Process Evaluation of DAC Green Tariff and Community Solar Green Tariff Programs

March 3, 2021

Martha Wudka
Evergreen Economics

Webinar Logistics

➢ Today's presentation (.pdf) will be sent to all participants afterwards.

➢ The Draft Evaluation Report and Comment Template are available on the Solar in DACs webpage at the bottom under "Events & Documents".

➢ Please mute yourself when not speaking

➢ Submit questions for speakers in the chat box or raise your hand to be unmuted by hosts.

➢ Chat questions will be read aloud

Mute/ Unmute   Participant List   Chat   Audio Options   Leave Meeting

Webinar Logistics

- **Online only:**
  - Audio through computer or phone
  - 1-855-282-6330
  - Access code: 2493 275 2068
  - Event password: dac2021
  - ***This workshop is <u>NOT</u> being recorded***

- **Hosts**:
  - Evergreen Economics: Martha Wudka
  - Energy Division: Josh Litwin

- **Safety**
  - Note surroundings and emergency exits
  - Ergonomic Check
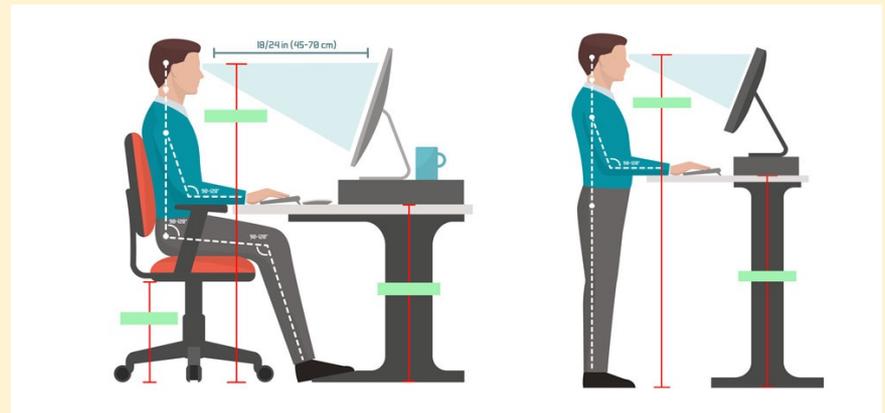
Agenda

- ➢ Introductions

- ➢ Programs overview

- ➢ Research objectives and methodology

- ➢ Program results by topic

- ➢ Conclusions and recommendations

- ➢ Next steps

- ➢ Questions

Introductions

Presenters:

Martha Wudka, Project Manager

wudka@evergreenecon.com

Lynn Roy, Environmental Benefits Lead at Brightline

Other Evergreen Contributors on the Line:

- *Tami Rasmussen*, Vice President and Project Director

- *Sarah Monohon*, Senior Consultant

- *John Paul Welch*, Analyst

- *Stefan Rose*, Senior Analyst

- *Jesse Atkin*, Analyst

DAC-GT and CSGT

Goal: To provide alternatives for renewable energy to residents of Disadvantaged Communities (DACs).

What is a DAC?

➤ A census tract in the top 25% of communities experiencing pollution burden (in IOU service territory)

➤ Based on CalEnivroScreen, a tool that maps communities most affected pollution

➤ Includes 11 federally-recognized tribal territories

CES 4.0 DAC Boundary
DAC 5-mile Buffer
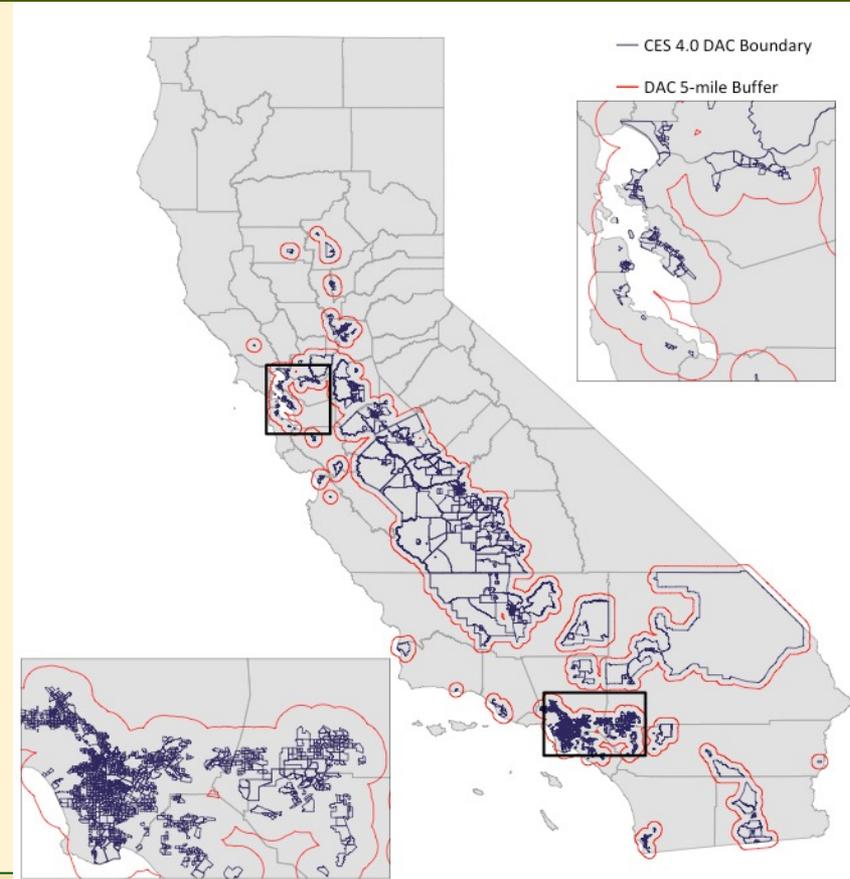
Key Program Features

DAC-GT	CSGT
20 percent discount off customer bill	
Electricity sourced from 100% renewable sources	
Solar project located in DAC in same service territory	Solar project located within five miles of customers served or 40 miles of SJV pilot communities
Low-income customers only	50% of enrollments must be low-income
	Solar project supported by local "community sponsor"
	Solar project hires local employees and provides training opportunities

DAC-GT and CSGT

	DAC-GT	CSGT
Customer income eligibility	Low-income only (CARE/FERA-income eligible).	Requirement for 50% low-income (CARE/FERA eligible) subscription. Non-low-income and/or master-metered residential rate accounts are accepted once threshold is met.
Project location	In any DAC within the same IOU service territory as customers.	Limited to 5-mile distance from project site with exceptions. Must be within top 25% DAC.
Capacity caps	PG&E: 70 MW SCE: 58 MW CPA: 12 MW SDG&E: 18 MW	PG&E: 18 MW SCE: 15 MW CPA: 3 MW SDG&E: 5 MW

