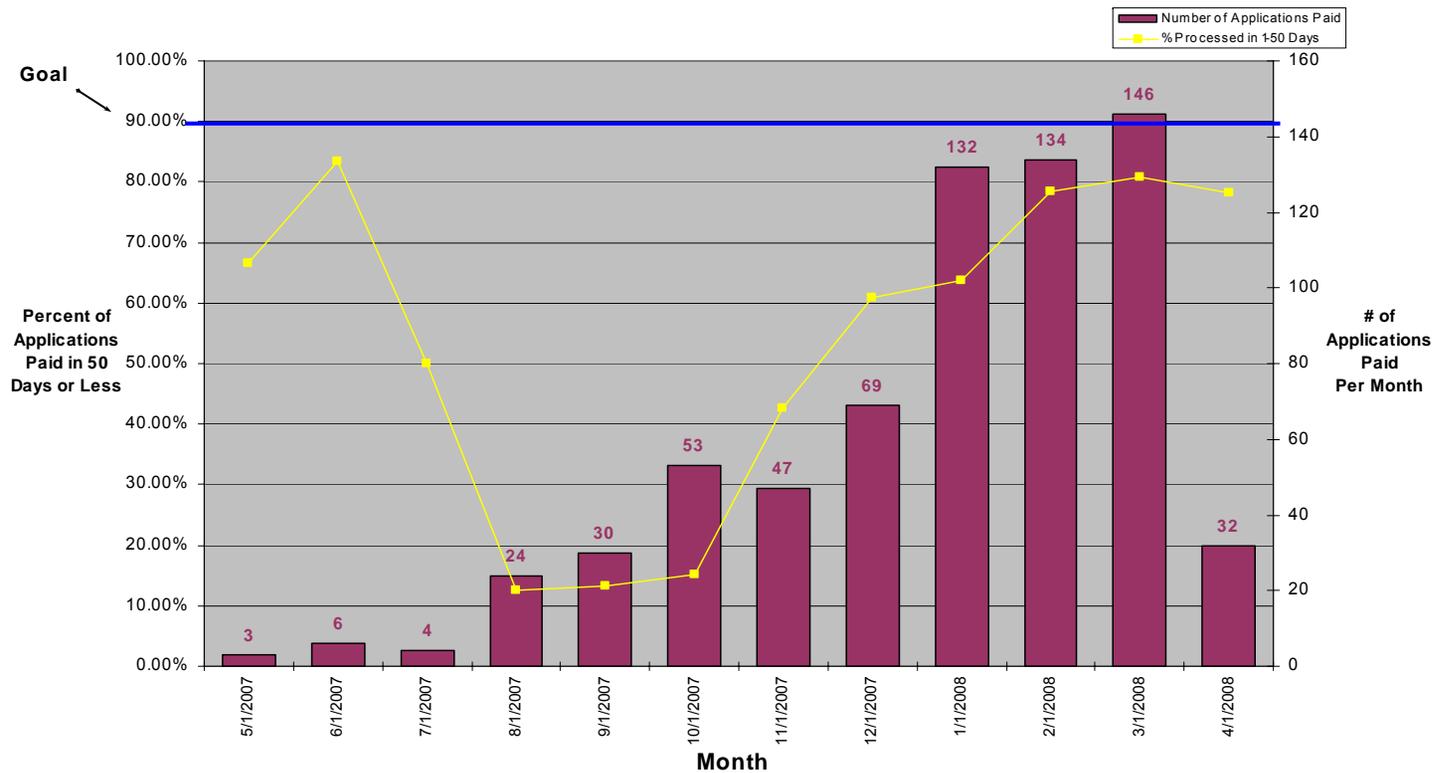
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SCE CSI Submittal Processing



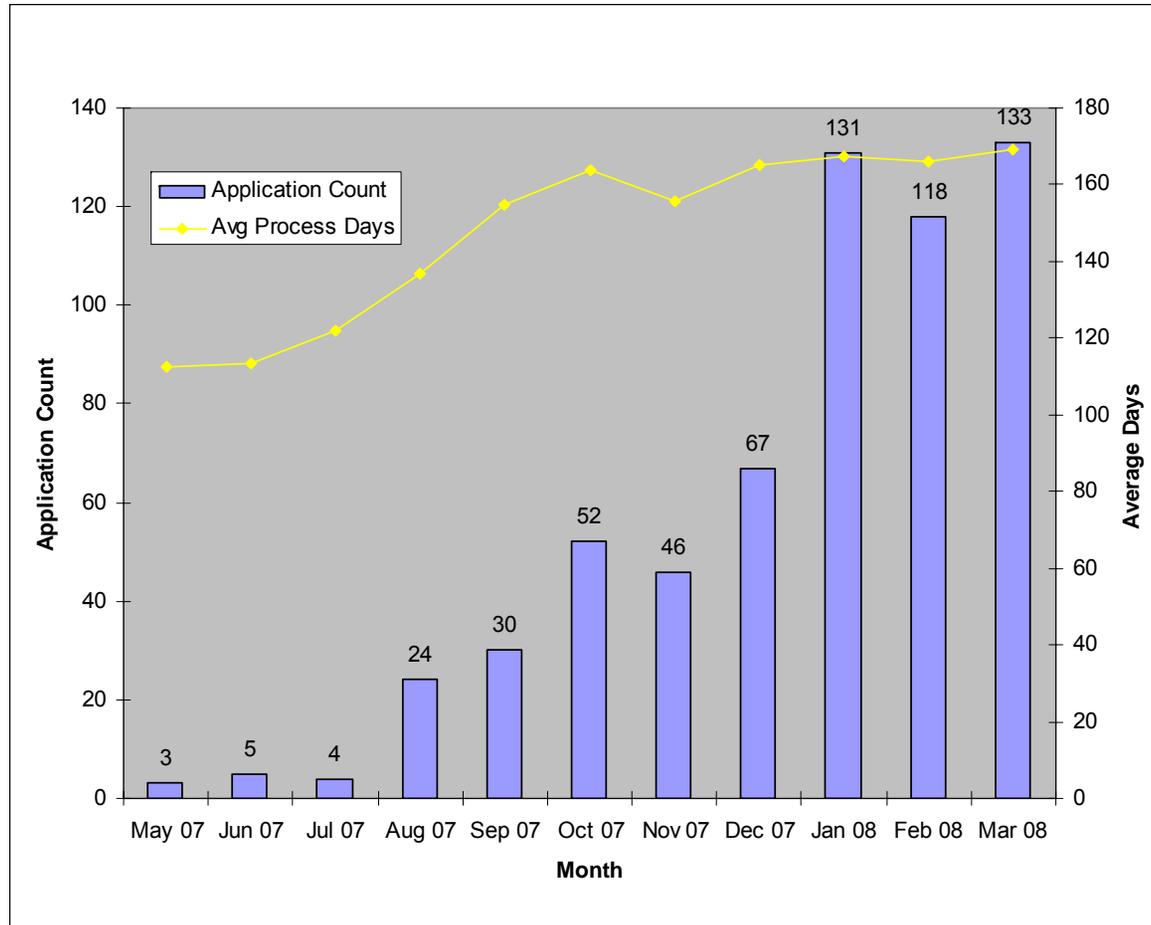
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SCE CSI Payment Processing



