Update on the California SGIP Energy Storage Incentive

May 9, 2018

Presenter: Andrea Woodall, Center for Sustainable Energy
Moderator: Todd Olinsky-Paul, Clean Energy Group/ Clean Energy States Alliance
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This webinar is being recorded. Slides and a webinar recording will be sent to you via email within 48 hours.
Energy Storage Technology Advancement Partnership (ESTAP) (bit.ly/ESTAP)

ESTAP is supported by the U.S. Department of Energy Office of Electricity and Sandia National Laboratories, and is managed by CESA.

**ESTAP Key Activities:**

1. Disseminate information to stakeholders
   - ESTAP listserv >5,000 members
   - Webinars, conferences, information updates, surveys.

2. Facilitate public/private partnerships to support joint federal/state energy storage demonstration project deployment

3. Support state energy storage efforts with technical, policy and program assistance

ESTAP Project Locations:

- **Oregon:** 500 kW Energy Storage Demonstration Project
- **New Jersey:** $10 million, 4-year energy storage solicitation: 14 projects
- **New York:** $40 Million Microgrids Initiative
- **Vermont:** 4 MW energy storage microgrid & Airport Microgrid
- **Massachusetts:** $40 Million Resilient Power/Microgrids Solicitation: 11 projects
- **$10 Million energy storage demo program**
- **Connecticut:** $50 Million 3-year Microgrids Initiative: 11 projects
- **Pennsylvania Battery Demonstration Project**
- **Maryland Game Changer Awards: Solar/EV/Battery & Resiliency Through Microgrids Task Force**
- **Alaska: Kodiak Island Wind/Hydro/Battery & Cordova hydro/battery projects**
- **New Mexico: Energy Storage Task Force**
- **Hawaii: 6MW storage on Molokai Island and HECO projects**
- **Northeastern States Post-Sandy Critical Infrastructure Resiliency Project**

ESTAP is supported by the U.S. Department of Energy Office of Electricity and Sandia National Laboratories, and is managed by CESA.
Massachusetts Community Clean Energy Resiliency Initiative: 11 communities, 28 projects

City of Boulder: emergency center, shelter, wildfire center, wastewater treatment, public housing

Supporting 50+ Projects

California Multifamily Affordable Housing: AB 693 150,000 units

Chicago Housing Authority: 1,900 public housing units; senior, childcare, and health centers

Massachusetts Community Clean Energy Resiliency Initiative: 11 communities, 28 projects

New York/New Jersey: 9 multifamily affordable housing projects, community shelter

Affordable Housing
Critical Facilities
Both

www.resilient-power.org
Update on the California SGIP Energy Storage Incentive

• Andrea Woodall, Project Manager, Self-Generation Incentive Program, Center for Sustainable Energy (Presenter)

• Todd Olinsky-Paul, Project Director, Clean Energy States Alliance (Moderator)
Self-Generation Incentive Program (SGIP)

May 9, 2018
Andrea Woodall, Project Manager, Center for Sustainable Energy
Our Mission:

Accelerate the transition to a sustainable world powered by clean energy
We Are Experts In...

- Renewable Energy
- Energy Efficiency
- Building Performance
- Clean Transportation
Our Services...

- Program Management
- Technical Assistance
- Workforce Training
Energy Storage Growth in California
Key Drivers of Growth in Energy Storage

State
- Greenhouse gas emissions reductions
- Renewable integration

Utilities & Grid Operator
- Defer transmission and distribution upgrades
- Avoid new fossil fuel “peaker plants”

Customer
- Reduce electricity costs
- Electric service reliability
Primary Customer-Sited Use Cases and Benefits

• Load shifting/peak shaving
  – Reduce monthly demand charges by offsetting peak demand

• Provides reliable power to critical systems
  – Includes power quality and backup power

• Facilitates renewable energy integration
  – Time shifting generation
  – Firming variable generation
Developing Market: Residential (Solar+Storage)

• Unlike commercial entities, residential customers do not have demand charges. However new solar customers are now on time-of-use pricing (TOU).

• Existing Markets:
  – Backup Power
  – Solar self-consumption/TOU load-shifting

• Future Markets:
  – Aggregated Demand Response

• SGIP now has a carve-out for residential sector
The Role of Incentives: Self-Generation Incentive Program (SGIP)
Self-Generation Incentive Program (SGIP)

• SGIP provides cash incentives for the installation of clean and efficient distributed generation and storage technologies installed on the customer's side of the utility meter.

• SGIP has incentivized distributed generation technologies since 2001, and energy storage since 2009.

• Utility ratepayer-funded and overseen by the CPUC.

• Today, SGIP is primarily an energy storage incentive program.
SGIP Goals

GHG reduction

GRID support

MARKET transformation
Energy Storage Costs are Declining

http://energycenter.org/sgip/statistics

- The SGIP incentive will offset roughly 50% of project costs for applications that have been submitted this year.
- Current incentive rates and available funding can be found at https://www.selfgenca.com/home/program_metrics/
SGIP Rated Capacity

Energy Storage Rated Capacity (MW) Reserved and Paid to Date*

*Source SGIP Public Report 5/7/2018
Energy Storage Applications Received

Number of Applications Each Year Statewide: 2009-2016

- Residential
- Non-Residential

*Source SGIP Public Report 3/21/2018*
Energy Storage Applications Received

Non-Residential and Residential Applications Received by Territory: 2017-2018

- **Pacific Gas & Electric**
  - Residential: 1696
  - Non-Residential: 325

- **Southern California Edison**
  - Residential: 1371
  - Non-Residential: 363

- **Center For Sustainable Energy**
  - Residential: 2012
  - Non-Residential: 199

