



**People. Planet.
Employment.**



San Joaquin Valley Pilots

Bill Protection Principles & Recommendations

2/1/19

Presented by:

Elise Hunter

Policy & Regulatory Affairs Director

ehunter@gridalternatives.org

www.gridalternatives.org

- Recommended key principles for bill protection
- Recommended solution for bill protection
 - Supporting Analysis
- Discussion/Questions



Bill protection solutions should be...

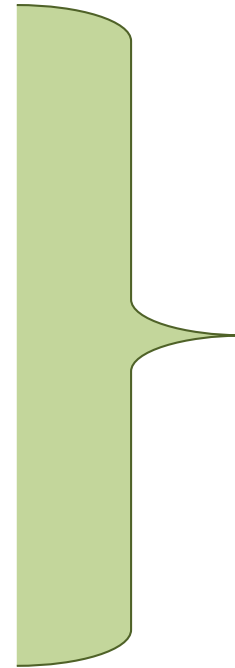
1. consistent and equitable across pilot types and communities
2. available community-wide, to all participants in pilots
3. designed for *affordability for all*, not bill neutrality, per AB 2672
4. accounting for uncertainty and data gaps
5. permanent – lasting at least 20 years, with an evaluation stage after Data Gathering findings
6. fully funded up-front
7. monitored by PAs/CENs and Data Gathering Plan
8. designed to provide key learnings to stakeholders





Bill Protection – Key Areas of Uncertainty and Risk

- Pre-pilot propane usage and actual costs
- Pre-pilot propane and electricity usage – distribution vs. averages
- Post-pilot electric/gas usage – reliance on literature vs. real household data
- Customers may use more energy after the pilot measures are in place to increase their health, safety and comfort
- Not every customer may be able to participate in community solar



Factors partially addressed in updated analysis



Bill Protection – Recommendation Overview

All pilot participants should receive a 20% discount off their post-pilot all-electric bill or final electric/ gas bills.

1. Supported by the Assigned Commissioner as well as a coalition of advocates*
2. Supported by the California Disadvantaged Communities Advisory Group
3. Ensures that *all* participants will receive significant savings on their bills, accounting for key areas of uncertainty
4. Provides a stronger level of confidence that customers with increased health, safety and comfort energy usage will still receive savings
5. Protects any non-CARE/FERA customers who will not receive, or must wait before receiving, community solar credits

*GRID Alternatives, The Pilot Team, The Greenlining Institute



Bill Protection – Analysis Scope

1. Scope: 5 communities covered by the PA/PI, in PG&E Territory (Alpaugh, Fairmead, Lanare, La Vina, Le Grand)
2. Electrification and community solar pilots
3. Analyzed CARE-eligible and non-CARE-eligible customers
4. Considered a range of pre-pilot electric usage levels
 - Low: 25th percentile
 - Median: 50th percentile
 - High: 75th percentile
5. Re-assessed assumption on added electricity loads, considering regional trends
6. Estimated a “rebound effect” of health, safety and comfort energy usage – an additional 30% space conditioning usage added per year, per SCE methodology



Bill Protection – Analysis Findings

Post-Pilot Savings Analysis – Community Solar Customers

	CARE	Non-CARE
Savings % w/o 20% Bill Protection	25 Pcntl: 24% or \$494	25 Pcntl: -1% or -\$18
	Median: 23% or \$553	Median: 3% or \$83
	75 Pcntl: 23% or \$627	75 Pcntl: 7% or \$253
Savings % w/ 20% Bill Protection	25 Pcntl: 39% or \$808	25 Pcntl: 19% or \$416
	Median: 39% or \$915	Median: 22% or \$646
	75 Pcntl: 38% or \$1,050	75 Pcntl: 25% or \$964

An additional bill discount ensures that both CARE and non-CARE customers will receive energy bill savings

