Self-Generation Incentive Program (SGIP) Quarterly Workshop

Friday, August 24, 2018
SDG&E Energy Innovation Center, San Diego, CA

Hosted by Center for Sustainable Energy (CSE) Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), and SoCalGas

Introductions

CSE: Rebecca Feuerlicht, Andi Woodall, Alex Kaufman, Joe Bick, Alejandra Belalcazar, Matt Meyer, Anastassia Zygmunt

SoCalGas: Rosie Magana, Laura Crump, Adrian Martinez

SCE: Jim Stevenson, Vicky Velazquez

PG&E: Brian Bishop, Ron Moreno

CPUC: Mary Claire Evans

AESC: Dara Salour

Energy Solutions: Andrea Vas

Agenda (9:00 AM – 10:00 PM)

- Energy Innovation Center Welcome
- SGIP Welcome and Introduction
- SGIP Update
- SGIP Technical Working Group & Database Updates
- SGIP Application Requirements
- Stakeholder Q&A

Housekeeping

- Webinar is recorded and will be shared to attendees after the workshop. The video will also be posted on selfgenca.com.
- All callers and web attendees will be muted throughout the workshop. All questions must be submitted via the Chat feature in GoToWebinar.
- The information and recommendations discussed today do not replace or amend existing program rules. All applications continue to be subject to the program rules as defined in the SGIP Handbook until future notice.

SGIP Program Updates

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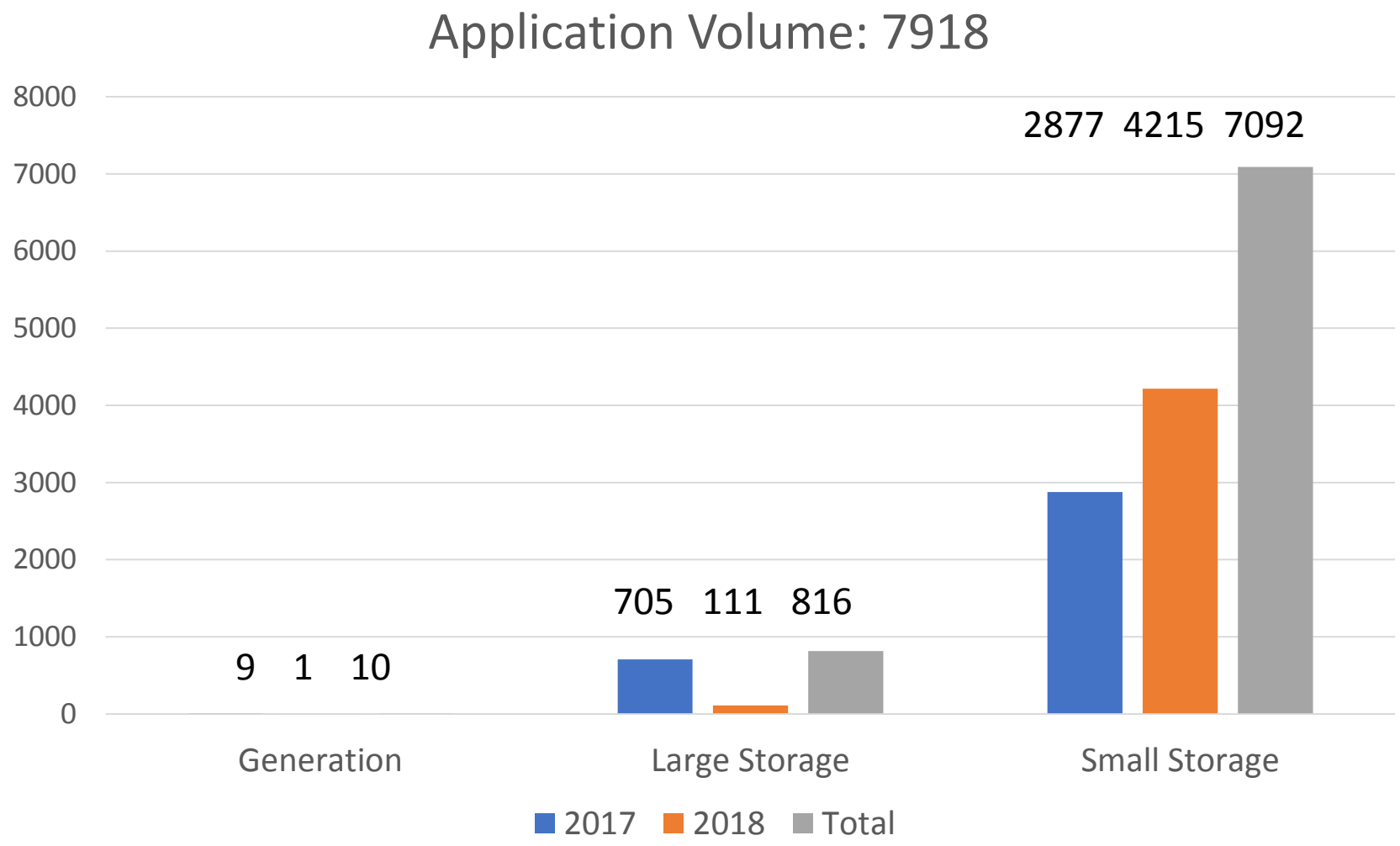
Program Adoption Data: 2017-2018 Application Volume as of 08/22/2018



NOTE:

2017 program opened in May; was open 8 mos.

2018 program has been open 8 months so far.

