SELF-GENERATION INCENTIVE PROGRAM

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

Tuesday, March 15, 2022

Microsoft Teams Meeting

Southern California Edison — An Edison International Company

Pacific Gas and Electric Company

SoCalGas — A Sempra Energy utility

Center for Sustainable Energy

Introduction

Program Administrators

SELF-GENERATION INCENTIVE PROGRAM

- 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

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SGIP Support

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

Microsoft Teams Meeting

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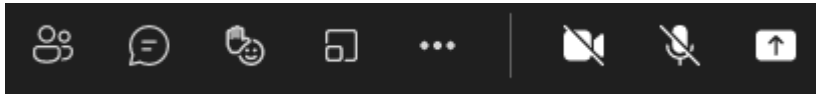
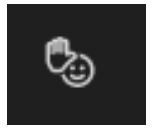
- Controls 

- 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 

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Agenda (9:00 am – 12:00 pm PST)

SELF-GENERATION INCENTIVE PROGRAM

- 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)

SELF-GENERATION INCENTIVE PROGRAM

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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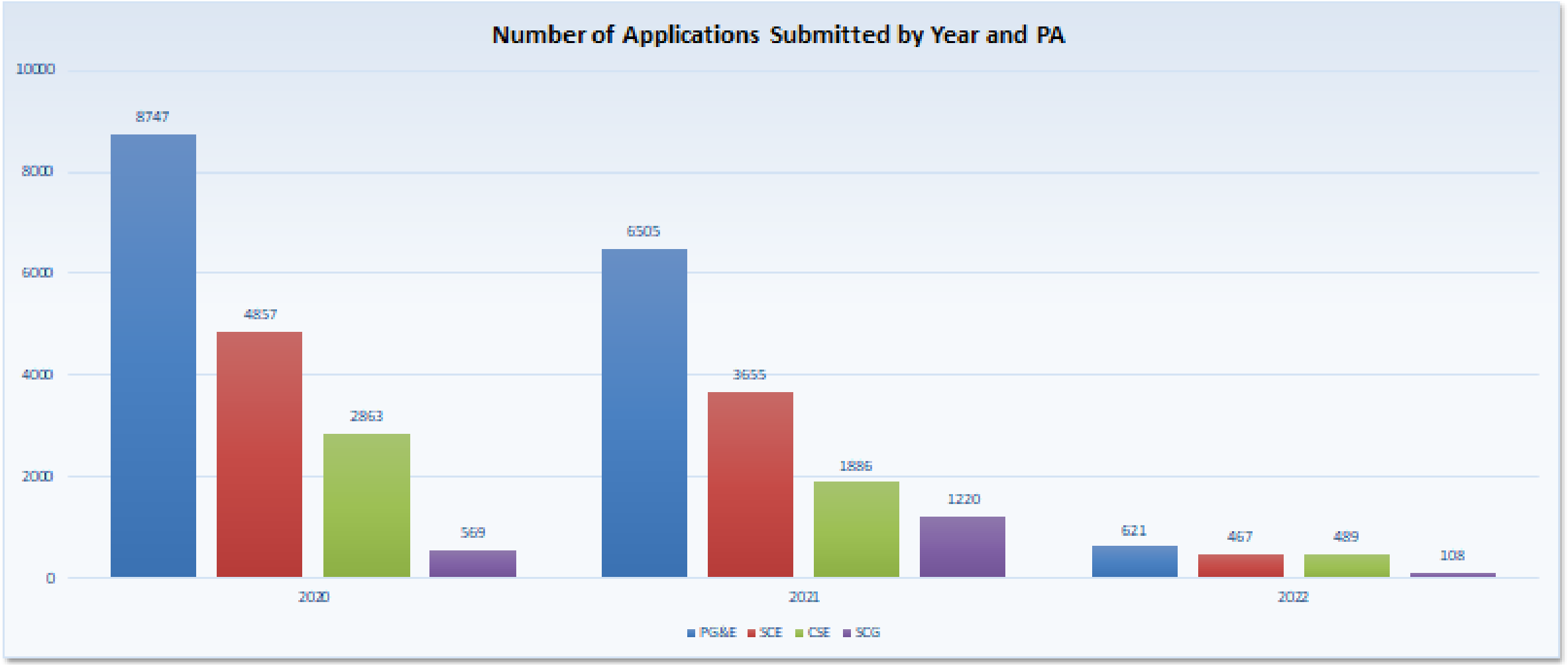

