



January 29th, 2010
California **Solar** Initiative Public Forum
Hosted by Pacific Gas & Electric



Welcome and Agenda

Andrew Yip

Pacific Gas & Electric Company



California **Solar** Initiative

Agenda

- **Welcome & Introductions**
- **CSI General Update**
- **CSI Program Improvements**
- **Marketing and Outreach in 2010**
- **Go Solar, California Web Update**
- **Lunch**
- **Low Income Update**
- **Legislation and NEM Update**
- **Solar, Energy Efficiency and Integration**
- **CSI Thermal Update**
- **Program Administrator and CPUC panel**
- **Closing Comments**



CSI General Update

Garen Grigoryan

Pacific Gas & Electric Company



California Solar Initiative

Q4 2009

- 25% of program's MW installed/pending
- Over \$900 million paid/committed
- Q4 MW installed - 28.5
- Q4 incentives paid - \$42.4 million

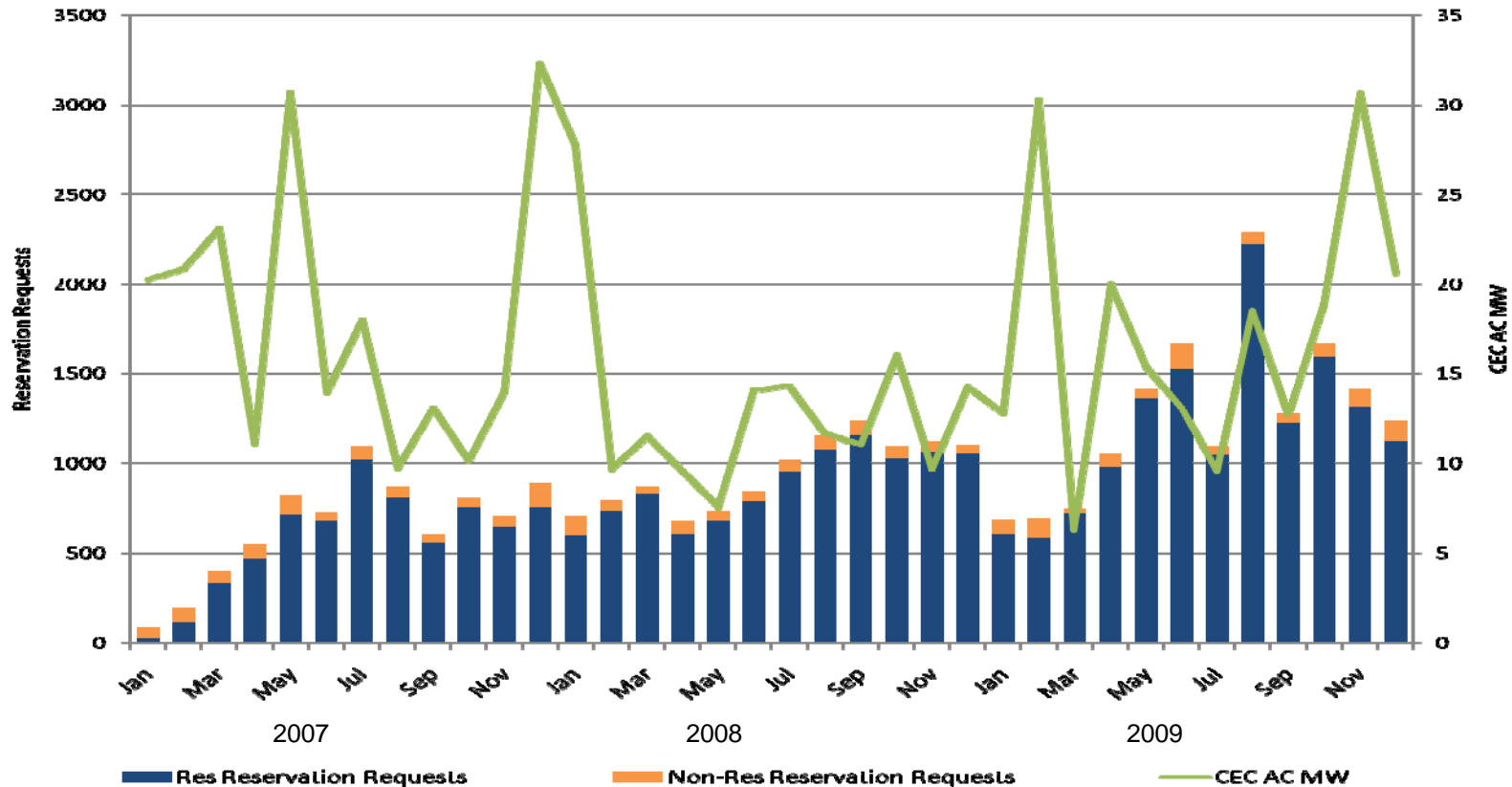
CSI Projects through Program Year 2009	
Installed Projects	
Applications	24,835
MW	285.5 MW
Incentives \$ MM	\$647.4
Pending Projects	
Applications	7,322
MW	163.5 MW
Incentives \$ MM	\$314.8
Total Installed and Pending Projects	
Applications	32,157
MW	449.0 MW
Incentives \$ MM	\$962.2

Source: CaliforniaSolarStatistics.ca.gov, January 6, 2010



California Solar Initiative

Applications & Capacity Received by Month



Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California **Solar** Initiative

Steady Increase in Demand Volume

	Reservation Request #			Reservation Request MW		
	Res	Non-Res	Total	Res	Non-Res	Total
2008	10,538	829	11,367	49	108	157
2009	14,294	937	15,231	71	138	209
Program Total ¹	31,689	2,644	34,333	154	429	583

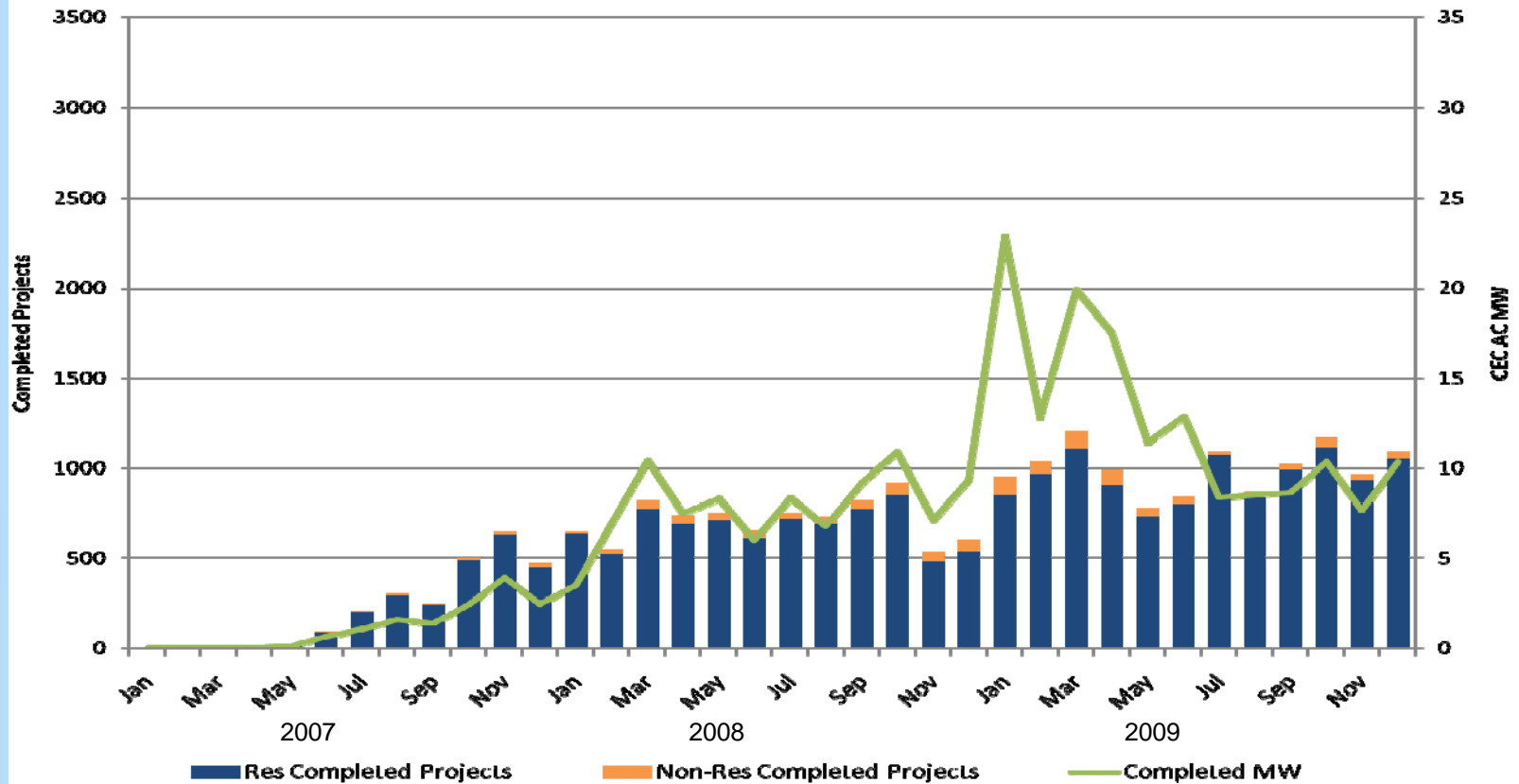
¹Program Total includes CSI projects reservation requests during the transitional year of 2007

Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Completed Projects & Capacity by Month



Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California **Solar** Initiative

Steady Increase in Demand Volume

	Completed #			Completed MW		
	Res	Non-Res	Total	Res	Non-Res	Total
2008	7,951	528	8,479	37	57	94
2009	11,319	673	11,992	54	97	151
Program Total ²	21,669	1,272	22,941	101	157	258

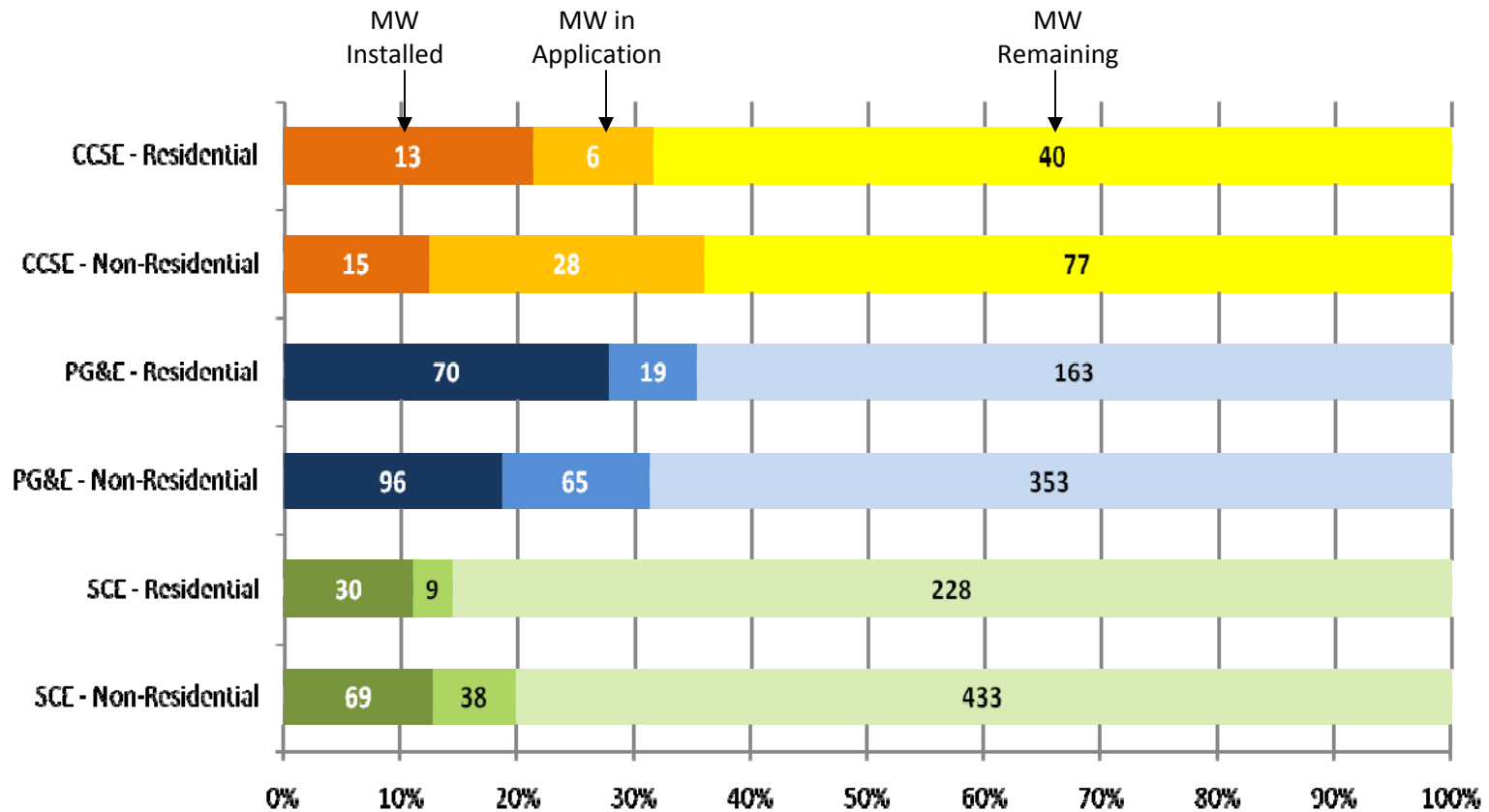
²Program Total includes CSI projects completed during the transitional year of 2007

Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

CSI Progress Towards 1,750 MW Goal

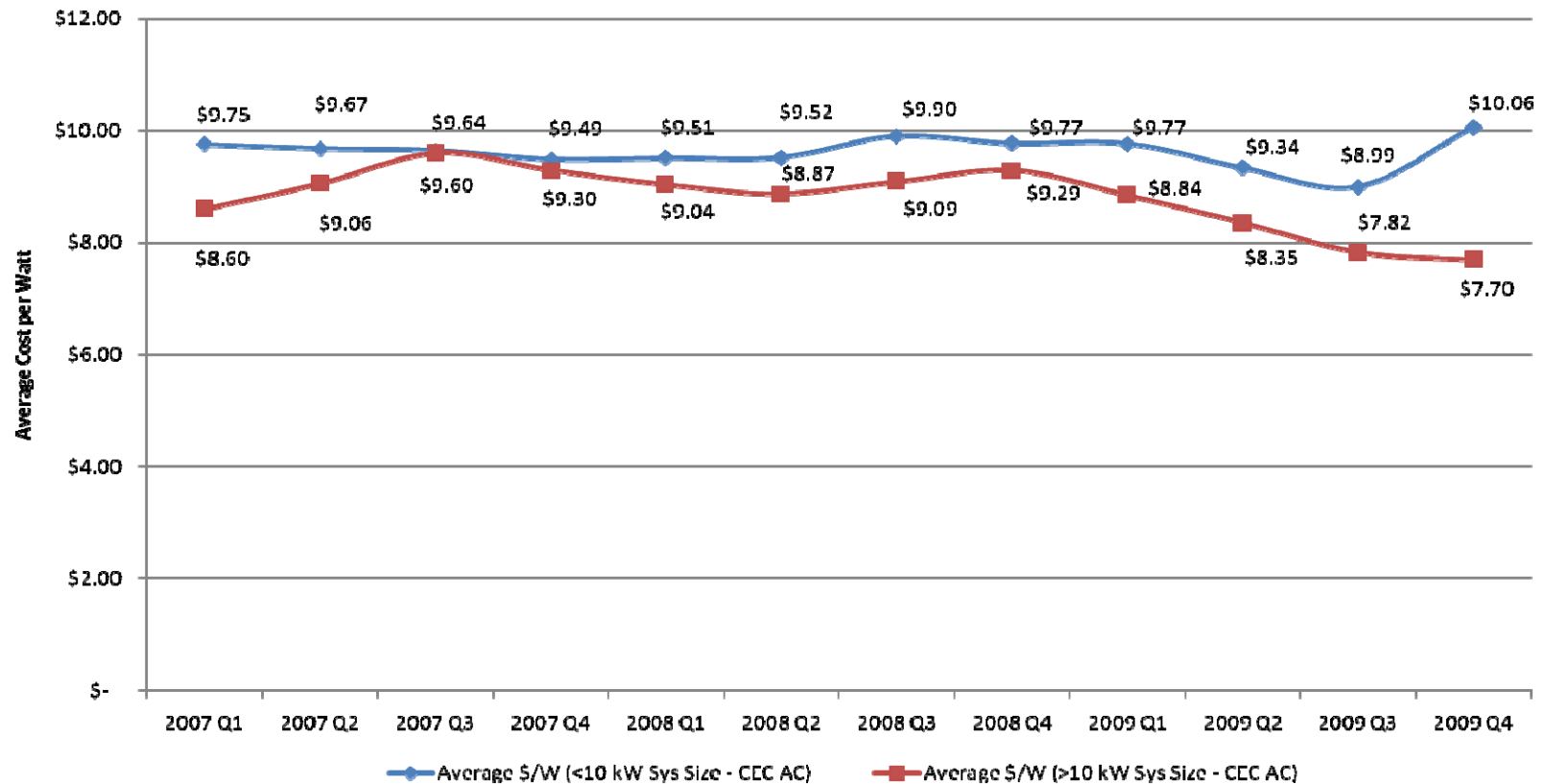


Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Average \$/Watt Cost by System Size

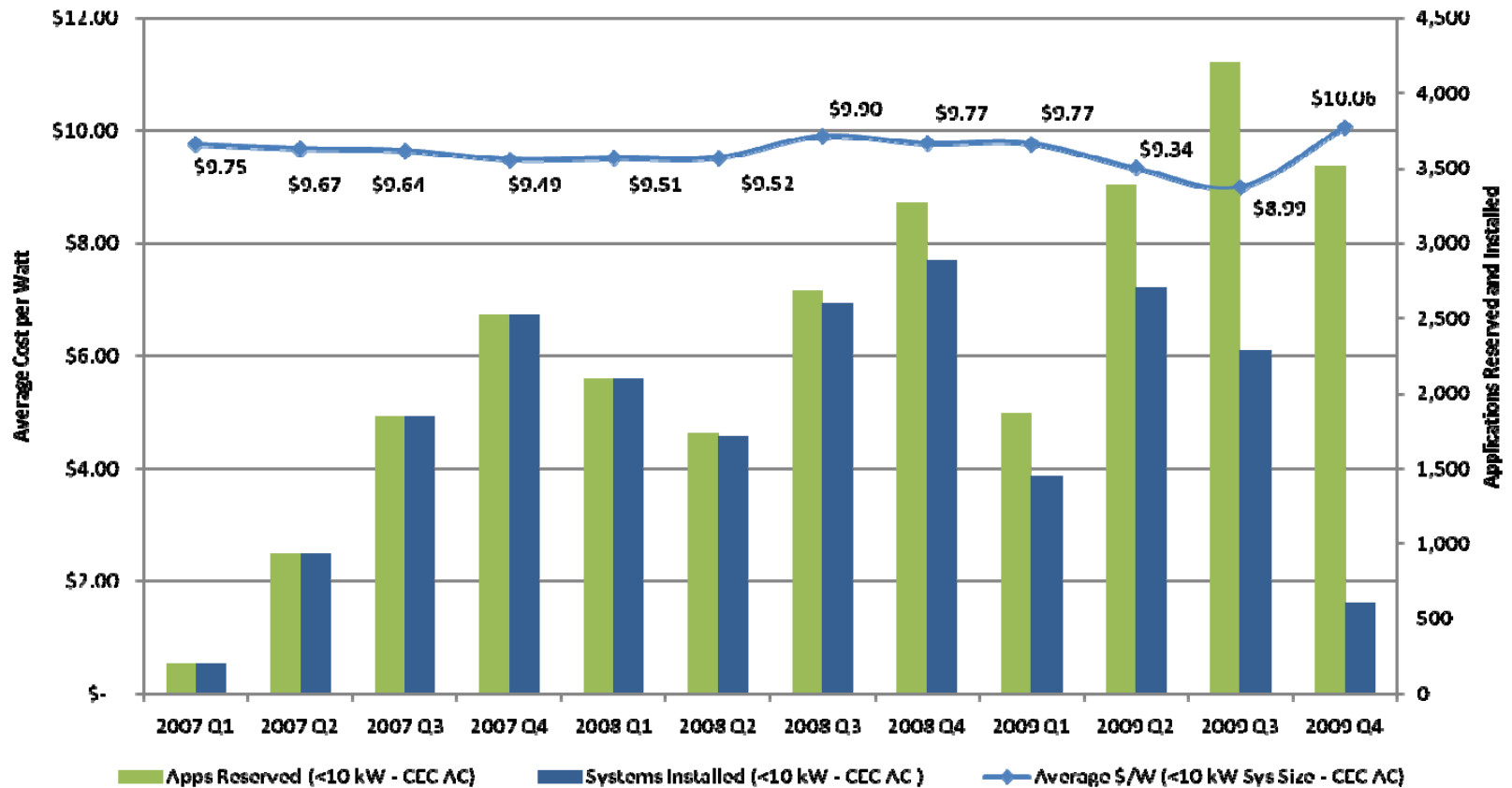


Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Average \$/Watt Cost by Sys Size - <10 kW

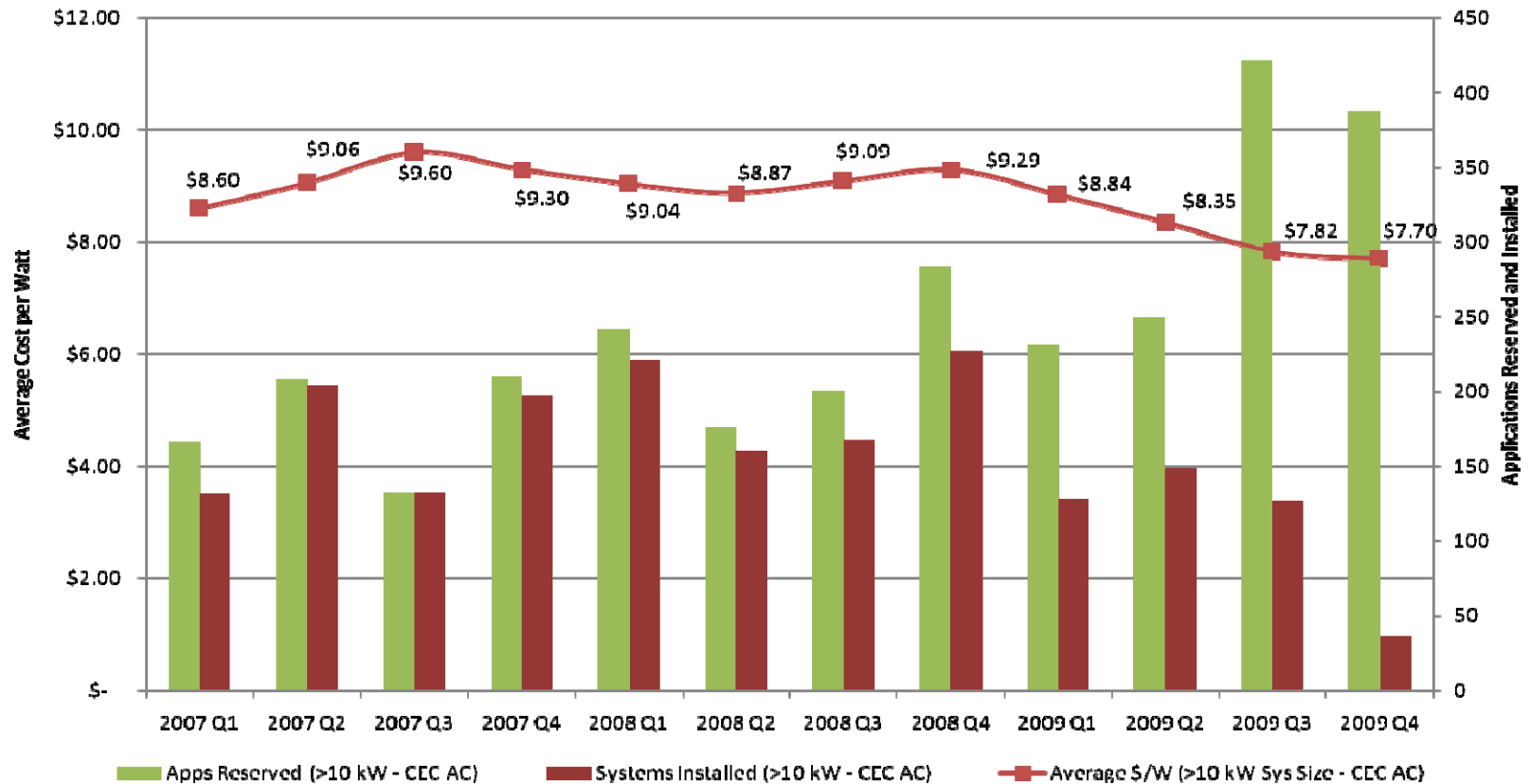


Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Average \$/Watt Cost by Sys Size - >10 kW