Study Objectives

Overarching research goals:

- Examine program elements including evolving DAC borders, addition of PAs and procurement

- Develop (logic models), document and establish comprehensive program metrics

- Establish/verify data collection protocols necessary for program evaluation to be conducted in future independent evaluations

- Evaluate data to draw conclusions and recommendations

Methodology

Evaluation Methodology

Step 1
Develop logic models and metrics

- Based on program document review and program administrator (PA) interviews

Step 2
Secondary data collection and analysis

- Background documents (e.g., CPUC decisions and resolutions)
- Program documentation and reports
- Program tracking data
- Customer information and billing system data
- Geographic data
- Environmental benefit assumptions

Step 3
Primary research

- Surveys with PG&E and CPA customers
- Telephone interviews with PAs, community sponsors, solar developers, other stakeholders
- Web survey of 61 solar developer contacts

Initial Evaluation Metric Categories

Capacity procured

Number of bids received

Customer awareness of programs and marketing

Customer awareness of specific program features
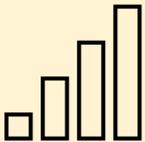
and location of participating customers

Participation relative to customer segment size

Customer perception of contributing to clean energy

Customer perception of reducing GHG

Participation in other clean energy programs

Estimated environmental benefits

leveraged job programs

local hires/trainees

Secondary Data Activities

Customer data analysis

- Requested CIS and billing data from PG&E and CPA for:

  - Survey sample frames;

  - Participation customer locations;

  - CARE/FERA status of customers; and

  - Customer bill impact analysis

Secondary Data Activities

Geographic data analysis

- Accessed geographic data used to define DACs to:

  - Compare # eligible customers between CalEnviroScreen 3.0 and 4.0;

  - Look at barriers of land cost and availability;

  - Examine where customers are currently being served;

  - Examine impact of CCA expansion; and

  - Perform a sensitivity analysis of different geographic eligibility conditions

Environmental benefits

- Estimated achieved avoided emissions due to program activities

Primary Research

Interviews with PAs and Stakeholders

- Completed IDIs with:

  - 10 Program administrators (PAs);

  - 4 community-based organizations;

  - 6 community sponsors;

  - 5 solar developers;

  - The CPUC tribal liaison;

  - GRID Alternatives (workforce development partner); and

  - 2 independent evaluators of solar solicitations.

Primary Research

Customer surveys

- Surveyed 214 PG&E and CPA customers regarding:

  - Environmental/social benefits;

  - Marketing and enrollment effectiveness;

  - Customer satisfaction;

  - Awareness of other programs;

  - Bill discount impact; and

  - Effectiveness of program in addressing barriers to clean energy

Primary Research

Customer Survey Sample Frame

PA	Total Enrolled	DAC-GT Participant Completes / Target	Target Non-Participant Completes / Target	Total Completes
PG&E	15,000+	100/100	0/0	100
CPA	500+	60/50	54/50	114

Primary Research

Solar developer web surveys

- Surveyed 65 contacts from PA solar solicitation contact lists regarding:

  - Solar developer firm characteristics;

  - Awareness of solicitations;

  - Reasons for bidding or not bidding on solicitations; and

  - Satisfaction with solicitations.

Primary Research

Solar Developer Survey Sample Frame

PA	Invitations Sent	Responses Received	Response Rate	Solar Developer Responses
PG&E	2,067	31	1%	18
SCE	155	10	6%	9
SDG&E	1,868	24	1%	11
CPA	525	0	0	0

Findings

Findings

Solar Developers

Program Eligibility and Geographic Boundaries

DAC and Low-Income Customers

Environmental Benefits

Workforce Development

Evaluability Assessment

Solar Developers

Status of Solar Projects (Q2 2021) – DAC-GT

Although four PAs held ten solicitations, only six contracted by one PA

PA	MW Capacity	# RFOs	Awarded Projects	Contracted Capacity
PG&E	56.82 MW	2	6	28.76 MW
SCE	56.5 MW	3	0	0
SDG&E	18 MW	3	0	0
CPA	12.19 MW	1	0	0

Solar Developers

Status of Solar Projects (Q2 2021) – CSGT

No responses to five out of nine solicitations

PA	MW Capacity	# RFOs	Awarded Projects	Contracted Capacity
PG&E	14.2 MW	2	4	9 MW
SCE	14.63 MW	3	1	3 MW
SDG&E	5 MW	3	0	0
CPA	3.13 MW	1	0	0

Solar Developers

Use of interim resources

- ➤ **PG&E** and **CPA** are using Renewable Portfolio Standard (RPS) interim resources to serve customers with DAC-GT before contracts come online.