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End-to-End CSI EPBB Cycle Times



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Next Steps

- Continue process improvement
- Analyze “as is” end-to-end customer solar process
- Identify potential process improvements
- Perform cost-benefit analysis
- Implement process improvements



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Process Study: Moving from Step 4 to Step 5

Chuck Hornbrook, PG&E



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Non-Res End of Year for PG&E

- Dec. 1-Jan. 18
 - 141 projects and almost 26 MW
- Dec. 26
 - 36 projects and 8 MW
- Challenge
 - How do we maximize number of projects in Step 4
 - Continue moving forward to reserve projects



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Actions We Took

- All projects were not reserved until application fee was received:
 - PG&E provides 30 days for fees to be returned if invoiced
- Contacted customers at PPM milestone
 - Provided status of situation with steps
 - Confirm status of project
- Contacted customers in months 10 or greater of reservation
 - Status of step and project update



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Results We Received

What was it?	kW	Source
Under review never reserved	5,747	Duplicate apps (3.6 MW), non-payment of app fee, customer chose to cancel
Cancelled projects	405	5 projects
Resizing down	849	400 KW for one project
Total	7,001	



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Results = More Projects in Step 4

- Able to increase number of projects in Step 4 by 40 from original estimated date
- Communicated the importance of downsizing early to community
- Identified opportunities for future advice letter to:
 - Simplify
 - Reflective of business issues (e.g. structural)



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Next Steps

- Feedback from stakeholders on PG&E and SCE due diligence
- CCSE poised for similar action when transitioning to Step 5
- Suggestions for other project management steps to maximize steps
- Look to kick off measurement and evaluation to provide data points to:
 - Establish best practices
 - Maximize number of projects in steps
 - Make effective use of customer-funded incentives



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CSI Database Tool Update

Andrew Yip, PG&E



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CSI Database and PA Consistency

Stakeholders Met During Second Week of February

Goal of Project:

- Roadmap to improve transparency, accurateness and consistency statewide with CSI program process and data

Areas of Focus:

- Improving coordination among PAs on processing steps
- Use of the CSI Database (db)

Results:

- Shared process mapping and established set procedures
- Dedicated project management to address usability of db
- Created list of priority items and implementation schedule for db



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Future CSI Database Improvements

Creating Additional Status Types

Goal:

- Create more project status types to improve application transparency

Status:

- New project status types have been added to demo version of the db for PA testing

Completion Date:

- New project status types to be added to live db by end of May
- Documentation of new project status types available in db by end of May



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Future CSI Database Improvements

Creating Communications

Goal:

- Generating emails and letters through the db to improve processing efficiency and saving paper

Status:

- Email and letter generation has been added to demo version of the db for PA testing

Completion Date:

- Email and letter generation to be added to live db by end of May



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Future CSI Database Improvements

Tracking Due Dates

Goal:

- Displaying project due dates for each application to provide transparency on project status

Status:

- Project due dates has been added to demo version of the db for PA testing

Completion Date:

- Project due dates to be added to live db by end of May



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Future CSI Database Improvements Application Fee Calculation

Goal:

- Calculating the Application Fee for non-residential applications to provide accuracy on application fee amount

Status:

- Application Fee Calculation has been added to demo version of the db for PA testing

Completion Date:

- Application Fee Calculation to be added to live db by end of May



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Future CSI Database Improvements

Calculating Split Incentives

Goal:

- Calculating for split incentives to provide accurate incentive amounts due to possible split incentive rates

Status:

- Specifications are being created to calculate split incentives in db

Completion Date:

- Split incentive feature to be added to demo version of db for PA testing by end of May
- Added to live db by end of June



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Future CSI Database Improvements System Sizing Calculation

Goal:

- Redesign system components section to provide clarity and accuracy when calculating system sizing per array

Status:

- Specifications are being created to redesign the calculation of the system components section

Completion Date:

- Redesign to be added to demo version of db for PA testing by end of May
- Added to live db by end of June



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Future CSI Database Improvements

Advice Letter Updates

Goal:

- Update db with new CSI requirements per the previous Advice Letter approvals to provide accuracy to the application process

Status:

- Specifications have been completed and Advice Letter updates are being implemented into the demo version of the db for PA testing

Completion Date:

- Advice Letter updates to be completed in demo version of the db for PA testing by end of May
- Added to live db by end of June



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Future CSI Database Improvements

Continue to Add and Modify New Features to the db

Goal:

- Fix bugs
- Improve features
- New Advice Filings
- New Technologies

Results:

- Ongoing process to improve transparency, accuracy and consistency statewide with CSI program process and data



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CSI Database – Reporting and Data Subcommittee

Goal:

- Refine the reporting features and correct any data integrity issues

Areas of Focus:

- Create internal and external reports that meet customer needs
- Fix data in the CSI db to ensure reports are accurate

Results:

- Creating template data tools to manage data and mechanisms to drive toward data integrity and transparency
- Target to be completed by end of June



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Interconnection Activity

Gerry Torribio, SCE



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A Public Service Announcement: Interconnection — The “Other” PV Program

- Don't wait until the end of your CSI application process to apply for interconnection.
- 258 interconnection days left – avoid the holiday rush!
- Utility interconnection program contacts:
 - PG&E: Mark O'Leary – (415) 972-5265
meo5@pge.com
 - SCE: Gerry Torribio – (626) 302-9669
torribigg@sce.com
 - SDG&E: Ken Parks – (858) 636-5581
KParks@semprautilities.com



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Potential Program Changes

Andrew McAllister, CCSE
Chuck Hornbrook, PG&E



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Regulatory Program Changes Suggested by Program Administrators

- **Solar Water Heating**
- **Stranded Dollars**
- **Advice Letter**



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Solar Water Heating Pilot Program Update

- Petition for Modification submitted April 3
 - CCSE and CALSEIA jointly submitted to the CPUC
 - <http://docs.cpuc.ca.gov/efile/PM/80839.pdf>
- Major modification requests
 - Expansion of the Pilot Program to all IOU territories
 - Six-month extension with new end date of June 30, 2009
 - Two-tiered residential incentive levels of \$1,800 and \$1,200 based on a threshold savings of 120 therms/25,000 kWh
- Parties have until April 24 to comment



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What is a Stranded Dollar?

- Dropouts after reservations are reallocated
 - If at current step, \$ and kW are the same
 - If at lower step, only kW move not the related dollar
 - Guarantees that MW target of program will be met
- SGIP solar dropout rates for 2006:
 - All 55% from application to finished project
 - Post-reservation (after the fee) 35%
- CSI data (preliminary)
 - 11% all projects, 3% post reservation



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Petition to Modify

What it would include

- Allocation of dollars with dropped kW
- Add identified “stranded dollar” kW equivalent to current step for both residential and non-residential

Next steps

- PG&E developed language and has been seeking input/collaboration from stakeholders
- Also seeking feedback on priority of this vs. other regulatory/PA activities



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Petition to Modify — The Standard Dollars

Opportunities:

- Maximize dollars in the steps
- Help lengthen step
- Maximize use of dollars now

Challenges:

- Immediate impact will not be felt until next step change (urgency was step 4)
- Calculation of the dollars available (see table 13 of the progress report)
- Costs of implementing and managing the lost dollars themselves



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Next Steps

- PAs will continue to project manage applications and projects to:
 - Maximize incentive in the steps
 - Minimize dropouts
- Parties interested in reviewing the petition to modify please contact me:
 - After the forum
 - *CLHS@pge.com*



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CSI Advice Letters

Goal: To simplify the application process, provide more transparency and reduce costs for all stakeholders.

History: Approved two Advice Filings to primarily reduce paperwork.



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Results of the Advice Letter Process

- Fewer required documents
 - Number of documents reduced by ~30%
 - Reduced labor costs for all stakeholders
- Reduced amount of paper
 - Two-step reduced by 56%
 - Three-step reduced by 58%
- This does not include other changes not requiring an Advice Letter



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CSI Advice Letters Changes (Two-Step)

	2-Step Process	Improvements
Reservation Request Documents	2007 RR Form w/CSI Program Contract	Shortened to 3 pages
	Proof of Electric Utility Service	Only need page with associated meter and service agreement number
	CSI System Description Worksheet	Deleted
	Electrical System Sizing Documentation (new/expanded load only)	Not needed for any systems less than 5kW or for systems less than 10 kW if less than 2 W (CEC-AC) times building square footage
	Certification of Tax Exempt Status (Public Agency Only)	
	AB1407 Public Entity Certification (Public Agency Only)	
	Documentation of Energy Audit	
	Printout of EPBB Tool Calculation	
	Executed Agreement of Solar System Purchase and Installation	Added warranty requirement in Contract
	Executed Alternative System Ownership Agreement (if System Owner is Different from Host Customer)	
	Application for Interconnection	Deleted



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CSI Advice Letter Changes (Two-Step Cont'd)

	2-Step Process	Improvements
Incentive Claim Documents	Incentive Claim Form	Added Incentive Payee section and revised for additional clarity
	Proof of Authorization to Interconnect	Deleted
	Final Singed-off Building Permit	Deleted
	Proof of Warranty	Deleted
	Final Project Cost Breakdown Worksheet	
	Final Project Cost Affidavit	
	3rd Party Payment Form	Deleted
	Copy of Executed PMRS or Cost Cap Exemption	Added
	Revised EPBB Tool Calculation	Added



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CSI Advice Letter Changes (Three-Step)

	3-Step Process	Improvements
Reservation Request Documents	2007 RR Form and Preliminary Agreement w/CSI Program Contract	Incorporated CSI Contract and shortened to 3 pages
	Proof of Electric Utility Service	Only need page with associated meter and service agreement number
	CSI System Description Worksheet	
	Electrical System Sizing Documentation (new/expanded load only)	
	Application Fee	
	Certification of Tax Exempt Status (Public Agency Only)	
	AB1407 Public Entity Certification (Public Agency Only)	
	Documentation of Energy Audit	
	Printout of EPBB Tool Calculation	



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CSI Advice Letter Changes (Three-Step Cont'd.)