Does not include cancellations and waitlist projects

Applications by Program Year and Budget Category

Energy Storage Data 2020 – March 7, 2022

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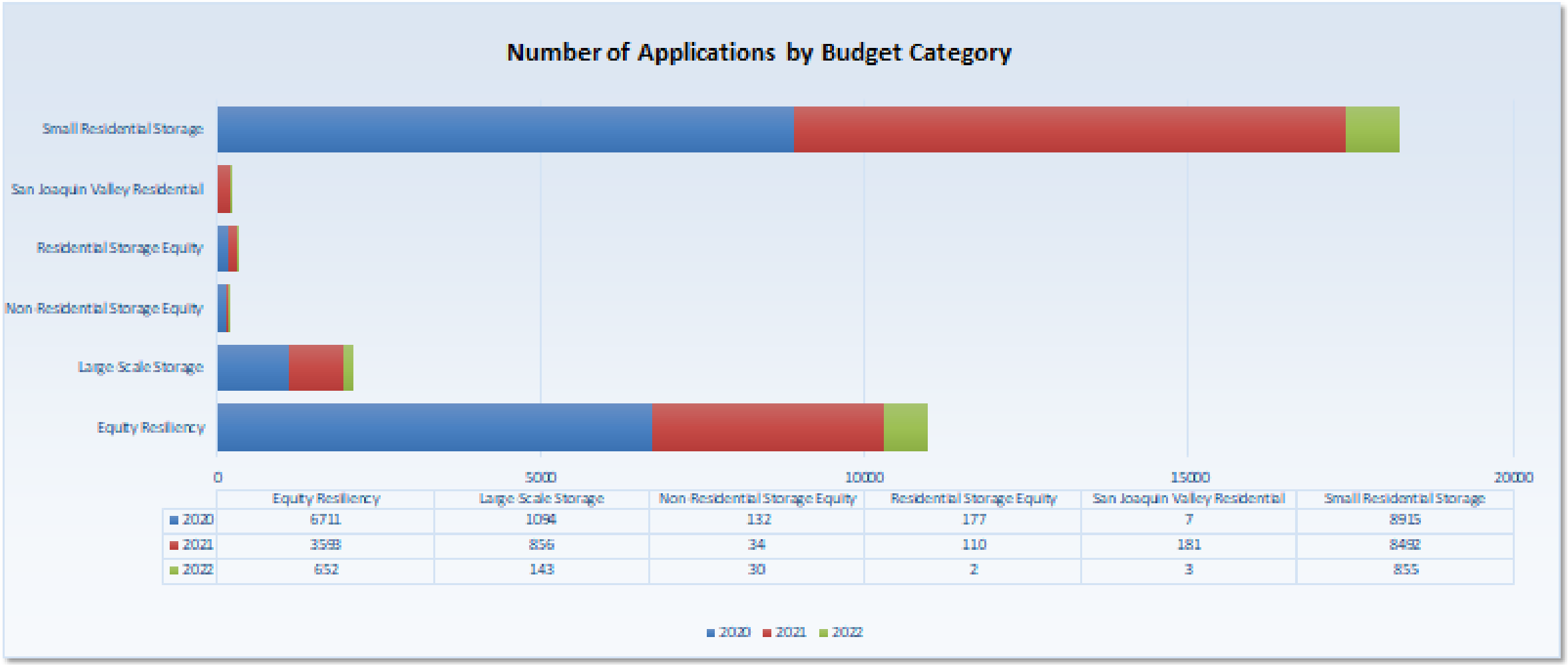

	Equity Resiliency	Large Scale Storage	Non-Residential Storage Equity	Residential Storage Equity	San Joaquin Valley Residential	Small Residential Storage
2020	6711	1094	132	177	7	8915
2021	3598	856	34	110	181	8492
2022	652	143	30	2	3	855