- Every customer receives a 20% community solar discount before any other discounts
- Customers are on EL-1 and E-1 tiered all-electric baseline rates, Region R



Bill Protection – Analysis Findings

- Several communities have either CSGT or GT-DAC as community solar options
- GT-DAC is restricted to only CARE/FERA eligible customers; other customers will be excluded
- The SJV pilots will allow participation up to 400% Federal Poverty Level (FPL), and FERA eligibility is 250% FPL
- While CSGT allows for a broader swath of customers, non-CARE/FERA customers may have to wait, or may be turned away if the CARE/FERA subscription % is too low

Post-Pilot Savings Analysis – Non-Community Solar Customers

	Non-CARE/FERA
Savings % w/o 20% Bill Protection	25 Pcntl: -26% or -\$560
	Median: -22% or -\$622
	75 Pcntl: -17% or -\$635
Savings % w/ 20% Bill Protection	25 Pcntl: -1% or -\$18
	Median: 3% or \$83
	75 Pcntl: 7% or \$253

Non-CARE/FERA customers risk higher bills as a result of the pilot if they are not enrolled in community solar, and do not receive additional bill protection



Bill Protection – Analysis Methodology

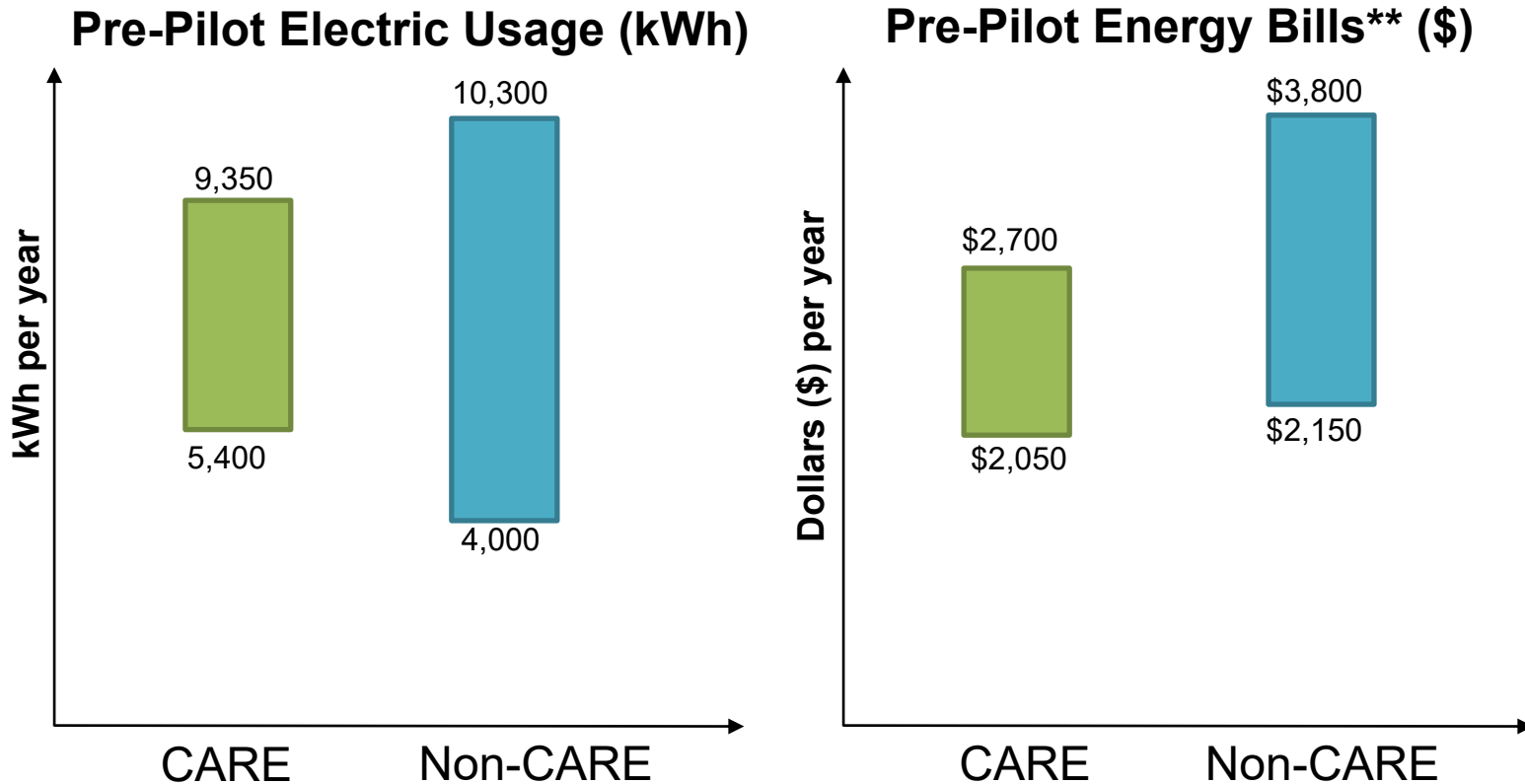
1. Determined baseline electric pre-pilot usage and bills from PG&E data on the 25th percentile, median, and 75th percentile for all 5 communities, obtained 1/25/19
2. Determined pre-pilot total energy usage by adding a constant propane usage and bill per community, unchanged from October 2019 pilot proposal
3. Reduced pre-pilot loads by 3%, to account for energy efficiency
4. Estimated added electric loads, primarily from the CEC 2009 RASS report, re-assessing space conditioning load for regional trends
5. Added an additional 30% space conditioning usage per year to account for health, safety and comfort energy usage
6. Calculated post-pilot electric bills with added loads, keeping rates the same (EL-1 CARE and E-1)
7. Applied community solar credit discount of 20%
8. Applied bill protection discount of 20% (if applicable)
9. Assumed that propane usage was eliminated. Therefore, the post pilot energy bill = the final electricity bill
10. Calculated savings % and savings amount (\$) from pre-pilot energy bill to post-pilot energy bill

