
emeren®
GIBSON SOLAR PROJECT
Generating Renewable Power Locally for Yolo County

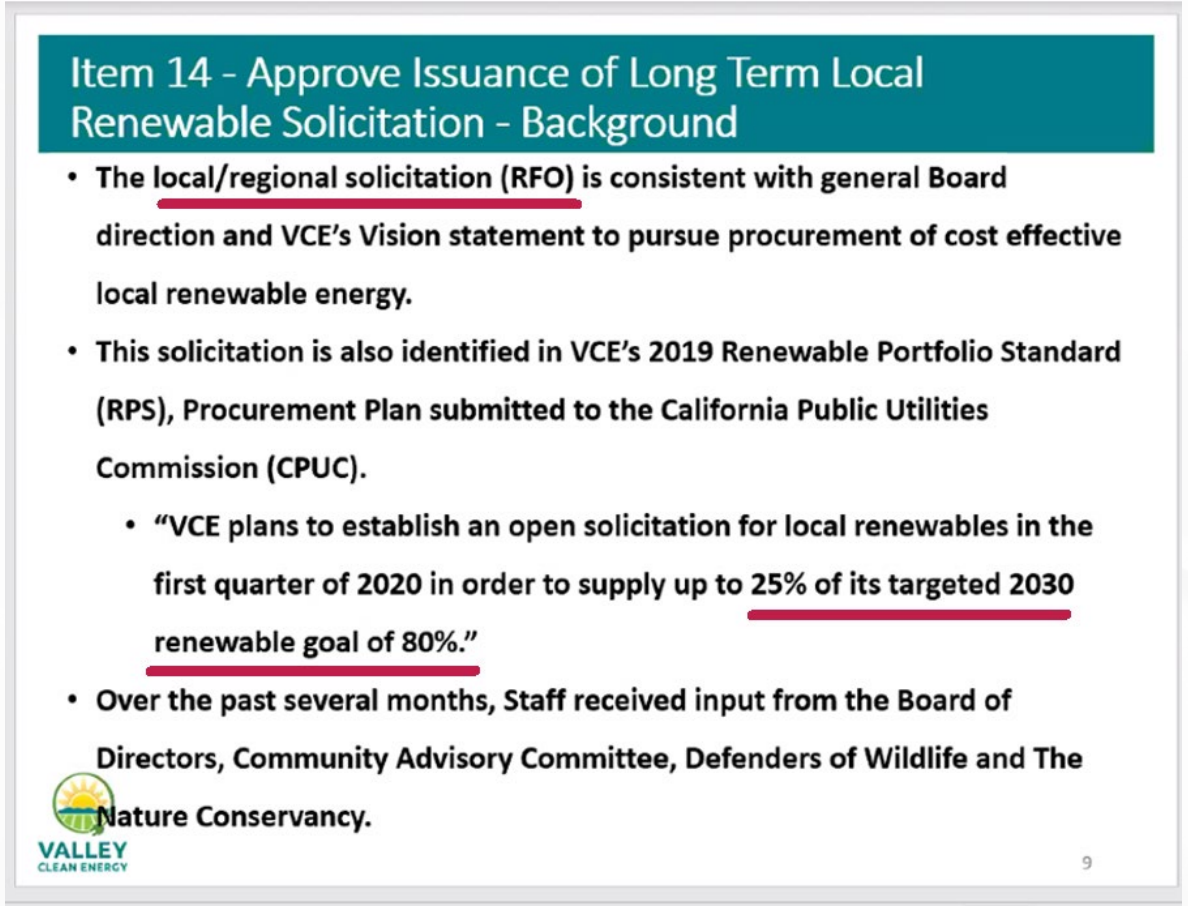
Local Policies Supporting Renewable Energy

Valley Clean Energy (VCE) Local Renewable Portfolio Standards:

- Procure 25% of renewable energy locally.
- This translates to **approximately 450 acres of solar PV**.

Yolo County General Plan & Climate Action Goals:

- Community Character Policy CC-4. 1: Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources.
- Community Character Policy CC-4.5: **Encourage individual and community-based wind and solar energy systems.**
- Public Facilities Policy PF-10.2: Streamline the permitting process for the production of energy alternatives (including but not limited to photovoltaic, solar, wind, biofuels, and biomass), to reduce dependency on fossil fuels.
- Conservation Policy CO-8.5: Promote GHG emission reductions by supporting carbon efficient farming methods; **installation of renewable energy technologies**;
- Climate Action Plan goals to reduce carbon emissions to 27% below 1990 levels by 2030.