- ➤ Both PAs are serving their full program MW capacity with interim resources

- ➤ PG&E: **54.82 MW**

- ➤ CPA: **12.19 MW**

Low awareness of bid opportunities

Percent of surveyed solar developers

Legend: Not at all familiar | A little familiar | Have heard of the program

Program	Not at all familiar	A little familiar	Have heard of the program
DAC-GT	32%	43%	24%
CSGT	41%	35%	24%
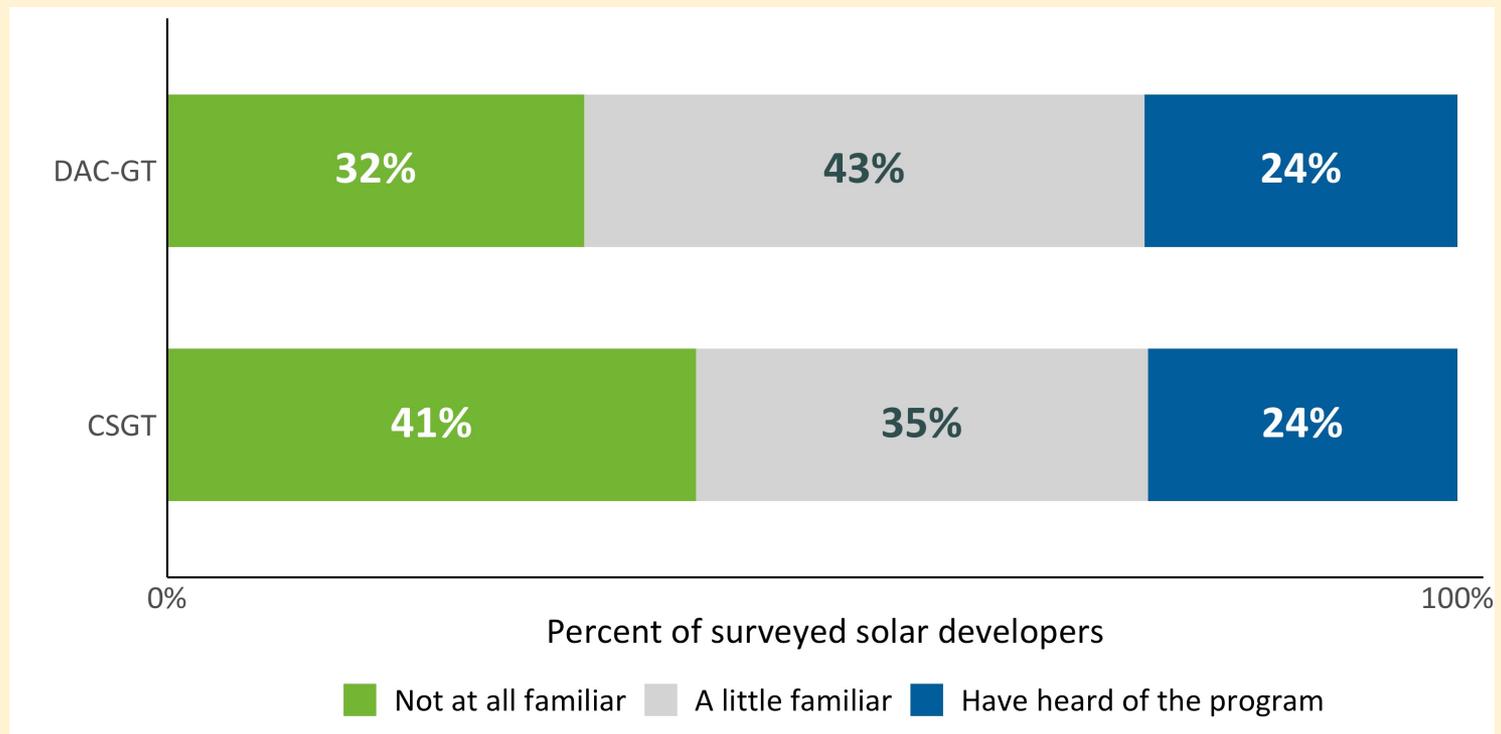
Only one quarter of sample familiar with either program

Low awareness of bid opportunities – DAC-GT

	Not at all familiar	A little familiar	Have heard of the program
SDG&E (n=11)	55%	45%	
PG&E (n=17)	29%	41%	29%
SCE (n=9)	11%	44%	44%

0%   100%

Percent of surveyed solar developers

Legend: ■ Not at all familiar ■ A little familiar ■ Have heard of the program

Low awareness of bid opportunities - CSGT

Percent of surveyed solar developers

SDG&E (n=11): Not at all familiar 64%, A little familiar 36%

PG&E (n=17): Not at all familiar 35%, A little familiar 35%, Have heard of the program 29%

SCE (n=9): Not at all familiar 22%, A little familiar 33%, Have heard of the program 44%

Legend: Not at all familiar | A little familiar | Have heard of the program

Barriers to Solar Development

Siting and land costs

- ➤ *"Sites we had under development were not in DACs" (PG&E contact)*

- ➤ *"The land around most[..]SCE substations are more developed[… and] as a result, the land is more expensive" (SCE contact)*

- ➤ *"The rate to the developer is too low" (PG&E contact)*

- ➤ *"Securing tax equity for this size project can be difficult" (PG&E contact)*

Solar Developers

Barriers to Solar Development
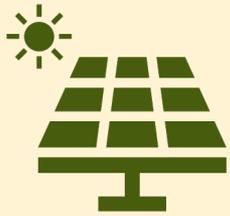
Interconnection and Timeline

- ➤ *"We needed more time for the interconnection study" (SCE contact)*

- ➤ *"Timeline on interconnection was unclear" (PG&E contact)*

- ➤ *"It is difficult to know ahead of time how many MWs will be available at the next RFO " (SCE contact)*

- ➤ *"CAISO interconnection costs and complexities (SDG&E contact)*
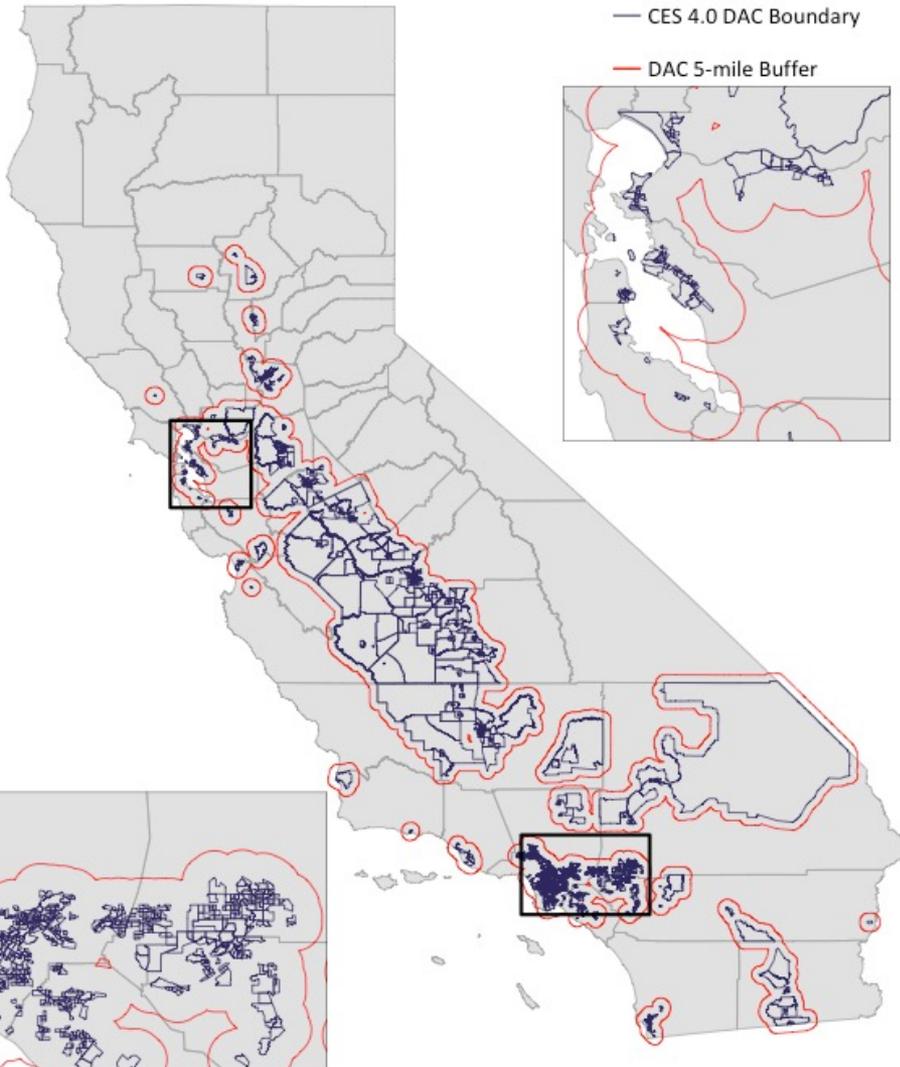
Current DAC-GT and CSGT Boundaries