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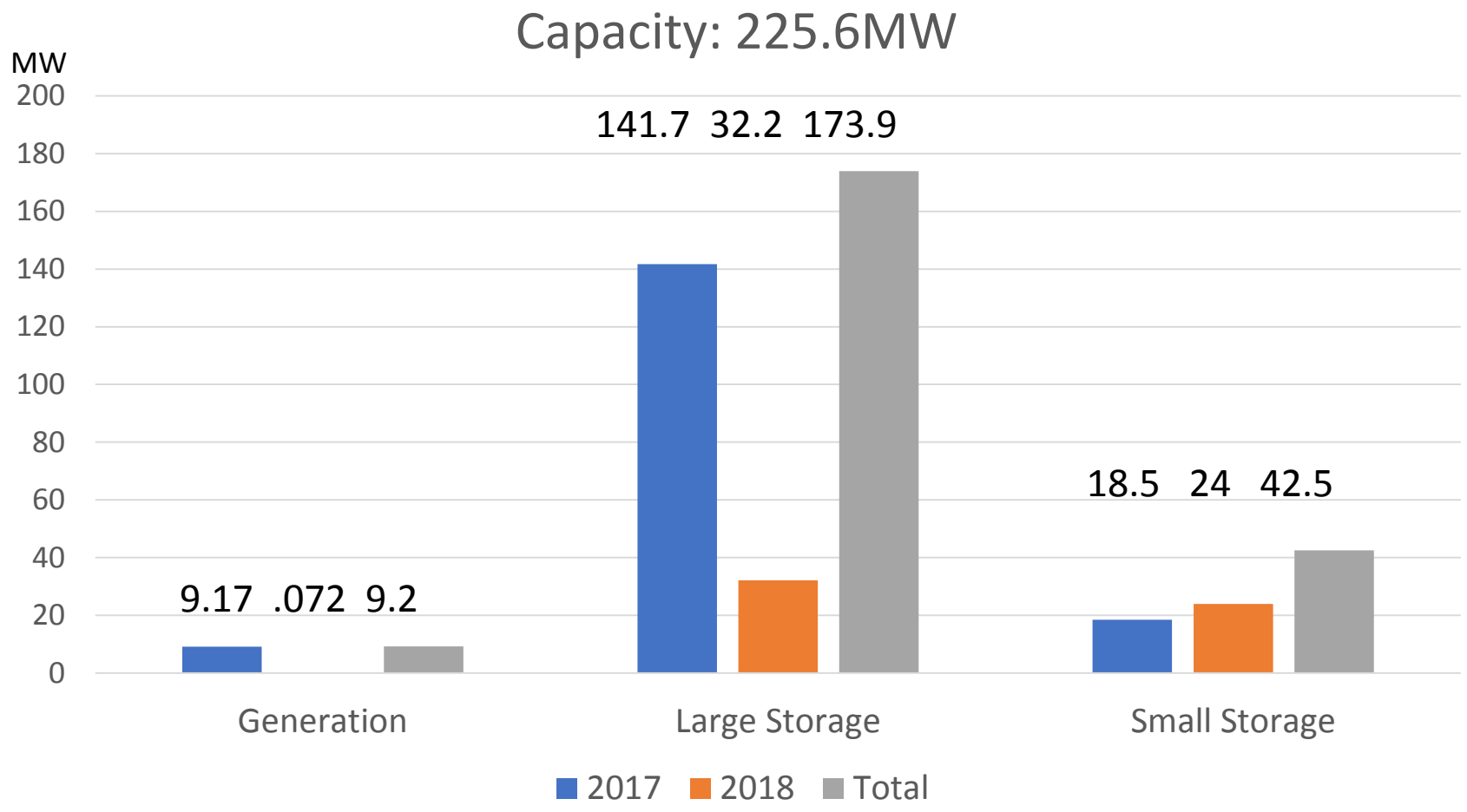
Program Adoption Data: 2017-2018 Application Capacity as of 08/22/2018



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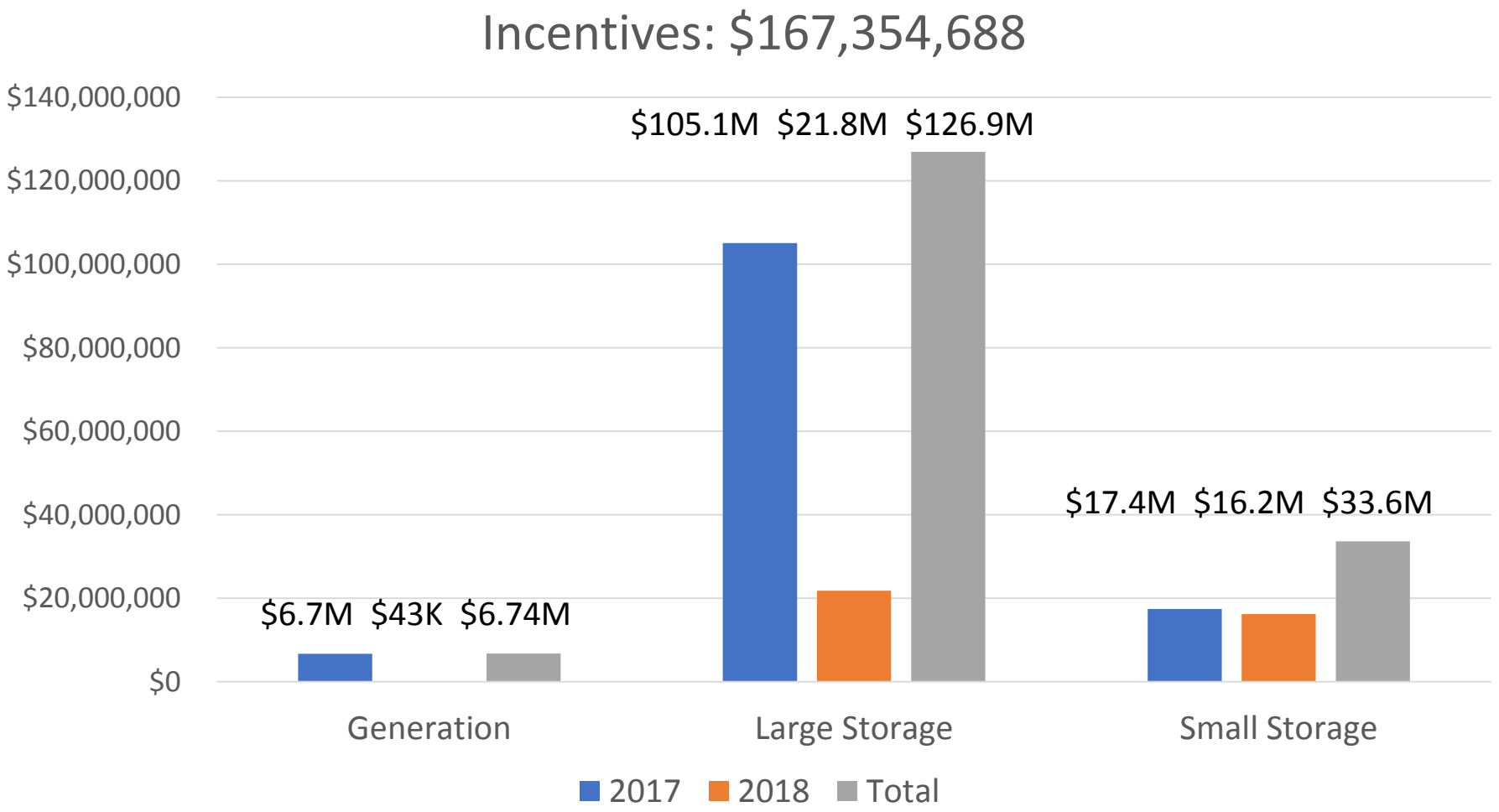
Program Adoption Data: 2017-2018 Application Incentives



