



SELF-GENERATION INCENTIVE PROGRAM

Self-Generation Incentive Program (SGIP) 1st Quarterly Workshop

Tuesday, March 15, 2022

Microsoft Teams Meeting





Introduction

Program Administrators



- PG&E: Brian Bishop, Ron Moreno, Ozzy Guzman, Jacklin Campos-Perez
- SCE: Jim Stevenson, Vicky Velazquez
- CSE: Andi Woodall, Melissa Cintron, Shalene Watanabe-O'Toole
- SCG: Jason Legner, Laura Diaz, Adrian Martinez, Sandi Linares-Plimpton



SGIP Support



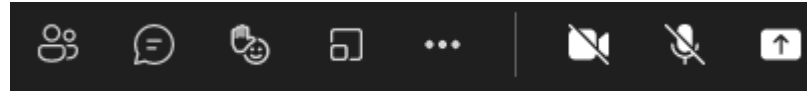
- Energy Division: Jonathan Lakey
- AESC: Dara Salour, Stephanie Raya
- Energy Solutions: Kelsey Albers, Andrew Chow
- WattTime: Henry Richardson



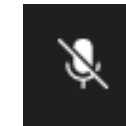
Microsoft Teams Meeting



- Controls



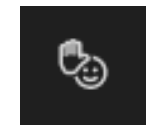
- Please remain on Mute during presentations



- For project specific questions please reach out to the PA directly.

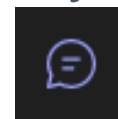
- Time is reserved for questions after each presentation. You may:

- Use the Hand Raise button to verbally ask your question



OR

- Enter your question into the chat



Agenda (9:00 am – 12:00 pm PST)



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- Welcome and Introduction (Safety)
- Program Metrics
- Regulatory Updates
- WattTime Update (SGIP GHG Signal)
- Energy Solutions Database Development (SGIP Database)
- UL 9450A
- Inspection Streamlining (Open Forum)

Agenda (9:00 am – 12:00 pm PST)



Breaks if needed.

- 10:30 – 10:45 am





Program Metrics

SCE

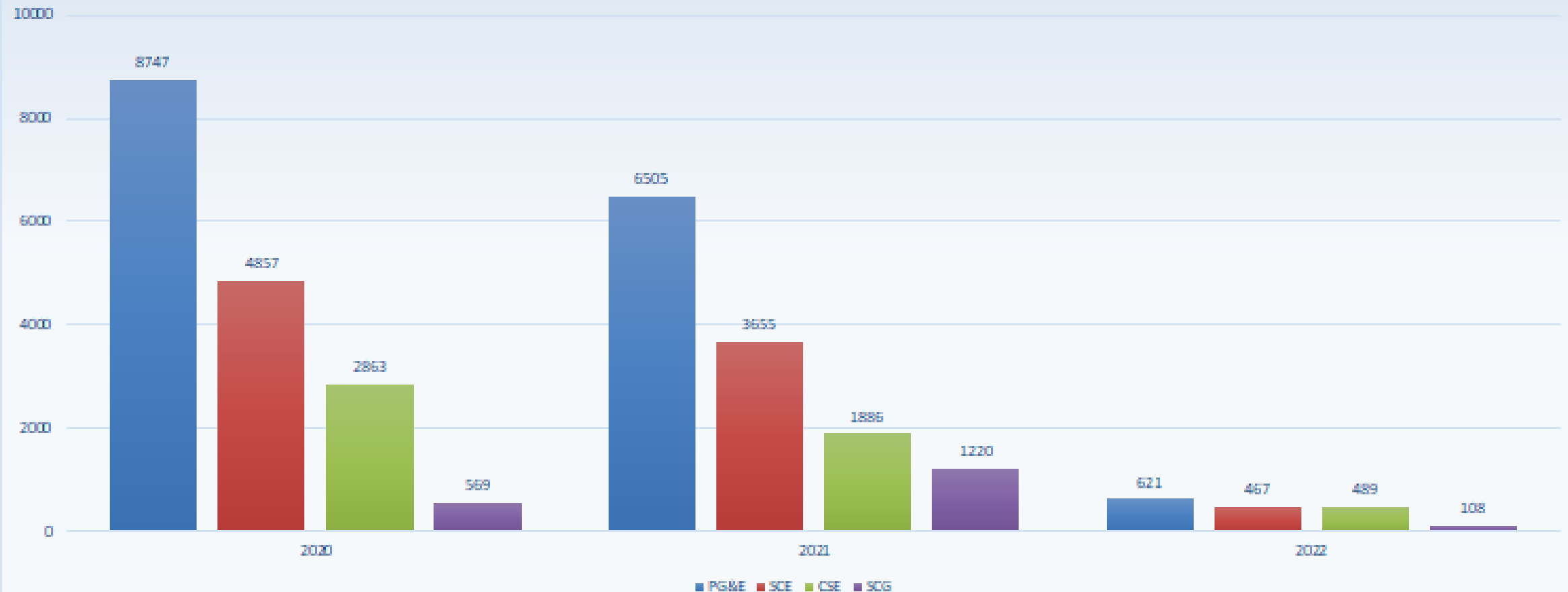
Number of Applications by Program Year and PA

