County of Yolo

PLANNING AND PUBLIC WORKS DEPARTMENT

John Bencomo
DIRECTOR

292 West Beamer Street
Woodland, CA 95695-2598
(530) 666-8775 FAX (530) 666-8728
www.yolocounty.org

WORKSHOP ONLY

PLANNING COMMISSION STAFF REPORT **JANUARY 13, 2011**

FILE #2010-005: Amend the zoning regulations in the County Code (Title 8, Chapter 2) by adding Section 8-2.2419 (Small, Medium, and Large Solar Facilities); and amending all other sections to allow small, medium, and large solar facilities with either a Zoning Clearance, Site Plan Review, a Minor Use Permit, or a Major Use Permit.	
APPLICANT: Yolo County	
LOCATION: All parcels in the unincorporated Yolo County area zoned for all uses **SUPERVISOR:** all districts **FLOOD ZONE**: various **SOILS**: various **FIRE ZONE:** various	**ZONING:** Agricultural zones (A-P. A-1, AGI zones); Residential zones (the R-1, R-2, R-3, R-4, R-S and RRA zones); Commercial zones (the C-1, C-2, DMX, C-3, and C-H zones); and Industrial zones (the M-L, M-1 and M-2 zones) **GENERAL PLAN:** Agricultural (AG); Open Space (OS), Parks and Recreation (PR), Public/Quasi-Public (PQ), Specific Plan (SP), Residential Rural, Very Low, Low, Medium, and High (RR, RL, RM, RH); Commercial Local and General (CL and CG); and Industrial designations (IN)
ENVIRONMENTAL DETERMINATION: to be determined	
REPORT PREPARED BY:	**REVIEWED BY:**
Eric Parfrey, Principal Planner	David Morrison, Assistant Director

RECOMMENDED ACTION

That the Planning Commission:

1. Hold a public workshop hearing, consider public comments, and give further direction to staff regarding the concepts proposed for the Small, Medium, and Large Solar Facilities Ordinance; and

2. Return the item to the Commission at a future hearing for recommendations on the revised ordinance.

REASONS FOR RECOMMENDED ACTION

In October, 2010, the Board of Supervisors requested that the Planning and Public Works Department prioritize the adoption of updated zoning regulations for solar facilities, based on several discussions of tentative proposals for solar "farms" in the unincorporated area. Only two formal applications for solar projects have been received by the Department in the last year. The first project, the OPDE Solar Farm, is located on approximately 160 acres of unincorporated lands along the Ship Channel owned by the Port of West Sacramento and would generate 24 megawatts (MW) of electricity. The OPDE project was processed and approved by the City of West Sacramento acting as the lead agency, in 2010. A second application for a medium-sized solar project (3.6 MW located on 44 acres of land), was received by the County on January 6, 2011 and is now being processed.

Previously enacted State law encourages the installation of solar energy systems in order to reduce demands on public utilities, and restricts the ability of local jurisdiction from placing onerous conditions on their approval in some circumstances. In addition, another State law, the Williamson Act, requires the County to make certain determinations and adopt findings that a proposed solar facility is a compatible use with the Act for facilities located on lands under contract.

The 2030 Yolo Countywide General Plan and accompanying draft Climate Action Plan (CAP) include numerous policies and measures to reduce fossil fuel reliance and greenhouse gas emissions by strongly encouraging and, in some cases, requiring, conversion to solar energy sources. For example, the CAP calls for establishment of a Community Choice Aggregation program where 50% of overall County purchases are from 50% renewable sources, and 25% of all County energy purchases are 100% renewable. The draft CAP also assumes that all new residential subdivisions approved by the County would be required to install solar water heaters and photovoltaic systems.

BACKGROUND

Description of Typical Small and Large Solar Energy Systems

Small solar energy systems are designed and scaled to provide electricity primarily for uses located on the site. Small systems can consist of solar photovoltaic (PV) panels placed on the roof of private single family houses or on a post in the backyard. Small systems may also include more extensive solar generating facilities designed to serve commercial and industrial businesses, including farms and ranches. Small systems may also at times sell power back to the electrical grid.

Private (non-commercial) systems such as PV panels on homes are regulated through the building permit process, and are not subject to any zoning or use permits provided they meet setback, height, and any other adopted standards. The proposed solar facility regulations would continue this current practice so that small systems located on most agricultural, commercial, and industrial-zoned lands would be subject only to building permit requirements, with an over-the-counter "Zoning Clearance" review by planners. Only small-sized facilities would be allowed in residential zones.

