

# New England Public Utilities Energy Storage Webinar Self-Generation Incentive Program (SGIP)

April 2nd, 2021



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# History and Overview of SGIP




## Self-Generation Incentive Program (SGIP)

This is a statewide California Public Utilities Commission (CPUC) ratepayer funded program that was initiated in 2001. Program administrators include PG&E, Southern California Edison (SCE), Southern California Gas Company (SoCalGas), and Center for Sustainable Energy (CSE) for San Diego Gas & Electric (SDG&E). SGIP has evolved over the years, from prioritizing GHG reductions to resiliency.

### PROGRAM GOALS

- 1 ENVIRONMENTAL:** Reduction of greenhouse gas and criteria air pollutants; facilitate the integration of renewables.
- 2 GRID SUPPORT:** Reduce/shift peak demand, improve efficiency and reliability of the T&D system, lower grid infrastructure costs, provide ancillary services, ensure DER reliability.
- 3 MARKET TRANSFORMATION:** Support technologies that have the potential to thrive in future years without rebates. The 'incubator' concept.

### CURRENT TECHNOLOGIES

-  Energy storage (AES or batteries), thermal & mechanical storage, fuel cells, wind, internal combustion engines, microturbine, pressure reduction turbine.

## Self-Generation Incentive Program (SGIP)

SGIP has changed focus several times over its 20-year life. Current focus is to mitigate PSPS disruption for targeted customers, **specifically Medical and low-income**, by providing incentives to install a permanent home battery system for regular and backup use. SGIP incentives can cover up to 100% of funding, including battery cost, installation and rewiring to eligible customers (solar costs ineligible).

### A HOME BATTERY SYSTEM HAS THE FOLLOWING MAIN FUNCTIONS:



**STORAGE/BACKUP POWER:** Procures electricity from the grid or home solar panels to be stored and used later. When shutoffs occur, a home battery can provide power for several hours to multiple days, depending on battery size, critical energy needs and (if paired with solar panels) weather conditions.





**RATE ARBITRAGE:** Battery can be discharged during peak hours to reduce the customer's monthly bill.




**GHG REDUCTION:** Discharging at specific times with batteries charged by solar can reduce greenhouse gases.

## Benefits of SGIP

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Incentives can cover up to **100% OF FUNDING** to acquire a home battery, including battery cost, installation, and rewiring. [It is expensive for ratepayers]
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A home battery can provide backup power for **SEVERAL HOURS TO MULTIPLE DAYS.**

  - Duration depends on battery size, critical energy needs and (if paired with rooftop solar) weather conditions.
  - Program is focused more narrowly than in previous years: benefits vulnerable customers in HFTDs/impacted by PSPS.
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▪ Batteries, when utilized properly, can serve multiple customer goals.





# SGIP Incentive Levels

| CATEGORY   | MAX INCENTIVE LEVELS         | TARGET POPULATION FOR INCENTIVES   |
|--|------------------------------|--|
| <b>Equity Resiliency Budget (ERB)</b><br><i>(Fully Subscribed)</i> | \$1.00/Wh<br>(100% of costs) | <ul style="list-style-type: none"><li>▪ Qualifying residential customers at highest risk of PSPS</li><li>▪ Qualifying non-residential customers that serve customers with highest risk of PSPS</li><li>▪ Income restrictions on Well Pump projects enacted to better support overburdened customers</li><li>▪ Medical and Low-Income customers are key focus in CA</li></ul> |
| <b>Equity Budget (EB)</b><br><i>(Fully Subscribed)</i>             | \$0.85/Wh<br>(85% of costs)  | <ul style="list-style-type: none"><li>▪ Residential customers in income-qualified and disadvantaged communities</li><li>▪ Non-residential customers that serve income-qualified or disadvantaged communities</li><li>▪ Equity Budget approved in 2017; initial incentives were too low so CPUC increased in 2019.</li></ul>  |

→ SGIP has shifted its focus over the last few years; from overburdened communities in 2017, to GHG Rules in 2018, and finally to Resiliency and Equity in 2019. The CPUC decision D.20-01-021 approved the program to retain its efforts on ERB and GHG rules.