Source: April 2020, VCE Board Meeting Slide on Local RFO

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Challenges to Siting Solar Energy Facilities

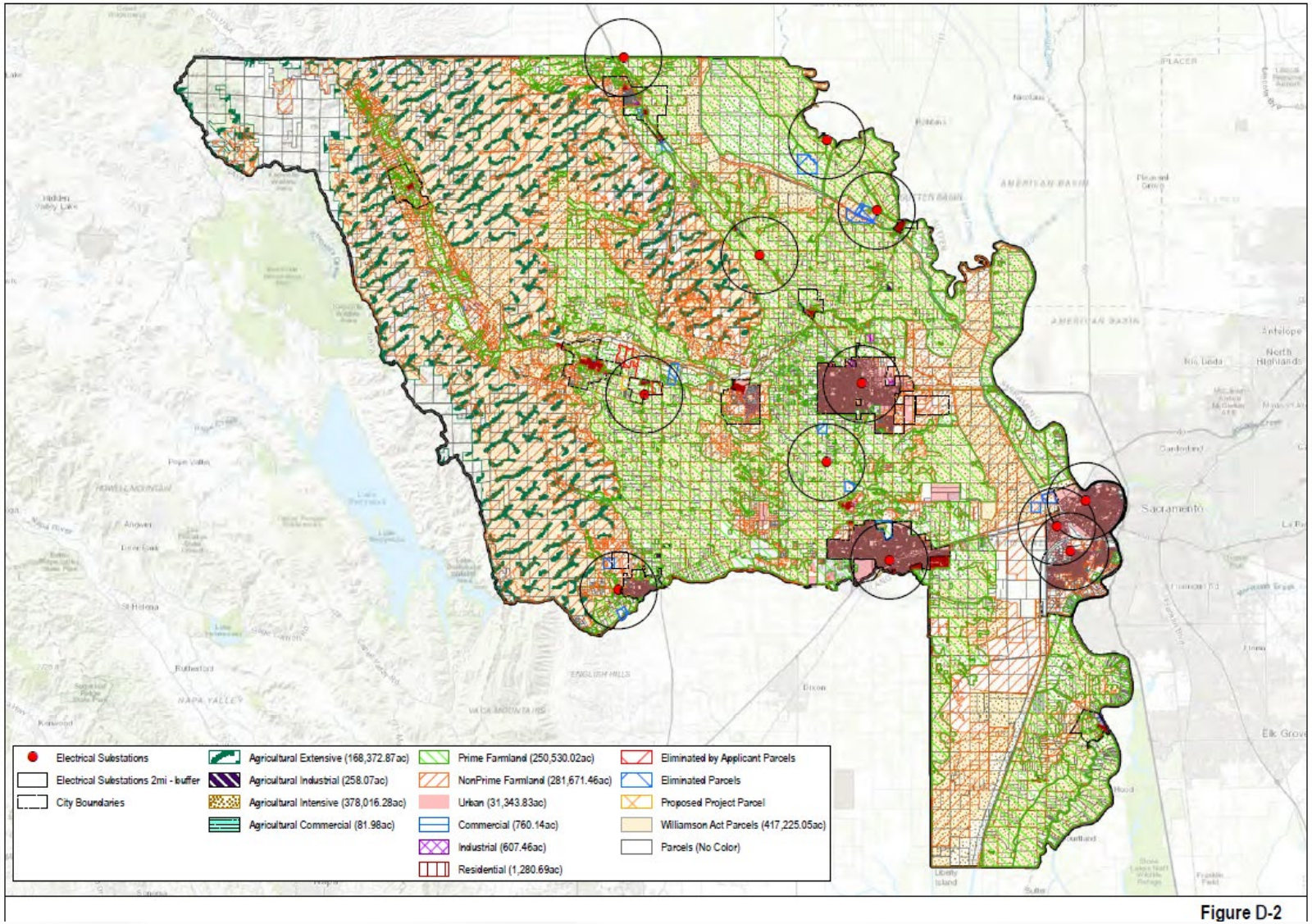

Figure D-2

Source: Gibson Solar Farm Draft EIR

Suitable land for Solar Energy Facilities (SEFs) should have the following characteristics:

- Flat terrain.
- Minimal to no shading impacts.
- Close to existing grid infrastructure.

Over 85% of land in Yolo County is zoned agricultural, and of that, 75% is under a Land Conservation Contract (Williamson Act or Farmland Security Zone).