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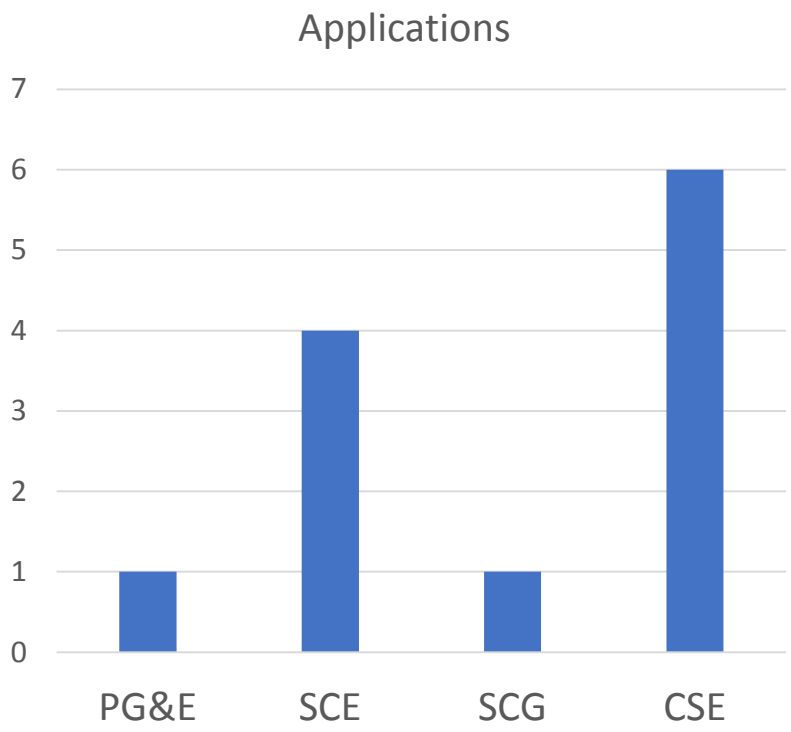
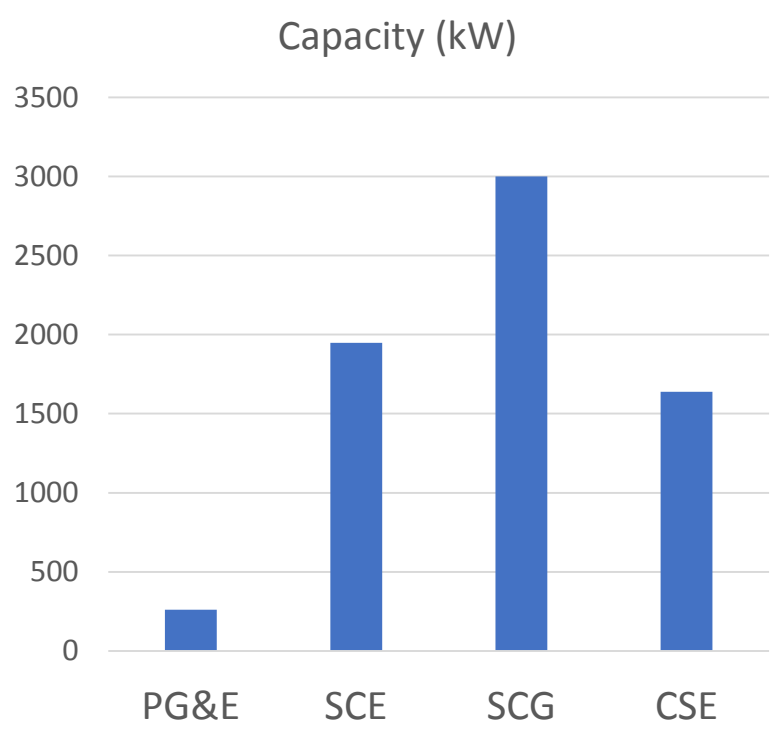
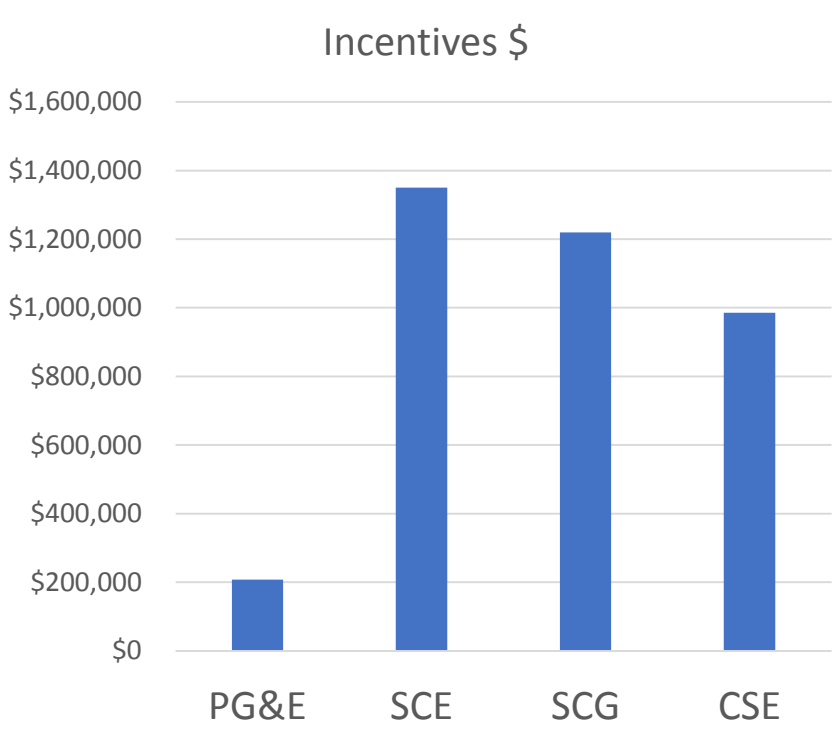
Large Commercial Apps Since the June 22nd 2018 Q2 Quarterly Workshop