Total Incentives Reserved and Paid by Budget Category

Energy Storage Data 2020 – March 7, 2022

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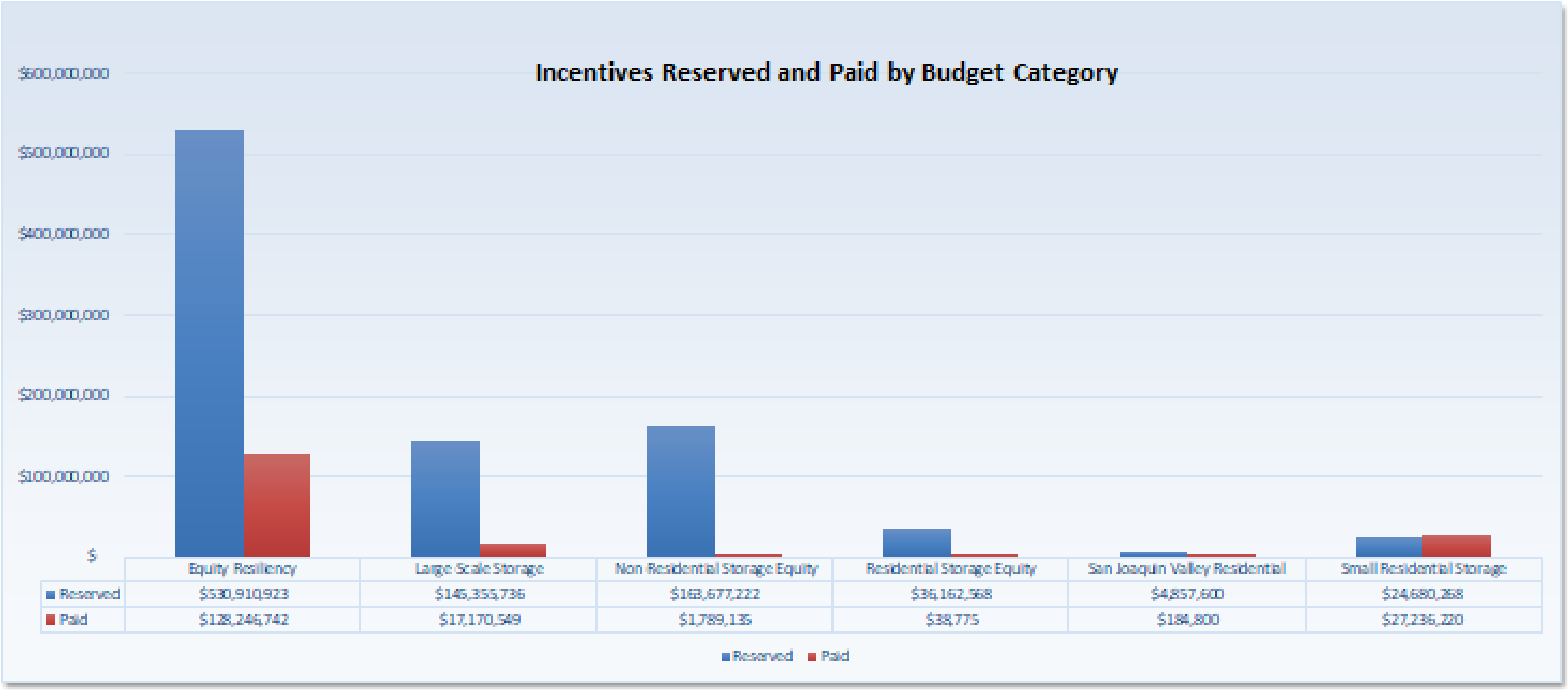

	Equity Resiliency	Large Scale Storage	Non Residential Storage Equity	Residential Storage Equity	San Joaquin Valley Residential	Small Residential Storage
Reserved	$530,910,923	$146,355,736	$163,677,222	$36,162,568	$4,857,600	$24,680,268
Paid	$128,246,742	$17,170,549	$1,789,135	$38,775	$184,800	$27,236,220