Program Eligibility

Approved PAs

Legend:
- Clean Power Alliance
- Clean Power SF
- East Bay Community Energy
- Marin Clean Energy
- Peninsula Clean Energy
- San Jose Clean Energy
- SD Community Power
- PG&E Service Area
- SCE Service Area
- SDG&E Service Area
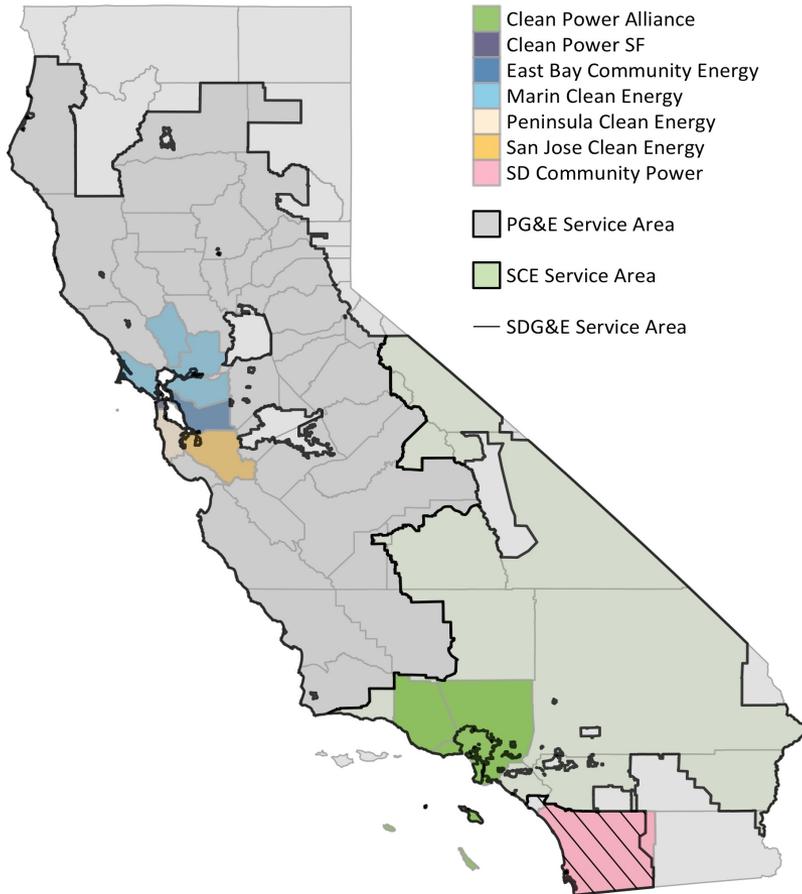
CCAs (Approved and Not Applied)

Legend:
- Application Approved Program CCAs
- Not-Yet-Applied Program CCAs
- PG&E Service Area
- SCE Service Area
- SDG&E Service Area
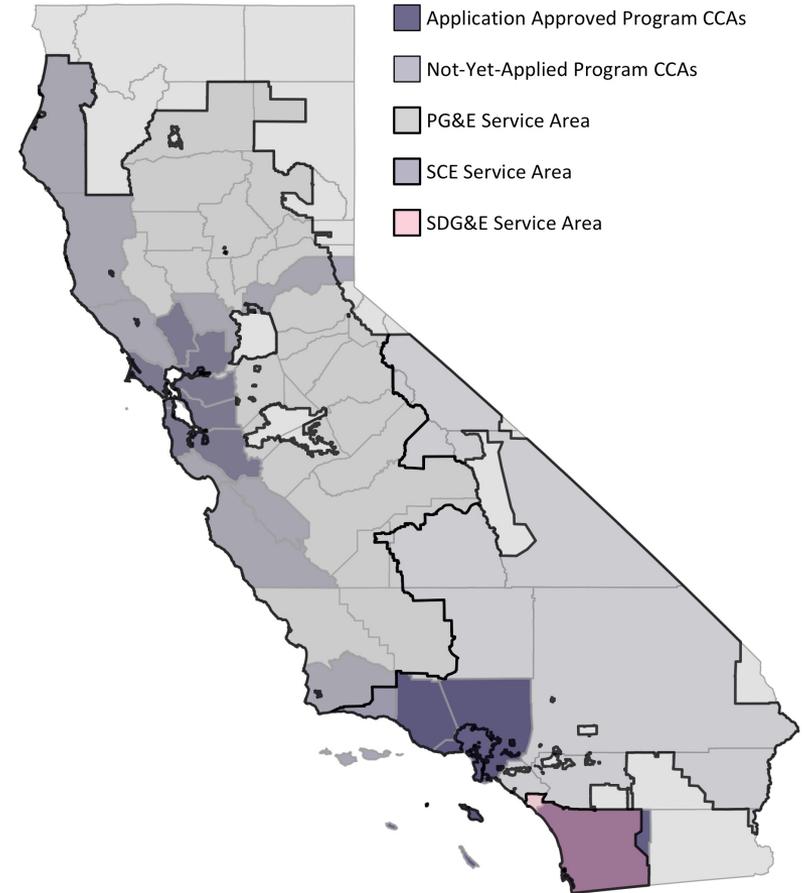
Sensitivity Analysis

> ➤ Solar developers indicated that **land cost**, **land availability**, and **distance to transmission** were barriers to development.

> ➤ We examined how leveraging different program eligibility levers would overcome these barriers.

## Sensitivity Analysis – Program Levers

Lever	DAC-GT	CSGT
Siting	Any DAC in service territory	**Increasing 5-mile buffer to 10 or 15 miles**
DAC Threshold	**Increase percentage of top DAC scores from 25% to 30 or 40%**	
	Increase top pollution burden from 5 to 10%	
SJV Pilot Communities	Not included unless fit above thresholds	All are included