- 12 large commercial energy storage applications statewide in the past 2 months
- PG&E and SCG have received only 1 application each; PG&E still in Step 2
- Large commercial ES could provide most value (peak shaving, GHGs, grid support) yet is the slowest market; slowdown of solar, upcoming rates, EMS operations, ITC = investor uncertainty

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Stakeholder Q&A

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SGIP Technical Working Group and Database Updates

SGIP ONLINE DATABASE WORKSHOP

AUGUST 24, 2018

AGENDA

- SOFTWARE PRIORITIZATION
- PAST DATABASE IMPROVEMENTS
- UPCOMING IMPROVEMENTS
- OPEN Q&A

PRESENTED BY

ANDREA VAS

ENERGY SOLUTIONS


SOFTWARE PRIORITIZATION

SOFTWARE PRIORITIZATION

MANAGING DEVELOPMENT TASKS

MAINTAIN A TASK LIST

- BUGS
- REQUESTS FROM SUPPORT
- REQUESTS FROM PROGRAM ADMINISTRATORS
- SECURITY AND STABILITY UPGRADES
- LEGISLATIVE REQUIREMENTS

PRIORITIZE WEEKLY

- FREQUENCY OF ISSUE
- IMPACT ON NUMBER OF USERS
- EXISTENCE OF WORK-AROUND
- DEADLINE-DRIVEN REQUIREMENTS

PAST DATABASE IMPROVEMENTS

PAST DATABASE IMPROVEMENTS

IMPROVEMENT GOALS

- REDUCE SUPPORT REQUESTS
- IMPROVE APPLICATION QUALITY
- EXPEDITE PA REVIEW TIME
- UPGRADE INFRASTRUCTURE

PAST DATABASE IMPROVEMENTS

REDUCE SUPPORT REQUESTS

- REVISED INSTRUCTIONS
- BULK APPLICATION UPDATES
- IMPROVED SUPPORT TOOLS




PAST DATABASE IMPROVEMENTS

IMPROVE APPLICATION QUALITY

- IMPROVE HOST CUSTOMER INFORMATION PANEL FOR RESIDENTIAL
- TRAINING MATERIALS
- UPDATED COMMUNICATION TEMPLATES




PAST DATABASE IMPROVEMENTS

EXPEDITE PA REVIEW TIME

- STORAGE INSPECTION TRACKING PROTOCOL
- WAITLIST MANAGEMENT AUTOMATION
- UPCOMING PAYMENTS LEDGER
- AUTOMATE DUE DATE SATISFACTION




PAST DATABASE IMPROVEMENTS

UPGRADE INFRASTRUCTURE BENEFITS

- RESILIENCE AS PARTICIPATION AND COMPLEXITY GROWS
- MORE DESIGN OPTIONS TO MEET REQUIREMENTS
- REDUCE DEVELOPMENT TIME
- MATCH DATA SECURITY AGAINST NEW THREATS





UPCOMING IMPROVEMENTS

UPCOMING IMPROVEMENTS

- IMPROVED DOCUMENT MANAGEMENT
  - REVIEW HISTORY FOR AD HOC DOCUMENTS
  - NOTES FOR DOCUMENTS
- IMPROVED REVISION HISTORY OF APPLICATION CHANGES
- REDESIGNED TECHNICAL REVIEW USER EXPERIENCE
- REDESIGNED RESOURCES PAGE
- “CHECK MY STATUS” FEATURE
- PBI CHANGES PER PENDING DECISION