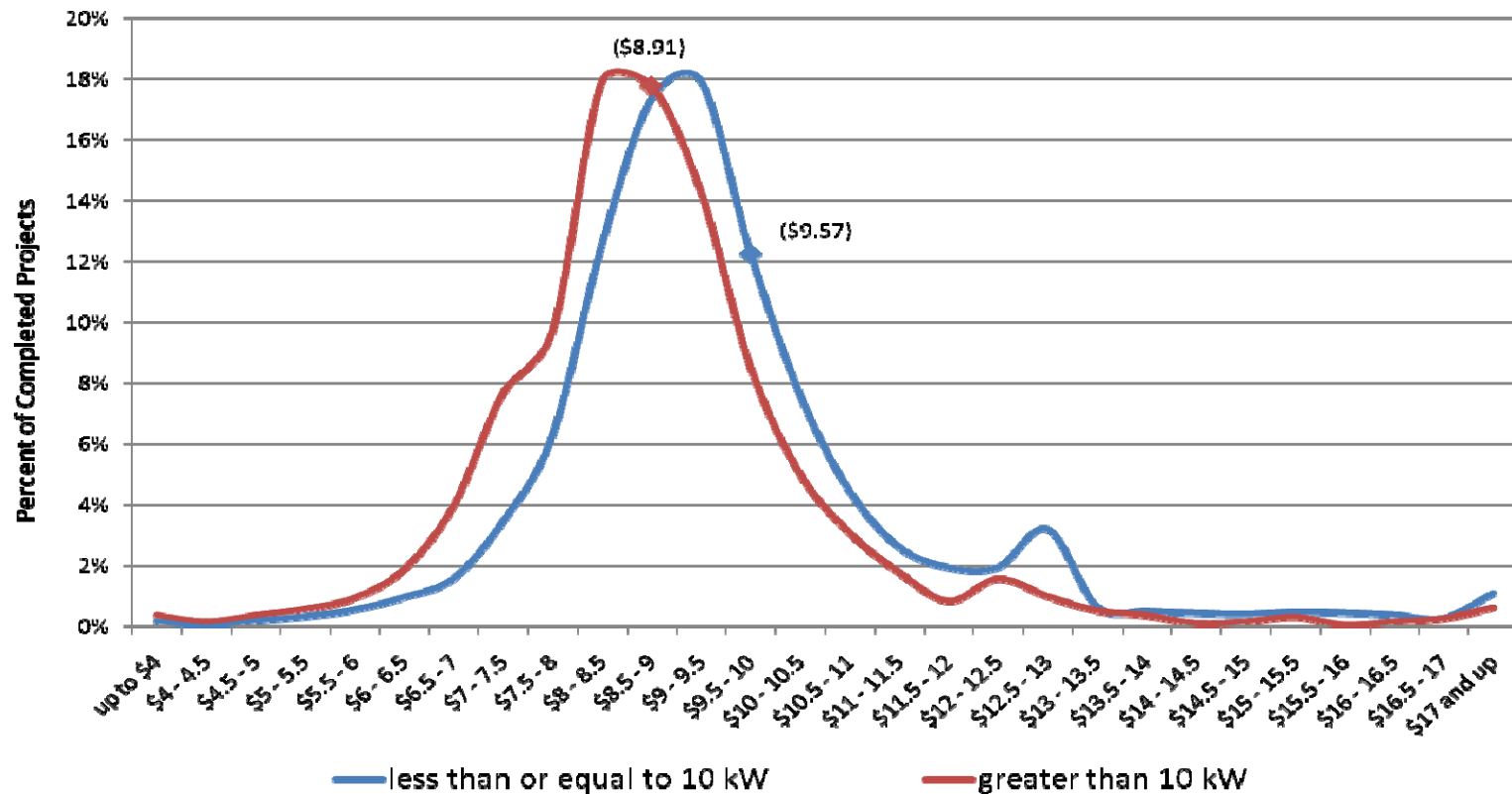


Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Completed Projects \$/Watt Costs



Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Contractors by Completed Projects - 2009 ranked by number of projects

Contractor Company Name	Number of Completed Projects	% of Total	CEC AC MW of Completed Projects	% of Total
1 SolarCity	1,192	9.7%	8.0	4.9%
2 REC Solar, Inc.	1,156	9.4%	9.8	6.0%
3 Akeena Solar, Inc.	622	5.1%	4.0	2.4%
4 Real Goods Solar	608	5.0%	3.4	2.1%
5 Self-Install	254	2.1%	1.5	0.9%
6 SPG Solar, Inc.	206	1.7%	10.2	6.2%
7 Borrego Solar Systems, Inc.	174	1.4%	3.0	1.8%
8 Sun Light and Power	164	1.3%	1.6	1.0%
9 Stout & Burg Electric, Inc.	161	1.3%	.3	0.2%
10 Sungate Energy Solutions, Inc.	150	1.2%	.2	0.2%
11 Independent Energy Solutions	148	1.2%	1.1	0.7%
12 Advanced Solar Electric, Inc	139	1.1%	.7	0.4%
13 Sungevity, Inc.	139	1.1%	.3	0.2%
14 SolarCraft Services, Inc.	138	1.1%	1.0	0.6%
15 Premier Power Renewable Energy	135	1.1%	2.8	1.7%
16 Luminalt Energy Corporation	128	1.0%	.3	0.2%
17 NextEnergy Corp.	123	1.0%	.6	0.4%
18 SunWize Technologies	111	0.9%	1.0	0.6%
19 Solar Technologies	109	0.9%	.5	0.3%
20 Sullivan Solar Power	106	0.9%	.8	0.5%
Total of Top 20 Contractors	5,963	48.6%	50.9	31.2%
Total of All Contractors	12,265		163.4	

Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



California Solar Initiative

Contractors by Completed Project – 2009 Ranked by MW

Contractor Company Name	Number of Completed Projects	% of Total	CEC AC MW of Completed Projects	% of Total
1 SunPower Corporation	54	0.4%	28.9	17.7%
2 SPG Solar, Inc.	206	1.7%	10.2	6.2%
3 REC Solar, Inc.	1,156	9.4%	9.8	6.0%
4 Chevron Energy Solutions	36	0.3%	9.6	5.9%
5 SolarCity	1,192	9.7%	8.0	4.9%
6 Akeena Solar, Inc.	622	5.1%	4.0	2.4%
7 Real Goods Solar	608	5.0%	3.4	2.1%
8 Team-Solar, Inc.	8	0.1%	3.1	1.9%
9 Conergy Projects, Inc.	12	0.1%	3.0	1.8%
10 Borrego Solar Systems, Inc.	174	1.4%	3.0	1.8%
11 BP Solar International, Inc.	5	0.0%	3.0	1.8%
12 Sun Edison LLC	13	0.1%	2.8	1.7%
13 Premier Power Renewable Energy	135	1.1%	2.8	1.7%
14 EI Solutions	7	0.1%	2.4	1.5%
15 Stellar Energy Solutions Inc.	5	0.0%	2.4	1.5%
16 Bleyco Inc	6	0.0%	2.4	1.5%
17 Permacity Construction	35	0.3%	2.3	1.4%
18 Pacific Power Management, LLC	4	0.0%	2.1	1.3%
19 WorldWater	3	0.0%	2.0	1.2%
20 Unlimited Energy, Inc.	54	0.4%	2.0	1.2%
Total of Top 20 Contractors	4,335	35.3%	107.0	65.5%
Total of All Contractors	12,265		163.4	

Source: CaliforniaSolarStatistics.ca.gov, January 20, 2010



PowerClerk Enhancements

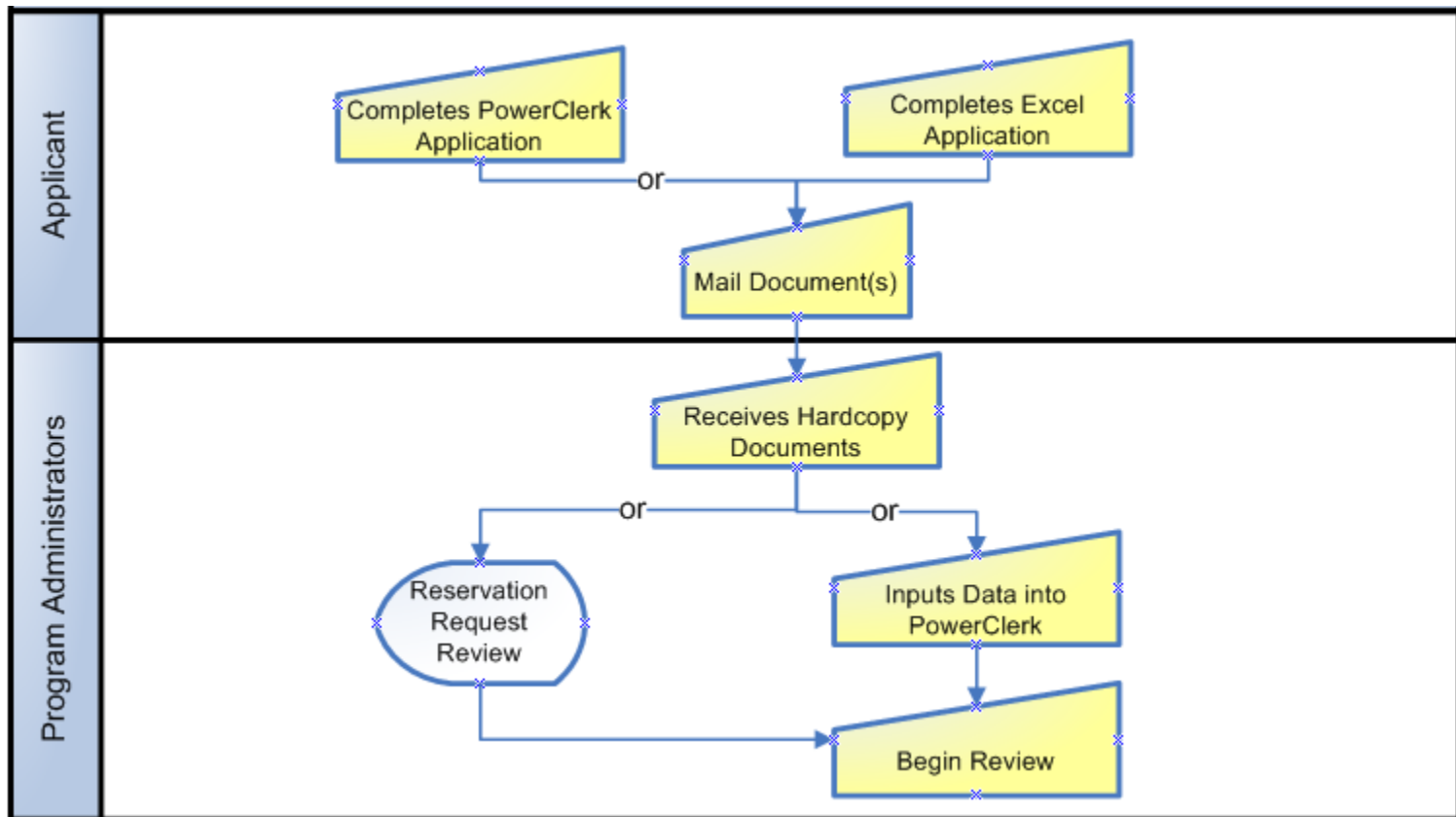
Robert Chan

Pacific Gas & Electric Company



California Solar Initiative

Previous Application Process Flow



California **Solar** Initiative

New PowerClerk Enhancements

1. Document Attachment
 - New Reservation Request Signature Page
2. Data Upload



California **Solar** Initiative

PowerClerk - Document Attachment

Attach PDF's of supporting documents



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PowerClerk - Document Attachment



This checklist must be completed. Please refer to the latest version of the CSI Program Handbook for detailed instructions on eligibility and application requirements. The purpose of this checklist is to assist applicants in the completion of information materials required for review of Reservation Requests and to speed processing of the applications.