	3-Step Process	Improvements
Proof of Project Milestone	Proof of Project Milestone Checklist	
	Host Customer Certificate of Insurance	Deleted
	System Owner Certificate of Insurance	Deleted
	Application for Interconnection	Deleted
	Executed Agreement of Solar System Purchase and Installation	Added warranty requirement in Contract
	Executed Alternative System Ownership Agreement (if System Owner is Different from Host Customer)	
	CSI Contract	Deleted
	Revised EPBB Tool Calculation	Added
	RFP or solicitation (Public Entities only)	



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CSI Advice Letter Changes (Three-Step Cont'd.)

	3-Step Process	Improvements
Incentive Claim Documents	Incentive Claim Form	Added Incentive Payee section and revised for additional clarity
	Proof of Authorization to Interconnect	Deleted
	Final Signed off Building Permit	Deleted
	Proof of Warranty	Deleted
	Final Project Cost Breakdown Worksheet	
	Final Project Cost Affidavit	
	3rd Party Payment Form	Deleted
	Copy of Executed PMRS or Cost Cap Exemption	Added
	Revised EPBB Tool Calculation	Added



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Next Advice Letter Suggestions

- Simplification
- Ease of business
- Clarification
- Documentation/cost reduction



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Simplification

Standardize Application Fee Amount

1 MW – 500 kW = \$20,000

499 kW – 250 kW = \$10,000

249 kW – 100 kW = \$5,000

99 kW – 50 kW = \$2,500

49 kW – 10 kW = \$1,250

Reason: Current application fee calculation method is not transparent.



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Ease of Business

Modify Project Cost Affidavit Worksheet

Remove the requirement to have the Host Customer sign and only require the System Owner to sign the Project Cost Affidavit.

Reason: For most Power Purchase or Lease Agreements, the Host Customer is not necessarily privy to confidential cost information



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Ease of Business

Allow Host Customers to Transfer a Reservation to Another Site

Allow Host Customers to transfer a reservation to another Host Customer Site within the respective Program Administrator territory only if an engineering study was completed and the results showed that the original site is not structurally sound to support solar.

Reason: Allows the Host Customer who is dedicated to installing solar, other opportunities elsewhere to make their projects viable.



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Clarification

Add New Definition of a Strike for High-Volume Installers

If a high-volume installer (> 200 installations a year statewide) accumulates two failures, then it turns into a Strike. Two Strikes require 100% field inspections; and three Strikes, the Installer is out of the program.

Reason: The current guidelines allow high-volume Installers to accumulate an infinite number of failures without accruing a Strike as long as the Installer responds to a failure within 60 days. Levels the playing ground for all sized installers.



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Clarification

Amend the Failure Language

Remove the sections in the CSI Handbook relating to failures and replace with a four-part chart:

No Failure Issued:

- Within tolerances
- Outside of tolerance and less than 5% difference in incentives

Failure Issued:

- Outside of tolerance and more than 5% difference in incentives
- Incorrect equipment listed

Reason: This will be much more transparent in terms of what is required, the consequences, and what the Applicant, Inspector and PA actions are associated with each one.



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Documentation/Cost Reduction

Other Advice Filing Suggestions

- Revise process for notifying industry of EPBB calculator changes
- Remove the word “Letter” in the CSI Handbook so email can be used more
- Define the definition of a System
- Eliminate redundant sections in the CSI Handbook
- Installer and Seller register with the CEC using the NSHP-4 Form
- Change of PG&E address



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Lunch

12:30 p.m.-1:30 p.m.



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Marketing & Outreach Update

Javier Burgos, SCE
Jeff Lidskin, SCE



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Marketing & Outreach

- Goals
 - Educate customers about the incentives that are administered by the three PAs, as well as the environmental and financial benefits of “going solar”
- Strategy
 - Build awareness with customers through collateral support including direct mail, bill inserts, fact sheets, trade shows, etc.



California **Solar** Initiative

Statewide Marketing & Outreach

- Monthly CSI Newsletter (electronic)
- Fact Sheets
 - Installer, Commercial/Business, Residential
 - In-language: English, Spanish, Mandarin
- Monthly Training Classes
 - Ongoing throughout each PA's service area for installers and homeowners
- CSI Bill Inserts & Targeted Direct Mail
- Trade Show Collateral



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Marketing & Outreach



California Solar Initiative
Powering Your Customers' Homes and Businesses with Solar Energy

Installer Fact Sheet

The California Solar Initiative (CSI) offers cash incentives for the installation of on-site fixed-tilt tracking photovoltaic (PV) systems. PV incentives play an important role in the solar application process and, in most cases, will address the legal and paperwork and apply for permits on behalf of residential and business customers who purchase and install PV systems.

PROGRAM OVERVIEW
The California Solar Initiative is designed to move the state toward a cleaner energy future and help lower the cost of solar systems for California consumers through the installation of 3,000 megawatts (MW) of new, customer-installed solar PV and non-PV projects by 2017.

ELIGIBLE PARTICIPANTS
All residential, commercial, government, and non-profit electric customers of Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E) are eligible to apply for incentives. The CSI program pays incentives for residential solar installations on existing structures, as well as new and existing non-residential structures. New residential construction projects are funded through a different program, the California Energy Commission's (CEC) New Solar Homes Partnership Program.