THANK YOU
AVAS@ENERGY-SOLUTION.COM

Stakeholder Q&A

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SGIP Program Documentation

Reservation Request Documents

- Reservation Request Form (RRF)
- Application Fee Check
- Equipment Specifications
- Proof of Utility
- Load Documentation (*CSE & SoCalGas only*)
- Preliminary Monitoring Plan (*>=30 kW and projects charging 75% from onsite renewable generator*)
- Proof of Equity Budget Eligibility (*Equity Projects Only*)

Reservation Request Form

- Initial application for the SGIP incentive that identifies:
  - Host Customer (utility customer of record)
  - Project Site (must match service address for utility account)
  - Equipment details (must match provided equipment specifications and undergoes a technical review)
  - Total Eligible Project Cost details (may not include costs associated with onsite generation)
  - Wet or verifiable e-signatures from
    - Host Customer
    - System Owner
    - Developer
    - Applicant

Application Fee

- 5% of the requested incentive amount due within seven days of being assigned to an incentive step
- Only checks, cashiers check, or money orders are accepted
- Must be mailed to the Program Administrator. Hand-delivered payments are not accepted

Equipment Specifications

- Manufacturer equipment specifications for all major components of the system such as:
  - Energy storage system
  - Inverter
  - DC-DC converter
  - controller
  - and/or additional system components when applicable
- Rated capacity (kW), energy capacity (kWh), and roundtrip efficiency for the storage system must be provided.

Equipment Specifications

Energy Storage system specs must include:

- Specs for the integrated system
- Specs for the components must include:
  - Duration of discharge (hours)
  - DC dischargeable amp-hour capacity
  - Nominal voltage (VDC)
- Quantity of equipment

- Inverter and DC-DC converter specs must include:
  - Inverter CEC-AC efficiency
  - DC-DC converter efficiency
  - Inverter continuous power output rating (kW)
  - The continuous maximum power output capability of the system. For DC systems, this is rated in DC, and for AC systems, this is rated in AC.

Proof of Utility

- A copy of a recent bill (typically within 6 months) required
- The bill must identify:
  - Utility customer of record
  - Service address
  - Account number
  - Interconnection meter
  - Tariff

Load Documentation (> 10 kW only)

- CSE and SCG require electric load documentation to verify the system meets the SGIP sizing requirements.
- Twelve months of historical load consumption data (kWh and peak demand kW) is required.
- CSE accepts interval data directly from the interconnection meter or twelve months of consecutive bills.
- SoCalGas accepts twelve months of electric data.

Forecast for New or Expanded Load

- 2017 SGIP Handbook:

  "If the energy storage system is being sized based on new or future load growth (i.e. new construction or load growth due to facility expansion or other load growth circumstances) applications must include an engineering estimate with appropriate substantiation of the Site's annual peak demand forecast."

- Suggested methods of demonstrating load growth include:
  1. Application for Service with corresponding equipment schedules and single line diagram
  2. Detailed engineering calculations
  3. Building simulation program reports such as eQUEST, EnergyPlus, EnergyPro, DOE-2, and VisualDOE

Example: New Load Forecast

Standard Method for Dwelling Service Calculations
Worksheet for the EVITP

Using the Standard Method complete this worksheet to perform a service load calculation. An example of standard loads is shown below.

Owner:

Address:

Contractor:

License number:

License class:

Data: 05/02/2018

LOAD CALCULATION FOR MAIN PANEL

Step 1: Section 220.12 – Lighting load for listed occupancies.

1,910	Sq.ft X	3	VA =	5,730 VA

Step 2 : Section 220.52 – Small Appliance and Laundry load.

1,910	Sq.ft x	3	VA =	5,730 VA
1	Appliances Circuits X	1,500	VA =	1,500 VA
1	Laundry Circuit X	1,500	VA =	1,500 VA
	General Lighting Load		=	8,730 VA

Step 3: Table 220.42 Apply demand factors to the general lighting load.

First	3,000	VA at 100%	=	3,000 VA
Remainder at 35% (	5,730	X 0.35	=	2,006 VA
Net Load			=	5,006 VA

Step 4: 220.53 – Demand Factor – Appliance Loads – Dwelling Units.

Disposal	=	1,200 VA
Dishwasher	=	1,200 VA
Compactor	=	1,200 VA
Refrigerator	=	1,000 VA
Garage Gate		1,500 VA
Tesla	=	5,800 VA
Total	=	11,200 VA
75% of total; four or more appliances	=	8,400 VA

Step 5: 220.54 – Clothes Dryer – The greater of 5 kW or nameplate value.

5,000 kW Electric Dryer	=	5,000 VA

Step 6: Table 220.55 **Household cooking Equipment**

Oven	=	2,000 VA
Range	=	2,000 VA
	=	VA
	=	VA
Total	=	4,000 VA

Preliminary Monitoring Plan

- Only required for projects that are claiming priority in the event of a lottery by charging at least 75% from an onsite renewable generator and/or projects sized 30kW and greater.
- Purpose:
  - Performance Based Incentive (PBI): to ensure appropriate monitoring capabilities for projects receiving PBI payments. The Performance Data Provider (PDP) and PBI meter must also be identified
  - Priority projects: ensure the system is capable of charging 75% from onsite renewables and the appropriate monitoring equipment is in place to ensure performance.

Stakeholder Q&A

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Proof of Project Milestone Documents

- Proof of Project Milestone (PPM)
- Request for Proposal or equivalent (*Public Entity Projects Only*)
- Executed Contract or Agreement for Installation
  - Includes Required Warranty Documentation
- Energy Efficiency Audit

Proof of Project Milestone Form (3-step projects only)

- Identifies new information from RRF:
  - Installer/contractor
  - Performance Data Provider (PDP)
  - Any changes to equipment and/or costs

Executed Contract

SGIP Handbook section 5.4.2.3:

The contract/agreement must be legally binding and clearly spell out the terms and scope of work. Purchase and/or installation agreements must also include system equipment and eligible system costs. All contracts/agreements must be signed by appropriate representatives (Host Customer, Installer, and/or System Owner) who are a party to the agreements of the SGIP reservation.