Santa Clara County has recently adopted an ordinance that defines "small scale" and "large scale" solar facilities. Staff recommends that the proposed Yolo County ordinance incorporate the Santa Clara definition of a "small solar system" as a starting point for this discussion, which relies on a threshold of 1.5 megawatts (MW) in electricity generation as a dividing line. A megawatt is 1 million watts and can power 1,000 homes for one hour. A typical small solar wind energy system could cover up to approximately eight acres of land. One reason that Santa Clara chose the 1.5 MW threshold is because California state regulations allow "feed-in tariff" contracts at fixed prices to be

negotiated between electrical utilities and small systems of up to 1.5 MW. This allows a streamlined process that does not require review by the California Public Utilities Commission (CPUC).

In contrast to small systems, very large solar "farms" may generate electricity in the range of 20 to 40 MW or more. These industrial-sized farms could require 150 to 500 acres of land. Commercial solar facilities usually cover five acres or more for each megawatt generated. Systems greater than 1.5 MW and less than 20 MW in size must execute "Power Purchase Agreements" with utilities, which must be approved by the CPUC. Solar facilities larger than 20MW are considered utility-owned generators. Very large thermal solar facilities over 50 MW fall under the permitting jurisdiction of the California Energy Commission.

There is increasing interest in medium-sized solar facilities of between 1.5 and 20 MW in Yolo County. These projects would be larger than the typical solar panel placed on buildings, and could involve 20 to 100 acres of land devoted to rows of panels on a single axis or dual axis track system that could rotate to maximize solar collection. As noted above, the County has recently accepted an application for a medium-sized 3.5 MW solar project proposed on 44 acres of land outside Winters.

Based on this preliminary analysis, staff suggests that the proposed ordinance use the following terminology to classify the size of solar application: "small systems" (up to 1.5 MW); "medium-sized systems" (1.5 to 10.0 MW), and "very large systems" (over 10 MW).

Recently Approved Very Large Projects

Several very large solar facilities have recently been approved in rural areas of Central California in San Benito, Kings, and Tulare counties. In San Benito County, a 420 MW facility located on up to 10,000 acres in the Panoche Valley was approved. The environmental impact report (EIR) that was certified for the project is now being sued, largely over agricultural/Williamson Act and biological habitat issues.

In Kings County, two solar facilities of 20 MW and 19 MW have been approved for the same 420-acre parcel. The two facilities will take up 63 acres, with the remaining 356 acres to be available for continued dry farming. The two projects were permitted through a Conditional Use Permit process.

In Tulare County, six large solar applications proposed by one company were approved last year in the Avenal area, ranging in size between 20 and 50 MW. The largest project (50MW) is located on 740 acres. The projects were approved through a Conditional Use Permit process with an EIR required. One additional project that would generate 100 MW on about 900 acres of land is currently under discussion.

All of the large facilities are located along major roadways where large transmission lines exist. A key issue for the rural counties is what financial return there is to the counties. Kings County has found no way to tax the plants, and if the land remains under Williamson Act contract, there is not even a property tax increase. However, Tulare County has negotiated with the solar companies to benefit from the projects. Each of the six approved projects has been required to enter into a Development Agreement, which guaranteed the county payments of mitigation fees of $1,000 per megawatt on private lands and $125 per MW for public lands. The six projects will pay a combined $36,000 annually to the county for the 150 MW of solar energy generated on 2,100 acres of land.

State Law

Government Code

Several sections of State law encourage solar facilities and restrict the ability of local jurisdiction from placing onerous conditions on their approval in some circumstances. The relevant sections of the California Government Code are included below, with key text emphasized in ***bold italics***.

Section 65850.5 of the Government Code states:

> (a) It is the intent of the Legislature that ***local agencies not adopt ordinances that create unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict the ability of homeowners and agricultural and business concerns to install solar energy systems***. It is the policy of the state to promote and encourage the use of solar energy systems and to limit obstacles to their use.
>
> (b) ***The requirements of local law shall be limited to those standards and regulations necessary to ensure that the solar energy system will not have a specific, adverse impact upon the public health or safety. However, if the building official of the city or county has a good faith belief that the solar energy system could have a specific, adverse impact upon the public health and safety, the city or county may require the applicant to apply for a use permit.***
>
> (c) A city or county may not deny an application for a use permit to install a solar energy system unless it makes written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The findings shall include the basis for the rejection of potential feasible alternatives of preventing the adverse impact.
>
> (d) The decision of the building official pursuant to subdivisions (b) and (c) may be appealed to the planning commission of the city or county.
>
> (e) ***Any conditions imposed on an application to install a solar energy system shall be designed to mitigate the specific, adverse impact upon the public health and safety at the lowest cost possible.***
>
> (f) (1) A solar energy system shall meet applicable health and safety standards and requirements imposed by state and local permitting authorities.