Energy Storage Data 2020 – March 7, 2022



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Number of Applications Submitted by Year and PA



Does not include cancellations and waitlist projects

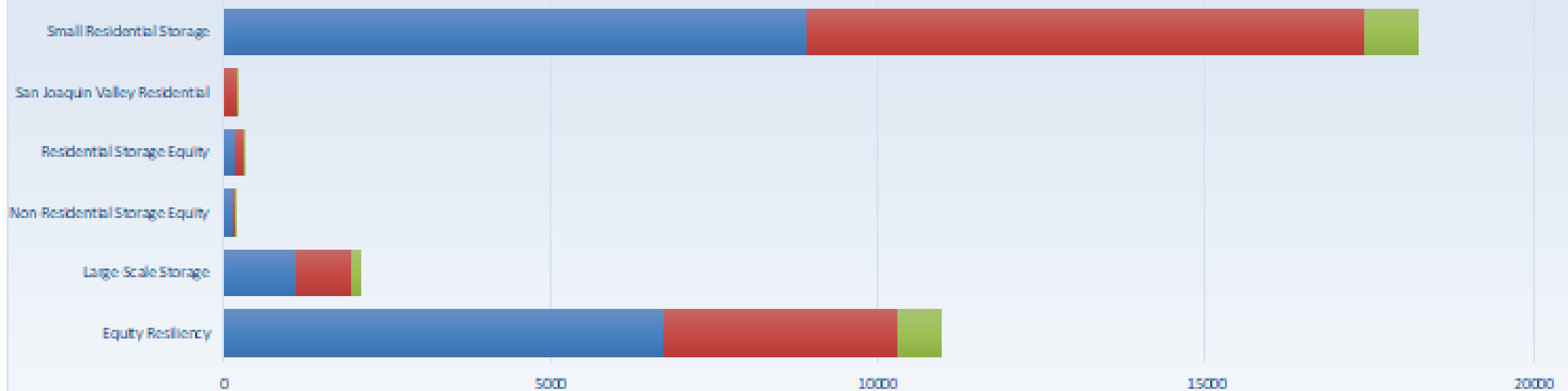
Applications by Program Year and Budget Category

Energy Storage Data 2020 – March 7, 2022



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Number of Applications by Budget Category



	Equity Resiliency	Large Scale Storage	Non-Residential Storage Equity	Residential Storage Equity	San Joaquin Valley Residential	Small Residential Storage
■ 2020	6711	1094	132	177	7	8915
■ 2021	3593	856	34	110	181	8492
■ 2022	652	143	30	2	3	855

■ 2020 ■ 2021 ■ 2022

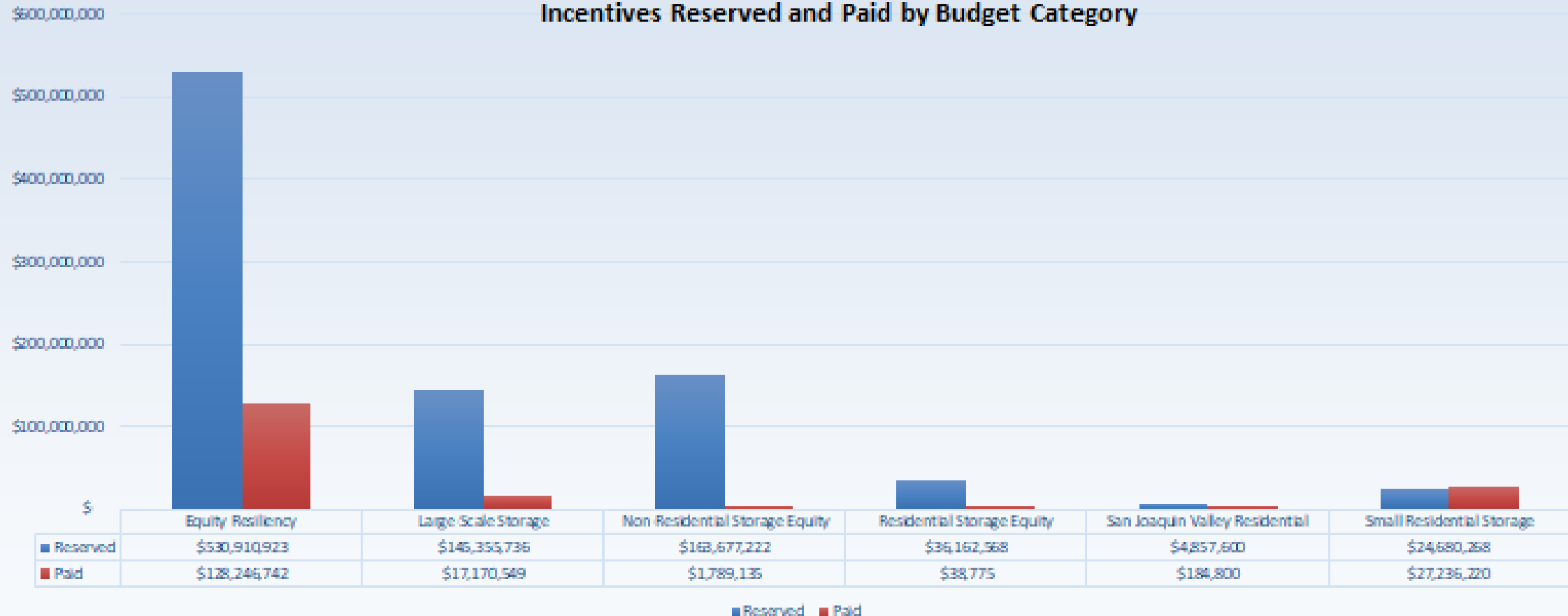
Total Incentives Reserved and Paid by Budget Category