> *As part of the Executed Contract, all storage systems are required to include a minimum 10 year service warranty. A service warranty ensures proper maintenance and continued project performance. The service warranty must cover the system maintenance to include (but not limited to) system support, problem diagnosis, on-site repair and preventative maintenance. The warranty should also include language to guarantee the continued performance of the system over the warranty period. The System Owner must provide proof of warranty and maintenance contract, and specify the warranty and maintenance contract start and end dates.*

Energy Efficiency Audit

- EEA should include:
  - List of Energy Efficiency Measures
  - kWh saved per year for each measure
  - $ saved per year for each measure
  - Cost of the measure
- Online audits such as the one available through www.hes.lbl.gov for residences are acceptable.
- Your utility may have an online audit for most customers.

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Incentive Claim Documents

- Incentive Claim Form (ICF)
- Proof of Authorization to Interconnect
- Project Cost Affidavit and Breakdown Worksheet
- Building Permit Inspection Report
- Substantiation for New or Expanded Load (*if applicable*)
- Final Monitoring Schematic (*>=30 kW and projects charging 75% from onsite renewable generator*)

Incentive Claim Form (ICF)

- Once the Reservation is confirmed and the project is complete, applicants must request payment of the incentive amount by submitting the Incentive Claim Form (ICF) and all applicable Incentive Claim documents to the Program Administrator via the online application database www.selfgenca.com
- The ICF information must be complete and accurate. Must include the following information
  - Actual system and/or fuel information as installed (including system size and type).
  - Payee information
  - Must be signed by the Applicant, Host Customer, System Owner (if not the Host Customer)

Proof of Authorization to Interconnect (PTO Letter)

- Host Customers and/or System Owners will be required to execute certain documents such as, but not limited to, an “Application to Interconnect a Generating Facility” and a “Generating Facility Interconnection Agreement” with the local Electric Utility.

- A copy of the PTO Letter from their Electric Utility granting permission to interconnect and operate in parallel with the local grid should be submitted as proof of Authorization to Interconnect.
  - Service address on PTO letter must be the same as ICF
  - PTO should reference energy storage

- Applicants, Host Customers and System Owners are solely responsible to submit interconnection applications to the appropriate Electric Utility interconnection department as soon as the information to do so is available to prevent any delays in system parallel operation.

Project Cost Affidavit and Breakdown Worksheet

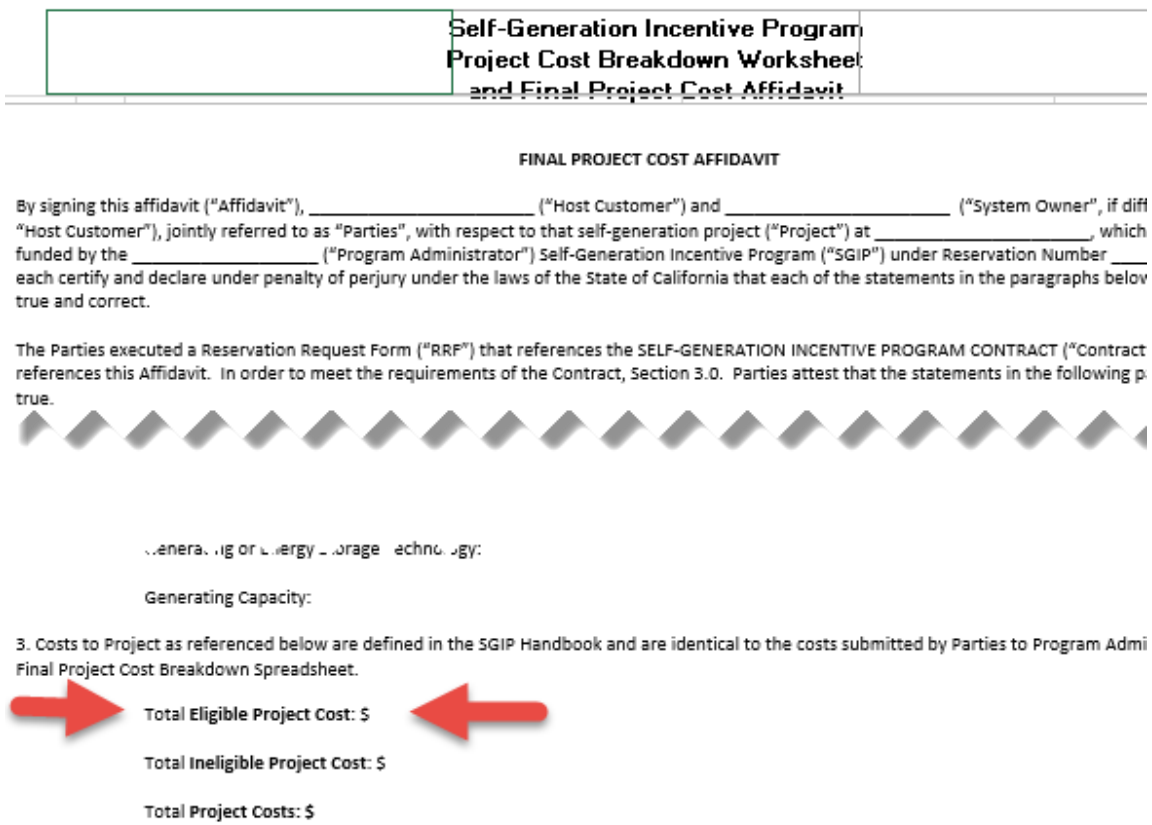
No project can receive total incentives (to include any combination of the technology incentive, biogas adder, and/or California Manufacturer) that exceed the Total Eligible Project Costs. Submittal of Project cost details is required to report Total Eligible Project Costs and to ensure incentive limits are not exceeded.