INCENTIVE STRUCTURE
The CSI page lists the types of incentives to solar customers:

- **Expected performance-based keywords (EPBB)** — For solar projects less than 50 kW, an incentive based on an estimate of the system's future performance is provided. You can calculate the EPBB incentive by entering the system specifications on the online CPEI Incentive calculator at www.csi.ca.gov.

- **Performance-based incentives (PBI)** — A flat, one-time monthly payment for all metered output (at the meter) throughout of operation from eligible solar systems equal to or greater than 50 kW. Any project also may apply to receive the type of incentive. As indicated in Table 1, incentive levels will be automatically indexed over the duration of the program based on the volume of megawatts of solar incentives issued. Projects also cannot receive the megawatts trigger once they are deemed eligible, have paid an application fee

(if applicable), and have received a confirmed reservation. Incentive levels may vary by customer class and Program Administrator's service territory. Current incentive levels may be viewed online at www.csi.ca.gov.

ELIGIBLE TECHNOLOGIES
PV systems up to 5 MW in capacity are eligible, although incentives are only paid for the first MW of capacity. The CSI offers incentives for PV systems, but other technologies such as non-PV solar thermal may be eligible for incentives if they displace traditional electric usage and meet CSI program requirements. Consult the CSI Handbook to determine eligibility of technologies.

WARRANTY REQUIREMENTS
All systems must have a minimum 10-year warranty that guarantees against system or component breakdown. Retail must have a one-year warranty against defective workmanship, system of components breakdown, or degradation in electrical output of not more than 10 percent of their originally rated electrical output during the warranty period. For meters that are integrated into the meter, the meter warranty period must be 10 years.

ENERGY EFFICIENCY REQUIREMENTS
All existing residential and commercial customers will be required to have an energy efficiency audit of their existing home or building. Acceptable audit protocols consist of an online telephone audit provided by the customer's utility. Proof of a completed energy efficiency audit must be submitted

with the CSI application. Consult the CSI Handbook for further details concerning the utility efficiency audit program requirements.

INSTALLER/EQUIPMENT SUPPLIER REQUIREMENTS
To participate in the CSI program, eligible companies that install system equipment must be listed with the Program Administrator. The Program Administrator will request the following information:

- Business name, address, phone, fax and e-mail address
- Owner of principal contact
- Business license number (if applicable)
- Contracted license number
- Proof of good standing on the records of the California Secretary of State as required for corporations and limited liability entities
- Reseller's license number (if applicable)

This information must be submitted to the Program Administrator before a company can become eligible to install systems under the CSI Program, and must be updated annually. The information must be received by the Program Administrator before the Applicant can receive any reservation confirmation of incentive payment, and must be updated annually by March 31.

Companies that sell system equipment must be certified by the CEC and must furnish the same information as listed above to the CEC (see their form MSEP-4). This information must be submitted to the CEC before a company

Table 1 - EPBB and PBI Payment Amounts by Step

MW Step	Statewide MW in Step	EPBB Payments (per watt)			PBI Payments (per kW/h)		
		Residential	Commercial	Gov't/Nonprofit	Residential	Commercial	Gov't/Nonprofit
1	50	\$ 1.50	\$ 2.10	\$ 2.25	\$ 0.39	\$ 0.59	\$ 0.58
2	75	\$ 2.20	\$ 2.10	\$ 2.95	\$ 0.34	\$ 0.34	\$ 0.48
3	100	\$ 1.90	\$ 1.90	\$ 3.65	\$ 0.36	\$ 0.36	\$ 0.37
4	150	\$ 1.55	\$ 1.15	\$ 2.30	\$ 0.32	\$ 0.22	\$ 0.32
5	190	\$ 1.30	\$ 1.10	\$ 1.85	\$ 0.15	\$ 0.15	\$ 0.28
7	215	\$ 0.85	\$ 0.85	\$ 1.40	\$ 0.02	\$ 0.02	\$ 0.19
8	250	\$ 0.35	\$ 0.35	\$ 1.10	\$ 0.05	\$ 0.05	\$ 0.15
9	285	\$ 0.25	\$ 0.25	\$ 0.60	\$ 0.03	\$ 0.03	\$ 0.12
10	350	\$ 0.20	\$ 0.20	\$ 0.70	\$ 0.03	\$ 0.03	\$ 0.10

Statewide Solar Incentives

GO **solar** CALIFORNIA

Powering California homes and businesses with solar energy

www.gosolarcalifornia.ca.gov

The California Solar Initiative

Program Administrators

Center for Sustainable Energy CALIFORNIA

Pacific Gas and Electric Company

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An EDISON INTERNATIONAL Company



Center for Sustainable Energy CALIFORNIA



California Solar Initiative

See the sun in a new way: Go Solar.



PG&E can show you how.

The number of PG&E customers joining the fight against global climate change is growing fast. Over 20,000 customers have already realized the power of the sun by installing photovoltaic systems on their homes and businesses.

PG&E customers, perhaps even some of your own neighbors, have taken a great interest in solar power. The California Solar Initiative provides incentives for

qualifying home owners who actively choose to generate their own clean and renewable solar energy. This year, there is also a valuable

federal tax incentive available to most customers.

PG&E is committed to providing you with the resources and tools to help you make the decision to go solar. For a quick guide on how to go solar, please visit www.pge.com/solarguide



PG&E is a program administrator of the California Solar Initiative, a customer-funded program under the auspices of the California Public Utilities Commission.