Electronic Document Submission: To submit paperwork items electronically, please click the link marked "Add electronic attachment" next to each item you wish to upload. In order for an item to upload successfully, you must select the document you wish to upload using the "Browse" button. Then, click the button marked "Attach" and wait until the phrase "I Will Send via Postal Mail" is replaced with the name of the file uploaded. **Please Note: Only PDF files 5MB or smaller may be uploaded.**

The following documentation is required based on the information you provided

- Completed Reservation Request Form and Program Contract with Signature on CSI Program Contract [Add Attachment](#)
- Copy of Signed Energy Efficiency Disclosure Form (Retrofit Projects Only) [Add Attachment](#)
- Printout of EPBB Tool Calculation (www.csi-epbb.com) [Add Attachment](#)
- Documentation of an Energy Efficiency Audit or Title 24 Report completed within the last three years [Add Attachment](#)
- Copy of executed contract for system purchase and installations, including warranty language [Add Attachment](#)

The following documentation may be required

- Electrical System Sizing Documentation (new/expanded load for systems greater than 5kW) [Add Attachment](#)
- Certification of Tax Exempt Status (Government, Non-Profit and Public Entities only) [Add Attachment](#)
- Copy of Executed Alternative System Ownership Agreement (If System Owner is different from Host Customer) [Add Attachment](#)



California Solar Initiative

PowerClerk - Document Attachment



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The following documentation is required based on the information you provided

- Completed Reservation Request Form and Program Contract with Signature on CSI Program Contract **Attachment: Reservation Request Signature Form.pdf, 123.0 KB** [Add Attachment](#)
- Copy of Signed Energy Efficiency Disclosure Form (Retrofit Projects Only) [Add Attachment](#)
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- Copy of Executed Alternative System Ownership Agreement (If System Owner is different from Host Customer) [Add Attachment](#)



California Solar Initiative

New Reservation Request Signature Page

Host Customer Information

Project Site Information

System Size and Incentive Amount

Program Contract

Signatures

California Solar Initiative Program Reservation Request Signature Form		
<p>Instructions: The California Solar Initiative Program Contract is to be completed and submitted in conjunction with the Reservation Request Application in PowerCheck, the California Solar Initiative Program's online database tool.</p>		
<p>1. CSI Program Participants</p> <p>Host Customer (Customer) Company Name: _____ <small>(Use based on electric bill)</small></p> <p>System Owner (if not Host Customer) Company Name: _____</p> <p>Applicant (if not Host Customer) Company Name: _____</p>		
<p>2. Project Installation Site</p> <p>Address: _____ City, State, Zip: _____</p> <p>Does the Host Customer have legal ownership of the building and/or property where the proposed PV system will be located? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, indicate the building and/or property owner, the contractual relationship with the Host Customer and the contact period: _____</p> <p>Is there any existing generation at this site including wind, hydro, geothermal, or other? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, describe the type of technology for existing generation: _____</p> <p>Has this project site received previous incentives to installed PV generation? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, list the amount: _____</p>		
<p>3. System Size and Requested Incentive</p> <p>CSI System Size (kW): _____ <input type="checkbox"/> 1000W CSI (use site Type and Rate (EP 88 or P8))</p> <p>Requested CSI Incentive: _____ <input type="checkbox"/> EP 88 (or 30 kW) <input type="checkbox"/> P 81e - 30 kW or greater</p> <p>Name of Other Financial Incentives: _____ Amount of Other Incentives: _____</p> <p><small>Note: P 81e will allow a placeholder for the System Size and Incentive amounts in reference to the EP88 Calculator output.</small></p>		
<p>4. CSI Program Contract</p> <p>Agreement by Host Customer and System Owner:</p> <p>The Host Customer and System Owner wish to install the solar energy system described on the Reservation Request Form and receive the benefits of the California Solar Initiative (CSI) Program. In consideration of Host Customer's and System Owner's participation in the CSI Program and the promises set forth below, Host Customer and System Owner agree to the following:</p> <p>CSI Program Handbook Requirements: By execution of this document, System Owner and Host Customer each certify that they have received and read a copy of the CSI Handbook; (2) the Project meets all Program eligibility requirements; and (3) that the System Owner and Host Customer agree to abide by the rules and requirements set forth in the CSI Program Handbook. Examples of CSI Program Handbook requirements that are incorporated herein by this reference are: Program rules that are not set forth in this contract include, but are not limited to, interconnection, interconnection limits, "Net-A-Transmission" laws, and interconnection and distribution.</p> <p>The Host Customer and System Owner are committed to completing this Project, and by signing below, are stating their intent to contract with any individual(s) necessary to complete the Project. The Host Customer is the reservation holder and reserves the right to submit new project specifications, including a new Applicant designation, upon approval from the Project and completion of the Agreement.</p> <p>Signature by Host Customer: The undersigned declares under penalty of perjury under the laws of the State of California that the information provided in the Reservation Request Signature Form is true and correct, the information provided in PowerCheck is true and correct. I certify that the information provided in PowerCheck, the California Solar Initiative Program online database, is true, accurate, and complete. Where an APPLICANT has been separately identified, I certify that I have provided the APPLICANT all required information and authorize the APPLICANT to act on my behalf to enter the information required to create the application in PowerCheck.</p> <p>Signature: _____ System Owner (if not Host Customer) Name Printed: _____ Name Printed: _____ Title: _____ Title: _____ Date: _____ Date: _____</p> <p>Signature: _____ Program Administrator Name Printed: _____ Title: _____ Date: _____</p> <p>Certificate by Applicant: Where an APPLICANT has been separately identified above and in PowerCheck, the California Solar Initiative Program Online Database Tool, the Applicant(s) certify that the information provided in PowerCheck is true, accurate, and complete. The Applicant is not a Party to the contract but certifies under penalty of perjury that the information provided in PowerCheck is true, accurate, and complete.</p> <p>Signature: _____ Applicant (if not Host Customer) Name Printed: _____ Title: _____ Date: _____</p> <p><small>Once complete, please attach this and other required documents to your application in PowerCheck or send it to one of the addresses below.</small></p>		
<p>Regular Mail Address:</p> <p>PO Box 7438 San Francisco, CA 94120</p>	<p>Please Mail To:</p>	<p>Overnight Mail Address:</p> <p>PO Box and Customer Orientation - CSI 240 Stern St., MC 878 San Francisco, CA 94106, P87</p>



California **Solar** Initiative

New Reservation Request Signature Page

Purpose

- Reduce paper
- Provide Solar Contractors a readily available 1 page sheet to bring on customer visit
- Eliminate 2nd visit to customer for Reservation Request Signature

Description

- Captures incentive application information that the Host Customer and System Owner must acknowledge by signing



California Solar Initiative

New Reservation Request Signature Page

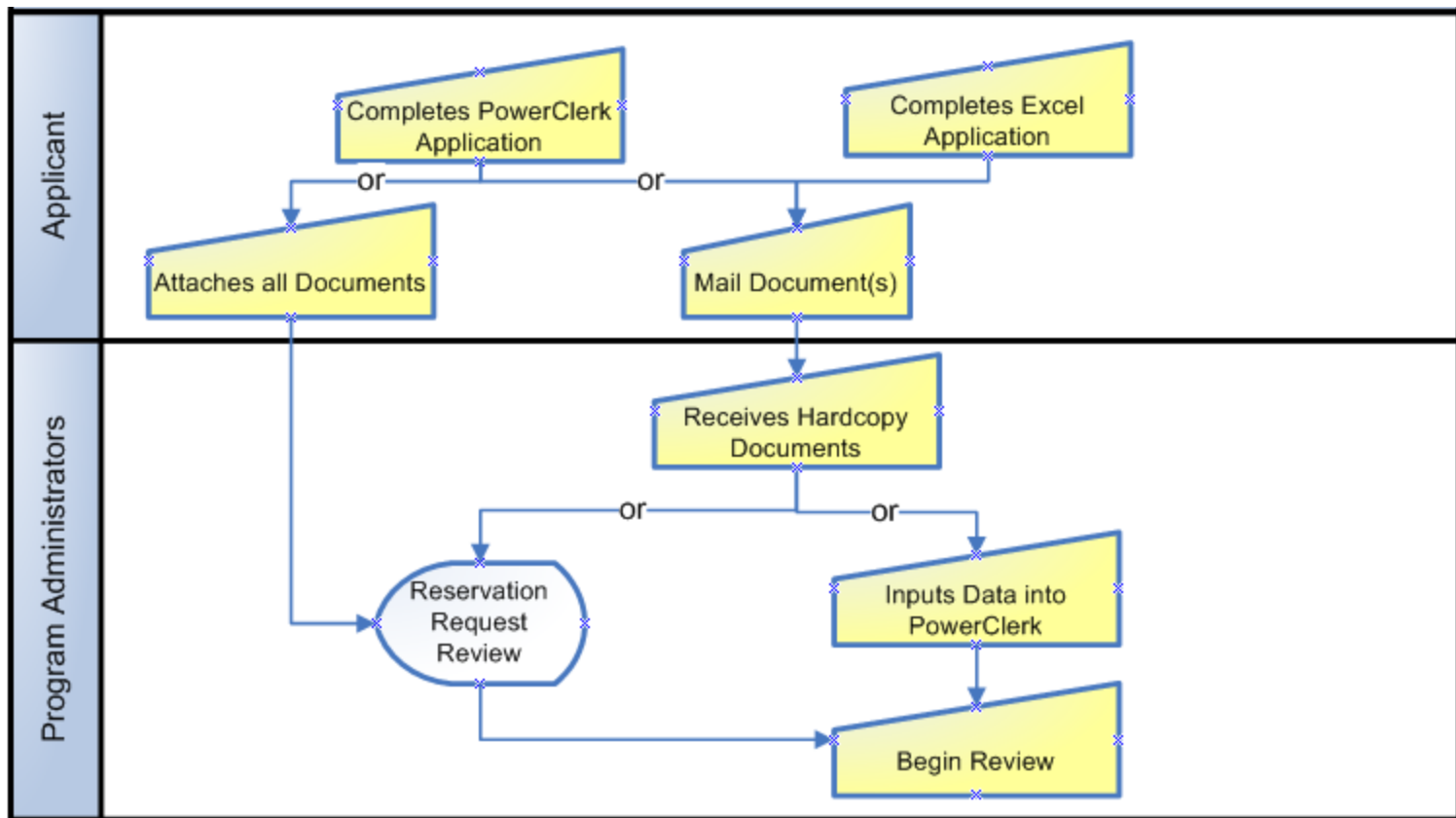
Steps to use it

1. Reservation Request Signature Page is signed
2. PowerClerk Reservation Request Application is completed
3. Reservation Request Signature Page and other required documents is submitted via PowerClerk Electronic Attachment or postal mail