- A signed Project Cost Affidavit and a Project Cost Breakdown Worksheet substantiating the claimed eligible Project cost is required (as defined in Section 3.2.2).

The Project Cost Breakdown and Affidavit form can be downloaded directly from the SGIP application portal: https://www.selfgenca.com/home/resources/

Project Cost Affidavit and Breakdown Worksheet (Cont.)

Total Eligible cost in ICF, Project Cost Affidavit, and Breakdown Worksheet must match



Self-Generation Incentive Program
Project Cost Breakdown Worksheet
and Final Project Cost Affidavit

FINAL PROJECT COST AFFIDAVIT

By signing this affidavit ("Affidavit"), _____ ("Host Customer") and _____ ("System Owner", if diff
"Host Customer"), jointly referred to as "Parties", with respect to that self-generation project ("Project") at _____, which
funded by the _____ ("Program Administrator") Self-Generation Incentive Program ("SGIP") under Reservation Number ____
each certify and declare under penalty of perjury under the laws of the State of California that each of the statements in the paragraphs belov
true and correct.

The Parties executed a Reservation Request Form ("RRF") that references the SELF-GENERATION INCENTIVE PROGRAM CONTRACT ("Contract
references this Affidavit. In order to meet the requirements of the Contract, Section 3.0. Parties attest that the statements in the following p
true.

Generating or Energy Storage Technology:

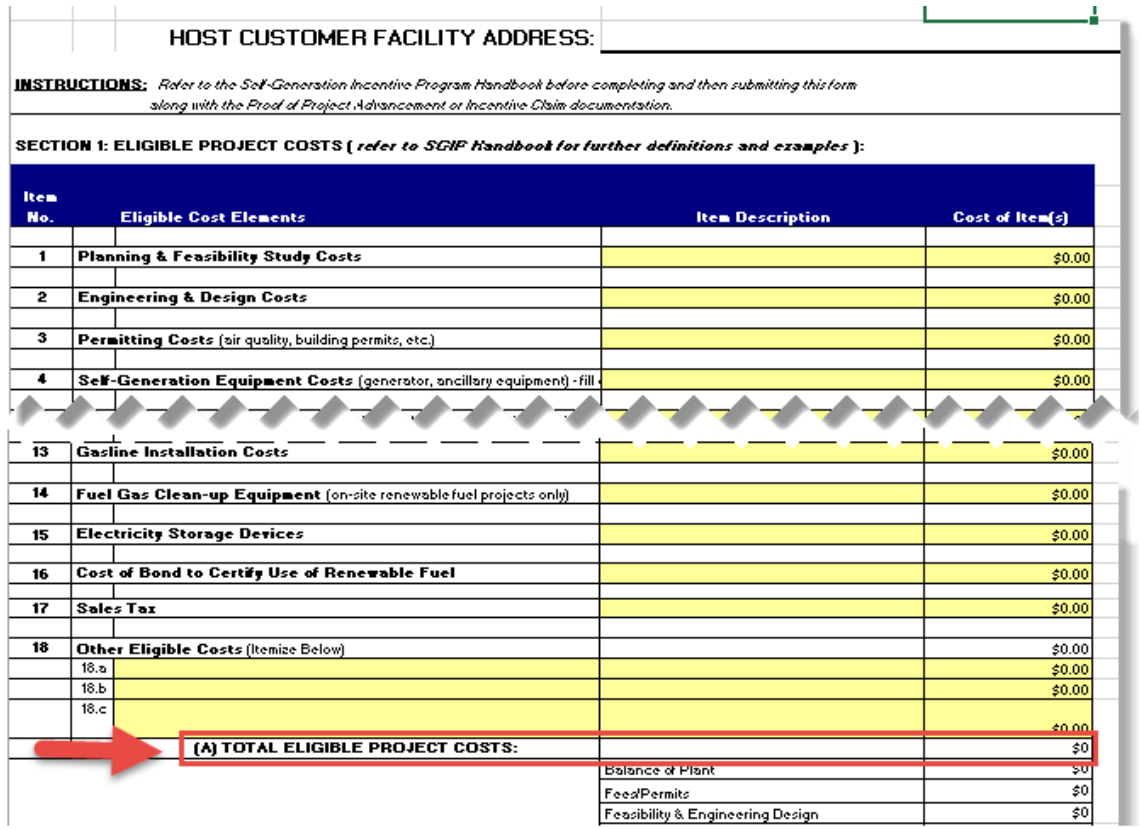
Generating Capacity:

3. Costs to Project as referenced below are defined in the SGIP Handbook and are identical to the costs submitted by Parties to Program Admi
Final Project Cost Breakdown Spreadsheet.