Energy Storage Data 2020 – March 7, 2022



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Incentives Reserved and Paid by Budget Category



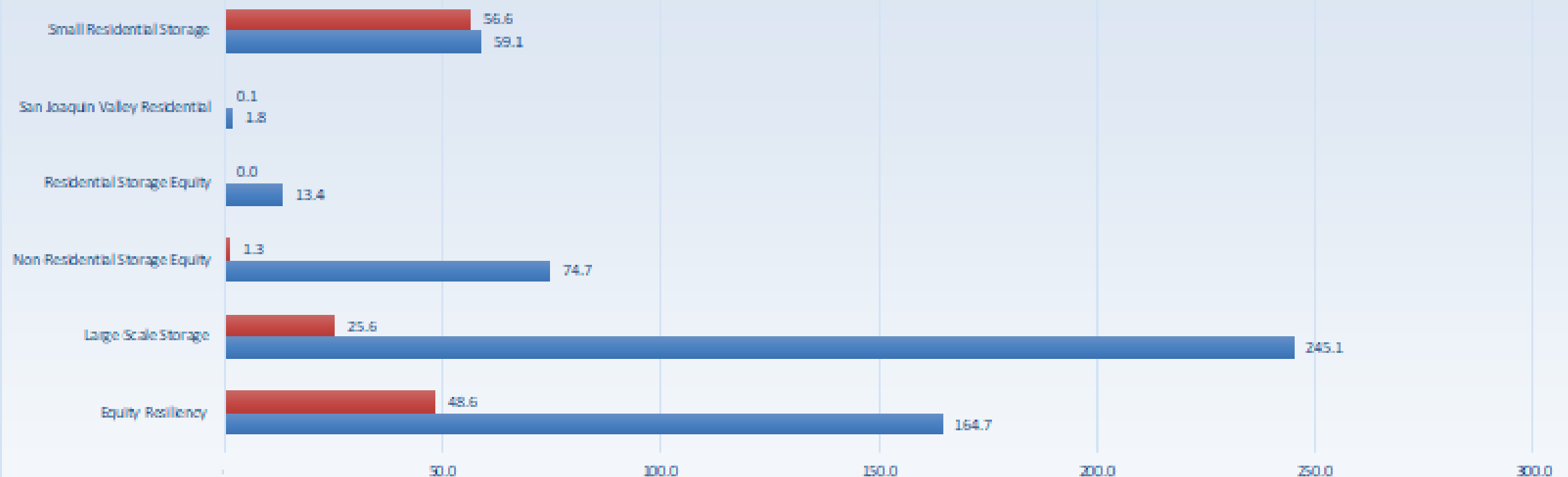
Total Capacity Reserved and Paid by Budget Category

Energy Storage Data 2020 – March 7, 2022



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MW Reserved and Paid by Budget Category



	Equity Resiliency	Large Scale Storage	Non-Residential Storage Equity	Residential Storage Equity	San Joaquin Valley Residential	Small Residential Storage
■ Paid	48.6	25.6	1.3	0.0	0.1	56.6
■ Reserved	164.7	245.1	74.7	13.4	1.8	59.1