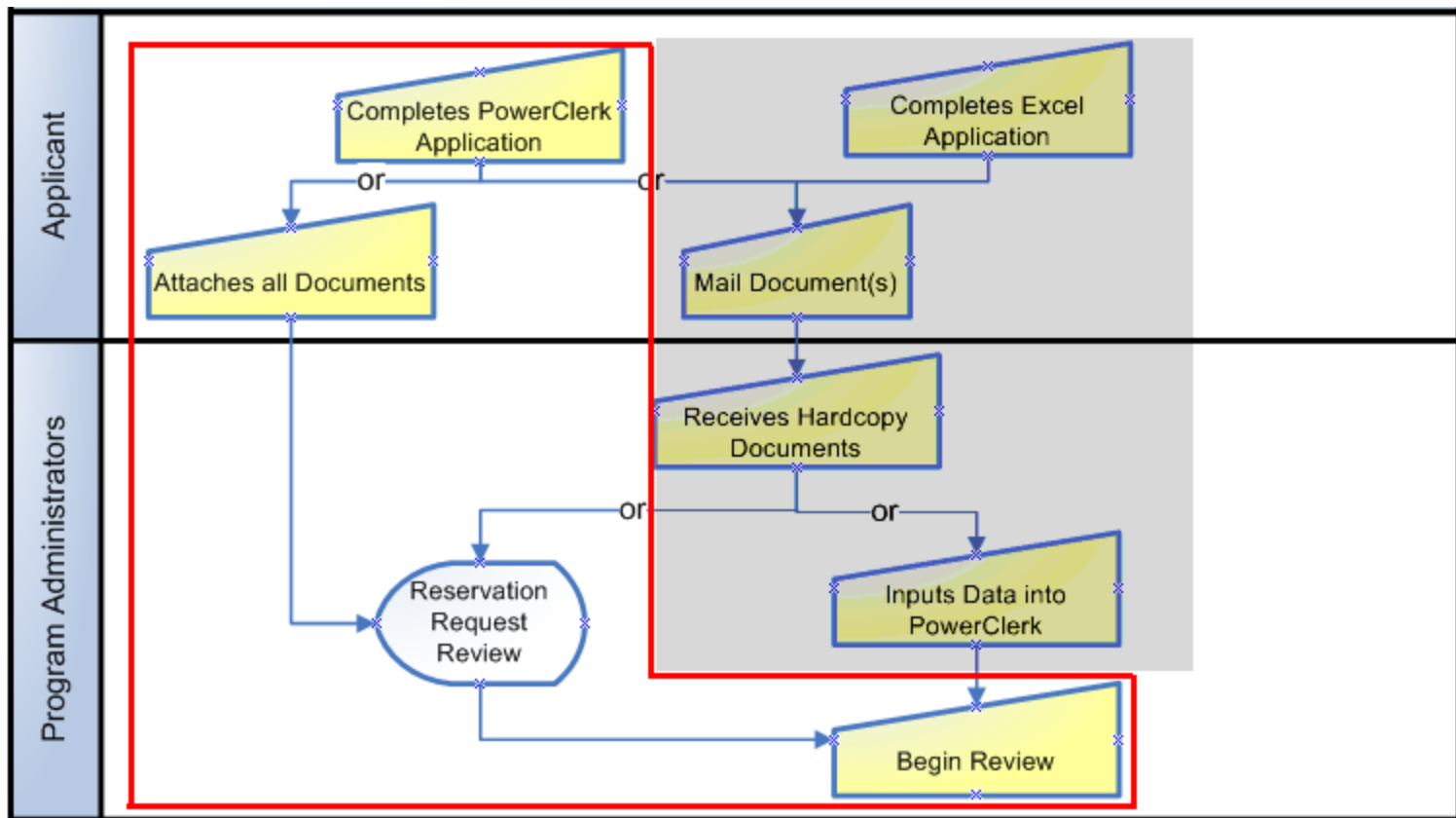
California Solar Initiative

Current Application Process Flow



California Solar Initiative

Current Application Process Flow



California **Solar** Initiative

PowerClerk - Document Attachment

Benefits

- CSI Program Carbon Footprint
 - Fuel Consumption
 - Printed Paper
- Postage Cost
- Labor Cost



California **Solar** Initiative

PowerClerk - Document Attachment

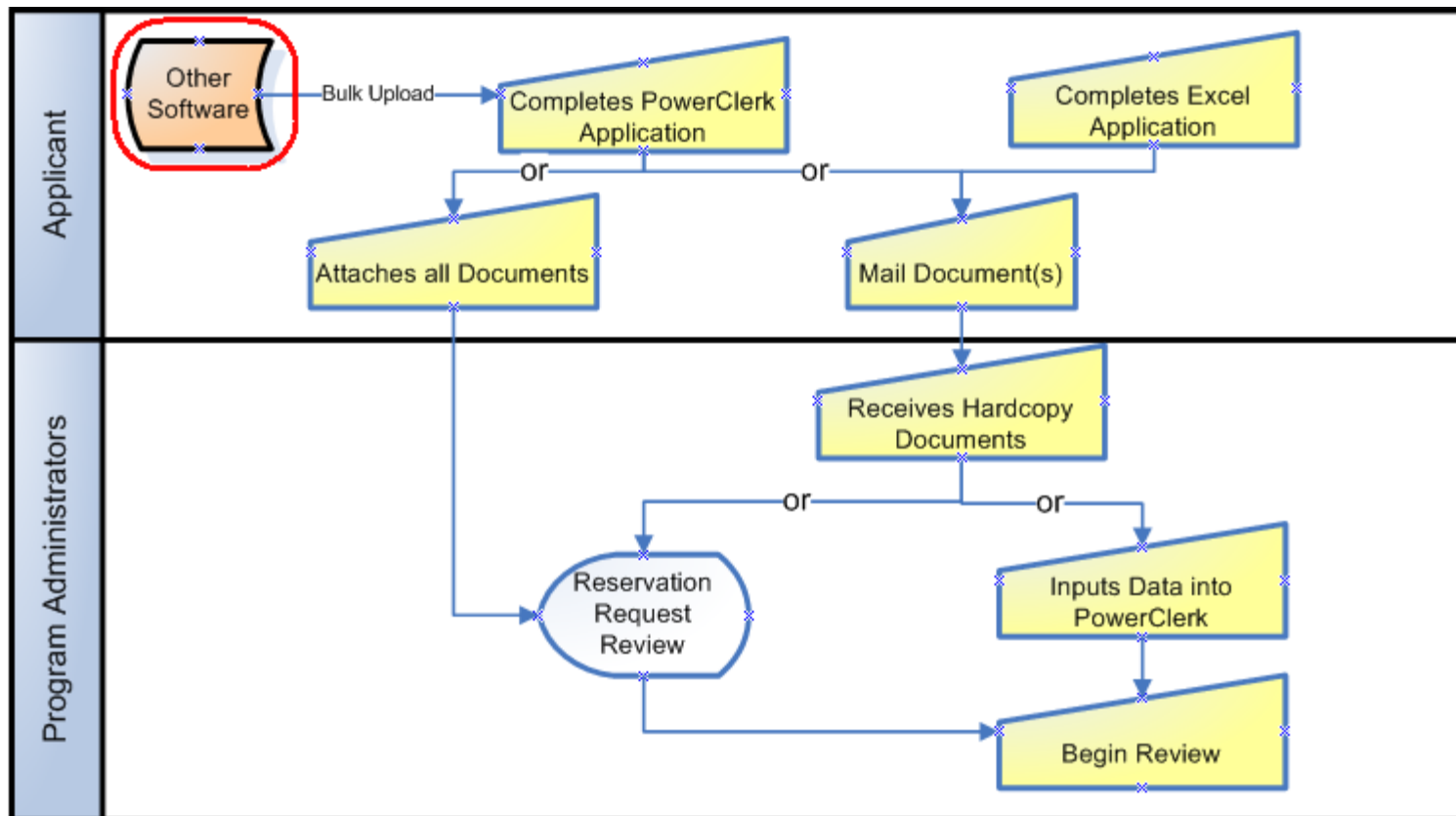
Available at all application milestones
for all projects

- Reservation Request
- Proof of Project Milestone
- Incentive Claim



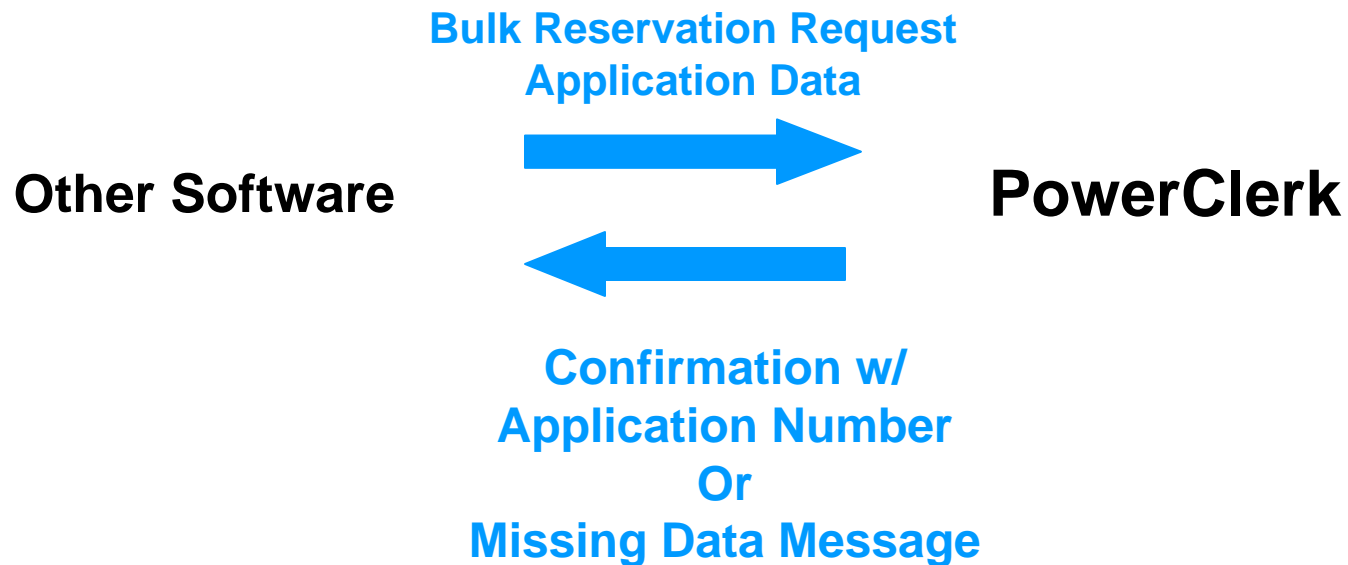
California Solar Initiative

PowerClerk - Data Upload



California Solar Initiative

PowerClerk Data Upload Feature



California **Solar** Initiative

PowerClerk – Data Upload

For details on how to participate
contact your Program Administrator



California Solar Initiative

Document Attachment - Feedback

“For years, we used to make copies for our file and send the originals to CSI. Now, we just scan the originals and submit them. This is saving roughly 20 pieces of paper and approx \$7 in mailing fees, per reservation or claim. It is also saving us the time it used to take for staff to drive and wait in line at the post office. “

- Solar Contractor



California **Solar** Initiative

Document Attachment - Feedback

“Though I attended a webinar and participated in the beta testing, I think the document attachment feature is straightforward enough that someone who hadn’t used it before would be able to complete a submittal with ease.”