Increasing DAC thresholds increases availability of rural land
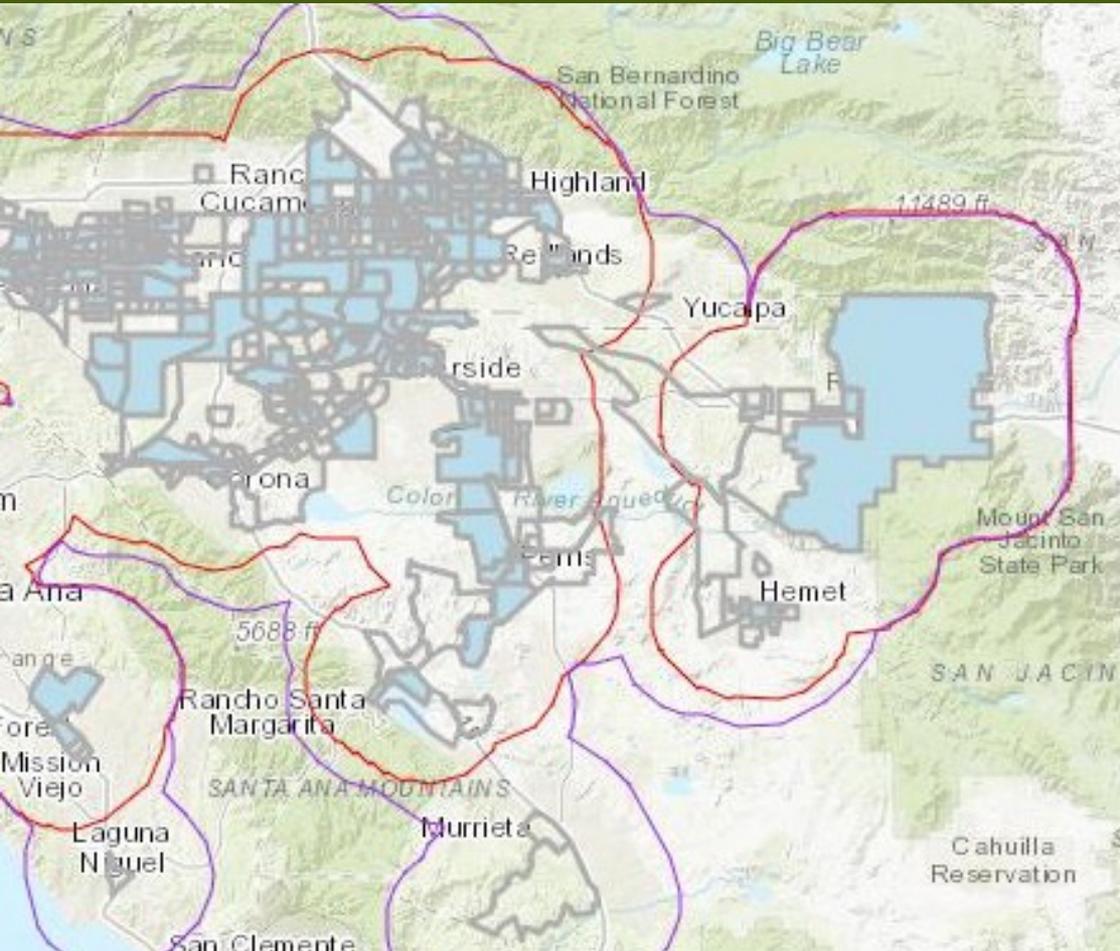
SCE CSGT boundaries – 25% DAC (red) v. 40% (purple)

Siting Challenges

Sensitivity Analysis Findings

DAC-GT

➢ PG&E is the most favorable territory to developers because median land cost lower

➢ Even when DAC threshold is increased, cost of living and land cost in SDG&E territory are high

➢ **Consider increasing the cost cap for SCE and SDG&E**

➢ **Consider increasing DAC percentage for SDG&E to lower median land cost**

CSGT

➢ Increasing DAC threshold increases land availability and rural land (especially for SDG&E)

➢ The 5-mile buffer zone allows projects to be built outside communities served contrary to program goals

➢ **Consider redefining boundaries for CSGT so that DACs align with communities (i.e., leg districts)**

Enrollment and Awareness

Chart: Awareness of DAC-GT amongst participants

- PG&E Participants (n = 104): Yes 46%, No 38%, Don't know 12%
- CPA Participants (n = 54): Yes 76%, No 15%, Don't know 6%

Legend: Yes | No | Don't know | Declined to answer
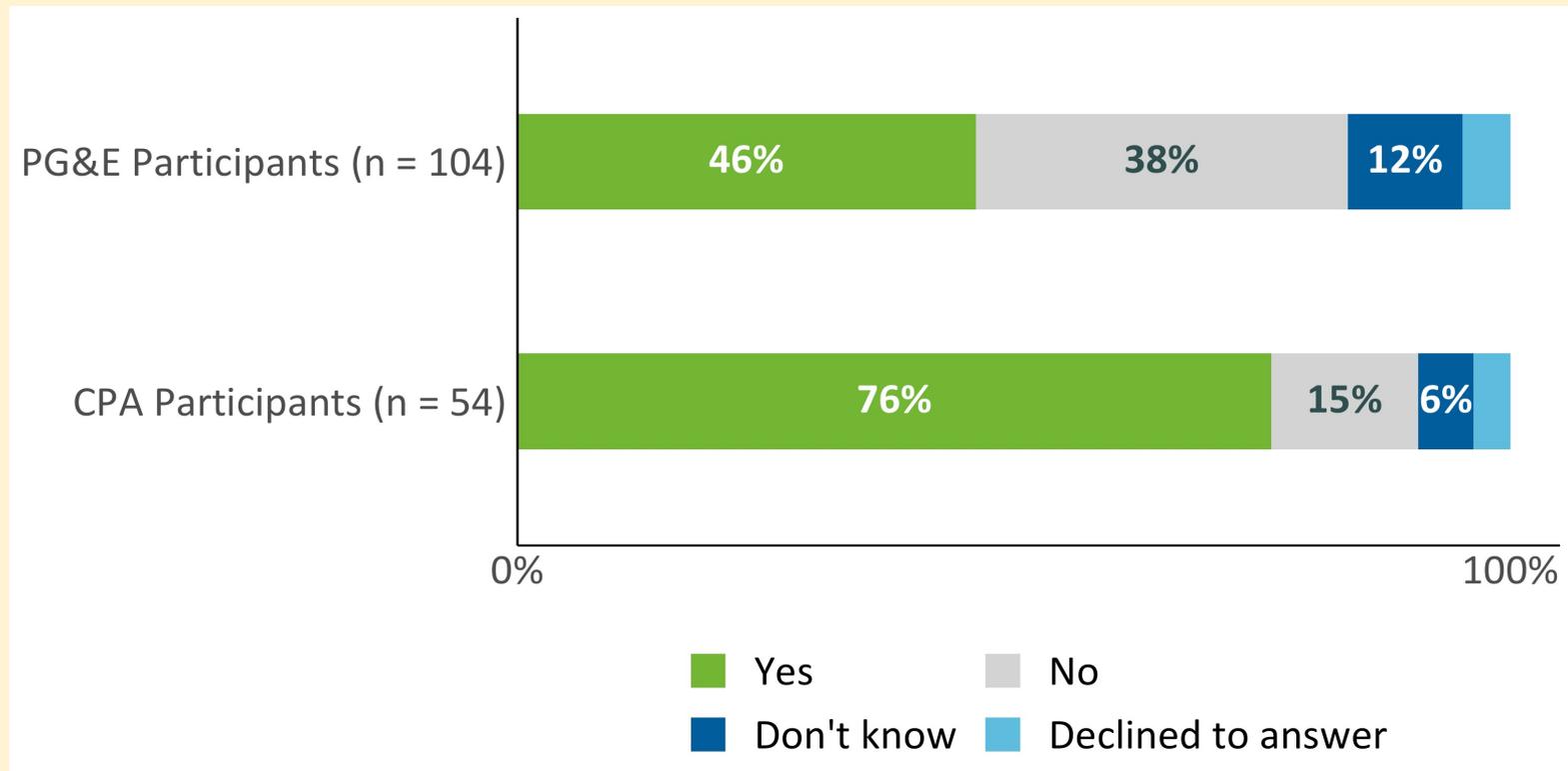
Awareness of DAC-GT amongst participants