The definition of a “solar energy system” applied in the above State code sections is somewhat vague, and could be read to include both small and large systems. Other provisions of State law define “solar energy system" as “[a]ny solar collector or other solar energy device whose primary purpose is to provide for the collection, storage, and distribution of solar energy for space heating, space cooling, electric generation, or water heating.” In general, counties appear to have interpreted “solar energy system” to include only systems that primarily serve on-site uses, such as solar panels built to provide energy to buildings or other facilities on the same parcel. The Office of the County Counsel agrees with this interpretation of the term. Accordingly, the restrictions in Government Code Section 65850.5 do not impair the County’s discretion to require a Use Permit for all other types of solar facilities, particularly large solar farms. Elsewhere, most of the recent industrial-sized

solar farms that have been approved have been subject to a Use Permit process and have been subject to analysis under the California Environmental Quality Act (CEQA).

Another State law adopted in 1979 also regulates "solar access" and vegetation. Section 25980 of the Public Resources Code, the "Solar Shade Control Act", states "there are certain situations in which the need for widespread use of alternative energy devices, such as solar collectors, requires specific and limited controls on trees and shrubs." This State law prohibits a tree or shrub to be placed, or to grow on, "subsequent to the installation of a solar collector on the property of another so as to cast a shadow greater than 10 percent of the collector absorption area upon that solar collector surface on the property of another at any one time between the hours of 10 a.m. and 2 p.m."

Williamson Act

Since a majority of land in the unincorporated area is under Williamson Act contracts, the issue of the compatibility of any proposed solar facilities, especially large scale facilities, with the Act is key for Yolo County. The State Department of Conservation (DOC) has given some guidance to local jurisdictions regarding this issue in the recent publication "Solar Power and the Williamson Act" (May, 2010). The following is a summary of the report's conclusions and recommendations.

The DOC report states:

> There are many ways in which a solar power generation facility may be built within an agricultural preserve or on land restricted by a Williamson Act contract. In summary: (1) A city or county may determine under certain factual patterns that a solar power generation facility is a compatible use on land restricted by a Williamson Act contract; (2) A city or county, or the landowner, may choose to not renew the contract; (3) A city or county may find it is either consistent with the Williamson Act or in the public interest to cancel the contract for the solar power generation facility and immediately remove the land's restrictions; or (4) A public agency with the power to condemn property may acquire the contracted land by, or in lieu of, eminent domain and render the Williamson Act contract void.

In Yolo County, staff assumes that most applicants of any large scale solar facilities will request that the County not alter existing Williamson Act contracts through non-renewal or cancellation. Thus, any proposed facility would most likely be permitted through the first option noted above, requiring the County to make a determination and adopt findings that the proposed solar facility is a compatible use consistent with the Williamson Act and the existing contract for the land. For this option, the DOC report gives the following advice (key text is emphasized in ***bold italics***):

> Certain non-agricultural uses, including solar power generation, may be compatible with an underlying agricultural use. The Williamson Act provides three general circumstances when a solar power generation facility may be found compatible. First, a solar power generation facility may be a compatible use as an "electrical facility" when located on non-contracted land within an agricultural preserve.
>
> Second, ***a solar power generation facility on contracted land may be a compatible use if it meets the "principles of compatibility" as set forth in Government Code Section 51238.1(a).*** Whether a proposed solar installation is compatible with the underlying agricultural use of the land depends almost entirely on the specific circumstances. The statutory test directs cities and counties to ***look at the degree to which the proposed project would significantly interfere with the underlying agricultural operation. If a proposed solar project would displace a very small percentage of the overall agricultural operation then the local jurisdiction could find that the solar panels would***

not reach the level of significant displacement and therefore be an allowed use.