*Note: propane usage and cost has not changed from GRID's October 2018 pilot proposal



Bill Protection – Analysis Methodology

The range (25th – 75th percentile) of pre-pilot electric usage across all 5 PA/PI communities was significant, especially for non-CARE customers*

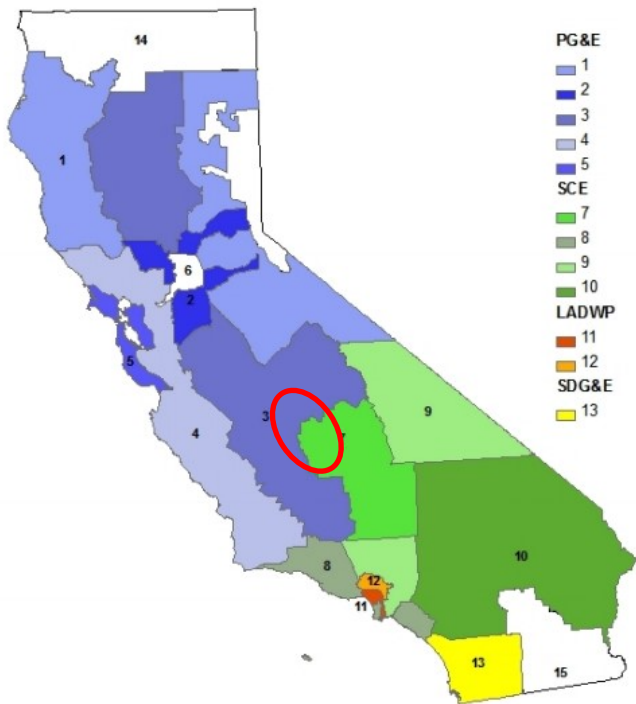


*Not to scale

**Includes a constant propane cost across all communities and customers

Assumed post-pilot electric loads were adjusted based on regional averages

Figure ES-2: California Energy Commission Forecast Climate Zones



- The pilots in SJV fall into two main CEC forecast zones, 3 (PG&E) and 7 (SCE)
- The 2009 CEC California Residential Appliance Saturation Study (RASS) has estimates for space heating loads in forecast zones
- FZ 7 is likely more representative of the southern pilot communities than FZ 3, especially since RASS is 10 years old, and climate change is already affecting local temperatures
- Assigned Communities in Madera, Fresno and Tulare Counties to FZ 7, and assigned Merced county to FZ 3
- This creates a weighted average where 4 out of 5 PA communities are assigned a higher space conditioning load

Region	# Communities	HP Space Conditioning Load (Annual kWh)
FZ 3	1	831 kWh
FZ 7	4	5,509 kWh
Weighted Avrg.	N/A	4,573 kWh

Source: 2010 California Residential Appliance Saturation Survey



Bill Protection –Analysis Methodology

Accounted for the “rebound effect” of increased usage of energy post-pilot to reach greater health and comfort

- In SCE’s October 2018 proposal, SCE compared actual 2017 electricity consumption in the summer and winter, and found 30% more consumption in the summer, likely due to air conditioning.
- To account for this, SCE increased its heat pump space conditioning post-pilot load by 30%.
- GRID replicates this approach for the 5 PA/PI communities:

4,573 kWh *1.3 = 5,945 kWh for HP Space Conditioning

Total Adjusted Added Electric Load = 7,978 kWh*

Using this adjusted value, median CARE customers see average loads increase by 108% and median non-CARE customers see average loads increase by 112%

*The remainder of electric loads are taken from the CEC RASS analysis for other appliances

- 719 kWh for electric dryer from table 2-5
- 310 kWh for radiant cooktop from table 2-5
- 1,004 kWh for heat pump water heater from table 2-5, adjusted for 300% efficiency rather than 95%