- **SoCalGas**
  - Residential: 369
  - Non-Residential: 70

*Source SGIP Public Report 3/21/2018*
## SGIP Incentive Rates per Step

<table>
<thead>
<tr>
<th>Energy Storage</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Budget</td>
<td>$/Wh</td>
<td>$/Wh</td>
<td>$/Wh</td>
<td>$/Wh</td>
<td>$/Wh</td>
</tr>
<tr>
<td>Large Storage</td>
<td>$0.50</td>
<td>$0.40</td>
<td>$0.35</td>
<td>$0.30</td>
<td>$0.25</td>
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<tr>
<td>(&gt;10 kW)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Large Storage</td>
<td>$0.36</td>
<td>$0.29</td>
<td>$0.25</td>
<td>$0.22</td>
<td>$0.18</td>
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<tr>
<td>Claiming ITC</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Residential</td>
<td>$0.50</td>
<td>$0.40</td>
<td>$0.35</td>
<td>$0.30</td>
<td>$0.25</td>
</tr>
<tr>
<td>Storage (&lt;=10</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>kW)</td>
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</tr>
</tbody>
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</tr>
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<td>$/Wh</td>
</tr>
<tr>
<td><strong>Equity Budget</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-residential</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>$0.35</td>
<td>$0.30</td>
<td>$0.25</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Equity Claiming ITC</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residential</strong></td>
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<td>N/A</td>
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<td>$0.30</td>
<td>$0.25</td>
</tr>
<tr>
<td><strong>Equity</strong> 18</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residential Equity Claiming ITC (&gt;10 kW)</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>$0.25</td>
<td>$0.22</td>
<td>$0.18</td>
</tr>
</tbody>
</table>
SGIP Application Process

1. Reservation Request Package (RRF) – All Projects
   • Submit RRF paperwork to receive a conditional reservation

2. Proof of Project Milestone (PPM) – 3-step Only
   • Submit contract and supporting documentation within 90 or 240 days (commercial or government/non-profit) of conditional reservation

3. Incentive Claim Package (ICF)
   • Submit final paperwork to claim your rebate after system has been installed and interconnected. Project may be subject to inspection before payment.
4. **Inspection**

- Discharge data test to verify reserved energy capacity for payment
  - 1 week of operational data
  - Continuous Discharge Data Test Package (Field or Factory)

- Schedule site visit with an SGIP inspector to complete the project
SGIP Equity Budget

• **CPUC Decision 17-10-004** establishes that 25% of the funds collected for energy storage shall be reserved for the SGIP Equity Budget and awarded to projects that meet specific criteria.

• If no reservations are confirmed in either the residential or non-residential Equity Budgets during any rolling three month period in a given territory, while 5 or more general market energy storage projects secure confirmed reservations in the same time period, the incentive rate will increase by $0.05/Wh. In no event shall the incentive exceed $0.50/Wh.
In 2017 the CPUC established that 25% of SGIP energy storage funds shall be reserved for the SGIP Equity Budget and awarded to projects that meet specific criteria.

Objectives:
1) Bring positive economic and workforce development opportunities to the state’s most disadvantaged communities;
2) Help reduce or avoid the need to operate conventional gas facilities in these communities, which are exposed to some of the poorest air quality in the state; and
3) Ensure that low-income customers, and non-profit or public sector organizations in disadvantaged or low-income communities have access to energy storage resources incentivized through SGIP.
• Non-Residential Eligibility Criteria:
  – Non-residential: The project site must be located in a disadvantaged or low-income community and meet one of the following customer criteria:
    • State or local government agency
    • Educational institution
    • Non-profit organization
    • Small Business, defined as a business or manufacturer, including affiliates, with average annual gross receipts of $15 million of less, over the last three tax years.
SGIP Equity Budget Eligibility

- **To check for eligibility based on location:**
  [https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm](https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm)

- Type in the project site address and the map will display disadvantaged community, low-income community, or both.
SGIP Equity Budget Eligibility

- **Residential Eligibility Criteria**
  - **Multi-Family**: A multi-family residential building of at least five rental housing units that is operated to provide deed-restricted low-income residential housing, and is either located in a disadvantaged community, or is a building where at least 80% of the households have incomes at or below 60% of the area median income.
  - **Single-Family**: Single-family low-income residences that are sold at an affordable housing cost to a lower income household that is subject to a resale restriction or equity sharing agreement.
SGIP Lessons Learned
Clear, obtainable goals are central to a successful program.

• Base program goals on needs.
• Goals must be well defined and specific.
• Ensure harmony between program goals and operational requirements.
• Do not create program requirements that conflict with customer tariffs.
When designing program rules, allow for flexibility.

- Energy storage technologies are rapidly evolving.
  - Price decline
  - New markets and use cases
  - Technological advancements

- Needs of the grid are changing and evolving over time.
  - Solar overgeneration
  - Electric vehicles
Program Continuity

Long term effectiveness relies on a stable, predictable program that meets growing demand with minimal disruptions.

- Market transformation approach
- Program “starts and stops” are detrimental to emerging market development.
- A clear signal of sustained support will enable the market and build consumer confidence.
Major Takeaways

• Clear, obtainable goals are central to a successful program.
• Not all energy storage systems are created equal.
• Incentive design should depend on program goals.
• When designing program rules, allow for flexibility and ensure continuity.
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Thank you!
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Jump Start
How Activists and Foundations Can Champion Battery Storage to Recharge the Clean Energy Transition

Published April 2018

Link: bit.ly/CEG-JumpStart