Total Capacity Reserved and Paid by Budget Category

Energy Storage Data 2020 – March 7, 2022

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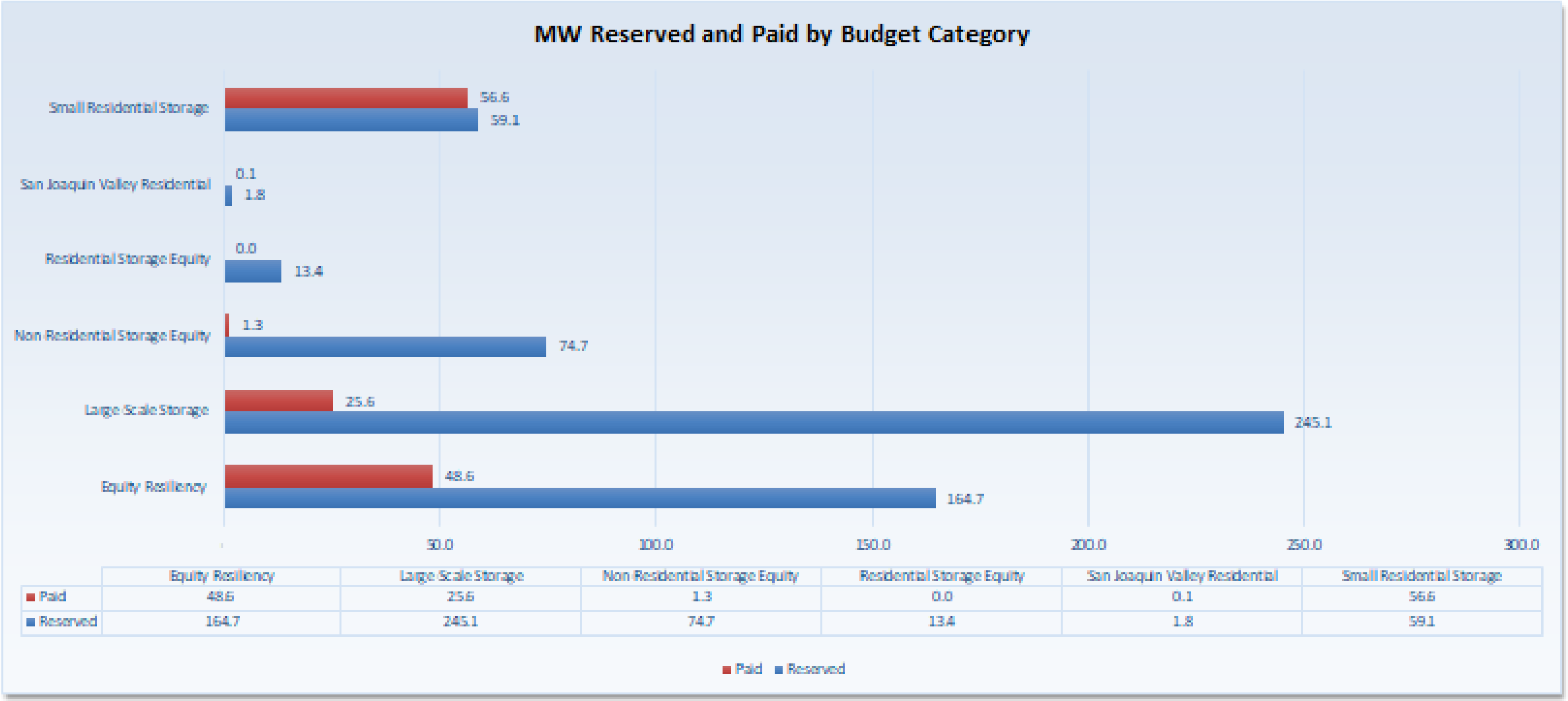

	Equity Resiliency	Large Scale Storage	Non Residential Storage Equity	Residential Storage Equity	San Joaquin Valley Residential	Small Residential Storage
Paid	48.6	25.6	1.3	0.0	0.1	56.6
Reserved	164.7	245.1	74.7	13.4	1.8	59.1

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
	$0.36/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	$41,994,561

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

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Questions?

Regulatory Updates

PG&E

Regulatory Updates

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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

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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.

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Regulatory Updates

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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.

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Regulatory Updates

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Questions?

Inspection Streamlining

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- 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
WattTime™

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/Customer_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.