For more information, please visit www.gosolarcalifornia.ca.gov

For more details call 1-800-743-5008 • Para más detalles llame 1-800-440-4781 • 1-800-892-9555 • For TDD/TTY (speech-hearing impaired) call 1-888-452-4712
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California Solar Initiative



John Q. Sample
Business Name
12345 Some Street
Anytown, USA 90068

There are lots of great reasons to Go Solar.
California Solar Initiative incentives make it possible.



Dear <First Name Last Name>:

Now you can reduce the cost of installing an eligible solar photovoltaic (PV) system for your home by up to 29% by taking advantage of incentives available through the statewide California Solar Initiative program.* The chart below shows you how. Incentives starting at \$2.50 per watt are currently at their highest. And, if you install your solar PV system before January 1, 2009, you may be eligible to receive an additional \$2,000 in Federal Tax Credits.**

Energy Efficiency Comes First.

Take the first step towards solar energy by making your home as energy efficient as possible. A Home Energy Efficiency Survey can help you identify energy-saving opportunities that will reduce the size of the solar PV system you need. This, in turn, will maximize your investment in solar power. Use SCE's convenient online Home Energy Efficiency Survey tool and you'll discover easy ways to save energy and the environment while lowering your bill. To take the online survey, visit www.sce.com/survey.

3 kW Residential Solar PV System	
Average Retail Cost:	\$28,500
CSI Incentive:	Up to \$7,500
Federal Tax Credit:	Up to \$2,000
Your Average Net Cost:	As low as \$19,000

Choosing a Solar Installer.

A solar installation expert can determine if solar energy is right for you and can help you select a PV system that meets your energy needs and budget. Simply contact a solar installer to schedule a solar site survey of your home, and get at least three bids before making your final selection. When your solar PV system is ready for installation, the installer will take care of the permits and will complete most of the solar incentive application paperwork for you. It's that easy! To find a qualified installer in your area, visit www.sce.com/CSI or www.GoSolarCalifornia.ca.gov.

Fresh California Sunshine
Harvest the power of the sun.

Solar incentives now in season!
Take advantage of incentives for qualifying solar photovoltaic systems while they're at their highest.
Visit www.GoSolarCalifornia.ca.gov or www.sce.com/CSI today.
Or call 800-799-4177 for more information.



California Solar Initiative



Going Solar Saves You More

Cash incentives from the California Solar Initiative make going solar a wise decision. The bigger your energy bill, the more you'll save.

Switch to solar and save. >>

The bigger the bill, the more you'll save.

If Your Bill is Currently...		
Without solar panels	\$50	\$150
With solar panels (a realistic "average")	\$5	\$70
		\$140

With a \$250 electric bill, you will save about \$88 per month by installing a 3 kW DC solar electric system. And, a bigger system saves you more.

*Savings are by gross location and actual performance. Consult a PG&E professional to determine your potential savings.

Choose energy efficient technologies to further reduce your energy usage, and be part of the solution to help California reach its energy goals.

The California Center for Sustainable Energy is here to help you go solar - whether it's solar photovoltaics to generate electricity, or solar water heating to heat your home's water, visit www.gosolar.energycenter.org or call (866)-SDENERGY to get started.

The CSI program is funded by California investor-owned utility customers and administered by the California Center for Sustainable Energy, Pacific Gas & Electric, and Southern California Edison under the auspices of the California Public Utilities Commission. For information on this and other California solar programs, visit www.gosolarinitiative.com.

 **Center for Sustainable Energy**
CALIFORNIA

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California Solar Initiative

What's Next?

- Online Application Tool
 - Aimed at installers to direct them step-by-step
 - Will feature a “get-started” checklist to help clarify the application components
 - Internet-based and on interactive kiosk for solar tradeshows
 - Peer review beginning second quarter 2008
- Consumer Guide to the Program Handbook
 - Peer review beginning June 2008
- Trade Shows
 - Solar 2008 (ASES): May 3-8
 - Fourth Germany CA Solar Conference: May 27
 - Intersolar North America: July 15-17
 - Solar Power 2008 (SEPA/SEIA): Oct 13-16



California **Solar** Initiative

What's Next: The Fine Print

- The new CPUC Rulemaking identifies a long-term M&O plan within its scope of activities related to the CSI.
- A participant workshop generally accompanies a draft staff proposal, which ultimately leads to a proposed decision on which the Commission votes.
- This is expected to roll out within the proceeding (R.08-03-008).



California **Solar** Initiative

Performance Data Provider (PDP) & Performance-Based Incentive (PBI) Update

Jim Baak, PG&E



California **Solar** Initiative

Acronym Alert!

- PMRS – Performance Monitoring & Reporting Service
 - Data to customer
- PBI – Performance-Based Incentive
 - Five-year monthly payments
- PDP – Performance Data Provider
 - Data to Program Administrator for PBI calculation



California **Solar** Initiative

PDP Update

- Two workshops held in February
 - Agreed on data exchange format (EDI 867) & data transfer protocol (SFTP)
- Additional workshops are planned for mid-May
 - Data validation rules to be discussed
- Advice Letter expected in late June



California **Solar** Initiative

PDP Ongoing Work

- Data Security Guidelines
- Data Validation Rules
- EDI Format & Mapping
- PDP Guidelines
 - Non-Performance Penalties
 - Testing, Auditing & Insurance/Bond Requirements



California **Solar** Initiative

PBI Update

- Proposed change to PBI process would start PBI payment “clock” sooner
- Requires an Advice Letter filing
- Change would be retroactive for all PBI customers



California **Solar** Initiative

Proposed PBI Process Change

- Current Process:
 - 60-month PBI payments start after ICF is approved
- Proposed Process:
 - 60-month PBI payments start retroactive to ICF received date, assuming ICF is complete & accurate & system passes inspection



California Solar Initiative

PMRS Update

- Since beginning of year, PMRS list has grown to more than 25 providers
 - CEC to update list to indicate which PMRS providers are also PDPs
- Proposal to exempt all systems under 10 kW from PMRS requirement under consideration



California **Solar** Initiative

Summary

- **Making progress on PDP requirements front**
- **PBI process improvements proposed**
- **PMRS improvements being considered**



California **Solar** Initiative

Update on Expected Performance-Based Buydown (EPBB) Incentive Calculator Tool

John Supp, CCSE



California **Solar** Initiative

Topics

- Why it changed
- How it changed
- Effects of change
- How does the change impact how I do my business?