■ Paid ■ Reserved

Current Budget Status

Energy Storage Data 2020 – March 7, 2022



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Budget Category	CSE	SCE	SCG	PG&E
Large-Scale Storage	Step 3	Step 5	Step 3	Step 4
	Open	Closed	Open	Open
	\$0.35/Wh	\$0.25/Wh	\$0.35/Wh	\$0.30/Wh
With ITC	\$0.25/Wh	\$0.18/Wh	\$0.25/Wh	\$0.22/Wh
Available Funds	\$4,086,315	\$255,169	\$6,642,993	\$17,825,071
Small Residential Storage	Step 7	Step 6	Step 6	Step 7
	Open	Open	Open	Open
	\$0.15/Wh	\$0.20/Wh	\$0.20/Wh	\$0.15/Wh
Available Funds	\$1,249,762	\$1,271,732	\$533,887	\$5,290,922
Residential Storage Equity	Step 5	Step 5	Step 5	Step 5
	Open	Open	Open	Waitlist
	\$0.85/Wh	\$0.85/Wh	\$0.85/Wh	\$0.85/Wh
Available Funds	\$2,847,454	\$405,120	\$596,023	\$193,910
Non-Residential Storage Equity	Step 5	Step 5	Step 5	Step 5
	Waitlist	Waitlist	Waitlist	Waitlist
	\$0.85/Wh	\$0.85/Wh	\$0.85/Wh	\$0.85/Wh
Available Funds	\$1,265,085	\$858,151	\$60,350	\$8,607,924
Equity Resiliency	Step 5	Step 5	Step 5	Step 5
	Waitlist	Waitlist	Open	Open
	\$1.00/Wh	\$1.00/Wh	\$1.00/Wh	\$1.00/Wh
Available Funds	\$11,382	\$20,224	\$28,032	\$912,006
San Joaquin Valley Residential		Step 5		Step 5
		Open		Closed
		\$1.00/Wh		\$1.00/Wh
Available Funds		\$4,695,200		\$22,400
San Joaquin Valley Non-Residential		Step 5		Step 5
		Open		Open
		\$1.00/Wh		\$1.00/Wh
Available Funds		\$120,000		\$120,000
Generation	Step 3	Step 3	Step 3	Step 3
	Open	Open	Open	Open
	\$2.00/W	\$2.00/W	\$2.00/W	\$2.00/W
	\$2.00/W	\$2.00/W	\$2.00/W	\$2.00/W
Available Funds	\$15,507,136	\$31,279,799	\$11,533,914	\$4,199,456

SCE and SCG have reached the 50% Residential Storage Soft Target Cap for Small Residential Step 6

CSE and PG&E have reached the 50% Residential Storage Soft Target Cap for Small Residential Step 7

Program Metrics



Questions?





Regulatory Updates

PG&E

Regulatory Updates



California Manufacturer Adder per Resolution E-5182 (Implementation Advice Letter Filed March 11, 2022)

Res. E-5182 approves PAs' Joint AL 5455-G et al. (April 15, 2019) which approved CMA eligibility if at least 50% of a project's capital equipment value is supplied by one or more California manufacturers (D.19-02-006), **and** directed new modifications to CMA eligibility to include equipment manufactured in-state via assembly and other manufacturing processes that may or may not use imported parts (i.e. battery cells).

Res. E-5182 identified a number of manufacturing processes PAs may use to determine if the majority of manufacturing occurred in CA such as:

- Cell testing including voltage, atmospheric, extended cycling, and fire propagation,
- Chemical adhesion bonding,
- Installation of circuit boards and sensing equipment,
- Laser welding of cells into battery modules,
- Battery Management System (BMS), firmware, and thermal systems design and production,
- Module testing including mechanical shock temperature ingress, and extended cycling. Includes UL certification testing.



Regulatory Updates



2021-2025 Measurement and Evaluation Plan

On January 27, 2022, PG&E filed on behalf of the other SGIP PAs the supplemental advice letter AL-4441-G-A/6201-E-A detailing the proposed PY2021-2025 SGIP M&E Plan. This tier 2 advice letter will be effective as of February 11, 2022, pending approval from Energy Division.

New changes to M&E Plan:

- The previously separate Annual Energy Storage Impact Evaluation and Biannual Impact Evaluation are now combined as the Annual SGIP Impact Evaluation.
- The Storage Market Assessment from the previous M&E plan will now be rolled into the Annual SGIP Impact Evaluation and take on a new form.
- Generation and HPWH Market Assessment sections that track generation and HPWH market trends will be included in the PY 2024 and PY 2025 impact reports.
- This supplemental Advice Letter replaced the one previously submitted in May 2021 from D.19-09-027 OP 7h.



Regulatory Updates



Proposal for SGIP Residential Price Cap in Accordance with D.19-09-027, OPs 7(g) and 8(a)

- The CPUC rejected the SGIP PAs' proposal for a price cap in their AL submitted on March 16, 2021, for not sufficiently answering the 'feasibility' question.
- The CPUC directed PAs to submit a new AL to work with Energy Division on a more detailed analysis.
- In the new AL, PAs will focus on directly answering if it's *feasible* to propose a cap and are exploring ways to provide a deeper dive to determine a) if it feasible or not to impose a price cap on residential energy storage projects and b) if yes, provide a list of methods and/or data that could be employed to develop such a price cap.
- PAs are working closely with Verdant and Energy Division to develop a new AL, which was submitted April 4, 2022.



Regulatory Updates



Questions?



Inspection Streamlining



- The SGIP PAs are in the preliminary stages of streamlining the Inspection Sampling Protocol
- The changes the PAs are looking to make would be focus less on make/model and more on developer performance, which would streamline inspections as make/models would be aggregated instead of each make/model having its own sampling rate.
- The PAs will provide more information in the Q2 workshop.