## Other SGIP Topics: Large Storage/Generation

| CATEGORY   | MAX INCENTIVE LEVELS                          | TARGET POPULATION FOR INCENTIVES  |
|--|---|---|
| <b>General Market<br/>(Large Commercial<br/>Storage)</b> | \$0.30/Wh<br>(35% of costs)                   | <ul style="list-style-type: none"><li>Commercial customers not eligible for Equity or Equity Resiliency budget categories</li><li>Can qualify for 'Resiliency Adder' for certain services</li></ul> |
| <b>General Market<br/>(Residential Storage)</b>          | \$0.15/Wh - \$0.20/Wh<br>(15% - 20% of costs) | <ul style="list-style-type: none"><li>General population of customers <b>without</b> the highest risk of power shutoffs and/or income qualifications</li></ul>                                      |
| <b>Generation</b>  | \$2.00/W<br>(\$0.60/W biogas adder)           | <ul style="list-style-type: none"><li>100% renewable fuel requirement</li></ul>   |





# PG&E SGIP Budget as of Spring 2020 Program Opening (for 2020-2024)

## Adopted Allocation of 2020-2024 Collections (Table 4; D.20-01-021)

| Budget Category      | Budget Allocation | Total State Amount (2020-2024) in \$M | PG&E Funds (44% of Total) |
|----------------------|-------------------|---------------------------------------|---------------------------|
| Renewable Generation | 12%               | \$ 97,677,720                         | \$ 42,978,197             |
| Large Scale Storage  | 10%               | \$ 81,398,100                         | \$ 35,815,164             |
| Equity Large Scale   | 0%                | \$ -                                  | \$ -                      |
| Residential Storage  | 7%                | \$ 56,978,670                         | \$ 25,070,615             |
| Equity Residential   | 3%                | \$ 24,419,430                         | \$ 10,744,549             |
| Equity Resiliency    | 63%               | \$ 512,808,030                        | \$ 225,635,533            |
| HPWH (General)       | 5%                | \$ 40,699,050                         | \$ 17,907,582             |
| HPWH (Equity)        | 0%                | \$ -                                  | \$ -                      |
| SJV Pilots           | 0%                | \$ -                                  | \$ -                      |
|                      | <b>100%</b>       | <b>\$ 813,981,000</b>                 | <b>\$ 358,151,640</b>     |

## PG&E SGIP Budget 2020+

| PG&E Funds 5/12/20   | PG&E 5/12/20 + Future Funds |
|----------------------|-----------------------------|
| \$ 4,137,641         | \$ 47,115,838               |
| \$ 81,664,671        | \$ 117,479,835              |
| \$ 300,131           | \$ 300,131                  |
| \$ 9,699             | \$ 25,080,314               |
| \$ 125,235           | \$ 10,869,784               |
| \$ 2,237,375         | \$ 227,872,908              |
|                      | \$ 17,907,582               |
|                      | \$ -                        |
| \$ 5,000,000         | \$ 5,000,000                |
| <b>\$ 93,474,752</b> | <b>\$ 451,626,392</b>       |

→ Fully Subscribed

→ Fully Subscribed

→ Fully Subscribed

**Notes (As of May 18, 2020):** 1) PG&E's % SW Budget is 44% 2) Equity Large Scale will receive no additional funding 3) Equity Budgets received some allocations transferred from the Large-Scale budget in Oct. 2020 4) Equity Budgets received some allocations transferred from the Large-Scale budget in Oct. 2020.

→ AB700-approved budget amounts were intended to last through 2024. The three most impactful/important budgets have been fully subscribed since September 2020.

# GHG Decision and Rules



# CPUC Ruling on Greenhouse Gas Signal

## ASSIGNED COMMISSIONER'S RULING (1) ESTABLISHING AN ENERGY STORAGE GREENHOUSE GAS SIGNAL WORKING GROUP (2) ENTERING A SUMMARY OF THE NOVEMBER 15, 2017 ENERGY STORAGE WORKSHOP INTO THE RECORD



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1. Develop a proposal for a greenhouse gas signal (to SGIP projects)
2. Develop operational requirements for SGIP storage systems based on the GHG emissions from the grid
3. Develop a verification mechanism to track & monitor
4. Consider an enforcement mechanism in the event of net GHG emissions on an annual basis
5. ED must serve Working Group findings by April 2, 2018

Filed by CPUC on 12/29/2017



## GHG Signal Working Group Meetings

- January 9, 2018: First GHG Signal Working Group led by PG&E & CESA
- Multiple productive meetings between *industry, Associations, NGO's and IOUs to share info and strategies* (including load profiles, rates, models)
- These meetings led to the *production of the SGIP WG GHG Signal Report: cpuc.ca.gov/sgip*



## CPUC Decision 19-08-001 Approved GHG Emission Reduction Requirements for SGIP

- **General:** Metering and data submittal requirements, new Rates with 1.69 peak/off peak differential, measure and post GHG performance by Developer, New vs. Legacy rules, other topics
- **GHG Signal Order:** SGIP PAs hired WattTime to develop and implement
- **New Non-Res:** Reduce by 5kgCO<sub>2</sub>/kWh based on PBI\* data through 10 years **Penalty:** \$1/kg CO<sub>2</sub>
- **Legacy Non-Res (>4/1/20):** 1) RTE 66.5% and 130cycles/year 2) Storage Rate or DR 3) GHG Path to emit 0kg/kWh GHGs, cycle 130/year, meet RTE
- **Residential:** Must reduce GHGs by 5kgCO<sub>2</sub>/kWh or Developers can be penalized.
  - Recent Energy Storage Impact Evaluation shows residential projects are now reducing GHGs!