Satisfaction

- PG&E Participants (n = 42): Yes 81%, I don't know 19%
- CPA Participants (n = 38): Yes 63%, No 13%, I don't know 24%

Legend: Yes, No, I don't know
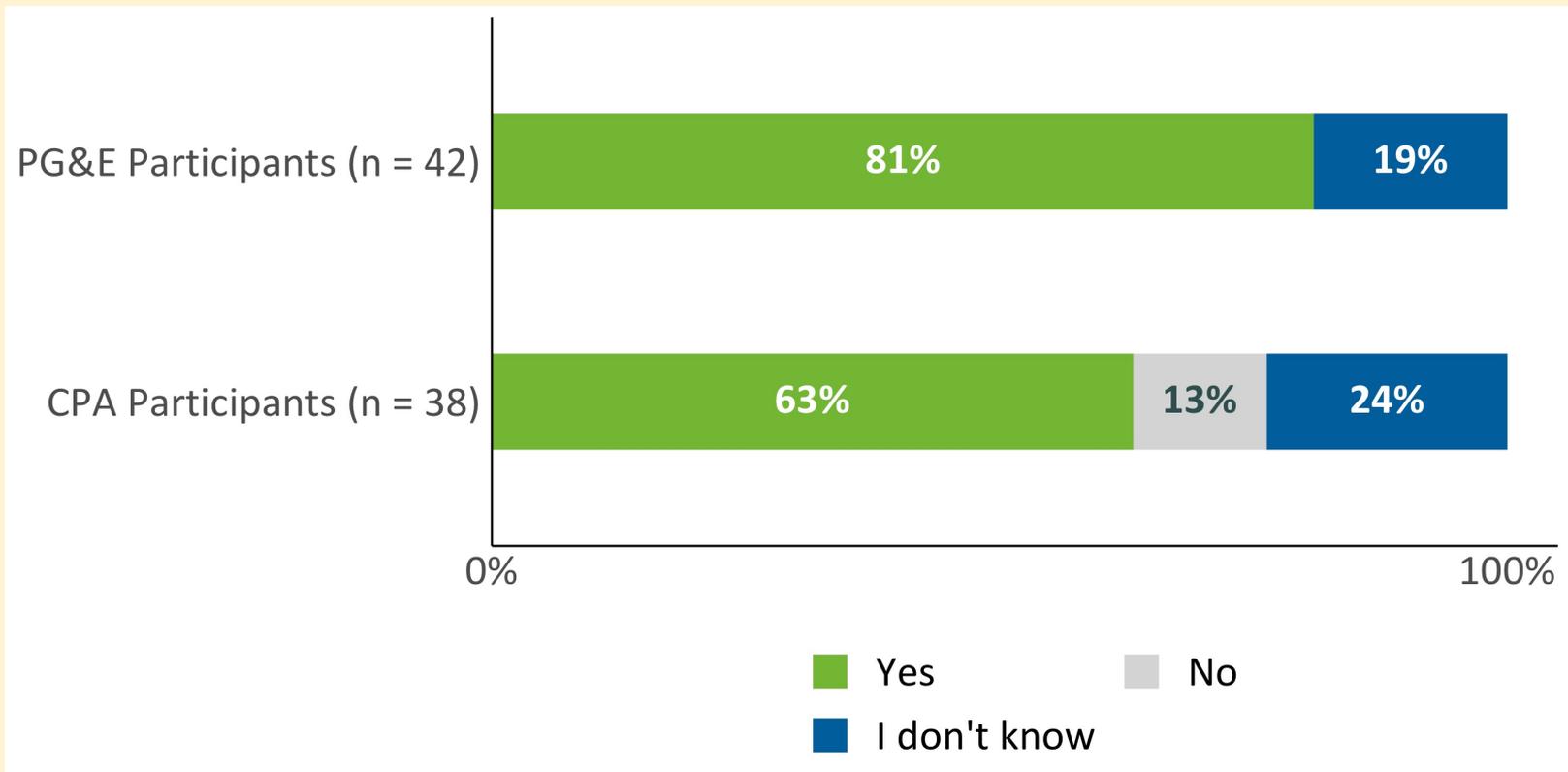
Enrollment and Awareness
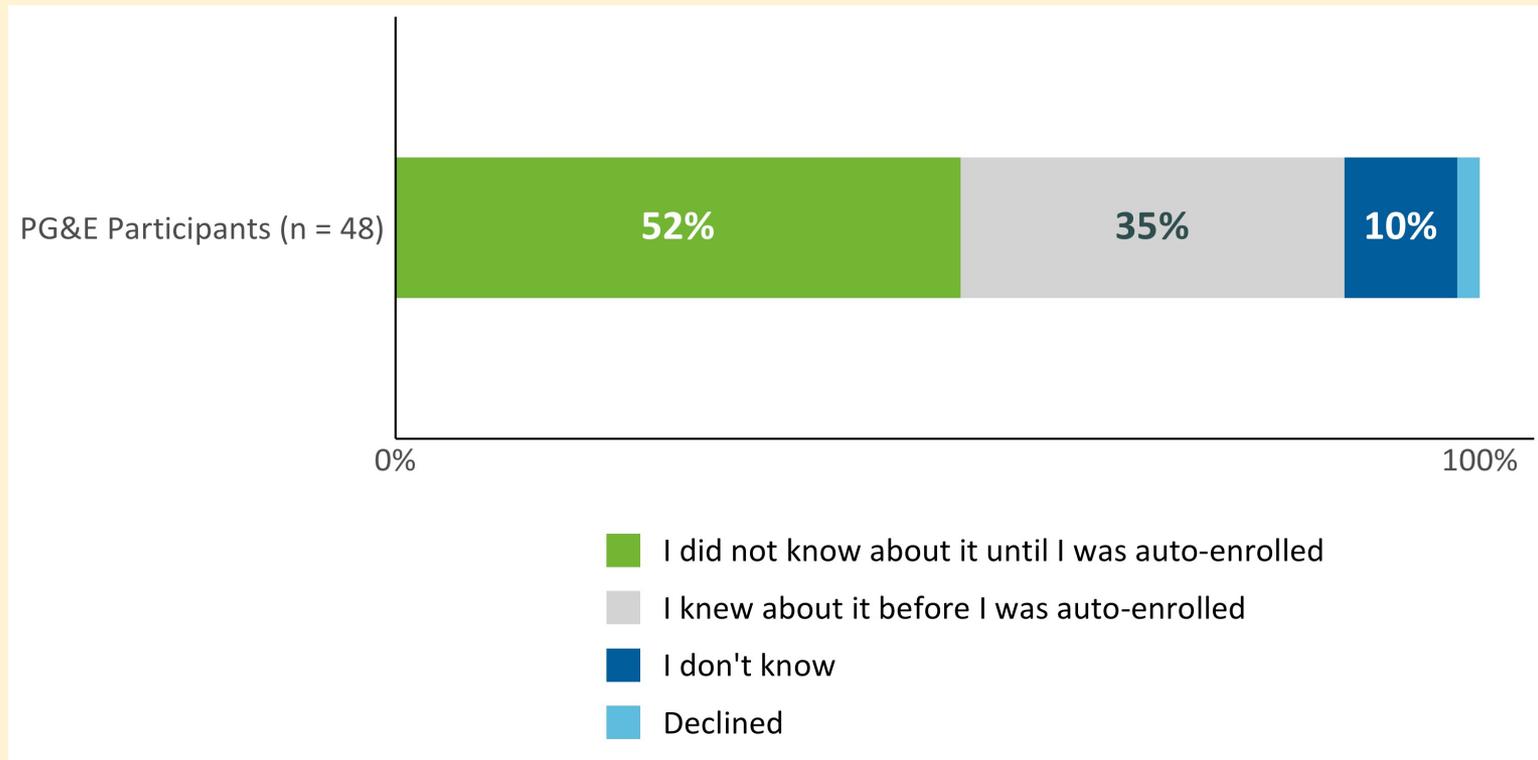
PG&E customers learn about programs upon auto-enrollment