SGIP GHG SIGNAL UPDATED

March 15, 2021



SGIP Signal Overview

- California Public Utility Commission (CPUC) Decision 19-08-001 directed development of a GHG Signal to assist storage technologies in optimizing their performance to reduce GHG emissions
- The integrated GHG emissions model must be updated to align with any changes to the most recent Avoided Cost Calculator (ACC).
- A change to bring the signal into compliance with this requirement was implemented at the end of January. This will provide users an overview of the changes made to the API and a chance for any questions and comments

https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/Custom_Gen_and_Storage/SGIP%20Advanced%20Energy%20Storage%20Impact%20Evaluation.pdf [A-11 (1184)]

<https://www.cpuc.ca.gov/general.aspx?id=5267>



How the Compliance Signal is Calculated

Compliance Signal

- The signal is calculated using the same open source heat rate-based methodology as in the most recent SGIP impact evaluation report, but with updated parameters and data sources more suitable for real-time use.
- This signal provides the marginal emissions per kWh calculated based on a natural gas-fired power plant producing energy at a price equaling the real-time (five-minute) CAISO Locational Marginal Price with costs equal to the most recent publicly available data on gas prices, CO2 prices, and variable operating costs constrained by reasonable minimum efficiencies.
- When the calculated heat rate is zero or below, it is assumed that the marginal generator is renewable, and thus the marginal emissions rate is zero.

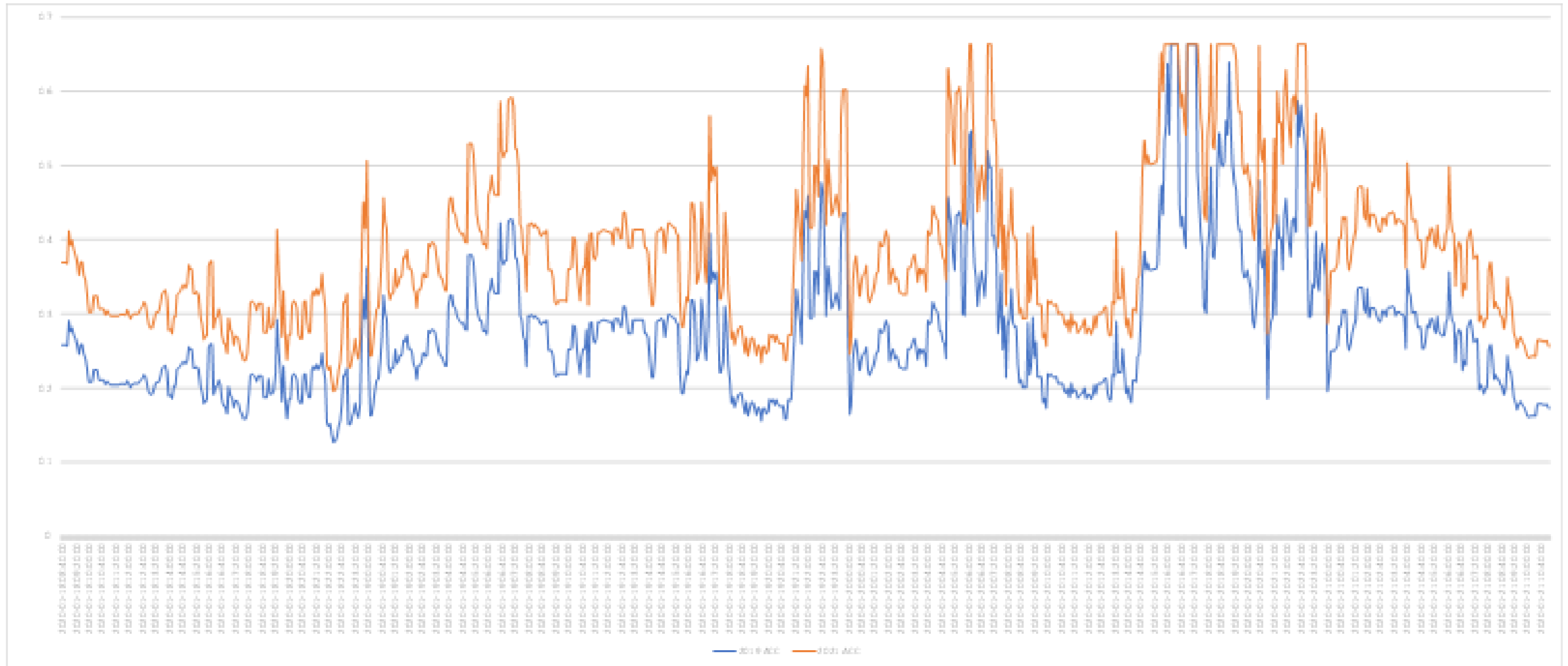
Changed Signal Assumptions

- Natural gas transportation costs
- Variable Operating and Maintenance Cost

Unchanged Assumptions

- Maximum heat rate of low efficiency plant (12,500 btu/kWh)
- Minimum heat rate of high efficiency plant (0 btu/kWh)
- Emissions factor of natural gas (0.0531 metric tons CO₂/MMBtu)
- Electricity Market price, GHG price, Gas Price all derived from different sources [appropriate for real-time use]

Signal Comparison Sample



The new signal changed in magnitude, but the time varying features remain substantially similar.