California **Solar** Initiative

Why it Changed

- CPUC Decision 06-12-033 required the inclusion of Building Integrated Photovoltaics (BIPV) into the EPBB incentive.
- Therefore, the EPBB calculator needed to adapt to this decision.



California Solar Initiative

Options

- 1) Create some kind of estimated impact (reduction) on performance, based on the fact BIPV (and flush-mounted panels) run hotter and thus produce less electricity.
 - * This was discussed at a point somewhere between 5%-10% reduction
 - * This provides no distinction between flush, pole, elevated mountings
 - * Possible manufacturer objections to using estimates when actual data available
- 2) Include the actual cell temperature information based on a combination of independent testing and/or manufacturer reporting until independent testing is done.
 - * This is known as Nominal Operating Cell Temperature (NOCT)
 - * CEC's SB1 Guidelines require the inclusion of this starting in 2009
 - * This provides for distinctions between performance for different mounting types

California **Solar** Initiative

What Changed

- 1) BIPV now can be calculated on EPBB
- 2) PBI Design Factor and PBI Incentive Estimate now included in output
- 3) Proposed system capacity factor displayed compared with estimated overall CSI capacity factor



California **Solar** Initiative

New Inputs Required

- Mounting Type
 - 0" (flush/BIPV), >0-1", >1-3", >3-6", or >6" average standoff
- Incentive Type
 - EPBB or PBI



California Solar Initiative

New EPBB

Site Specifications:

ZIP Code:

Utility:

Customer Type:

Incentive Type:

PV System Specifications:

PV Module:
165W Crystalline Silicon Based Photovoltaic Module (146.2W PTC)

Number of Modules:

Mounting Method:

Inverter:

Number of Inverters:

Documentation

User Guide

[Get Adobe Reader](#)
[EPBB Source Code](#)

Links & Resources

[PG&E](#)
[SCE](#)
[CCSE](#)
[Go Solar California](#)



California Solar Initiative

What Changed

- Incentive was calculated in 2007 using
 - $\text{CEC-AC} * \text{Design Factor} * \text{Incentive Rate}$
- The March 2008 revised calculator used
 - $(\text{CEC-AC} * \text{Temperature Impact}) * \text{Design Factor} * \text{Incentive Rate}$.
 - This method was submitted September 2007 to CPUC and approved
 - Effect of Temperature changed CEC-AC
- The April 2008 revised calculator uses
 - $\text{CEC-AC} * \text{Modified Design Factor} * \text{Incentive Rate}$. The modified design factor includes temperature impact
 - This keeps the CEC-AC value the same between 2008 and 2007 versions of the EPBB calculator.



California Solar Initiative

Impact of Change

- The inclusion of a temperature impact on PV performance will show up in the Design Factor as of 4/14/2008.
 - Since CEC-AC is fundamental to other aspects of the program – interconnection documentation, contract language, etc., we agreed with industry feedback to adjust the Design Factor instead.



California Solar Initiative

What Do Installer/Applicants Need To Do?

- 1) Measure and record Mounting type (average height above surface). Use this on the new EPBB.
- 2) See CSI Handbook Section 3.2 for how calculator changes impact your reservation(s). In summary:
 - If you already have a confirmed reservation prior to change, you may use either the new EPBB calculation or the old – see Handbook for specifics.
 - However, if the system characteristics changed (panel type or count, inverter type or count, etc.) that would normally require you to submit a revised EPBB at the Incentive Claim, you will have to use the new calculator results.



California Solar Initiative

2009

- CEC drafted the Solar Incentive Participation Guidelines. The guidelines require modification of the existing incentive calculator and calculation methodology.
 - <http://energy.ca.gov/2007publications/CEC-300-2007-012/CEC-300-2007-012-CMF.PDF>
- The Program Administrators have submitted their proposal for compliance.



California Solar Initiative

Steps to Compliance

- Analyze gaps between existing EPBB & CEC Guidelines (complete).
- Analyze gaps between CEC's NSHP calculator and CEC Guidelines (complete).
- Meet with CEC and CPUC to finalize method for compliance – (4/29/08).
- Develop exact changes required.
- Request bids from existing CSI contractors working on EPBB or PowerClerk.
- Evaluate whether bids are sufficient or open RFP will be required.
- Select vendor
- Make changes
- Test changes (PAs, industry groups) and make necessary revisions.
- Notify stakeholders (service list, newsletter, PA Web sites, etc.)
- Conduct Training Workshops



California **Solar** Initiative

Regulatory Updates from California Public Utilities Commission (CPUC)

Molly Sterkel, CPUC
Elizabeth Helton, CPUC
Melicia Charles, CPUC
Nick Chaset, CPUC



California Solar Initiative

Single-Family Low-Income Program

- Established by Commission decision, November 2007 — \$108 million budget
- Provides fully subsidized 1-kW systems to qualifying applicants
- Provides higher incentives to other low-income households according to tax liability:

