

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects



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# Solar Power Transactions

*“Here comes the sun, do do do do.  
Here comes the sun, and I say ... It’s all right”*



- The Beatles

# Presentation Road Map



## What should you get out of this presentation?

1. An overview of solar power purchase transactions, including PPAs and alternative ownership options.
2. An understanding of the most common mistakes school districts make when pursuing solar and how to help your districts avoid them.
3. You will see examples of PPA provisions and learn what to look for to protect your districts

# The History of Solar Power



- Research on solar energy began as early as the 1860s but died down by the turn of the 20th century with increasing investments in fossil fuel. The biggest impetus to solar power research came as late as 1973, with the oil embargo. The US government allocated \$400 million per year for solar energy research in 1973, from a mere \$1 million in the previous years. The next big push to solar power research came in 1997, with the Kyoto Protocol's focus on the effects of greenhouse gas emissions worldwide.
- Photovoltaics OR "PV" has seen average production growth of 40% per year since 2000.

# What is a Solar Power Purchase Agreement or “PPA”?

A Power Purchase Agreement (“PPA”) is a legal contract between an electricity generator and a power purchaser under which the power purchaser purchases energy from the electricity generator.



# Who are the Players in a Typical PPA?

1. School District (Often referred to as “Host”)
2. Vendor (Chevron, BP Solar, Solar City, etc.)
3. Financier (B of A Pub Capital Corp., GE Capital)
4. Manufacturer (Sunpower, Applied Solar, etc.)
5. Installer
6. Utility (PG&E, SoCal Edison, etc.)

# Solar Power Purchase Agreements

The Solar Power Purchase Agreement (PPA) is one alternative to financing and owning a PV system.

## Advantages:

- It offers the agency an opportunity to install solar power without paying upfront costs
- Agency doesn't have to worry about system operation and maintenance.
- Provides 15-25 years of predictable, pre-set electricity prices.

# Alternatives to Power Purchase Agreement

1. Direct Purchase Model
2. Lease/Purchase Option





# Alternatives to Power Purchase Agreement

An agency can purchase a PV system outright or through a lease-purchase transaction utilizing a combination of bonds, credits, grants, loans, rebates and cash reserves

## Advantages:

- Can involve less contracting complexity
- Increases the value of the agency's facility
- Can provide 25 years or more of "free" electricity



# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 10. Failing to Comprehend the District's Actual Power Usage Before Pursuing A Solar Energy Solution

- Energy Audits and Assessments
- Free and low costs assessment resources
- The California Energy Commission can provide school district free or reduced cost assessment if certain conditions are met (<http://www.energy.ca.gov/>)
- The Center for Sustainable Energy can also provide free or reduced cost assessment (<http://energycenter.org/>)
- The California Energy Commission's existing Energy Conservation Assistance Account Program (ECAAP) makes low interest loans available for investments in energy efficiency and carbon emissions reduction
- Local utilities have various programs that provide free or subsidized energy auditing

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

- Contracting for Expert services
  - No Competitive Process Required
    - selection “on the basis of demonstrated competence and on the professional qualifications necessary for the satisfactory performance of the services required” (Government Code section 4526)
  - RFP / RFQ for Well-defined Services
  - Ensure no Conflicts of Interest – Segment Services
- Ensure Experience in Public Education

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

- Deliverables from the District
  - Historical Utility Usage and Cost Data
  - Projected Future Energy Requirements – Master Planning Issues
- Access to Records and Sites

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 9. **Failing to implement energy efficiency measures prior to determining PV system size**

- The more energy efficient your facilities are, the smaller (and less expensive) the PV system will need to be.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## Energy Efficiency Contracts

- Authority: Government Code sections 4217.10-4217.18
- Use Results of Energy Efficiency and Projected Energy Requirements Analyses
- Analyze Cost of Solution
- Analyze Cost of Energy Post-Solution

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

8. **Failing to make prospective vendors compete by utilizing a competitive RFQ/RFP process**
  - Don't just use the first vendor to approach your District. In this highly-competitive environment, you're better served in requiring the vendors to compete for your business.
  - Don't worry about having every last detailed engineering aspect sorted out prior to the RFP. Let the vendors provide different options to give you ideas on how best to structure the transaction.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 7. Failing to retain appropriate expertise

### The Right Solar Company

- Corporate History
- Record of Past Performance
- Good References



# Engineer/Construction Manager

- Solar System Installation Experience
- Public Project Experience
- Successful collaboration with Solar Company and Installers