New Signal Delivery

- The new signal (v2.0) is now available by default through the API. This change occurred on January 31st, 2022 at midnight.
- The old signal, for before January 31st 2022 is still available through the API
- You will only receive the old signal if you specify a version number
- All projects will be evaluated against the old version for operations before January 31, 2022 at midnight after which the new signal will be used to evaluate project performance and determine compliance with SGIP requirements.

Accessing the data

- The old signal uses version number “1.0” in /sgipmoer queries and “1.0-1.0.0” in /sgipforecast.
- The new signal uses version number “2.0” and forecast version number “2.0-1.0.0”.
- All of these details are reflected in the SGIP GHG signal [API documentation](#).

Thank You

SGIP@WattTime.org

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Executive Director

Henry Richardson

Senior Analyst

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SGIP Database Implementation

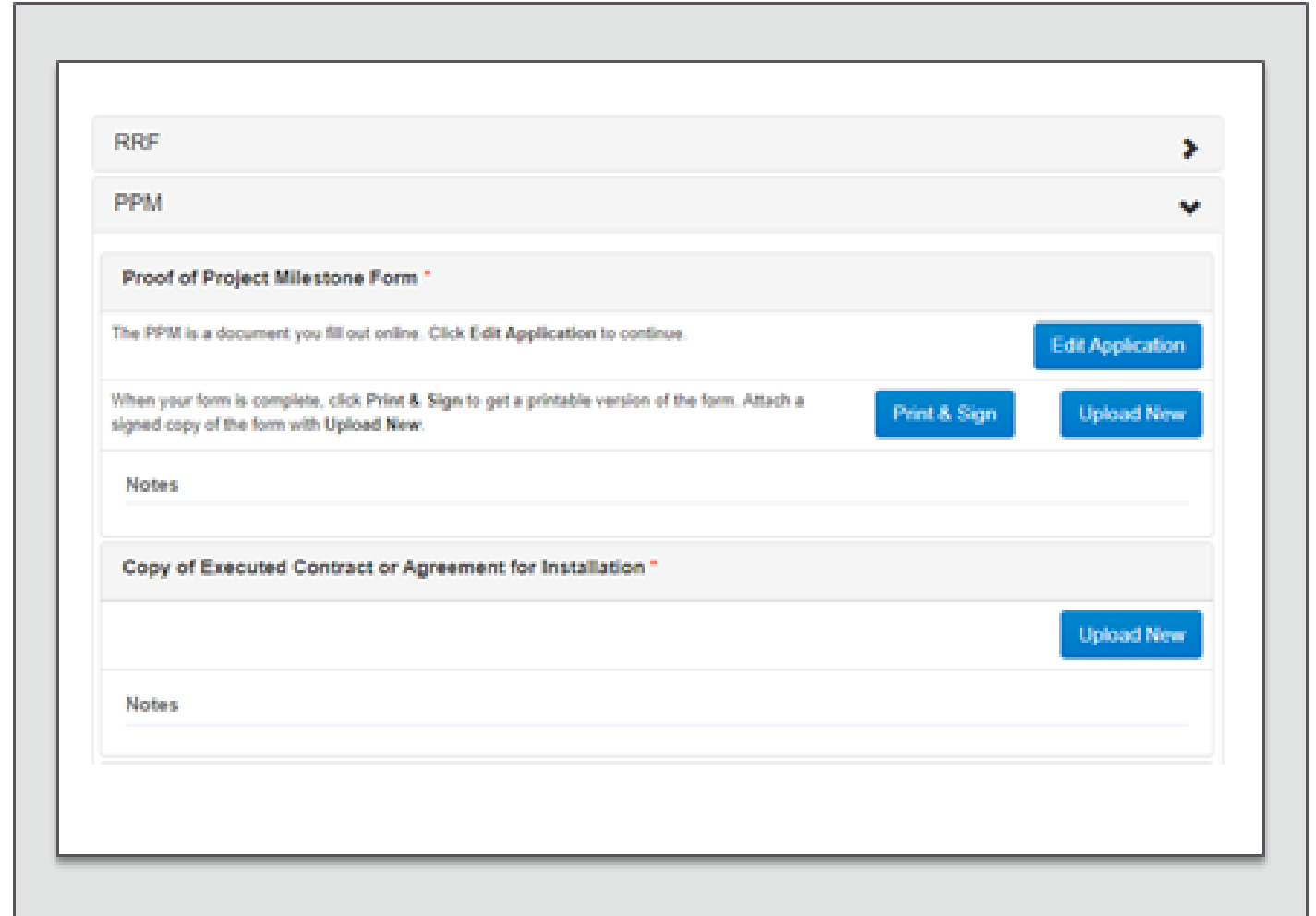
Q1 Workshop

Presented by: Andrew Chow
March 15th, 2022

PPM Streamlining Change

- PPM Document Upload not required if no edits are made to an application during PPM stages
- Labeled in image as “Proof of Project Milestone Form”

Image:
Existing PPM Document Upload Box



The screenshot displays a web interface for PPM document management. It features a vertical list of sections: 'RRF', 'PPM', 'Proof of Project Milestone Form', and 'Copy of Executed Contract or Agreement for Installation'. Each section has a corresponding 'Upload New' button. The 'Proof of Project Milestone Form' section includes a text area for notes, a 'Print & Sign' button, and an 'Edit Application' button. The 'Copy of Executed Contract or Agreement for Installation' section also includes a text area for notes.