Finally, under specific circumstances ***a solar power generation facility may be approved by a city or county even if it is inconsistent with the principles of compatibility if: (1) the proposed site is located on non-prime land; (2) the proposed site is approved pursuant to a conditional use permit; and (3) the following four findings are made***, based on substantial evidence in the record:

1) The conditional use permit requires ***mitigation or avoidance of onsite and offsite impacts to agricultural operations.***

2) The ***productive capability of the subject land has been considered*** as well as the extent to which the solar power generation facility may displace or impair agricultural operations.

3) The solar power generation facility is consistent with the purposes of the Williamson Act, to preserve agricultural and open-space land, or ***supports the continuation of agricultural uses, or the use or conservation of natural resources***, on the contracted parcel or on other parcels in the agricultural preserve.

4) The solar power generation facility does not include a residential subdivision.

There are a ***host of factors for a county or city to weigh and consider*** in making the above required findings. These include but are not limited to the ***availability of irrigation water, size of the solar power generation facility, size of the contracted parcel, slope, placement and location of solar panels, and types of mitigation and avoidance offered.***

Because each situation is so fact specific, the Department stands ready to assist cities and counties in performing the required compatibility analysis.

Staff recommends that the proposed solar ordinance be drafted to incorporate much of the language in these specific recommendations from the DOC report.

Yolo County Plans and Polices

The 2030 Yolo Countywide General Plan, adopted in November, 2010, and the accompanying draft Climate Action Plan include numerous policies, measures, and programs designed to reduce fossil fuel reliance and greenhouse gas emissions by strongly encouraging and, in some cases, requiring, conversion to solar energy sources. The most relevant measures and action programs include:

General Plan Action CO-A111: Amend the Zoning Code to streamline permitting for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels. (Implements Policy CO-7.1)
Responsibility: Planning and Public Works Department
Timeframe: 2010/2011

Climate Action Plan Implementation Measures involving solar power and their percentage contribution to achieving the 2020 emissions reduction target:

A-7.2: Replace 40% of irrigation return pumps to solar (6% of total reduction)

E-1.1: Establish a Community Choice Aggregation program where 50% of county purchases are 50% renewable and 25% of county energy purchases are 100% renewable (42%)

E-8.1: Install solar water heaters on 100% of new homes and 15% of existing homes (1%)

E-8.2: Install photovoltaic systems on 100% of new homes and 5% of existing homes (3%)

In the past, the Board of Supervisors has also approved discounts of building permit fees for applicants wishing to install photovoltaic systems. However, that program was discontinued due to budget reasons.

STAFF ANALYSIS

Staff has not yet prepared a draft ordinance to add a new Section 8-2.2419 to the County Code. The following is a detailed description with proposed text that could be included in an ordinance.

The basic concept of the proposed ordinance is to employ a tiered review process for small, medium, and large wind energy systems, based on the following key criteria:

- Zoning district;
- Size of the proposed solar facility (small, medium, or large);
- Health and safety determinations;
- Compatibility of proposed facility with the Williamson Act.

Figure 1 on the following page is a flow chart that illustrates the proposed review and approval process for solar facilities, as described below.

Zoning District

Small and large solar facilities would be allowed in all zoning districts in the unincorporated area, with the exception that only small-sized facilities would be allowed in residential zones. Large solar energy systems would be allowed only within agricultural and public/quasi-public zoning districts.