- Solar Contractor



California Solar Initiative

PowerClerk – Document Attachment

Number of 100% Electronically Submitted Applications
January 15th to January 26th

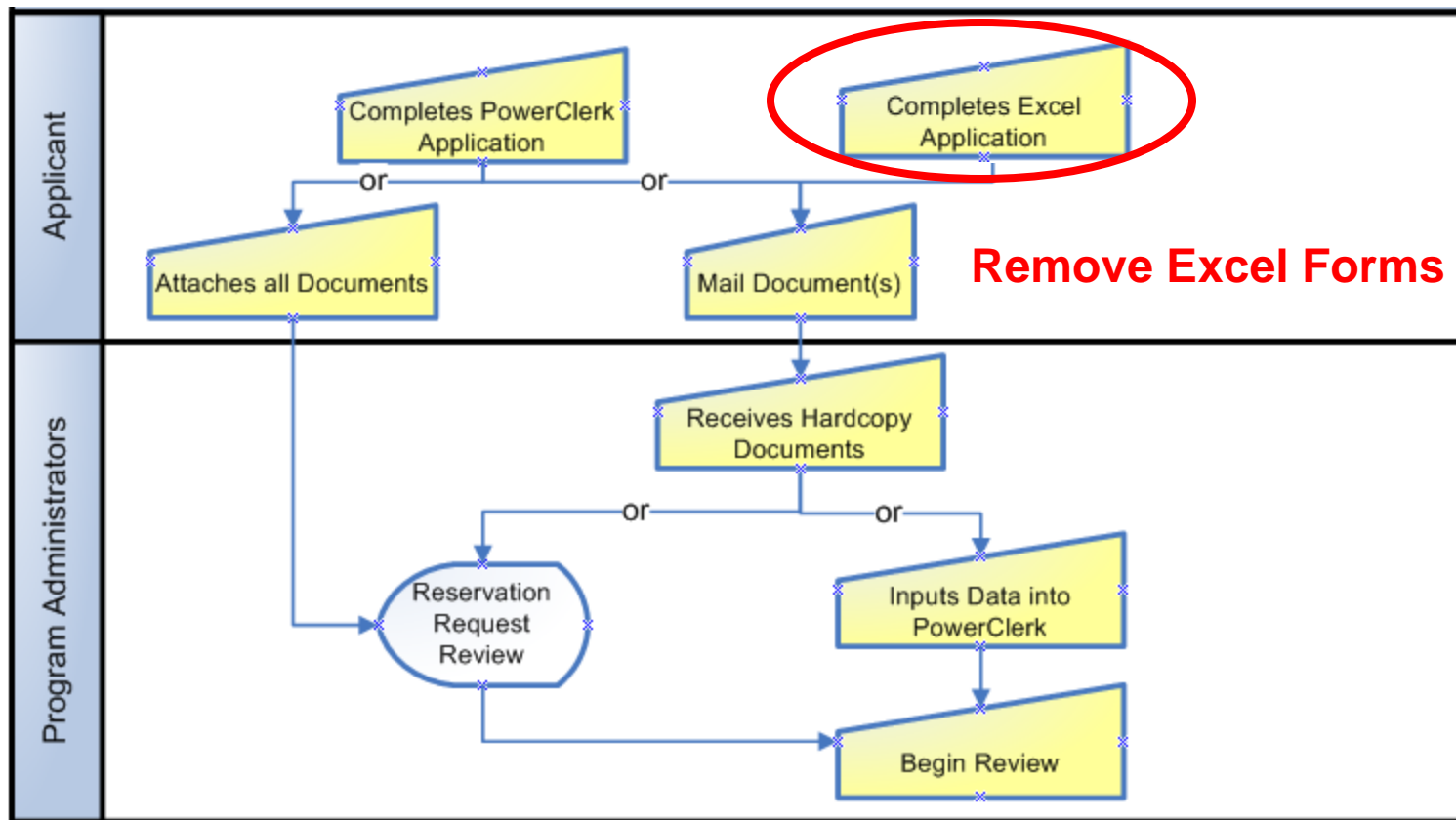
	Reservation Requests	Incentive Claims
PGE	84	101
SCE	31	29
CCSE	16	41

2,308 total attachments



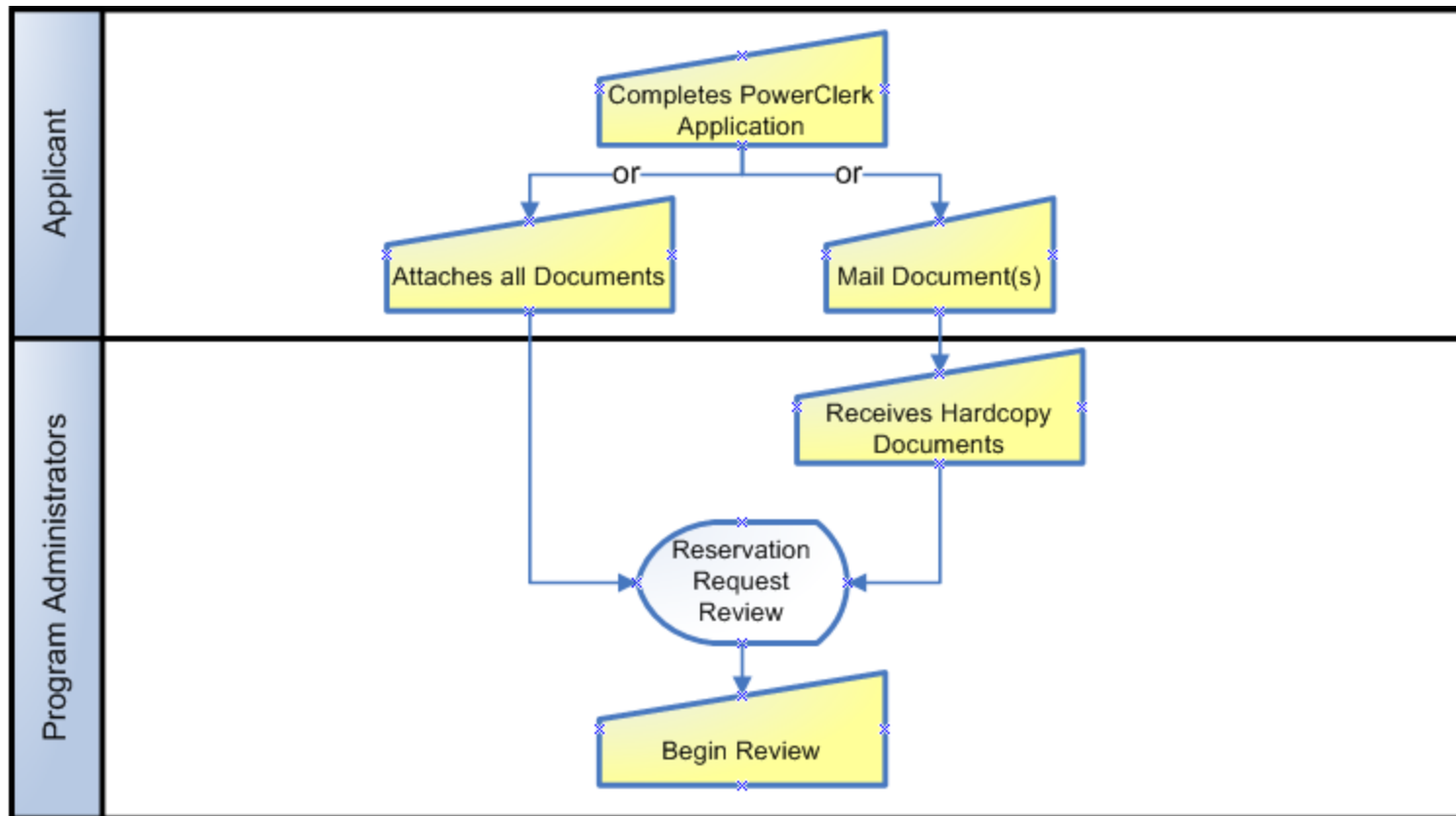
California Solar Initiative

Future Application Process Flow



California Solar Initiative

Future Application Process Flow



Questions or Feedback?



CSI Program Improvements

CSI Advice Letter and Handbook Changes

Ben Airth

California Center for Sustainable Energy



California Solar Initiative

CSI Handbook Changes

CSI Project Review

- CSI Project Review now encompasses the following:
 - Onsite Field Inspections
 - Application Process Review
 - The successful completion of Onsite Field Inspections and Application Process Reviews will determine the frequency of an Applicant's inspection rates
- Onsite Field Inspections
 - Major and Minor Infractions
 - Based on Onsite Field Inspection Parameters and Key Project Components
 - Minor Infractions – Incentive difference between 5% - 10%
 - Major Infractions – Incentive difference greater than 10%
- Application Process Review
 - Includes a review of the following:
 - Review of all project application documentation
 - Review of interconnection information
 - Review of any other information about the Applicant's project that has been received by the Program Administrators
 - Review of PBI payment documentation



California Solar Initiative

- Failures – based on Onsite Field Inspection or Application Process Review
 - A few reasons for failures based on the Onsite Field Inspection
 - One Major Infraction
 - 5 Minor Infractions
 - Failure to attend CSI related inspection training
 - A few reasons for failures based on the Application Process Review
 - Not disclosing the actual contractor performing work on Installation Contract
 - Neglecting to provide required documentation on a consistent basis, such as Host Customer contact information
 - Neglecting to respond to requested information within the 20 day time period on a consistent basis



California Solar Initiative

- New Fraud Language
 - Broadens the scope of what can be considered fraud
- Determination of Fraud
 - Gross negligence
 - Intentional submission of inaccurate information to collect more incentive dollars
 - Misrepresentation of:
 - System performance
 - System cost
 - System components
 - Misrepresentation to:
 - CSI Program
 - The utilities
 - Host Customer
 - System Owner
 - Any local, state or federal government authority



California **Solar** Initiative

- Fraud Sanctions:
 - Withholding of any or all incentive payments
 - A determination of fraud on a project from one entity may result in sanctions on any pending or active projects for that entity
 - Barring of future participation in the CSI Program for a specified period of time or on a permanent basis



California **Solar** Initiative

Other CSI Handbook Changes

- 1-Step Application Process
- Host Customer Email at Reservation is now mandatory
- Three 180 day Extensions for:
 - University of California Schools
 - California State Schools
- Add language to the CSI Contract that ties the transfer of PMRS data to the Host Customer's agreement with the PMRS Provider



California **Solar** Initiative

Thank you!

Benjamin Airth

CSI Residential Program Manager

California Center for Sustainable
Energy

Benjamin.airth@energycenter.org

858-244-1194



Marketing and Outreach in 2010

Lisa Shell

Pacific Gas & Electric Company



California **Solar** Initiative

Marketing and Outreach in 2010

Through both collaborative and individual Program Administrator efforts, utilize various marketing and outreach channels to:

- Promote and educate customers on the program
- Facilitate reaching the program's goal of creating a sustainable solar industry and reducing barriers to increased adoption



California **Solar** Initiative

The Team

- SCE: Priscilla Ortiz, Jeff Lidskin, Vinnie Tucker
- CCSE: Kim Sykes, Siobhan Foley, Cindy Zulick, Agnes Stupak
- PG&E: Lisa Shell, Jessica Tellez
- CPUC Energy Division: Amy Reardon



California Solar Initiative

Collaborative Tactics and Plans in 2010

- Promote all of the programs under the Go Solar, California! Umbrella
- Encourage energy efficiency and other integration wherever feasible
- Leverage each others' individual experiences
- Confirmed collaborations for 2010
 - Conferences
 - Go Solar, California! Newsletter
 - Go Solar, California! Web site



California **Solar** Initiative

Individual Efforts in 2010

- Market and customer specific
- Hinge on program status and individual challenges and strengths in each area



California **Solar** Initiative

Individual Plans in 2010: SCE

Messaging:

- Emphasize environmental benefits of using solar energy
- Educate on available incentives and tax credits
- Encourage customers to “act now” to take advantage of higher incentive levels



California **Solar** Initiative

Individual Plans in 2010: SCE

A Sample of Activities:

- Bill “onsert” messages
- Solar Energy Management Success Stories
- Solar “partner” outreach communication & education Tradeshows
 - World Ag Expo (Tulare, Feb. 9-11)
 - Rahus Solar Forum (Pasadena, Feb. 17)
 - SolarTech Summit (San Ramon, April 21-22)
- Training
 - Homeowner, Contractor and Commercial Classes
 - Solar Forums



California **Solar** Initiative

Individual Plans in 2010: CCSE

A Sample of 2010 Activities:

- Continued collaboration and production of the CSI monthly newsletter
- Increased community outreach in support of energy efficiency and municipal financing models
- Decreased traditional advertising in favor of high ROI advertising such as interactive web-based radio campaigns, digital direct mail and newspaper advertising



California **Solar** Initiative

Individual Plans in 2010: PG&E

Goals:

- Create an educated base of consumers
- “Cross the chasm” from early enthusiasts to mainstream adopters
- Support existing statewide marketing, education and outreach activities underway



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Individual Plans in 2010: PG&E

Classes

- Financial Analysis
- Solar Basics
- Solar Champion
- Solar System-life Maintenance
- Solar and EE

Outreach

Strategic sponsorships and community partnerships



California **Solar** Initiative

Individual Plans in 2010: PG&E

Collateral

- Bid Analysis Form
- Energy Efficiency and Solar Collateral
- Financial Analysis Guide

Web

- Banner Ads
- Education Modules



California **Solar** Initiative

Thank You

Lisa Shell

415.973.0305

L1SB@pge.com



Questions or Feedback?