RRF

PPM

Proof of Project Milestone Form

The PPM is a document you fill out online. Click [Edit Application](#) to continue.

When your form is complete, click [Print & Sign](#) to get a printable version of the form. Attach a signed copy of the form with [Upload New](#).

Notes

Copy of Executed Contract or Agreement for Installation

Notes

PG&E Streamlining Changes

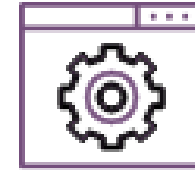


Optional Documents for PG&E applications with an RRF Submitted date on or after 12.05.2021



Modification of Electric Utility Bill Requirement (PG&E territory only)

Proposes to make utility bill an optional RRF document for applications since the info in PG&E's internal billing system matches the information provided on the customer's electric bill



Modification of PTO Documentation Requirement (PG&E territory only)

Can verify interconnection through PG&E's internal interconnection system, thus eliminating the requirement for customers to submit a separate copy of the PTO letter as part of the ICF stage document requirements

RNG – Updates to Application Panels

Recent updates for Renewable Natural Gas (RNG) applications

Proposed System Information – Energy Generation Panel

- Added Notes (three last notes)
- Added 2 Validation Questions
- Removed Non-Renewable Questions

The screenshot displays the 'Proposed System Information - Energy Generation' panel. It features several dropdown menus and radio buttons for user input. The 'Equipment Technology' dropdown is set to 'Internal Combustion', 'Renewable Fuel Type' is 'Digester Gas', and 'Renewable Fuel Source' is 'Onsite'. The 'Paired Equipment Type' dropdown is set to 'Photovoltaic'. There are two validation questions with red error messages: one regarding biogas fuel methane content and another regarding nonattainment areas. A 'Save' button is located at the bottom right. A 'NOTES' section on the right contains three informational paragraphs.

Proposed System Information - Energy Generation

Equipment Technology *
Internal Combustion

Renewable Fuel Type *
Digester Gas

Renewable Fuel Source *
Onsite

Paired Equipment Type *
Photovoltaic

Is this an "Export to Grid" Project? *
 Yes No

Is there currently, or will there be by the time of inspection, other self-generation or storage equipment onsite? *
 Yes No

The biogas fuel used in on-site internal combustion engine meets a minimum of 96 percent methane. *
The project does not comply with SGIP program requirements.

The project site is NOT located in a county listed as a severe or extreme federal nonattainment area for particulate matter (PM10 or PM2.5) or eight-hour ozone (O3) in the U.S. Environmental Protection Agency Green Book for any of the three years prior to the date of this SGIP application. To check, navigate to: [Nonattainment Areas for Criteria Pollutants \(Green Book\) | US EPA](#). *
The project does not comply with SGIP program requirements.

NOTES

Enter information about the proposed generating system that is applying for an SGIP incentive.

Please refer to the SGIP Handbook for the minimum fuel blending requirements per program year.

Report details of the paired system in the Other Onsite System Information Panel.

Export to Grid projects that qualify for the feed-in tariff are sized based on the Eligible Capacity restrictions in the SGIP Handbook.

Biogas or gas must be derived from feedstocks as defined in Assembly Bill 2163, or biomass as defined by the Renewables Portfolio Standard, with the exclusion of purpose-grown energy crops.

Biogas fuel used in on-site internal combustion engine projects that contains a minimum of 96 percent methane.

Hydrogen fuel must be produced at a SGIP project site, or delivered to a SGIP project site by vehicle or dedicated pipeline, that was produced through non-combustion thermal conversion of biomass or electrolysis using 100 percent renewable electricity, as defined by the Renewables Portfolio Standard, with the addition of large hydropower and excluding purpose-grown crops. If the renewable electricity is not generated on-site, the purchase program or load serving entity must provide bundled Renewable Energy Credits to the electricity purchase.

Save

RNG-PSPS and Outage Requirement Updates

Updated questions because Equity Resiliency and General Market Resiliency Adder Requirements have been expanded to:

- Customers who have experienced one Public Safety Power Shutoff (PSPS) event and one de-energization or power outage from an actual wildfire that occurred on or after January 1, 2017,
- Customers that have experienced two or more discrete PSPS events and apply the eligibility requirements to the meter not to individual customers, referencing CalFIRE or a similar source to define the term "wildfire."

For questions about the expanded requirements, please contact your PA directly.