Enrollment and Awareness
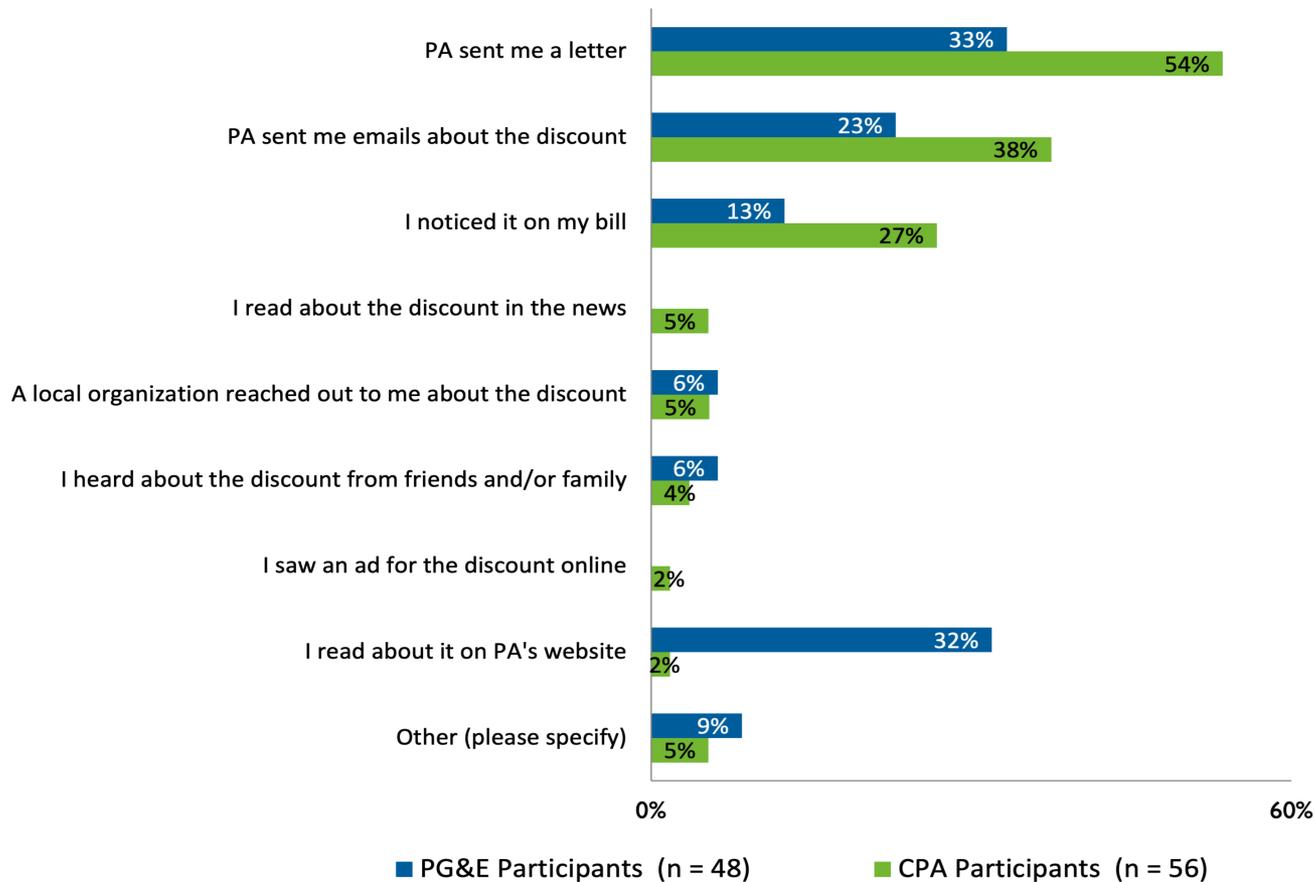
CPA customers hear from CPA directly

Chart: Enrollment and Awareness

Source	PG&E Participants (n = 48)	CPA Participants (n = 56)
PA sent me a letter	33%	54%
PA sent me emails about the discount	23%	38%
I noticed it on my bill	13%	27%
I read about the discount in the news		5%
A local organization reached out to me about the discount	6%	5%
I heard about the discount from friends and/or family	6%	4%
I saw an ad for the discount online		2%
I read about it on PA's website	32%	2%
Other (please specify)	9%	5%

0% — 60%

■ PG&E Participants (n = 48)   ■ CPA Participants (n = 56)

