Clean Power Update

SVCE Board Meeting
October 13, 2021
Monica Padilla, Director of Power Resources
Topics

- RPS & PPA Update
- Reliability
- Mid-term Reliability Procurement Order
- California Community Power & Long Duration Storage Procurement
- Summary
SVCE has exceeded SB100 RPS requirements since 2017 and will exceed SB350 long-term PPA mandate.
Signed Power Purchase Agreements

- $1.6 B in commitments
- 62% RPS in 2024
- 13 PPAs signed
- 10 new build projects
- ~725 MW in total
- 173 MW lithium-ion storage paired with 516 MW of Solar PV

12 Projects to be operated with Central Coast Community Energy
Three of SVCE’s PPA projects have broke ground

Slate
Solar + Storage

Casa Diablo
Binary Geothermal

Big Beau
Solar + Storage
Slate now providing test energy. Other projects facing delays.

- Recurrent’s Slate solar plus energy storage plant testing and CAISO grid synchronization started.
- EDF’s Big Beau solar PV will start testing activities synchronization with the CAISO grid in October 2021. Storage system delayed.
- Coso’s existing Geothermal project will deliver to SVCE starting on January 1, 2022
- Ormat’s Casa Diablo geothermal construction started in August 2021.
- Projects facing delays due to COVID-19, labor shortages and/or supply-chain delivery issues.
- Board approval of Coordinated Operating Agreement with Central Coast Community Energy (3CE) in November 2021.

https://www.svcleanenergy.org/power-sources/
PPA Expected Commercial On-line Dates over the next 9 quarters

- **2021- Q4**: Slate & Big Beau Solar + Storage
- **2022 – Q1**: Coso & Casa Diablo Geothermal
- **2022 – Q3**: Rabbitbrush Solar + Storage
- **2022 – Q4**: Yellow Pine Solar + Storage & Atlas Solar
- **2023 – Q1**: Mountain View & Cameron Crest Wind
- **2023 – Q2, Q3**: Angela & Aratina Solar + Storage
- **2023 – Q3, Q4**: Victory Pass & San Luis West Solar + Storage
Carbon-free, non-RPS, resources continue to be in short supply due to dry hydro conditions.
Reliability and Resource Adequacy Reform

The State’s 3 Energy Agencies are Coordinating on Planning, Reliability and Resource Adequacy

1. Drivers:
   1. RPS – 60% by 2030 and 100% Carbon-free by 2045
   2. Phasing out of natural gas resources
   3. Retirement of Diablo Canyon Nuclear Power Plant
   4. Changes in peak load

2. CEC’s Mid-term Reliability Assessment

3. CPUC’s Workshops on long-term Resource Adequacy Reform – 2024 & Beyond

4. CAISO’s Resource Adequacy Enhancement initiatives

5. CPUC’s Integrated Resource Plan – Preferred System Plan

6. Procurement Orders
Multiple Procurement Decisions in last 24 months ... And we’re not done

Unprecedented scale, speed & frequency of orders by the CPUC

2019
- 3,300 MW (online Summer 2021-23) – SVCE’s share 67 MW

2021 March
- Emergency procurement (online Summer 2021) – IOUs responsible

2021 June (Mid-term Reliability Procurement)
- 11,500 MW (online 2023-2026) – SVCE’s share 237 MW

2021 TBD
- 5,000 MW (online 2022-23)
CPUC Orders 11.5 GW of new resources on-line by 2026 to replace Diablo Canyon Power Plant – Mid-term Reliability 2020 IRP (R. 20-05-003)

<table>
<thead>
<tr>
<th>Procurement Category</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero-emissions generation, generation paired with storage, or demand response resources, required by 2025, not necessarily in 2025**</td>
<td>-</td>
<td>-</td>
<td>2,500</td>
<td>-</td>
<td>2,500</td>
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<tr>
<td>Firm zero-emitting resources*</td>
<td>-</td>
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<tr>
<td>Long-duration storage resources*</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>1,000</td>
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<tr>
<td><strong>Total annual capacity requirements</strong></td>
<td>2,000</td>
<td>6,000</td>
<td>1,500</td>
<td>2,000</td>
<td>11,500</td>
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Future Clean Procurement

SVCE’s share of 11.5 GW is 237 MW – Open Position 192 MW

1. Long Duration Storage (8-hours)
   CC Power RFO – in process

2. Firm Clean Resources – baseload geothermal/biomass
   CC Power RFO Fall 2022

3. Standalone storage (4-hours) & Solar + Storage (5-hours)
   SVCE RFO late 2021 to early 2022
California Community Power

- Formed in February 2021
- 10 CCAs combined buying power
- Advance local and state climate goals
- Represent 3 million customers and more than 145 municipalities
- Procure new, cost-effective clean energy and reliability resources
LDS RFO – Objectives & Requirements

- October 2020 – RFO for up to 500 MW of Long Duration Energy Storage for a subset of CC Power Members
- Procure cost-effective LDS to integrate renewables & support grid reliability
- Joint-procurement to share resources and project risk
- Meet future IRP procurement mandates
- Grid-charged with minimum 8-hour discharge duration
- CAISO resource or Import with dynamic transfer rights
- Meet Resource Adequacy requirements
- COD no later than June 1, 2026
- Minimum delivery term 10 years
- 50 MW minimum
Evaluation, Ranking, Shortlisting & Negotiations

Offers: Over 220, 9,000 MW, 8 technology types

Round 1 Evaluation: 98 unique Conforming offers evaluated – economics, location, technology, environmental, developer

Round 2 Evaluation: Top 17 projects, deep evaluation of economics, risk and interconnection. Follow-up interviews with Emerging Technology developers

Shortlisting: 6 Projects (4 L-ion and 2 emerging technology)

Negotiations: June 2021 started negotiating Energy Storage Service Agreements (ESSAs)
CC Power – LDS Project #1 Approval Process

October
- Complete LDS Project Agreement Negotiations & Provide 60 Day Notice for LS Power Tumbleweed

November
- Finalize Supporting Agreements

December
- CC Power Approves LS Power Tumbleweed

January - February 2022
- Participating CCAs Approve Participation Agreements
- ESSA with LS Power Tumbleweed

Process will be repeated for additional LDS Project Agreements – condition on negotiations and interest from other CCAs
SVCE Approval Process for LDS Project #1

1. **September 2021** - Risk Oversight Committee Review of RFO Process, Agreements and Approval Process

2. **October 2021** – Risk Oversight Committee Review of LS Power Tumbleweed (LDS Project #1)

3. **November 2021** – Obtain input from the Executive Committee related to CEO vote at CC Power Board meeting in December on LS Power Tumbleweed approval

4. **December 2021** – Seek Board approval of LS Power Tumbleweed Agreements – condition on CC Power approving
Summary & Next Steps

Procurement orders, drought and scarcity of reliability resources drive costs up.

- Projected Power Supply Costs reflect increased cost due to reliability, hydro and scarcity of resources.
- Resource Adequacy reform produces planning and procurement challenges.
- More procurement orders to come
- Next Steps:
  - Now – February 2022: LDS Procurement via CC Power
  - Q4 ‘21: RFO for Firm Clean Resource Procurement via CC Power
  - Q1 ‘22: RFO for Stand-alone storage and additional Solar plus Storage
  - 2022 Integrated Resource Plan
THANK YOU!

Monica V. Padilla
SVCE - Director of Power Resources
monica.padilla@svcleanenergy.org
510-676-3793