RNG-PSPS and Outage Requirement Updates

Panel	Previous Question	New Question
Project Site	Has experienced at least two discrete PSPS events?	Has experienced two or more discrete PSPS events, or one PSPS event and one de-energization or power outage from an actual wildfire that occurred on or after January 1, 2017?
Host Customer Contact	Does the host customer provide critical facilities or infrastructure to one or more communities in a Tier 3 or Tier 2 HFTD or a community with customers whose electricity was shut off during two or more discrete PSPS events?	Does the host customer provide critical facilities or infrastructure to one or more communities in a Tier 3 or Tier 2 HFTD or a community with customers whose electricity was shut off during two or more discrete PSPS events, or one PSPS event and one de-energization or power outage from an actual wildfire that occurred on or after January 1, 2017?
Host Customer Contact	Does the host customer provide critical services or infrastructure during a PSPS event to a community that is at least partially located in a Tier 2 or Tier 3 HFTD and eligible for the equity budget?	Does the host customer provide critical services or infrastructure during a PSPS event to a community that is at least partially located in a Tier 2 or Tier 3 HFTD, or a community with customers whose electricity was shut off during two or more discrete PSPS events, or one PSPS event and one de-energization or power outage from an actual wildfire that occurred on or after January 1, 2017 and eligible for the equity budget?



Medical Baseline Attestation

Who needs to upload it?

- All projects for customers claiming eligibility in the Equity Resiliency Budget under Medical Baseline that are funded on or after January 21, 2022
- "Yes" selected for medical baseline question in Host Customer Contact panel

Is the Host Customer enrolled for the medical baseline program?*

YES NO Not Applicable

Where can I find it?



Program Provided Application Documents and Forms

Forms and Documents for Reservation Request (RRF)

Proposed Monitoring Plan Checklist
Energy Storage Preliminary Monitoring Plan Template
Commercial Minimum Operating Efficiency Worksheet
Residential Minimum Operating Efficiency Worksheet
2016 Commercial Minimum Operating Efficiency Worksheet
2016 Residential Minimum Operating Efficiency Worksheet
Pre-2016 Commercial Minimum Operating Efficiency Worksheet
Pre-2016 Residential Minimum Operating Efficiency Worksheet
Thermal Energy Storage Refrigeration kW Offset Worksheet
CSE Authorization to Receive Customer Information (LOA)
Residential Energy Storage Affidavit (PRE-2017) Residential Energy Storage Affidavit
Multi-Family Low-Income Housing Documentation
Cover Sheet
Small Business Affidavit
Customer Resiliency Attestation
Electric Well Pump Attestation

Medical Baseline Attestation

Forms and Documents for Proof of Project Milestone (PPM)

Renewable Fuel Affidavit
Directed Renewable Fuel Attestation Letter - System Owner
Directed Renewable Fuel Attestation Letter - Fuel Supplier
Directed Renewable Fuel Attestation Letter - Combined
Waste Gas Fuel Affidavit

Forms and Documents for Incentive Claim (ICP)

Project Cost Breakdown Worksheet
Project Cost Affidavit
Project Cost Combine - Breakdown and Affidavit
Planned Maintenance Coordination Letter (PRE-2017) Energy Efficiency Affidavit



Thank you

SGIP Software Team

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877-651-8608





SGIP Adoption of UL 9540A

Dara Salour, AESC

UL 9540A



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- Test Method for Evaluating the Thermal Runaway Fire Propagation in Battery Energy Storage Systems
- This test is intended to show whether fire or thermal runaway condition in a single battery module or cabinet will propagate outside of the cabinet to adjacent cabinets or walls.

Source: Eaton.com

NFPA standard 855 and IFC 1206 Fire Codes



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- Contain new requirements specific to lithium-ion stationary battery design and installation
- For example, these codes require:
 - 3 ft. spacing on all sides of a battery cabinet
 - 50kWh or less cabinet capacity and
 - 600kWh maximum allowable quantity (MAQ) in a room.
- On their own, these stringent requirements may prevent many lithium ion battery installations

Exceptions to NFPA standard 855 and IFC 1206



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- These sections also come with exceptions that allow the electrical inspector, fire inspector, or Authority Having Jurisdiction (AHJ) to approve a more traditional UPS and battery installation.
- These exceptions typically allow the AHJ to waive a requirement based on:
 - Large scale fire testing,
 - Failure modes and effects analysis (FMEA)
- A FMEA by the user is commonly required for VRLA battery installations as well, but the fire testing is generally assumed to mean a UL9540A test has been conducted by UL.
- With the UL 9540A test report and the FMEA analysis, the AHJ can waive the cabinet spacing and MAQ requirements for a given installation.

SGIP Adoption of UL 9540A



- SGIP is evaluating UL 9540A, for fire safety reasons, as a safety requirement for battery energy storage systems.
- The SGIP PAs are looking for feedback from industry regarding whether UL 9540A should be adopted as a required certification in SGIP.

Closing



Thank you for attending today's workshop!
The PAs can be reached at the contact information listed below:

Pacific Gas and Electric Company selfgen@pge.com

Southern California Edison: SGIPGroup@sce.com

Center for Sustainable Energy sgip@energycenter.org

SoCalGas selfgeneration@socalgas.com