Size of Facility

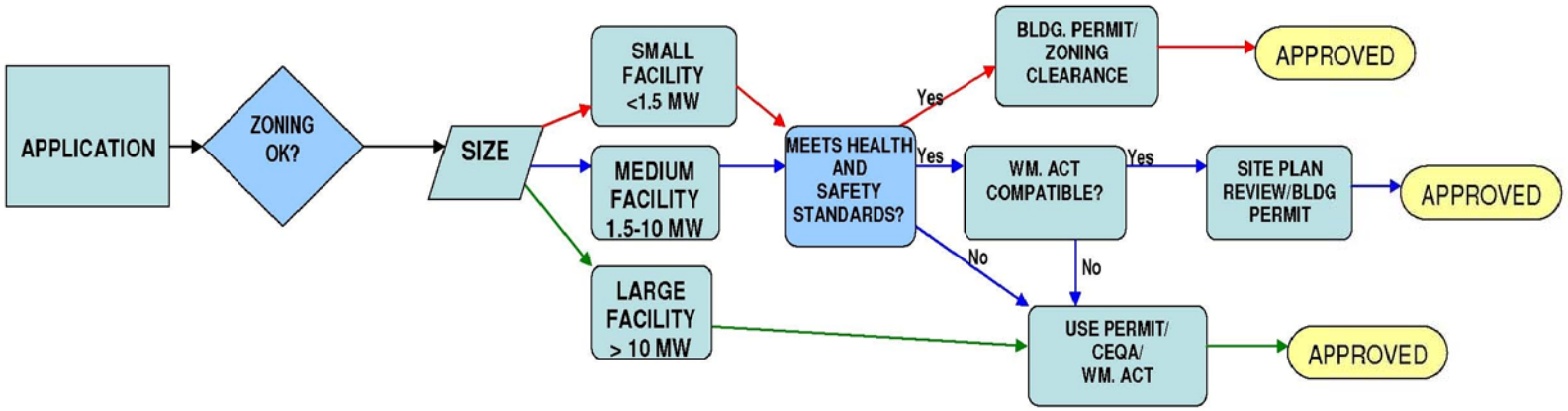
As is currently the practice at Yolo County Planning and Public Works, all small solar facilities would be allowed through the issuance of building permit(s), with an over-the-counter "Zoning Clearance" review by planners to ensure that the project conforms with required property line setbacks, any height limits, and other established zoning standards, including new health and safety standards proposed in this ordinance. Small facilities are defined as those that generate up to 1.5 megawatts (MW).

Medium solar facilities, defined as those that generate between 1.5 and 10.0 MW, would be allowed through the issuance of either a non-discretionary Site Plan Review if located on non-prime farmland or a discretionary Minor Use Permit if located on prime farmland. Even on non-prime farmland, a Use Permit may be required if health and safety issues are raised or if the use may be incompatible with the Williamson Act.

For large solar energy systems generating more than 10 MW, all applications would be subject to a Major Use Permit, and would be referred to the Planning Commission for approval. Large solar energy systems, and those medium-sized systems that are required to undergo discretionary review through a Use Permit, may be required to mitigate for loss of agricultural and habitat lands, and conform to more restrictive setback and other environmental regulations, than small and non-discretionary large solar systems.

FIGURE 1

PROPOSED REVIEW AND APPROVAL PROCESS FOR SOLAR ENERGY FACILITIES



Draft Jan. 7, 2011

Health and Safety Standards

As set forth under State law, the standard requirements for small solar systems, and for medium-sized solar systems which have been found to be compatible with the Williamson Act, would be limited to those standards and regulations necessary to ensure that the solar energy system will not have a specific, adverse impact upon the public health or safety. However, if the Chief Building Official has a good faith belief that the solar energy system could have a specific, adverse impact upon the public health and safety, the County may require the applicant to apply for either a Minor or Major Use Permit.

The following health or safety standards are proposed to be included in ordinance. Some of these standards have been incorporated from other jurisdictions that have recently updated their solar regulations, including the City of Santa Monica.

The following standards apply to small solar systems proposed in residential and commercial zoning districts:

- Photovoltaic solar energy systems may extend up to five (5) feet above the roof surface even if this exceeds the maximum height limit for the principle structure for the district in which it is located, or if this exceeds the height limit of an accessory structure (15 feet);

- Solar water or swimming pool heating systems may extend up to seven (7) feet above the roof surface even if this exceeds the maximum height limit for the principle structure for the district in which it is located, or if this exceeds the height limit of an accessory structure (15 feet);

- Excluding solar collection panels, solar energy system equipment may be installed within the required side and rear yard, but shall not be closer than two feet from any property line;

- Pole mounted solar collection panels shall comply with existing regulations for accessory structures (Article 34 of Chapter 2, Title 8 of the County Code), i.e., the panels may not exceed ten (10) feet in height in residential zones and must meet a rear yard setback of five (5) feet;

- Solar facilities proposed on a property or structure that is a designated Historic Landmark or is located within a designated Historic District may be permitted upon approval of a non-discretionary Site Plan Review;

In addition to the standards above, the following standards apply to medium-sized solar systems proposed in agricultural, industrial, commercial, and public/quasi-public zoning districts:

- Medium-sized solar facilities shall be located on non-prime lands;

- Ground-mounted solar facilities shall meet the following setback standards:

  Agricultural districts: setbacks of at least 100 feet from all property lines, and setbacks of at least 300 feet from the nearest occupied residence;
  Industrial districts: setbacks of at least 50 feet from all property lines, and setbacks of at least 100 feet from the nearest occupied residence;
  Commercial districts: setbacks of at least 20 feet from all property lines, and

setbacks of at least 50 feet from the nearest occupied residence;

- Ground-mounted solar facilities shall meet a height limit of no more than fifteen (15) above the ground;

- The proposed solar facility shall be designed to minimize any glare or lighting on adjacent neighbors;

- The proposed solar facility shall be designed to minimize any identified impacts to natural features, e.g., sensitive and listed wildlife species and habitat, water courses, or heritage trees;

If an application for a medium-sized solar facility does not meet any of the above standards, the project would be required to be reviewed through a Minor or Major Use Permit process, and would not be eligible for a Site Plan Review.