Total **Eligible Project Cost: $**

Total **Ineligible Project Cost: $**

Total **Project Costs: $**



HOST CUSTOMER FACILITY ADDRESS:

INSTRUCTIONS: *Refer to the Self-Generation Incentive Program Handbook before completing and then submitting this form along with the Proof of Project Advancement or Incentive Claim documentation.*

SECTION 1: ELIGIBLE PROJECT COSTS (*refer to SGIP Handbook for further definitions and examples*):

Item No.	Eligible Cost Elements	Item Description	Cost of Item($)
1	**Planning & Feasibility Study Costs**		$0.00
2	**Engineering & Design Costs**		$0.00
3	**Permitting Costs** (air quality, building permits, etc.)		$0.00
4	**Self-Generation Equipment Costs** (generator, ancillary equipment) - fill		$0.00
13	**Gasline Installation Costs**		$0.00
14	**Fuel Gas Clean-up Equipment** (on-site renewable fuel projects only)		$0.00
15	**Electricity Storage Devices**		$0.00
16	**Cost of Bond to Certify Use of Renewable Fuel**		$0.00
17	**Sales Tax**		$0.00
18	**Other Eligible Costs** (Itemize Below)		$0.00
	18.a		$0.00
	18.b		$0.00
	18.c		$0.00
	(A) TOTAL ELIGIBLE PROJECT COSTS:		$0
		Balance of Plant	$0
		Feed/Permits	$0
		Feasibility & Engineering Design	$0

Building Permit Inspection Report

- A copy of the final building inspection report (or proof of exemption) demonstrating that the Project meets all codes and standards of the permitting jurisdiction. Contact your local permitting jurisdiction to learn about permitting requirements.
  - Final Inspection must be legible and include the following information:
    1. Identification of the city/county that performed the inspection (e.g. city seal, letterhead)
    2. Site Address
    3. Final Electrical Sign off.
       - Must include date and signature or initials for the final electrical
- Note: Government agencies, college districts, and Native American reservations are allowed to self certify. Self-certification letters require the same elements as a regular final inspection.
- Some schools can provide an inspection from the Division of State Architect (DSA).

Final Monitoring Schematic

- Should be an electrical single line diagram that shows the connection between the following components:
  - Energy storage system(s)
  - Photovoltaic panels
  - Inverter(s)
  - Load panel
  - Critical load sub-panel (if applicable)
  - PBI meter (if applicable)
  - Utility meter

Incentive Claim Process

- A project is considered complete when the system is completely installed, interconnected (if applicable), permitted, and capable of operating in the manner for which it was designed.

- If the complete Incentive Claim package is not received by the reservation expiration date, the application may be cancelled by the Program Administrator

- Payment will be dispersed after the Program Administrator verifies by field inspection (if the project is selected for field inspection) that the system meets all the eligibility requirements of the SGIP.

SGIP Program Documentation

- **The SGIP provides several program forms for download, including:**
  - Proposed Monitoring Plan Template & Sample (RRF)
  - CSE's 3rd Party Authorization Form (RRF)
  - Project Cost Breakdown and Affidavit (ICF)

  These forms can be downloaded directly from the SGIP application portal: https://www.selfgenca.com/home/resources/

- **Documents NOT provided by the SGIP include:**
  - Equipment Specifications
  - Energy Efficiency Audit
  - Customer Contract
  - Final Monitoring Schematic

Stakeholder Q&A

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SGIP Inspection Process and Best Practices

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Inspection Process and Discharge Data

- Upon receipt of a complete Incentive Claim Form package, the PA may organize a field verification visit to verify that the project's system is installed as represented in the application and conforms to the eligibility criteria of the SGIP.
- If an energy storage project is selected for an inspection, discharge data files must be submitted to the PA prior to scheduling the onsite field verification visit.
- Discharge data files verify that the project is operational and that the system is capable of discharging energy at its incentivized capacity.

Inspection Process and Discharge Data

- If the project is selected for inspection, the Program Administrator (PA) will require documentation demonstrating system performance:

    1. Over the course of one week; and
    2. Over the duration specified on the application for a full, uninterrupted system discharge

Inspection Process and Discharge Data

- **One-Week of Operational Data**

The following information must be provided to the PA:

1. A unique system identifier (e.g., battery/system serial number or MAC address)
2. Interval data (no greater than 15 minutes) with the following information for each interval recorded over the test period:
3. Date and time stamps
4. kW and/or kWh charged and discharged or offset
5. State of charge

Inspection Process and Discharge Data

Continuous Discharge Test

One of the following must be provided to the PA:

1) **Field Test:** Continuous discharge test of the system located at the SGIP project site, measuring actual energy storage system output over the discharge duration specified on the application.

2) **Factory Test:** For battery systems, manufacturer and/or system integrator continuous discharge test report of the same make and model as the unit(s) inspected in the field must be provided. Factory report must also include description of testing approach or methodology and location of test.

For either option, the data must include a unique system identifier, interval data (no less than 1 minute and no greater than 15 minutes) with date and timestamps, kW and or kWh and state of charge for each interval recorded over the test period

Inspection Process and Discharge Data

- Familiarize yourself with the details of the Field Inspection Protocols. Contact PAs with any questions/concerns.
  - https://www.selfgenca.com/home/resources/
- Develop a plan for how to access and provide required data to PAs prior to inspection. This may require close coordination with the equipment manufacturer to perform a factory test or obtain operational data from project sites.
- It is encouraged (not required) that discharge data be uploaded when the Incentive Claim Form documents are submitted for a faster approval process.

What to expect on the day of the inspection

- The homeowner needs to be home for residential inspections to provide access to the equipment
- The inspection may take between ½ hour to an hour
- The inspector will take photographs of
  - The installed equipment and the nameplate and serial numbers of the equipment
  - The utility meter and the PBI meter (if applicable)
- The inspector will need access to locked cabinets
- The S/N of the equipment needs to match the S/N on the discharge data

Inspection Process and Discharge Data

ICF Review

- System is installed, interconnected and operational at the project site
- Applicant submits ICF documents and discharge data

Inspection

- If project is selected for inspection, discharge data is reviewed and onsite field inspection is scheduled
- The results of the discharge data and field inspection determines eligibility and final incentive payment

Payment

- PA sends ICF Approval email – noting any incentive adjustments
- PA issues incentive check to payee designated on incentive claim form
- PA refunds application fee to original payor

Stakeholder Q&A

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Thank you for attending the SGIP Quarterly Workshop! The slide deck is available for download via Handouts on the webinar toolbar.

The materials are also posted at www.selfgenca.com

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