New electrical infrastructure can be prohibitive:

- Cost of over $1,000,000/mile for new conductor makes projects uneconomical.
- Can impact multiple landowners and complicate acquiring easement land.
- Can take decisions out of local lawmakers' hands.

Gibson Solar Energy Storage Facility

Site Details

- Net Parcel Acreage: ±147 acres
- Address: State Hwy 16, Esparto, CA
- Zoning: A-N (Agricultural Intensive)
- POI: Existing PG&E 21kV Distribution Line within 1 mile

Revised Configuration

- <100 acres impacted
- 13MW AC Solar
- 13MW/5-hour ESS
- **Preferred configuration**

Benefits

- 1,000ft setback from Highway 16
- Removal of gravel from interior project access drive aisles
- Larger battery energy storage allows VCE to meet additional reliability mandates set by regulatory authorities

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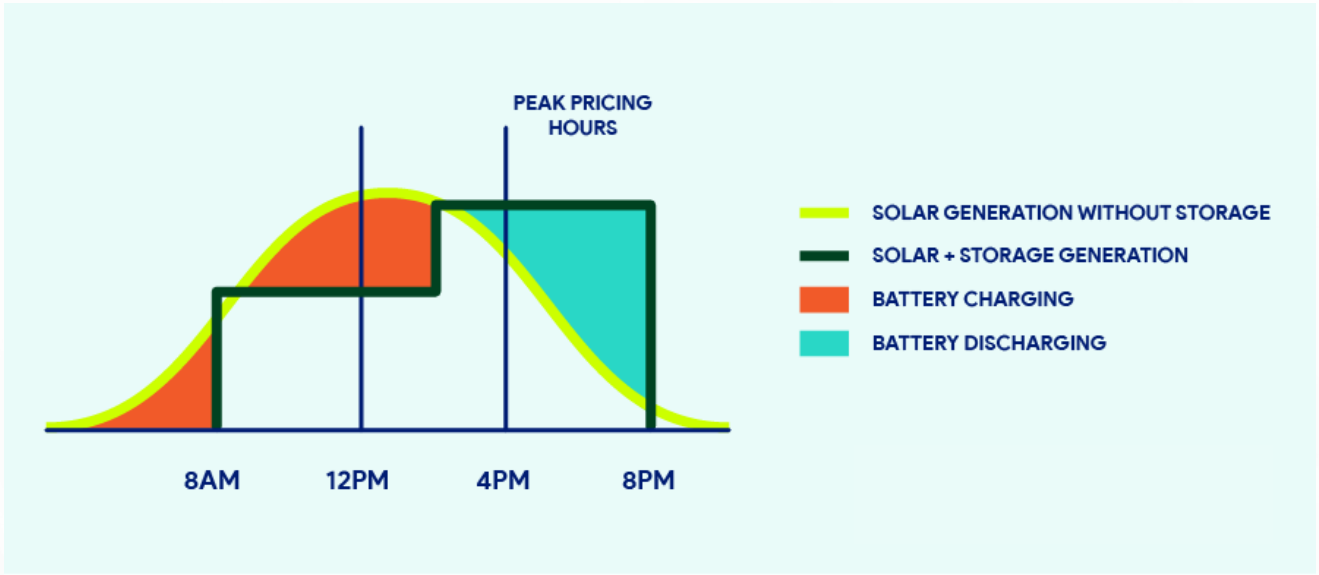
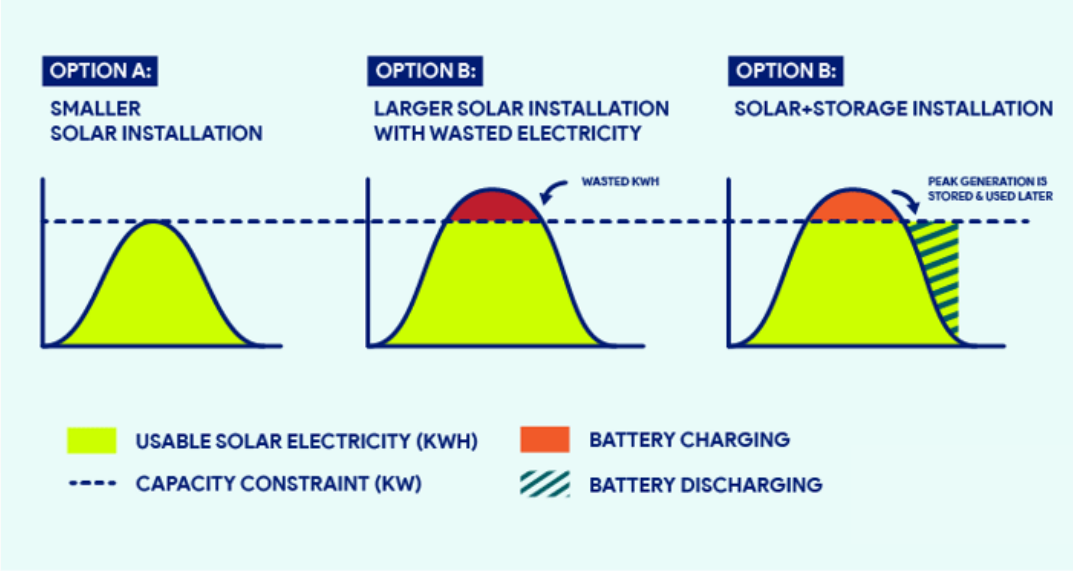
Gibson Solar Energy Storage Benefits