Compatibility of Proposed Facility with the Williamson Act

All applications for medium-sized and large solar facilities that are proposed on lands under Williamson Act would be subject to a determination and finding by the County that the use is compatible with the Act, as required by State law. It is assumed that the vast majority of medium and large solar facility applications would fall into this category of review. Conversely, small systems would not be subject to this determination but would be assumed to be a compatible use with any existing Williamson Act contract.

Medium-sized solar facilities, between 1.5 MW and 10 MW in size, may be found to be a compatible use under the Williamson Act if the Director determines that the project meets the following criteria:

- the proposed project would not significantly interfere with the underlying agricultural operation;
- the proposed project would displace a very small percentage of the overall agricultural operation;

Following a determination of compatibility by the Director, an application for a medium-sized solar facility may be processed with a non-discretionary Site Plan Review, provided that the project meets the health and safety standard and the Chief Building Official has not identified any additional specific, adverse impact upon the public health and safety. Following approval of a Site Plan Review, building permits could then be issued.

Large facilities that are processed with a Major Use Permit may be found to be a compatible use under the Williamson Act, and approved with all necessary conditions, if the Planning Commission determines that the project meets all of the following criteria:

(1) Facilities must be located on poorer quality (i.e. non-prime Class 2 or 3 soils) to be considered compatible.

(2) Installation on Class 1 soils would only be considered compatible if there is an opportunity to maintain existing, and/or create additional agricultural value e.g., maintaining agricultural cultivation between solar equipment, cropping alfalfa, tomatoes, other low row crops.

(3) Solar arrays shall be designed to be widely-spaced (i.e. with a minimum of 35 feet

between structures) to facilitate maximum agricultural production and encourage Swainson's hawk and other raptor foraging between the arrays.

(4) Lands within the solar array (i.e. between panels) shall be managed to accommodate grazing for livestock production where crop production cannot be accommodated. Solar panels will also rotate on at least one axis - preferable vertical - to provide sunlight below the panels to facilitiate plants growth and to avoid a "scorched earth" appearance. , At least 25 percent of non-crop areas will remain un-mowed or un-grazed to provide refuge to prey species for raptor foraging.

(5) The footprint of solar facilities in contact with the ground should generally not exceed 5% of the total property. The total surface area of the array and any roads and ancillary equipment shall not exceed 35% of the total property.

While final determination of solar development compatibility with Williamson Act lands will be decided on a case-by-case basis, those projects incorporating the above criteria will most likely be considered compatible with Williamson Act contract lands and generally result in "less than significant impacts" to such lands.

Medium and large facilities that do not conform to all of the above criteria and are not found to be a compatible use can be approved according to State law if:

- the proposed site is located on non-prime land;
- the proposed site is approved pursuant to a conditional use permit; and
- the following four findings are made, based on substantial evidence in the record:

  (1) The conditional use permit requires mitigation or avoidance of onsite and offsite impacts to agricultural operations.
  (2) The productive capability of the subject land has been considered as well as the extent to which the solar power generation facility may displace or impair agricultural operations.
  (3) The solar power generation facility is consistent with the purposes of the Williamson Act, to preserve agricultural and open-space land, or supports the continuation of agricultural uses, or the use or conservation of natural resources, on the contracted parcel or on other parcels in the agricultural preserve.
  (4) The solar power generation facility does not include a residential subdivision.

As the Department of Conservation reports notes, there are a host of factors for a county or city to weigh and consider in making the above required findings. These include but are not limited to the availability of irrigation water, size of the solar power generation facility, size of the contracted parcel, slope, placement and location of solar panels, and types of mitigation and avoidance offered.

OTHER AGENCY INVOLVEMENT

County Counsel has reviewed this staff report.

ATTACHMENTS

Photos of Typical Solar Projects