

Solar Farms

What are Solar Farms?

Solar farms can be used to reduce energy costs for agricultural operations (commercial scale) or they can sell clean energy to the grid (utility scale). “Community solar” projects can be developed on ag lands where the system is owned by a 3rd party and energy is sold locally to communities. Utility scale solar can generate income for a grower/landowner by leasing land to a solar developer that will build, own, and operate the system.



To meet its renewable energy goal, CA needs over 16,000 Megawatts (MW) of utility scale solar by 2030, perhaps requiring over 60,000 ac of land. Utility solar must be located near substations to export energy to the grid cost effectively.

Potential Water Benefit

Utility-scale solar: water savings can be substantial. These plants are typically 25 -200 MW in size and require at least 40 to 200 acres, and up to 2,000+ acres. MLRP supports this solution given the water savings.

Commercial-scale solar: even if the project yields energy savings for a grower, water savings is limited with regard to MLRP. Current rules related to solar have recently changed such that the economics are not very good if your primary load is seasonal pumping, unless you have a pump that's 300hp or more.

While “agri-voltaics” has been promoted recently, in reality it is not economical yet. While UC Davis and others are conducting trials combining solar and crops, talk to trusted solar developers about practical options.

Benefits to the Grower/Landowner

Utility solar: generates long-term lease payments (15-20 yrs) and others manage the plant. You are also supporting the use of clean, renewable energy in a substantial way.

Commercial solar: the benefits can be energy savings and independence, reduced operating/pumping costs, and using clean energy (a selling point for customers). If replacing crops, it can help growers use less water.

Benefits to Other Stakeholders

Local labor is often hired to build these solar plants, as well as maintain them and provide security. If utility-scale, some plants will utilize sheep to graze under and around the arrays to keep down weeds and dust. On-going tax revenues accrue to the local government.

Solar + Habitat: In some cases, habitat around the perimeter of a solar plant provides added benefits for pollinators, native plants and other species, as well as reduce dust. The site can be a mix of solar + habitat. It may also use sheep to graze within the solar field to keep weeds down.



Clean Energy for Communities: It's possible with a utility-scale project to provide low-cost, clean energy to a local community. As part of the Wright Solar Project, the City of Los Banos procured some of the energy for their residents at a cost lower than PG&E. Read more at <https://www.peninsulacleanenergy.com/los-banos/>. Community solar incentives are not currently available, but check with solar developers as there's some hope these incentives will return.

Examples of Solar Farms

The following are common examples, for illustration purposes, but do not reflect all possible options.

Utility-scale Solar: *Luciana Solar Project (Ducor)*

- 73 MW solar plant (>200 ac), power for 20k homes
- **Project Funding:** by developer
- **Farmer Revenue:** lease payments, \$250 - \$2,000/acre/yr (15 yrs+)
- **MLRP Funding:** not needed due to lease revenue
- **Developer:** Idemitsu Renewables
- **Time frame:** moderate (3-5 years+ to implement)
- *To learn more:*



The 73 MW Luciana Solar Project in Ducor, CA. (Courtesy: Idemitsu Renewables)

Commercial-scale solar: *JR Dairy (Tipton)*

- 1.1 MW solar plant (approx. 3 ac), on-site use
- **Funding:** self funded; loan or lease possible
- **Farmer Revenue:** savings from solar (25 yrs+)
- **MLRP Funding:** none needed or available
- **Partner/developer:** Coldwell Solar
- **Time frame:** short (1+ years to implement)
- *To learn more about the fit for your land contact: ?*