Source: Convergent

You can charge your battery with your solar generation, then discharge the battery to get solar power when you want it.

When your solar generation is limited by a constraint, such as your site's peak consumption or power line capacity, storage lets you upsize solar and bank excess power for later use.



Source: Convergent

The Changing Nature of Farmland

Prime Farmland, IF irrigated

- As noted in the DEIR, the project soils are classified as Prime Farmland, Class I & II soils, IF irrigated.
- The project site was not irrigated or received a reduced water allocation for the 2014, 2015, 2021 and 2022 season due to curtailed surface water deliveries from the Yolo County Conservation and Flood Control District (YCC&FCD).
- This necessitated either fallowing the fields or cultivating lower value, less water intensive crops

No Alternative Water Sources

- The project parcel does not currently have access to other sources of irrigation water.
- Test wells to 500ft did not result in sufficient water flows and deeper drilling was cost prohibitive for the Landowner.
- Data from the test wells also showed that new wells on the project parcel could have an adverse impact on existing groundwater pumping by neighboring landowners in the local basin.

Multi Use Plan Features

Native Vegetation Substrate

- Serve as pollinator habitat.
- Reduced water demand.
- Seeding will use a mix of plants, curated by partners at the University of California (UC) Davis, that will flower at varying times to provide an ample, stable foraging habitat for the bees.
- The plant substrate would only be irrigated for the first three years to assist with plant establishment.

Sheep Grazing

- Natural vegetation control vs. chemical or mechanical means.

Project Partnerships and Labor Commitments

UCD Research

Gibson Renewables has partnered with the University of California, Davis Wild Research Center to curate the seed mix for the project and conduct research on how co-locating solar PV and pollinator habitat can positively impact the local agricultural climate.

Emeren has committed $100,000 to UC Davis to help fund this research.

In July 2023, the UC Davis Wild Research Center was awarded a grant from the University of California Office of Research & Innovation Research Grants Program Office (RGPO) for $2M to seek funding to answer the question: *How can a rapid renewable energy buildout be achieved while maintaining goals for conservation and food security?*

Emeren staff will also volunteer time as “champion mentors” to postdoctoral scholars as part of this research collaboration.

Union PLA

Gibson Renewables has executed a project labor agreement with:

- Operating Engineers Local 3,
- Northern California Carpenters Regional Council on behalf of itself its affiliated local unions,
- Northern California District Council of Laborers and its affiliated local unions,
- IBEW Local 340, and
- Ironworkers Local 118.

Potential Awards: Microgrid Grant Opportunities

- In March 2023, VCE submitted a grant application to the California Department of Food and Agriculture (CDFA) for $5.7M to enable the Gibson project to have the capability to operate in a microgrid state
- The grant opportunity is part of the CDFA's Community Resilience Centers Program. The project would utilize the proposed Gibson project as well as additional electrical infrastructure (grant funds would support this additional infrastructure) to serve the Capay Valley in times of electrical outages.
- The overall project would be called the Esparto Capay Multi-Customer Microgrid project.
- The project will serve the Capay Valley via PG&E's Madison circuit 2101.
- 5 community resilience centers (CRCs) are served by this circuit and the Gibson project could serve these centers during a power outage.
- VCE has also applied for 2 additional grants to enhance the potential for a future microgrid to serve this community.