# Financial Consultant

- Aggressive and independent verification of financial and cost escalation assumptions provided by Solar Vendor
- Experience with financing of Solar PV Systems under PPA and Direct Purchase Models

# Legal Consultant

- Experience with all phases of project, from initial consideration, through RFP selection process, through PPA negotiation and construction and operation of project
- Demonstrated ability to effectively coordinate district's team

# Environmental Consultant

- Familiarity with the particular environmental conditions where system installation is proposed
- Past experience with CEQA on Solar Projects

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

- Assembling the right team with the right expertise is *critical* to insuring your District obtains the best arrangement possible.
- Solar Transactions involve complex financial, legal, environmental and construction considerations.
- The vendor's job is to look out for the *vendor*. Who's looking out for your district?

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 6. Failing to obtain aggressive energy production guarantees

### Guarantees That Preserve the Economic Benefit Enjoyed By The District

- Minimum Production Guarantees
- Metering Accuracy Guarantees

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## Minimum Production

9.2 Energy Warranty. Provider grants the energy warranty set forth as Exhibit C. Provider warrants that the System will produce the Guaranteed Minimum Annual Energy (Column C), based on Estimated Annual Production (Column B). If Actual Annual Production is lower than the Guaranteed Minimum Annual Energy, a Reimbursement Rate (Column D) shall be applied to the energy shortfall. The Reimbursement Rate is calculated as the value of the Anticipated Cost Reduction, as defined in Exhibit B, divided by the Estimated Annual Production. The resulting amount shall be the payable by Provider to Host as liquidated damages. The period of this warranty is 20 years. The period will start from the Commercial Operation Date of the System.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## Metering Accuracy

### 3.1 Metering.

(a) Maintenance and Testing. Provider shall install and maintain a utility grade kilowatt-hour (kWh) meter for the measurement of electrical energy provided by each System and test the same. Upon Host's written request, Provider shall furnish a copy all technical specifications and accuracy calibrations for the meter per each System upon and after installation. Provider shall deliver to Host a copy of meter accuracy verification test performed one year after system implementation. Host's failure to object to such metering and measuring devices shall be deemed an approval of the same and Host waives any future claims as to inaccuracy of such devices.



# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

(b) Adjustments. If testing of the metering equipment pursuant to Section 3.1(a) indicates that such equipment is in error by more than two percent (2%), then Provider upon Host's written request shall promptly repair or replace such equipment.

A cost adjustment shall be made for any period during which inaccurate measurements were recorded, not to exceed four (4) months. Host (in the event of underpayment) or Provider (in the event of overpayment) will pay the other the amount of any underpayment or overpayment determined as a result of the adjustment, with interest at the rate of \_\_\_\_\_% per month from the date of such overpayment or underpayment or the maximum amount permitted by law, whichever is less.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 5. Failing to conduct proper project analysis under the California Environmental Quality Act (“CEQA”)

PV projects generate light, heat and their installation in some cases may displace threatened wildlife species.

Failing to conduct appropriate environmental review leaves the project vulnerable to legal challenge.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 4. Accepting a PPA term that is too long.

As technology in the PV industry advances, we will see more efficient and less expensive PV panels and equipment, which in turn, will have a *significant* impact on the current economics of the PPA.

# What were cell phones like 25 years ago?



## PRICE AND TECHNOLOGY BREAKTHROUGH! LIGHTWEIGHT HANDHELD CELLULAR PHONE

**Carry It Along With You to Make or Take Calls Wherever You Go!  
Keep in Touch When You're Out of Your Office, Home or Car**

**1499<sup>00</sup>**  
Commercial Lease  
Low As **49<sup>95</sup>**  
Plus applicable sales/use tax

ESP Available

- The Most Affordable Portable Available Anywhere
- Fits in Your Briefcase—Only 1½" Wide
- Weighs Only 28 Ounces, Including Batteries
- Includes Built-In Rechargeable Battery Pack, Antenna, Carrying Case and Strap

**Radio Shack CT-300.** All the convenience of a full-feature cellular phone in a truly portable size! You can easily carry it with you anywhere you go and use it just as you would a regular pushbutton phone. But you can use it at times when you would normally be out of contact. At the job site, in a rental car, on a service call or relaxing on a boat. You're always accessible if an immediate response is necessary, and you can manage your time more efficiently. You can use your portable phone in and around the over 110 cities in the USA that now have cellular service, with more cities on the way.