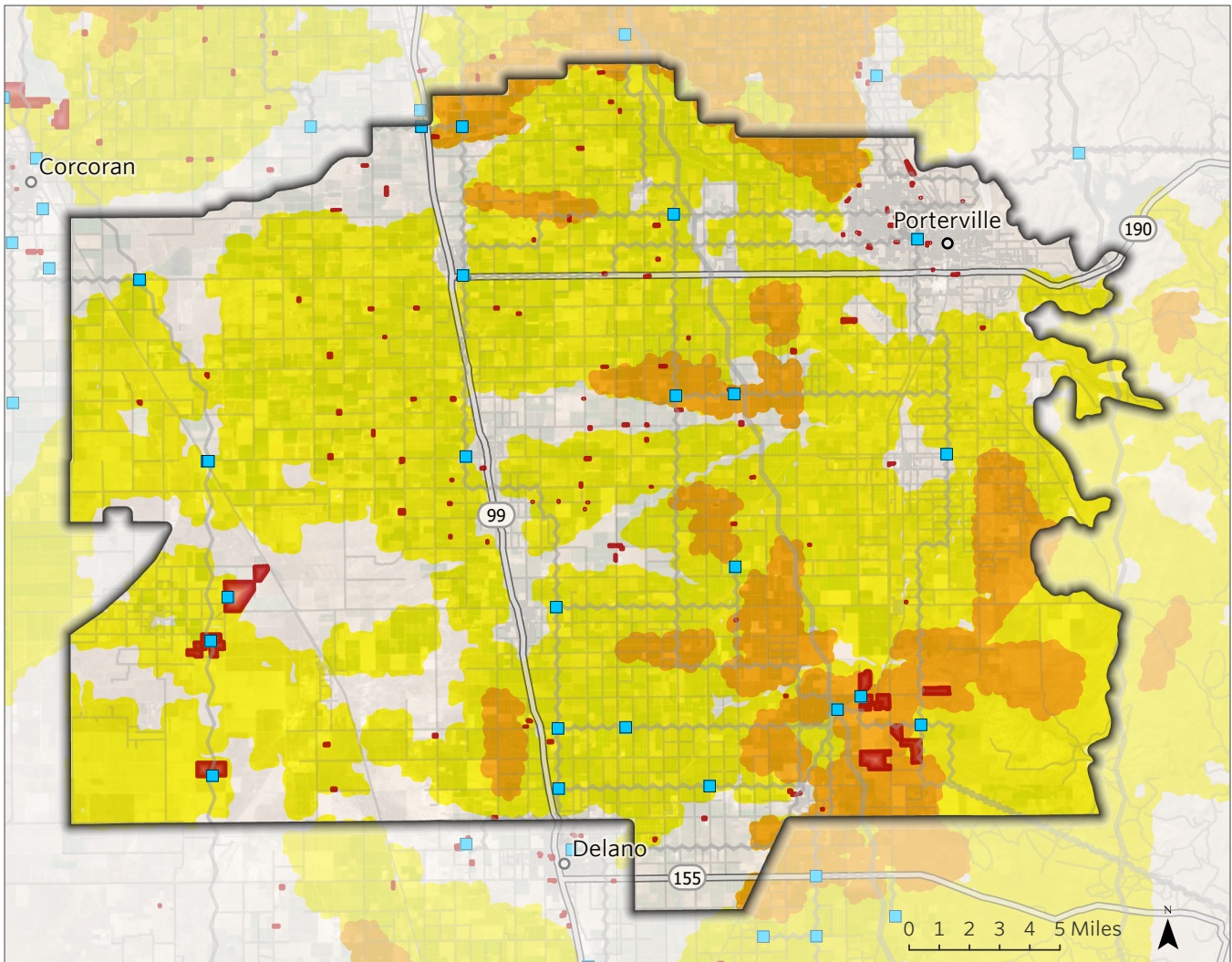
Things to Know

In both cases, it is wise to work with experienced, well-established solar providers and developers as these projects are more complex and expensive than they can appear. Current timelines to develop utility-scale solar can be years, conducting a CEQA review, awaiting utility approvals, permitting, and actual construction. All of this work is managed by the solar developer, not the landowner. Maps show where plants can be sited and where current projects are already awaiting approvals or in development.

Resources

- Coldwell Solar (commercial- and utility-scale solar)
- 8 Minute Energy (utility-scale solar)

Solar Farming



Candidate Project Areas are identified based on their technical potential to produce wind, solar, or offshore wind, and then filtered by Exclusions at Siting Level 2 (SL2) and Siting Level 3 (SL3). From the "Power of Place - West" study, 2020. SL2 filters out lands that are unsuitable due to socio-economic factors, and SL3 removes from SL2 lands that have potential conservation values.

- Solar Candidate Project Area SL3
 - Solar Candidate Project Area SL2
 - Existing Solar Installation
 - Point of Utility Interconnection
- Transmission Line (kV)
- ~ 33 - 110
 - ~ 110 - 161
 - ~ 161 - 287