Bill Protection – Action Items

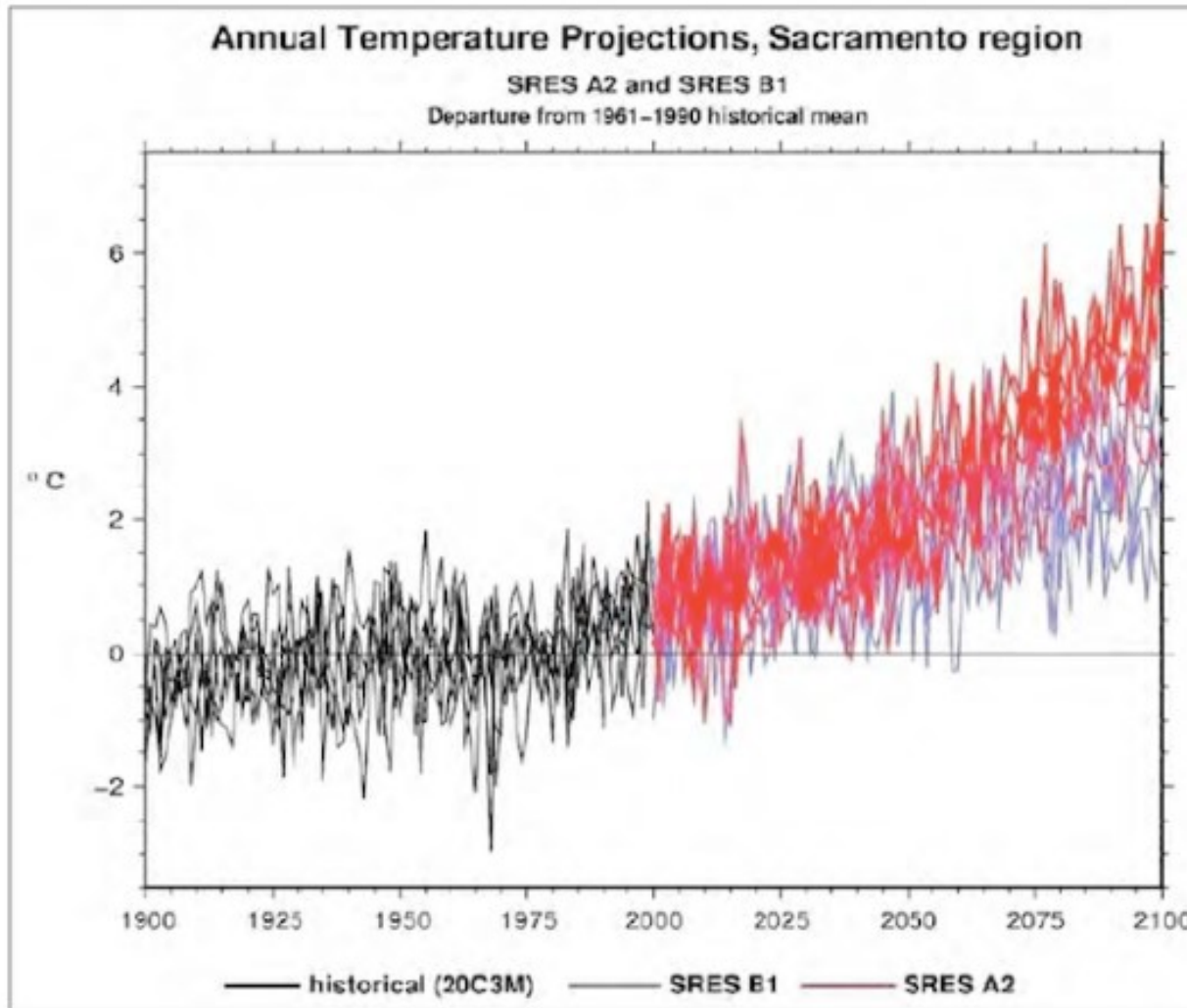
GRID urges the Commission to:

1. Before Phase II, authorize and fund a 20% electric bill discount,* lasting for 20 years, for all pilot participants
2. Re-assess the bill discount during the evaluation stage of Phase II, determine the appropriateness of the bill discount, and increase/reduce funds as needed
3. Only allow for the CSGT program as the community solar platform in pilot communities, as it can include participants of all income levels
4. Guarantee that all participants will receive community solar credits within 3 months of receiving home upgrades

*Or electric/gas bill discount if a natural gas pilot



Archive



Source: Cayan et al. 2009

Figure 2.C-3. Simulated Historical and Future Annual Temperature Projections for the Sacramento Region

Table 2-11: Space Conditioning Electric UECs for Single-Family Residences in Forecast Zones 1-7

Single Family	Forecast 1		Forecast 2		Forecast 3		Forecast 4		Forecast 5		Forecast 7	
	UEC	Sat.	UEC	Sat	UEC	Sat	UEC	Sat	UEC	Sat	UEC	Sat
All Household	8,217	523 homes	8,919	505 homes	8,836	988 homes	7,514	1782 homes	6,138	1205 homes	7,987	707 homes
Conv. Heat	1,275	0.09	2,090	0.02	1,312	0.01	1,043	0.02	1,932	0.02	1,590	0.01
Heat Pump	1,108	0.01	1,010	0.00	831	0.02	813	0.00	3,103	0.00	5,509	0.00
Aux. Heat	400	0.04	301	0.03	417	0.01	284	0.02	663	0.01	954	0.01
Central Air Conditioning	748	0.45	904	0.81	1,359	0.80	415	0.50	54	0.11	1,169	0.66
Room AC	349	0.11	341	0.14	649	0.12	111	0.10	24	0.06	389	0.23

Source: 2010 California Residential Appliance Saturation Survey