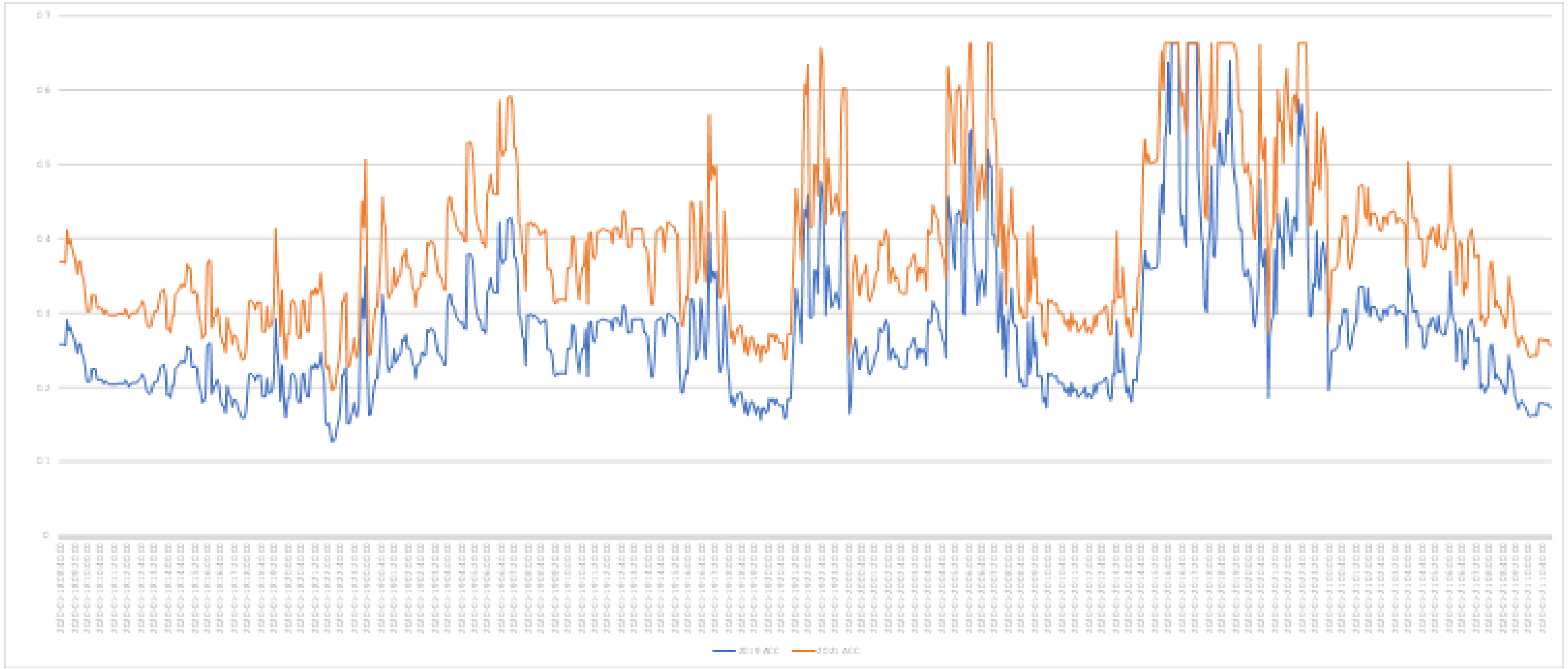
Changed Signal Assumptions

- 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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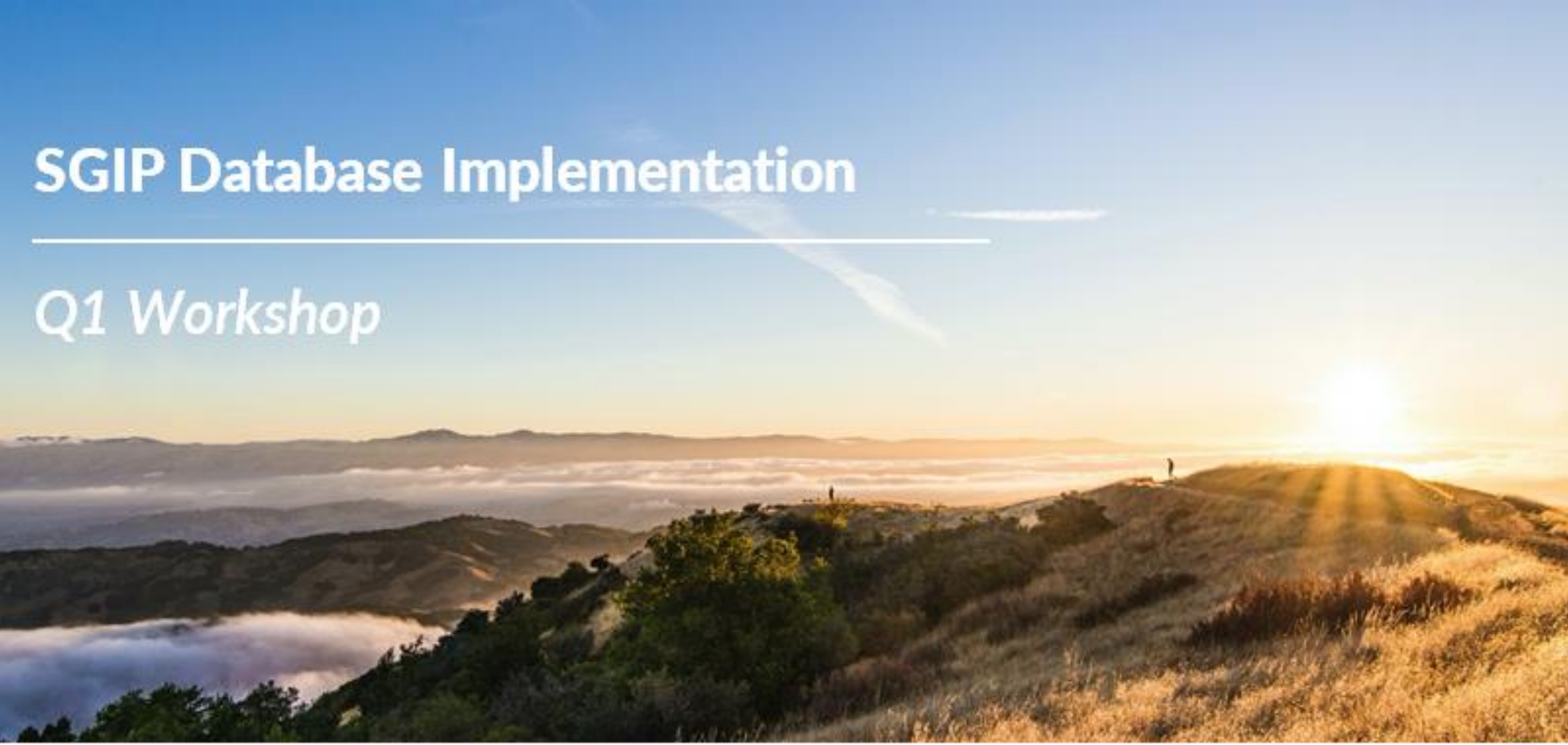
415.300.7475