No larger than a cordless telephone, the CT-300 gives you all this: Memory for accurate speed-dialing of up to 40 phone numbers. High-energy batteries that deliver up to 15 hours standby or 1½ hours of talk time on one charge, and that can be recharged in only 60 minutes. Cumulative call-timer display so you can easily keep track of the amount of time your phone has been in use. And an electronic "lock" that restricts phone use and is easily reprogrammable through the keypad. Other features include a low-battery warning tone, and indicators for "No Service," "In Use" and "Roam." Has 600-milliwatt power output.

We make the CT-300 easy to own with leasing and credit plans, in-store processing of all start-up paperwork and programming of the phone. You walk out with a working cellular telephone! Backed by our one-year limited warranty. It's your best buy, by far. Requires charging stand plus AC adapter or mobile mounting kit. 17-2001 1499.00

**Accessories for the CT-300**

**Charging Stand.** Recharges battery pack in one hour! Permits operation while charging batteries. Requires AC adapter or mobile mounting kit. 17-602 ..... 59.95

**AC Adapter.** UL listed. 273-1653 ..... 18.95

**Extra Rechargeable Nickel-Cadmium Battery Pack.** Output: 1 ampere-hour. 17-604 ..... 59.95

**Handsfree/Data Interface\*.** Enjoy two-way hands-free conversations. Full duplex. Also serves as interface for Tandy laptop computers. 17-601 ..... 69.95

\*Available on special order Sept. 30, 1987

**Mobile Mounting Kit**

Use the CT-300 in your car as a mobile cellular phone! Our Mobile Mounting Kit allows installation of Charging Stand #17-602 (extra) in a vehicle. You can make and take calls while you're driving to and from work, stuck in traffic or taking the kids to practice. Quick-release design allows easy disconnect of charging stand from the mobile mounting kit. Includes DC power cord and mounting hardware. 17-603 ..... 24.95

**Make Last-Minute Calls**



**Communicate at Job Sites**



**Even Use on Your Boat**



# How About Computers?



[www.old-computers.com](http://www.old-computers.com)

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 3. Failing to Make the Requisite Findings Under Government Code Section 4217.12 Prior to Entering the PPA

### Government Code § 4217.12

**Energy service contracts and facility ground leases; authorization; findings**

- (a) Notwithstanding any other provision of law, a public agency may enter into an energy service contract and any necessarily related facility ground lease on terms that its governing body determines are in the best interests of the public agency if the determination is made at a regularly scheduled public hearing, public notice of which is given at least two weeks in advance, and if the governing body finds:

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

(1) That the anticipated cost to the public agency for thermal or electrical energy or conservation services provided by the energy conservation facility under the contract will be less than the anticipated marginal cost to the public agency of thermal, electrical, or other energy that would have been consumed by the public agency in the absence of those purchases.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

**Include a provision demonstrating the District's compliance with 4217.12**

1.2 Energy Savings. In accordance with its obligations under Section 4217.12 of the Government Code, Host has determined that the anticipated cost to the Host of the solar energy services will be less than the avoided costs if the solar services were not utilized. Host's determination is based upon the assumptions in Exhibit B, attached hereto and incorporated herein.



# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 2. Failing to consider direct purchase as an alternative to a PPA

Because of the falling costs of PV systems and the availability of credits, rebates, grants and opportunities for selling bonds and obtaining other financing, the economics of ownership may be a preferred option for some districts.

The right financial consultant can help you understand the “true” cost difference between ownership and a PPA.

# Top 10 Mistakes School Districts Make When Pursuing Solar Power Projects

## 1. Failing to look into solar power *now...*

Given the long-term savings opportunities achieved through lower PV system costs coupled with the availability of rebates, credits and grants, given the current challenging fiscal environment, districts should look into solar as a part of its long-term fiscal strategy.

# Negotiation of Solar PPA Provisions

## 1. Assignment Clauses

- Avoid language that permits the Provider to extinguish its obligations under the PPA by assigning it to another company.
- Either require the Provider to remain on the hook post-assignment or require that the District approve the assignee *prior* to assignment.