Low Income Solar Update

Single Affordable Solar Housing (SASH)

Stan Greschner
Grid Alternatives



California **Solar** Initiative

SASH Program

GRID Alternatives

- SASH Program Manager
- A non-profit solar contractor

Presenter: Stan Greschner,
Director – SASH Program

Phone: 510-652-4730 ext. 322

Email: SASH@gridalternatives.org or sgreschner@gridalternatives.org



California Solar Initiative

SASH Program



GRID Alternatives

SASH Applications by Status and Service Territory (2009)

Application Status	Number of Applications				Total kW, (CEC-AC)	Total Incentive
	PG&E	SCE	SDG&E	Totals		
STEP 1: Applications under review	53	32	9	94	N/A*	N/A*
STEP 2: Confirmed Applications/Reservations	16	3	2	21	46.92	\$312,009
STEP 3: Completed/Installed	39	17	18	74	162.52	\$1,059,455
All Confirmed Projects	55	20	20	95	209	\$1,371,464
All Active Projects	108	52	29	189	209	\$1,371,464



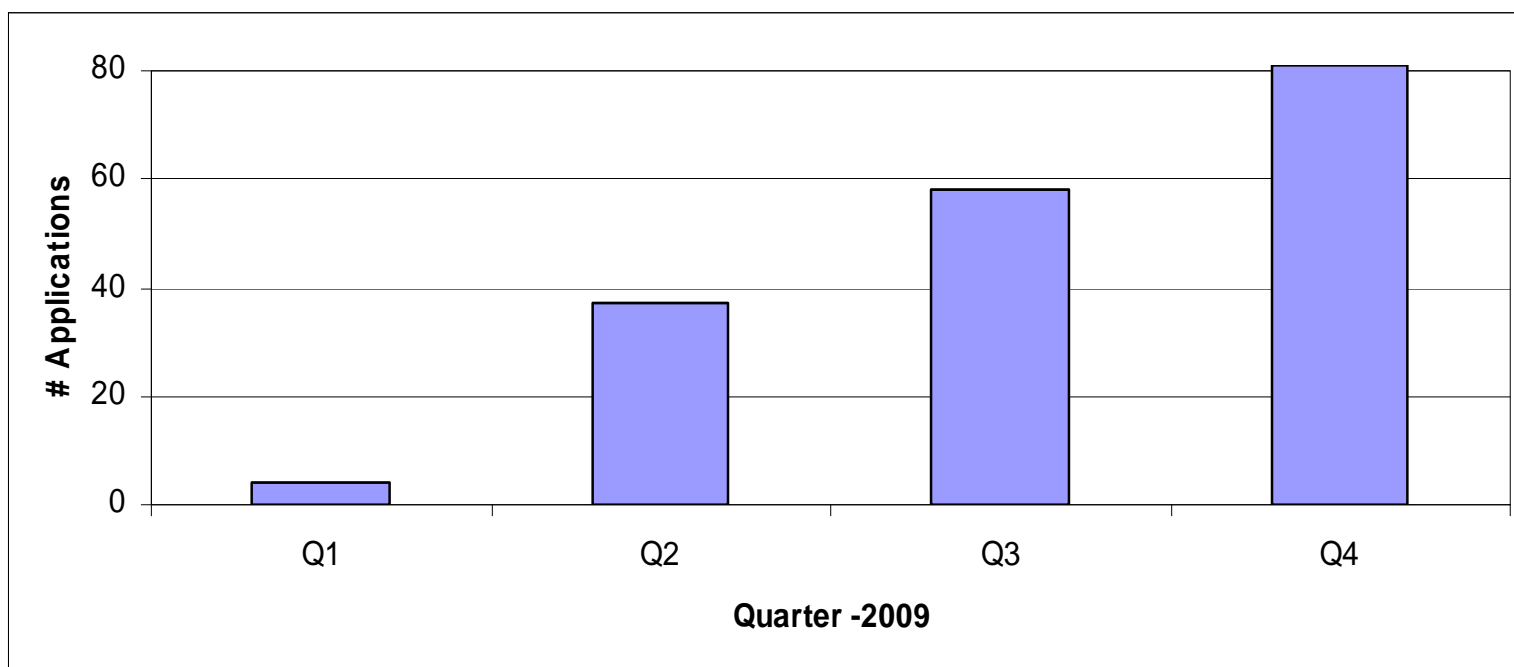
California Solar Initiative

SASH Program

SASH Applications per Quarter (2009)



GRID Alternatives



California **Solar** Initiative

SASH Program

A Comprehensive Solar Program



Volunteers and Workforce Development participation

- 1,500 volunteers participated on SASH installs in 2009
- 11,000 volunteer-hours dedicated to SASH installs
- 2,200 job trainee-hours dedicated to SASH installs

Energy Efficiency

- >120 applicants signed up for LIEE services



California **Solar** Initiative

SASH Program

Outreach



GRID Alternatives

- GRID has 4 regional offices serving all IOU territories (Bay area, Greater L.A., Fresno, San Diego)
- All cities in SCE and SDG&E territories contacted re: their affordable housing developments. 25% of cities in PG&E territory contacted.
- >4,000 addresses identified as P.U.Code 2852-compliant
- Marketing conducted in 6 languages



California **Solar** Initiative

SASH Program

Sub-Contractor Partnership Program



- Allows solar contractors to participate in SASH Program
- SPP Application – available on GRID’s website (www.gridalternatives.org/sash)
- SPP Webinar – anticipated for mid-late Q1 2010



California **Solar** Initiative

SASH Program Recognition



CBS 5: Jefferson Award Winner: Leah Pimentel (GRID Outreach Coordinator – Bay Area office);
"Solar Girl" Helps Families Go Green For Free (Jan. 6, 2010)



California Solar Initiative

SASH Program Recognition



Porterville Reporter:

Teachers team up with non-profit to install solar panels (Dec 8, 2009)

“...a number of Porterville families had their traditional energy systems replaced by rooftop solar panels this week. The systems are worth thousands, but cost them nothing.”

“...provided an opportunity for four Porterville High School teachers to learn about solar energy installation - something they will pass to PHS students, allowing them to gain entry into the growing alternative energy field.”



Low Income Solar Update

Multifamily Affordable Solar Housing

Aileen Lagbao

Southern California Edison



California **Solar** Initiative

MASH Progress to Date

- The MASH program began accepting applications for Track 1 incentives in February 2009 and Track 2 applications in July 2009.
- SCE, PG&E and CCSE are fully subscribed in Track 1 and started a waitlist

Summary

- Total MASH applications received: **384**
 - Total Track 1 applications reserved: **179**
 - Total Track 1 applications paid: **2**
 - Total Track 2 applications reserved: **1**
- PG&E, SCE and SDG&E offered a virtual net metering tariff option in June 2009



California Solar Initiative

MASH Incentive Budget

- PG&E and CCSE received applications that exceeded funds available in their respective Track 1 budgets for 2009, and both created a wait list.
 - PG&E has a waitlist of 63 projects totaling \$15.2M and no longer accepting new applications
 - CCSE has a waitlist of 1 project totaling \$137K
- SCE received applications for over 90% of its Track 1 budget. As of January 8, 2010 SCE is also fully subscribed and created a waitlist.
- Currently SCE has 100% of its Track 2 budget available, PG&E has 90% and CCSE has 80%.
 - SCE, PG&E and CCSE are accepting Track 2 applications through March 31, 2010



California Solar Initiative

MASH Applications by Month

Program Inception – December 31, 2009

Month	Feb	Mar	Apr	May	Jun	Jul ¹¹	Aug ¹²	Sep ¹³	Oct ¹⁴	Nov ¹⁵	Dec ¹⁶	Total
PG&E	13	2	0	1	29	5	22	52	80	21	15	240
SCE	3	3	1	0	0	0	0	11	12	32	59	121
CCSE	0	0	0	1	0	0	0	3	11	8	0	23
Total	16	5	1	2	29	5	22	66	103	61	74	384

Notes:

¹¹ Includes 1 PG&E Track 2 application

¹² Includes 1 PG&E Track 2 application

¹³ Includes 22 PG&E Track 2 applications, 5 SCE Track 2 Applications & 2 CCSE includes Track 2 Applications

¹⁴ Includes 28 PG&E waitlisted projects

¹⁵ All PG&E projects are waitlisted

¹⁶ All PG&E projects are waitlisted



California Solar Initiative

MASH Applications by Status - Summary

Summary Data (Track 1)				
	CCSE	PG&E	SCE	Total
# Projects reserved	5	162	12	179
# Projects Under Review	16	3	107	125
Total Reserved Capacity	0.392 MW	8.832 MW	1.025 MW	10.297 MW
Total Under Review Capacity ^{1/18}	1.672 MW	0.401 MW	8.247 MW	10.273 MW
Total Reserved Incentives (\$)	\$ 1,261,278	\$ 31,005,861	\$ 3,794,340	\$ 36,217,889
Total Under Review Incentives (\$)	\$ 6,498,660	\$ 1,324,083	\$ 28,632,454	\$ 36, 298,787
# Projects Paid	0	0	2	2
Total Incentives Paid (\$)	\$ 0	\$ 0	\$ 208,339	\$ 208,339
# Projects Waitlisted	1	63	0	64
Total Waitlisted Capacity	0.042 MW	4.189 MW	0	4.231 MW
Total Waitlisted Incentives (\$)	\$ 137,050	\$ 14,206,027	\$ 0	\$ 14,343,077
Average Project Costs (\$/Watt)	\$ 8.67/Watt	\$ 8.75/Watt	\$ 8.04/Watt ¹⁹	N/A
Total Master-Metered (Reserved)	0	8	4	12
Total Individually Metered (Reserved)	5	154	8	167



California **Solar** Initiative

Contact Information

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CCSE Program Manager

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Legislative and NEM Update

Molly Sterkel

California Public Utilities Commission



California Solar Initiative

AB 920: Background

- AB 920 sponsored by Assemblyman Jared Huffman and signed into law by Governor Schwarzenegger on October 11, 2009
- Requires utilities to pay NEM customers for electricity produced in excess of on-site load over a 12-month period
- Utilities retain all renewable energy credits (RECs) associated with surplus electricity purchased from NEM customers



California **Solar** Initiative

AB 920: What's required

- Utilities required to notify customers by January 31, 2010 that they are eligible to receive compensation
- PUC required to set the per-kWh compensation rate through a rate-setting proceeding by January 1, 2011.
 - AB 920 requires the rate to leave other non-NEM customers indifferent (i.e., the rate cannot be a subsidy payment).



California **Solar** Initiative

AB 920: Where we are now

- On January 15, the CPUC issued a ruling directing the utilities to file applications by March 1, 2010 proposing a rate for net surplus compensation
 - The applications will include an explanation of how the rate was calculated and will answer questions about how the policy will be implemented.
- The utilities are currently notifying their customers that they are eligible to receive net surplus compensation



California **Solar** Initiative

AB 920: What happens next

- After the utility applications have been submitted, they will be consolidated into one proceeding
 - The public will be able to follow the proceeding by signing up for the service list on the CPUC website
- Parties will have the opportunity to protest the applications within 30 days of the date the applications are filed
- The ALJ will most likely hold a pre-hearing conference to discuss with parties the scope of the proceeding, need for hearings and other relevant issues.



California **Solar** Initiative

AB 920: What happens next

- Parties will have the opportunity to submit testimony, entering into the record facts that support their positions
- If there are issues of factual dispute, hearings may be held in which expert witnesses are cross-examined under oath
- Parties submit written briefs arguing for their positions
- The ALJ writes a Proposed Decision
- Parties have the opportunity to comment on the Proposed Decision prior to a Commission vote
- Commission votes on Proposed Decision
- Utilities Implement the Commission Decision, and Net Surplus Compensation is available to IOU customers



Questions or Feedback?