SGIP Database Implementation

Q1 Workshop



Presented by: Andrew Chow
March 15th, 2022

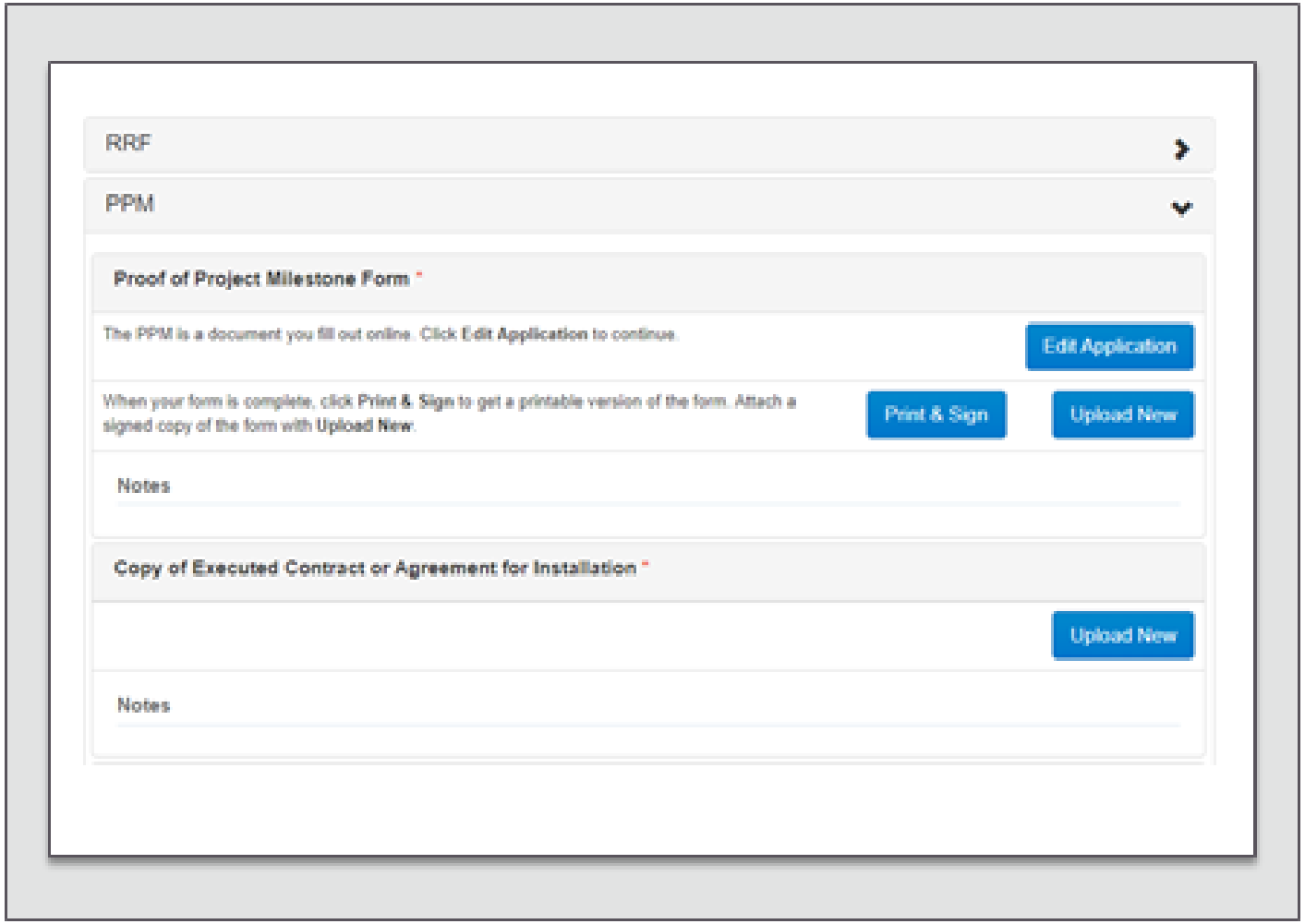
Energy Solutions

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

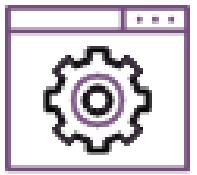


PG&E Streamlining Changes

