CleanPowerSF Participation in California Community Power’s Long-duration Storage Procurement
February 8, 2022
In June 2021 the California Public Utilities Commission mandated that CleanPowerSF and other power providers procure Long-duration Energy Storage (LDS) resources.

CleanPowerSF participated in a Request for Offers (RFO) for LDS resources as a member of California Community Power (CC Power).

Power staff briefed the SFPUC Commission on the status of the CC Power LDS procurement process on Dec. 14th.

On Jan. 19th CC Power approved its first LDS project from a competitive solicitation, the Tumbleweed LDS project.

CC Power member agencies, including CleanPowerSF, are now seeking approval from their governing bodies to participate in the Tumbleweed LDS project.
Established in February 2021 to leverage the combined buying power of Community Choice Aggregators (CCAs) for energy supply, programs and services.

CleanPowerSF became a member in April 2021.

- Commission approved in Resolution No. 21-0023
- Board approved in Ordinance No. 25-21

CC Power conducts its business in open meetings – for more info visit: [https://cacommunitypower.org/meetings/](https://cacommunitypower.org/meetings/)
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>June ‘20</td>
<td>Joint CCAs issue a Request for Information to understand market opportunity</td>
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<tr>
<td>Oct ‘20</td>
<td>Joint CCAs Issue a Request for Offers (RFO) for up to 500 MW of LDS</td>
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<tr>
<td>Feb ‘21</td>
<td>California Community Power (CC Power) Formed/Long Duration Storage (LDS) Project Oversight Committee formalized</td>
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<td>Jun ‘21</td>
<td>LDS Projects Shortlisted, Negotiations start, and begin development of CC Power/Member Agreements</td>
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<td>Jun ‘21</td>
<td>CPUC Issues Mid-term Reliability Procurement Order – LDS Project Oversight Committee Develop Pathways to Achieve Compliance</td>
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<tr>
<td>Oct ‘21 to Feb ‘22</td>
<td>CC Power and individual member agency approval process for LDS Project #1 – LS Power’s Tumbleweed</td>
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CleanPowerSF Ordered to Procure 15.5 MW of LDS Resources

- On June 24, 2021, CPUC issued Decision D.21-06-035 ordering retail sellers of electricity under its jurisdiction to procure 11,500 MW of new resources, including 1,000 MW of LDS.
- CleanPowerSF’s share of the LDS order is 15.5 MW.
- Failure to comply with CPUC procurement order is expected to result in significant cost to CleanPowerSF.
- Tumbleweed project will meet about half of CleanPowerSF’s LDS procurement obligation.
- CleanPowerSF will pursue additional procurement through CC Power and independently to meet CPUC order.
LDS RFO Objectives & Specifications

**Objectives**
- Procure cost-effective LDS to integrate renewables & support grid reliability
- Joint-procurement to share resources and project risk
- Meet regulatory requirements, including procurement mandates

**Specifications**
- Grid-charged with minimum 8-hour discharge duration
- Located in or able to deliver to California ISO
- Commercial operation date no later than June 1, 2026
- Minimum delivery term of 10 years
LDS RFO Project Conditions

At the April 2021 CC Power Board meeting, the Board passed a resolution adopting Project Conditions for the LDS RFO regarding Workforce, Environmental, and Environmental Justice issues.

- **Workforce**: Requires prevailing wages; encourages local labor and apprenticeship programs; and states a preference for a Project Labor Agreement, allowing up to 5 points in the evaluation process for a commitment to PLA.

- **Environmental**: Project must meet permitting requirements of local authority(ies); preference for projects that avoid sensitive habitats.

- **Environmental Justice**: Requires developer to attest to not using forced labor in its supply chain and to identify project benefits to local communities.
Summary of Offers Received

- 51 Entities submitted offers (over 9,000 MW)
- Projects on-line as early as 2023
- Total of 221 unique pricing offers
- 18 distinct technologies within 8 technology types
- 8,10,12-hour, and multi-day discharge durations

### Technology Types

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<thead>
<tr>
<th>Technologies</th>
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<tr>
<td>Battery</td>
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<tr>
<td>Aqueous-air</td>
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<tr>
<td>Flow</td>
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<tr>
<td>Lithium-ion (Li-ion)</td>
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<tr>
<td>Zinc</td>
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<tr>
<td>Chemical Flow</td>
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<tr>
<td>Iron redox flow</td>
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<tr>
<td>Vanadium flow</td>
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<tr>
<td>Compressed Air</td>
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<tr>
<td>Fuel Cell – Hydrogen</td>
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<tr>
<td>Hybrid</td>
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<tr>
<td>Hydrogen, combined-cycle gas gen</td>
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<tr>
<td>Li-ion, combined-cycle gas gen</td>
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<tr>
<td>Mechanical – Gravity</td>
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<tr>
<td>Pumped Hydro</td>
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<tr>
<td>Thermal</td>
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<tr>
<td>Ice (HVAC)</td>
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<tr>
<td>Liquid air</td>
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<tr>
<td>Molten Salt</td>
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<tr>
<td>Molten Salt &amp; gas gen</td>
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<tr>
<td>Volcanic stone</td>
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<td>Water heat exchange</td>
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CC Power LDS Project
#1: Tumbleweed
Project by LS Power

- Developer: LS Power/REV Renewables
- Product: 69 MW/552 MWh 8-hour discharge battery
- Location: Rosamond, Kern County, California
- Technology: Lithium-ion
- Commercial Operation Date: 6/1/26
- Price structure: Fixed $/kilowatt-month
- Proposed contract term: 15 years
Participants in the Tumbleweed LDS Project
Project Agreement Structure
(3 documents to be authorized for GM execution)

1. Operations Agreement
   - #1 & #2 executed by CC Power & each Participating Member Agency

2. Energy Storage Services Agreement
   - Developer
   - CC Power
   - LDS Project

3. Project Participation Share Agreement
   - CC Power
   - 7 CCAs

4. Buyer Liability Pass Through Agreements
   - (Each participating CCA executes with Developer’s Seller entity and CC Power)

5. #3 executed by each CC Power Member Agency & LDS Project

6. Scheduling Coordinator Agreement

CCA Customers
CleanPowerSF has:

- 9 contracts with $\approx 658$ MW of clean energy capacity under long-term contract of 10-years or more, today.
- Total annual power supply budget of $200-250$ million/year.

Tumbleweed LDS Project:

- Total not-to-exceed cost of $65$ million over a 15-year contract term.
Next Steps

- Participating CC Power members have 90 days from Jan. 24\textsuperscript{th} (April 25\textsuperscript{th}) to execute their required agreements.
- Staff bringing the Tumbleweed LDS Project to the Commission for approval on 2/22.
- If approved by Commission, staff will seek Board of Supervisors and Mayoral approval in March.
- Staff is working with CC Power to bring additional LDS Projects for approval.