Customer Research

Customer Benefits

Reduction in average monthly bill costs

Customer Research
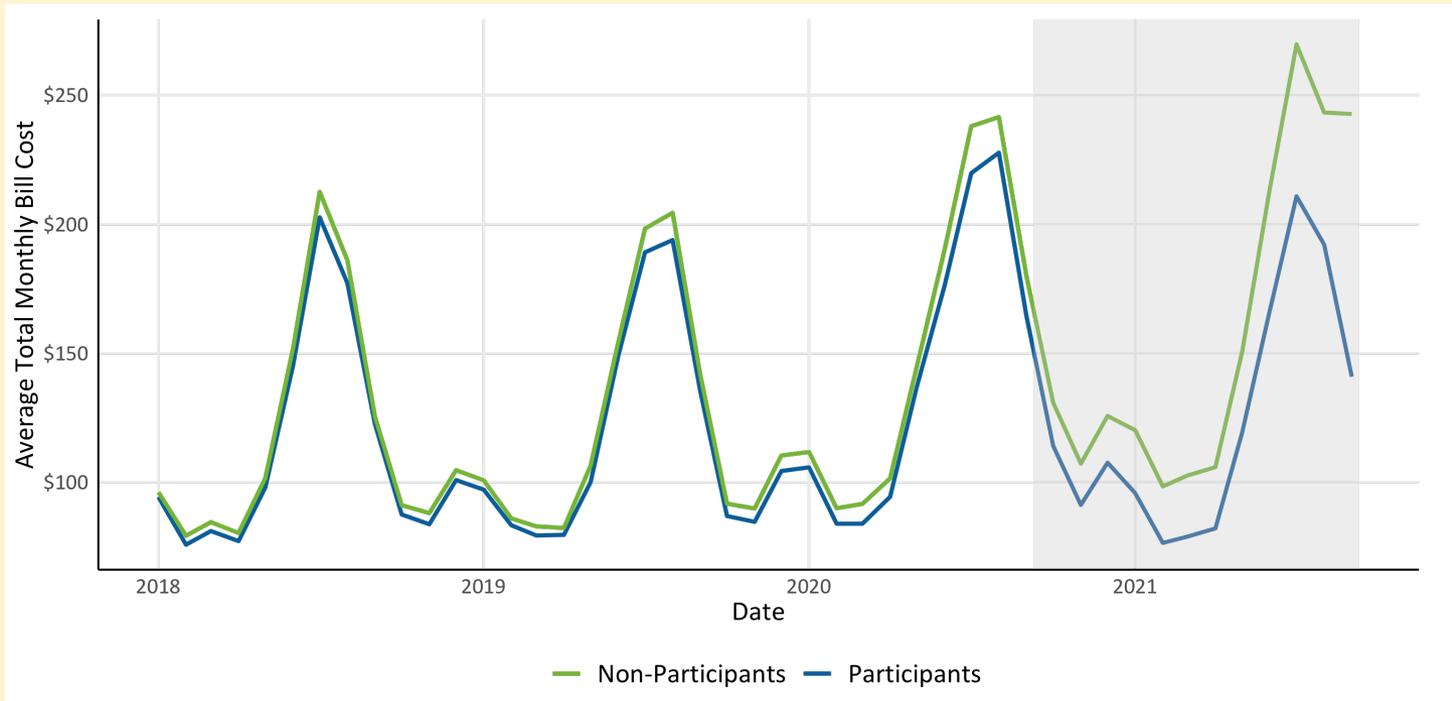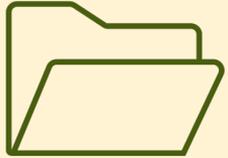
Customer Benefits

Additional CARE/FERA enrollments

	PA	Enrolled Customers *before Enrollment*	Additional CARE/FERA Enrollment
CARE	PG&E	13,192	1,436
	CPA	519	4
FERA	PG&E	84	38
	CPA	4	0

Customer Research

Customer Benefits

Self-reported customer benefits

Element	CPA Parts (n=38)	PG&E Parts (n=44)	CPA Non-Parts (n=13)
20% bill discount	87%	80%	69%
Offered to local income eligible customers	82%	73%	69%
GHG reduction	78%	66%	69%
Clean energy	74%	68%	62%
Investments in local solar developments	71%	61%	77%
Average knowledge level	78%	70%	69%

Environmental Benefits
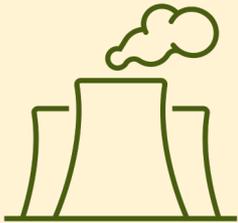
Avoided Emissions

Estimated GHG Reductions – DAC-GT

Program Year	Program	PA	Estimated Solar Generation (MWh)	Estimated Avoided Emissions (mt-CO_2)
2020	DAC-GT	PG&E	20,845	4,740
2021	DAC-GT	PG&E	127,902	29,083
2021	DAC-GT	CPA	3,232	721

Environmental Benefits

Avoided Emissions

DAC-GT estimated GHG reductions – CARB estimates

Program Year	Program	GHG Allowance Funding Allocation	Estimated Solar Generation (MWh)	Estimated Avoided Emissions (CO_2)
2020	DAC-GT	100%	20,845	4,415
2021	DAC-GT	100%	127,902	27,092
2021	DAC-GT	100%	3,232	685

Workforce Development

Current Status

- Early program status of CSGT limits evaluability of local jobs and workforce development

- **Recommend PAs/workforce development partners track progress and future evaluations investigate workforce development**

Evaluability

To improve future program evaluability, **we recommend PAs track:**

➢ Number of conforming and non-conforming bids;

➢ Sponsor outreach efforts, messaging and materials;

➢ Attrition rates of enrollees;

➢ Data for customers cross-enrolled in other programs;

➢ Location of DAC-GT and CSGT generation, both interim and newly-acquired;

➢ Arrearage data for program non-participants;

➢ Cost by installed MW; and

➢ Job training program data.

Recommendations

1. Centralize and coordinate solar dev and community org outreach

2. Increase solar dev engagement

3. Use auto-enrollment

4. Collect additional job training information

5. Expand to federally recognized tribal regions

6. Consider CSGT intent

7. Track additional data

8. Conduct future research covering non-participant solar developers

Next Steps

March 11: Comments due COB, Email to wudka@evergreenecon.com

March 31: (or earlier): Final Report including RTR table completed and sent to service lists

April 30: PAs respond to findings & recommendations using RTR table and submit to Energy Division

May 20: Energy Division feedback on RTR (3 weeks after RTR is received)

May 31: (estimated): RTR is issued and added as an appendix to Final Evaluation Report; Evergreen posts to CALMAC

June 1: (60th day after report served): IOU DAC & GTSR Applications due; served on R.14-07-002 and A.12-01-008

Discussion / Questions

Comments due COB March 11, 2022

Email to wudka@evergreenecon.com