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)

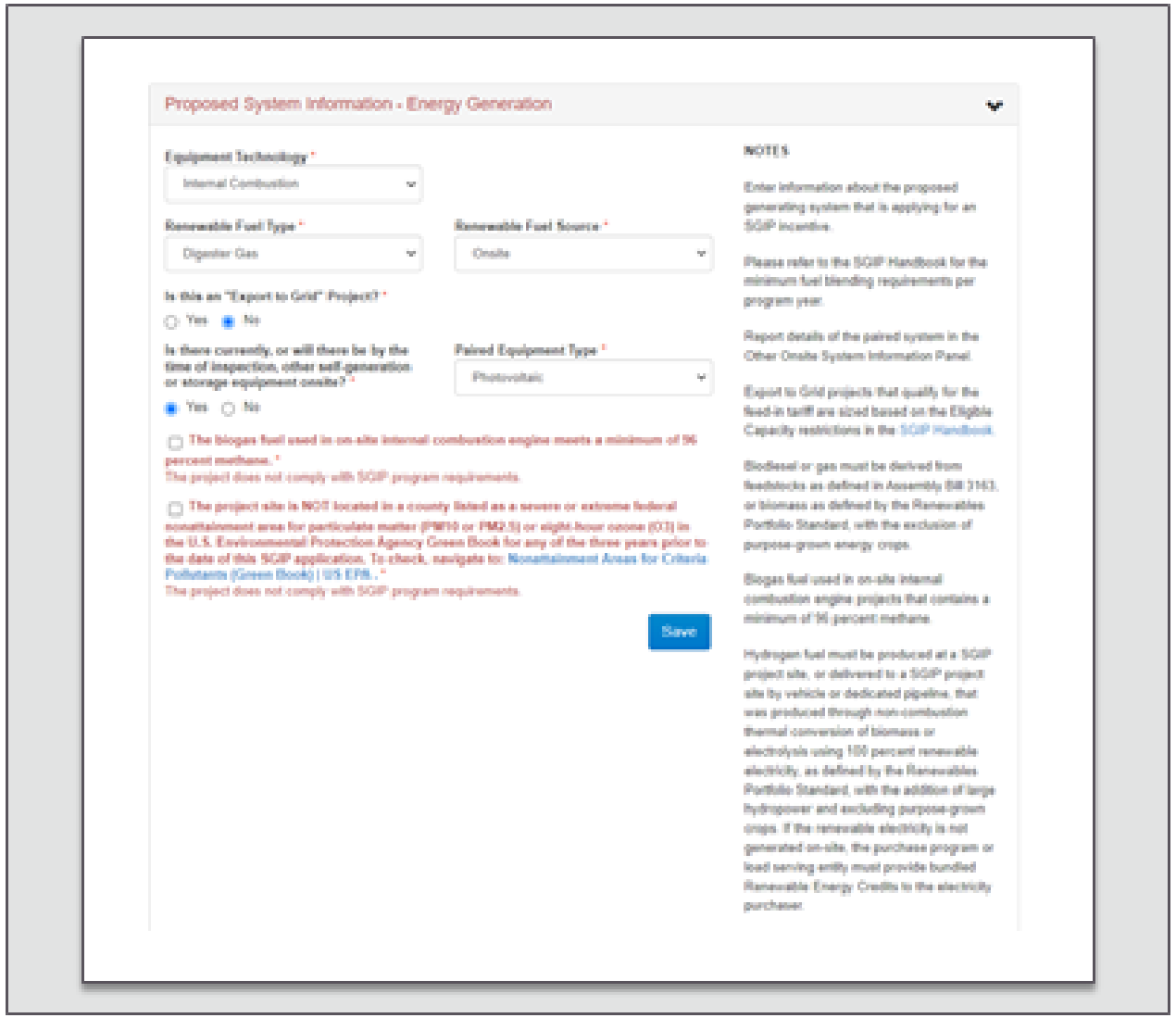
Can verify interconnection through PG&E's internal interconnection system, thus eliminating the requirement for customers to submit a separate copy of the PTO letter as part of the ICF stage document requirements