Solar, Energy Efficiency and Integration

CaliforniaFIRST

Terry Clapham

California Center for Sustainable Energy



California **Solar** Initiative

PACE: Energy Efficiency (EE) & Renewable Energy (RE) Finance Programs



Presented by Terry Clapham
California Center for Sustainable Energy
terry.clapham@energycenter.org



California **Solar** Initiative

Property Assessed Clean Energy

- Financing for EE, RE & H2O conservation
- Loan is secured by the property
- Payments made through property taxes
- Obligation stays with property
- Terms up to 20 years
- Legal authority via Mello Roos or AB 811



California **Solar** Initiative

Legislative Authorities

- **Mello Roos – 1982**
 - The Act enabled “Community Facilities Districts” (CFDs) to be established by local government agencies as a means of obtaining community funding.
- **AB811 – 2008**
 - Enables cities and counties to create Property Assessed Clean energy (PACE) Programs
 - Authorizes the creation of an assessment districts. Property owners can finance 100% of EE and RE) Improvements
 - Repay financed amount on property tax bill
- **AB474 allows for water conservation measures**



California **Solar** Initiative

Types of CA PACE Programs

- Custom
 - Custom designed to local government needs
- Generic – CaliforniaFIRST
 - Basic Package Under JPA
 - Economies of Scale
 - Uniformity for Contractors



California **Solar** Initiative

Custom CA PACE Programs

- **Current Custom Programs**
 - Sonoma County
 - Berkeley
 - Palm Desert
- **New Programs**
 - San Francisco
 - Los Angeles
 - San Diego



California **Solar** Initiative

CaliforniaFIRST

- **California Statewide Communities Development Authority (CSCDA) “California Communities” - Sponsored**
 - Joint powers authority (JPA) sponsored by the league of California Cities and the California State Association of Counties
 - Formed in 1988 with 500 members cities, counties, and special districts
- **CaliforniaFIRST is a PACE program available to counties and cities within participating counties**
- **Program is set to launch set to launch in June 2010**



California **Solar** Initiative

CaliforniaFIRST Program Team

- Renewable Funding – Administration/Finance
- Royal Bank of Canada Capital Markets – Finance
- California Center for Sustainable Energy (CCSE) & EcoMotion – Program Administration
- Legal Counsel: Jones Hall and Orrick, Herrington & Sutcliffe LLP



California **Solar** Initiative

CaliforniaFIRST: Benefits

- **Economies of Scale**
 - Reduce resource burden on participating counties and cities
 - Reduce costs to property owners
- **Standard Program Platform**
 - Uniformity for Contractors



California Solar Initiative

Examples of Authorized Measures

**EE measures are required before any RE measures are installed*



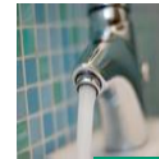
Energy Efficiency (EE)

- Air Sealing & Ventilation
- Insulation
- Space Heating & Cooling
- Water Heating
- Lighting
- Windows, Doors & Skylights
- Reflective Roof
- Pool Equipment



Renewable Energy (RE)

- Solar PV
- Solar Thermal
- Wind
- Fuel Cell



Water Efficiency

- Fixtures
- Landscaping
- Other



California **Solar** Initiative

CA1st Property Owner Qualification

Property Ownership

- All property owners listed on the title must sign and agree to terms.
- Mortgage lender must at minimum be notified of program participation

Property-Based Debt

- All property taxes must be current and made on time for the last 3 years.
- Cannot have any existing mechanic or other involuntary liens > \$500.
- Cannot have any mortgage defaults or foreclosure filings within the last 5 years.

Underwriting Ratios

- Project to Value ratio is 10:1
- Private loan to value ratio must be at least 80%



California **Solar** Initiative

CaliforniaFIRST Cities & Counties

The following is a list of counties and cities that have passed the resolution to join CaliforniaFIRST:

Alameda County

- o Albany
- o Berkeley
- o Fremont
- o Hayward
- o Oakland
- o Piedmont

Fresno County

- o Clovis
- o Fresno
- o Kerman
- o Kingsburg
- o San Joaquin
- o Selma

Kern County

- o Taft

Monterey County

- o Dely Rey Oaks
- o Gonzales
- o Greenfield
- o King City
- o Marina

- o Pacific Grove

- o Salinas

- o Soledad

Sacramento County

- o Citrus Heights

- o Elk Grove

- o Folsom

- o Galt

- o Rancho Cordova

San Benito County

San Diego County

- o Chula Vista

- o Oceanside

- o Poway

- o Santee

San Luis Obispo County

- o Atascadero

- o Grover Beach

- o Morro Bay

- o Paso Robles

- o San Luis Obispo

San Mateo County

- o Belmont

- o Daly City

- o Hillsborough

- o Redwood City

- o San Mateo

- o South San Francisco

Santa Clara County

- o Campbell

- o Gilroy

- o Los Altos

- o Los Altos Hills

- o Los Gatos

- o Milpitas

- o Monte Sereno

- o Morgan Hill

- o Mountain View

- o Palo Alto

- o Saratoga

- o Sunnyvale

Santa Cruz County

- o Capitola

- o Santa Cruz

- o Scott's Valley

Solano County

- o Benicia

- o Dixon

- o Fairfield

Ventura County

- o Camarillo

- o Fillmore

- o Moorpark

- o Ojai

- o Oxnard

- o Port Hueneme

- o Simi Valley

- o Thousand Oaks

- o Ventura

Yolo County

- o Davis

California **Solar** Initiative

CSI/Solar Industry Impact

- EE Emphasis (Reduce Before You Produce)
- Leverages CSI for Program Admin When PV Involved
- Longer Cash Flow Period for Contractors (Need for Interim Financing)
- Smaller PV Projects
- Provide Stimulus in Later CSI Steps



Solar, Energy Efficiency and Integration

Statewide IDSM Efforts

Michelle Thomas – Southern California Edison

Elizabeth Lowe – Pacific Gas & Electric Company



California Solar Initiative

Integrated Demand Side Management (“IDSM”)

The CPUC directed the utilities in 2007 to integrate, coordinate and innovate in order to provide more comprehensive solutions to customers

Energy efficiency, energy conservation, demand response, advance metering, and distributed generation technologies are offered as elements of an integrated solution that supports energy and carbon reduction goals immediately, and eventually water and other resource conservation goals in the future.

-IDSM Vision: California Energy Efficiency Strategic Plan



California **Solar** Initiative

Strategies for IDSM

1. Carry out integrated marketing of DSM opportunities across all customer classes.
2. Conduct integrated DSM delivery pilots in the Residential, Commercial, Industrial and Agricultural sectors.
3. Develop integrated DSM programs across resources, including energy, water, and transportation
4. Promote development and support of new technologies that enable or facilitate DSM Coordination and Integration



California Solar Initiative

IDSMS – Statewide Coordination

- Rulings guiding development of 2010-2012 EE portfolios directed IOUs to work collaboratively “to better coordinate across the entire range of DSM programs so as to leverage opportunities to maximize energy savings”
- 2010-2012 Energy Efficiency Applications included IDSMS Program Plans which identified key integration activities coordinated statewide
- Representatives from all the IOUs, and Energy Division’s IDSMS working group, continue to work together on the ongoing development of all IDSMS statewide plans



California Solar Initiative

IDSMS Advice Letter

- Developed Jointly by the IOUs and filed January 22, 2010
- Establishes a Statewide IDSM Task Force
 - Key utility representatives from EE/LIEE, DG/CSI, & DR;
 - CPUC's Energy Division internal IDSM working group
 - Expert external stakeholders as needed
- IDSM Task Force will:
 - Review Cost effectiveness of Integrated Projects
 - Establish an EM&V methodology for Integrated Projects
 - Track integrated Activities, Pilots, Projects and Programs
 - Work with the SW M&EO effort
 - Coordinate with Internal IOU Integrated Teams
- Responds to CPUC request to develop a standardized cross-utility integrated audit tool (PEAT)



California **Solar** Initiative

Progressive Energy Audit Tool

- **“Appendix C” Characteristics**
 - Verifiable
 - User-friendly
 - Accessible
 - Compatible with CSI program – Shall combine energy audit findings with appropriate solar calculator results into a report on energy improvement opportunities, allowing customers to understand the relative costs of pursuing the full range of DSM options
 - Site-Specific
 - Comprehensive



California Solar Initiative

CSI Audit Report Requirements

- Current load and consumption (bill data)
- Estimated size, output, and cost of any proposed DG system
- Comprehensive list of site-applicable DSM measures
- Estimated cost and annual energy savings of each EE measure
- Payback analysis for each EE and solar measure
- A list of building energy use assessment services and tools available for use by the building owner for further investigation
- Affirmation with signature that customer has read and understands the information. This affirmation must be available to CSI Program Administrators and other DSM programs.



California Solar Initiative

Next Steps to Successful Integration

The California Utilities are looking to partner with vendors and contractors to help integrate projects

Equipment vendors and installers can help identify opportunities and bring more value to customers by offering comprehensive offerings

The utilities are here to help:

- *Education and training – on how comprehensive solutions that include energy efficiency, demand response and solar can bring the optimal results*
- *Technical support – on a variety of IDSM installations*
- *Audit support – On-site Integrated Audits for large customers and other tools for smaller customers – to identify the scope of opportunities*
- *Incentives are available – for energy efficiency, demand response and solar installations*



CSI Thermal Update

Nick Stimmel

Pacific Gas & Electric Company



California **Solar** Initiative

Background

- AB 1470 signed by the Governor in 2007 authorizing a \$250 Million incentive program
- SWH Pilot Program created for SDG&E territory began on July 2, 2007
- CSI-Thermal Staff Proposal released by the CPUC on July 15, 2009
- CSI-Thermal Proposed Decision released on November 5, 2009
- CSI-Thermal Final Decision Released on January 21, 2010



California **Solar** Initiative

Customer Eligibility

- **Retail Gas** water heating Customers of: PG&E, SDG&E, or SoCalGas
 - Retrofit and New Construction
- **Retail Electric** water heating Customers of: PG&E, SDG&E, or SoCal Edison
 - Retrofit only
- **Program Administrators:** PG&E, SoCalGas, SoCal Edison, CCSE (for SDG&E territory)



California **Solar** Initiative

Technology Eligibility

- Single Family Homes: SRCC-OG 300*
- Commercial/Multifamily: SRCC-OG 100*
- Components must be new
- Meters are required for systems displacing over 30 kWth
- Non-SWH Solar Thermal Technologies may be eligible at a later date
- Pool/Spa Heating is not eligible

*SRCC: Solar Rating and Certification Corporation
<http://www.solar-rating.org/>



California **Solar** Initiative

CSI Thermal Important Dates

- May 1st, 2010 Begin accepting single-family residential applications*
- June 1st, 2010 Begin accepting commercial/multifamily applications*
- Workshops: Last week of February 2010 (Tentatively)
- Program ends December 31st, 2017

*Projects installed and issued a building permit after July 15, 2009 are eligible



California **Solar** Initiative

Incentive Process

- Incentives based on estimated first year therm or kWh displacements of the system
- 4 Step declining incentive structure
- Steps decline as we receive more projects and step budget allocations are used for each customer class
- When gas steps decline, electric steps follow



California Solar Initiative

Incentive Structure: Gas

Step	Customer Class	Dollar per therm displaced	Incentive Cap	Budget Allocation
1	Residential Commercial/Multifamily	\$12.82	\$1,875 \$500,000	\$20 Million \$30 Million
2	Residential Commercial/Multifamily	\$10.26	\$1,500 \$500,000	\$18 Million \$27 Million
3	Residential Commercial/Multifamily	\$7.69	\$1,125 \$500,000	\$18 Million \$27 Million
4	Residential Commercial/Multifamily	\$4.70	687.5 \$500,000	\$16 Million \$24 Million



California Solar Initiative

Incentive Structure: Electric

Step	Customer Class	\$/kWh displaced	Max Incentive
1	Residential Commercial/Multifamily	0.37	\$1262.5 \$250,000
2	Residential Commercial/Multifamily	0.30	\$1,025 \$250,000
3	Residential Commercial/Multifamily	0.22	\$750 \$250,000
4	Residential Commercial/Multifamily	0.14	\$475 \$250,000



California **Solar** Initiative

CSI-Thermal Budget

- \$250 Million for gas displacing
 - General Market Incentives: \$180 million
 - Low Income Incentives: \$25 million
- \$100.8 Million for electric displacing
 - General Market Incentives: Up to \$100.8 million



California Solar Initiative

Workshop Items

- Development of citing, installation, freeze protection, and system sizing requirements
- Development of an on-line incentive calculation tool
- Development of appropriate energy efficiency improvements



California **Solar** Initiative

Program Administrator Contact Information

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- **SoCal Gas:** Chris Roberts, croberts@semprautilities.com



Questions or Feedback?



THANK YOU!