→ WattTime has developed and implemented the GHG signal for SGIP participants. Participation and results are forthcoming.

\*PBI = Performance Based Incentive

# Appendix

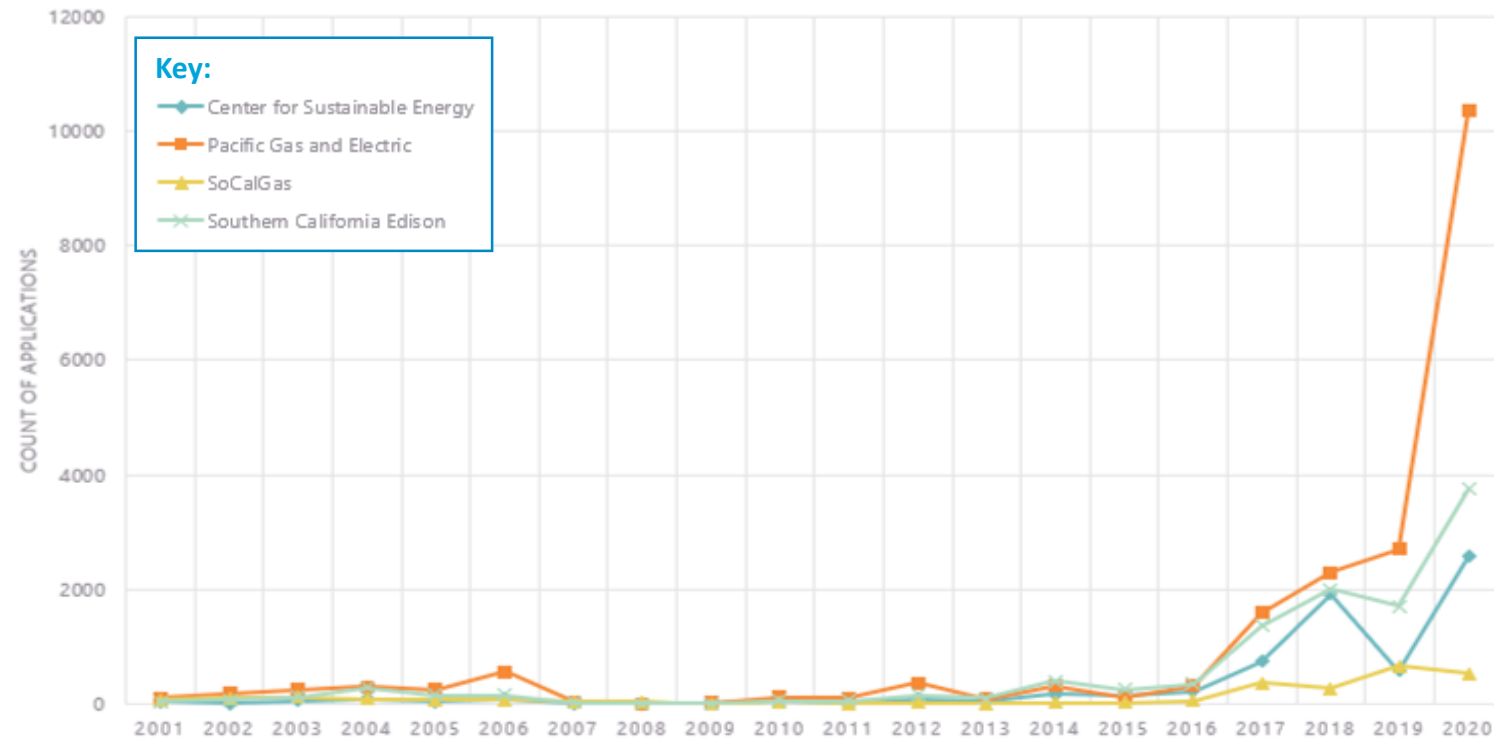




# SGIP Adoption Rates Over the Years – Since 2016

## Large Increase in Applications Created Since 2016

### SGIP Applications Assigned to an APP ID Per Year\*



\*Includes Cancelled and Waitlisted Apps

### Key Observations

- **Over 10,000 SGIP applications submitted in PG&E territory since January 2020**
- **10,000 SGIP applications submitted in PG&E territory from 2001 – January 2020 (19 years)**