Federal Tax Liability	CARE Eligible (\$ / W)	Not CARE Eligible
\$0	\$7.00	\$5.75
\$1 - \$1,000	\$6.50	\$5.25
\$1,001 - \$2,000	\$6.00	\$4.75

- CPUC is in the process of selecting a statewide Program Manager
 - RFP for Program Manager issued April 16, 2008
- Incentives will not be available until after the Program Manager is selected



California Solar Initiative

Multifamily Low-Income Program

- \$108 million Multifamily Program is currently under development
- Feb. 29, 2008: Energy Division staff issued a proposal on the program
 - A workshop was held in March 2008
 - Comments and reply comments on the staff proposal were filed in late March & early April
- The CPUC is currently considering comments
- Next step is a proposed decision issued for comment



California **Solar** Initiative

SDG&E General Rate Case Approval

- On Feb. 28, 2008, the CPUC approved the SDG&E rate case
- The rate case included approval of the terms of a September 2007 settlement in which SDG&E and interested parties—including solar—settled on many key issues
- One change as a result of the rate case is the creation of new tariff schedules for commercial and residential distributed generation customers
- **SDG&E filed the new rate schedules on March 28, 2008**
- **The tariff schedules should be available to the public on May 1, 2008**



California **Solar** Initiative

CSI Research, Development and Deployment (RD&D) Program

CSI RD&D Program:

- \$50 million budget
- CSI RD&D is a portfolio-based grant-making program that focuses on overcoming technological barriers to the widespread adoption of solar distributed generation

RD&D Program progress to-date and timeline:

- **April 1, 2008:** RD&D Program Manager RFP released
 - **April 22, 2008:** Bidders must file intent to bid
 - **April 28, 2008:** Bidders' Conference at the CPUC
 - **May 20, 2008:** Proposals Due
 - **June 12, 2008:** Notification of winning bids
 - **July/August 2008:** Contract work begins
 - Next steps:
 - Finalize RD&D grant-making strategy (**Q3/Q4 of 2008**)
 - Stakeholder meeting (**Q3/Q4 of 2008**)
 - First RD&D grant RFP released (**Q4 2008/Q1 2009**)
- note that all above dates are targets not set deadlines*



California Solar Initiative

Order Instituting Rulemaking (OIR) and Rulemaking (R) 08-03-008

- On March 17, 2008, the Commission released an OIR to initiate new Rulemaking (R.) 08-03-008 to continue the work of the CSI and DG Programs
- Within OIR, the Commission released a preliminary scoping memo that included a list of the major policy issue areas to be considered by the CSI Program in 2008 and beyond:
 - Solar Incentives for Multi-Family Low-Income Housing
 - Energy Efficiency Requirements
 - Marketing Outreach and Consumer Education
 - Program Evaluation
 - Solar Water Heating
 - Time-of-Use Requirements
- On April 22, 2008, a pre-hearing conference will kick off the new rulemaking



California **Solar** Initiative

SCE Photovoltaic Program

Rudy Perez, SCE



California Solar Initiative

Solar Photovoltaic Program (SPVP) Overview

On March 27, SCE filed an application and Advice Letter with the CPUC requesting:

- \$875 million to install 250 MW of PV within five years — approval is requested by mid-December 2008.
- Immediate approval of a \$25 million memo account to allow for the construction of up to 5 MW of PV solar on large commercial rooftops throughout our service territory
- Should the program be deemed successful, SCE may request to expand program to 500 MW and increase to 100 MW per year.
- Will be utility-owned assets



California Solar Initiative

SPVP Justification

- Market Transformation
 - Program large enough to impact costs/resources
 - Increases focus for large PV on California
 - Develops larger trained PV Installation workforce
- Adds 0.4% to RPS Goals by 2014
- Supports CSI Goals: 83,333 equivalent roofs
- SCE's Expertise –
 - History with solar
 - Ongoing study of grid impacts – intermittency, power quality, circuit saturation
 - Utility implementation coupled with energy efficiency deployment
- Deployment of PV on circuits in a distributed manner
 - Does not require any transmission upgrades
- Can provide generation in critical AQMD emissions-sensitive areas such as the Inland Empire
- No greenhouse gas emissions



California Solar Initiative

PV Suppliers and Installers

- During the pendency of the application at the CPUC (expected mid-December 2008), SCE's procurement processes will be used for panels, inverters, balance of plant equipment and installation.
- We would be looking for 50MW of panels/inverters/balance of plant equipment for five years beginning early 2009 and within the cost target of \$3.50/watt dc installed.
- Project labor agreement (PLA) to be developed for program in accordance with SCE's existing labor agreements.



California Solar Initiative

Rooftop Owners

- Due to the 1 MW-2 MW size of these installations, we are looking for 250,000-square-foot minimum of usable roof space at each site for these projects.
- 20 years+ lease is optimal, will consider 10-year with renewal clause.
- New roofs (< 5yrs old) will be considered to avoid re-roofing concerns.
- For those that qualify, we have been signing non-disclosure agreements and exclusive right to negotiate agreements to start the process.
- The lease rate is yet to be determined and will be based on liability and other factors.
- Though the program is aimed at rooftops, land-based systems will be considered if cost effective.



California Solar Initiative

SPVP Funding and CSI

- Complements and supplements CSI.
- SPVP funding requested from bundled service customers.
- Should CSI goals become mandatory for SCE customers, SCE reserves right to request that SPVP megawatts should be counted.
- SPVP expenditures may justify reducing some portion of the CSI costs our customers contribute.



California **Solar** Initiative

California Solar Initiative Q&A Panel

California Public Utilities Commission
California Center for Sustainable Energy
Pacific Gas & Electric
Southern California Edison



California **Solar** Initiative

**Thank You for Joining Us ...
Please Drive Safely**