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



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

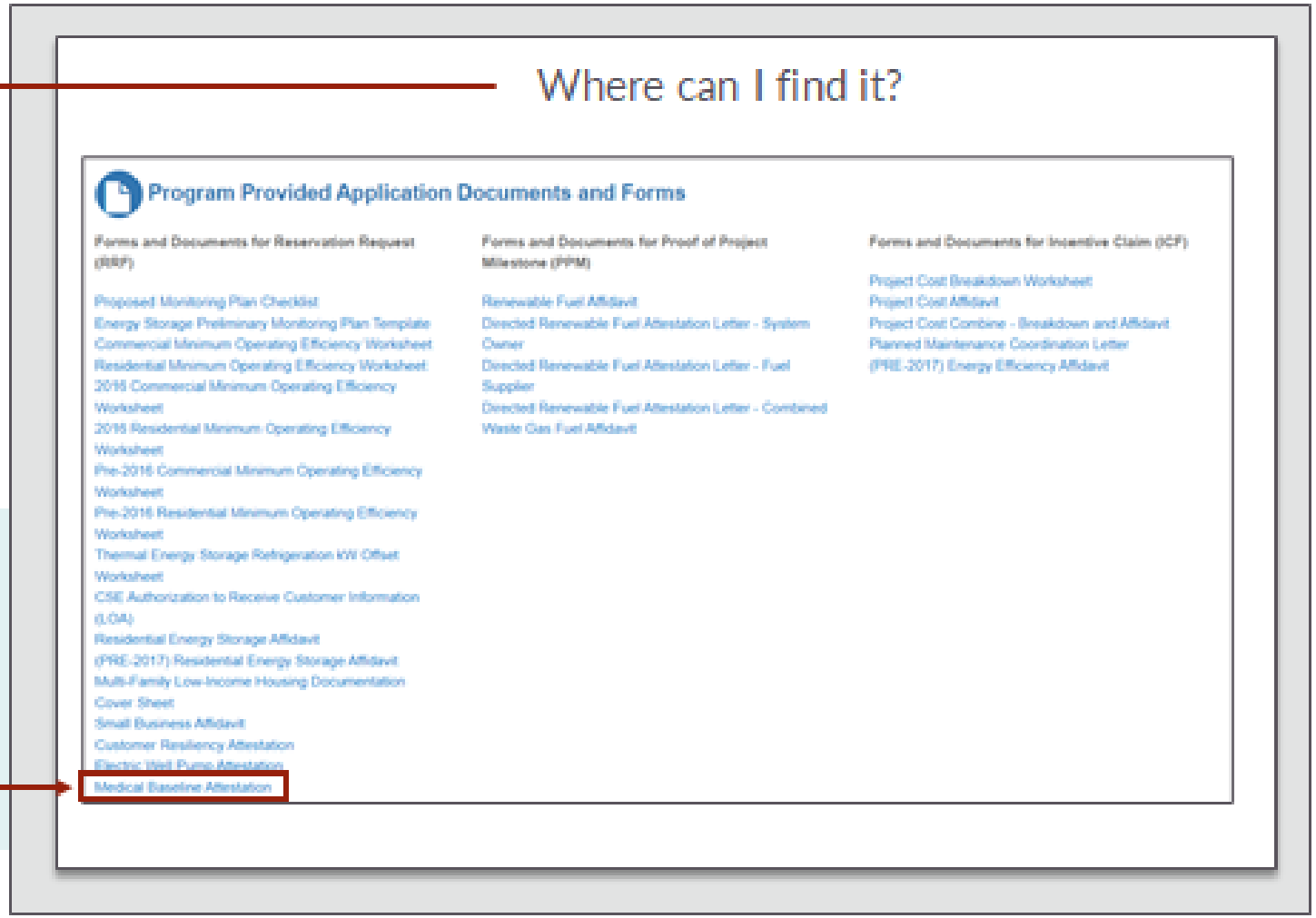
Who needs to upload it?

- 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?




Thank you
SGIP Software Team
sgipsupport@energy-solution.com
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

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- 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

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Thank you for attending today's workshop!

The PAs can be reached at the contact information listed below:

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Southern California Edison: SGIPGroup@sce.com

Center for Sustainable Energy sgip@energycenter.org

SoCalGas selfgeneration@socalgas.com