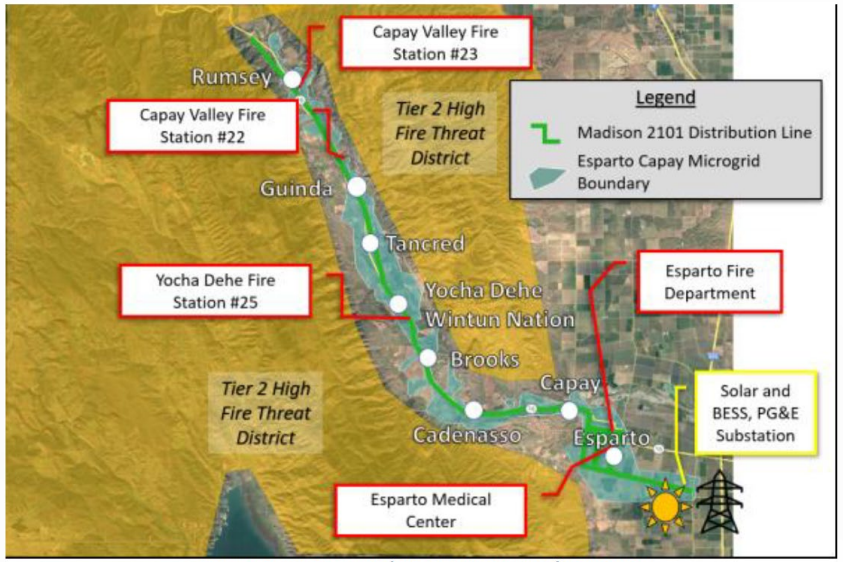


Figure 2: Esparto Capay Multi-Community Microgrid Vicinity Map

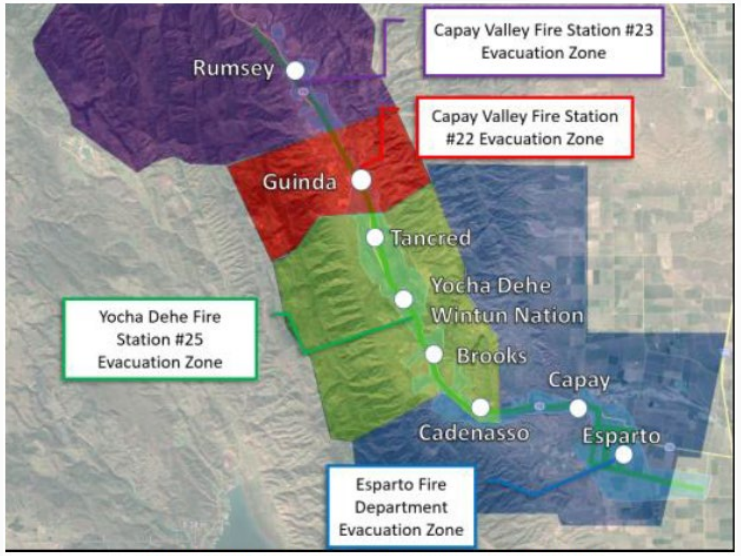


Figure 3: Yolo County Evacuation Rally Point Zone Map

Agricultural Compatibility and Community Benefits

Temporary Use Compatible with Existing and Surrounding Agricultural Uses

- Pollinator habitat and grazing are compatible with surrounding agricultural uses and improve upon existing uses by demanding less water.
- Temporary use (35 years) with system removed and site restored.
- No impact to productive capability of parcel; pollinator centric agrivoltaics sites have been shown to both improve fertility and protect topsoil due to lack of chemical inputs and annual tilling.

Supports County General Plan and Climate Action Plan Goals

- Reduce dependence upon fossil fuels (Policy CC-4. 1).
- Promote GHG emission reductions (CO-8.5).
- Climate Action Plan goals to reduce carbon emissions to 27% below 1990 levels by 2030.

Supports Valley Clean Energy's Goals and Mandates

- A significant portion of VCE's local renewable energy goal.
- Helps fulfill VCE's CPUC mandate for battery energy storage.

Enhances Community Electricity Reliability

- Will provide the backbone for future VCE microgrid plans (grant applications pending).
- Would transform the Capay Valley grid from the least reliable to one of the most reliable on the PG&E system.

Economic Benefits to the Community

- Generates Yolo County sales and use taxes.
- Creates ~75 annual full-time equivalent local union jobs through the project's union labor agreements.
- UC Davis research grants.
- Allows the landowner an alternative income stream when farming becomes infeasible due to lack of surface water allocations.

Thank You!