# Negotiation of Solar PPA Provisions

## 2. Insurance Requirements

- Utilize your risk manager, carrier and legal counsel to assist you in determining the appropriate types and amounts of coverage

# Negotiation of Solar PPA Provisions

## 3. Liquidated Damages/Termination

- It is important that the PV system be up and running by the projected operation date to achieve the financial benefit of the arrangement. To guard against late project operation date, a provision for liquidated damages or termination of agreement without penalty tied to delayed operation date can be used.

# Negotiation of Solar PPA Provisions

## 4. System Removal

- Obligate the Provider to remove all components of the system (including concrete footings for ground-mounted installations) and return property to original condition at end of PPA term.

# Negotiation of Solar PPA Provisions

## 5. Utilize License Agreement (Not Lease) for Installation of System

- *Licensing* the underlying real property to the Provider upon which the system is installed avoids cumbersome surplus property and other procedures that must be followed when a district *leases* real property.

# Negotiation of Solar PPA Provisions

## 6. Confidentiality Provisions

- Be mindful of the limitations of such provisions imposed on public agencies under the Public Records Act.



# Negotiation of Solar PPA Provisions

## 7. Early Termination

- 2.3 Early Termination. If Host terminates this Agreement prior to any applicable Expiration Date in accordance with Section 2.1, for any reason other than for Provider's Default under Section 11.1, upon such termination, (a) Host shall pay the Early Termination Fee set forth on Schedule 4, Column 2 of the applicable Appendix for the terminated System, and

# Negotiation of Solar PPA Provisions

(b) Host shall ensure that the terminated System is disconnected and allows Provider the unfettered right to remove the System(s) from the Properties. Upon Host's payment to Provider of the Early Termination Fee, this Agreement shall terminate with respect to that System or Systems. In addition, Host shall be obligated to offer Provider any substitute property that will avoid Provider becoming ineligible for future subsidies as set forth above. In the case that a suitable substitute property is found, no Early Termination Fee shall be incurred and instead adjustments shall be made to ensure that Provider receives all the economic benefits as if the Agreement continued at the existing Property.

# Negotiation of Solar PPA Provisions

## 8. Purchase Option

2.4 Purchase Option upon Expiration of this Agreement. So long as a Host Default shall not have occurred and be continuing, Provider grants to Host an option to purchase all the Systems, but no less than all the Systems as of the Expiration Date (including the Expiration Date of the Initial Term or the last day of any applicable Renewal Term) for a purchase price (the “Option Price”) equal to the greater of (a) the Fair Market Value of the System, as determined pursuant to Section 2.5, and

# Negotiation of Solar PPA Provisions

(b) A value of \$1.15/Wdc of each System purchased. Not less than one hundred and eighty (180) days prior to the Expiration Date, as applicable, Host may provide written notice to Provider of Host's intent to exercise its option to purchase the Systems. Upon receipt of Host's notice, Provider shall specify the Option Price, and Host shall then have a period of five (5) Business Days after notification to confirm or retract its decision to exercise the purchase option.

# Negotiation of Solar PPA Provisions

In the event Host confirms its exercise of the purchase option for the Systems and upon receipt of payment of the Option Price in immediately available funds, such payment to be made in accordance with any previous written instructions delivered to Host for payments under this Agreement, in addition to any other payments pending for Host to make, the Parties will promptly execute all documents necessary to (A) cause title to such System to pass to Host shortly after the Expiration Date, and (B) assign all warranties for the System to Host. In the event Host retracts its exercise of, or does not timely confirm, the purchase option, the provisions of this Agreement shall be applicable as if this Section 2.4 were not included in this Agreement.

# Negotiation of Solar PPA Provisions

## 9. How To Determine Fair Market Value For Purchase Option

2.5 Determination of Fair Market Value. The Fair Market Value of a System or Solar Services, as applicable, shall be determined by the mutual agreement of Host and Provider; provided, however, if Host and Provider cannot mutually agree to a Fair Market Value within ten (10) days of the need to determine Fair Market Value pursuant to Section 2.4, then the Parties shall select a nationally recognized independent appraiser with experience and expertise in the solar photovoltaic industry.

# Negotiation of Solar PPA Provisions

Such appraiser shall act reasonably and in good faith to determine Fair Market Value and shall set forth such determination in a written opinion delivered to the Parties. The valuation made by the appraiser shall be binding upon the Parties in the absence of fraud or manifest error. The costs of the appraisal shall be borne by the Parties equally.

# Negotiation of Solar PPA Provisions

## 10. Dispute Resolution Process

- Utilize a “tiered” approach requiring informal attempt to resolve followed by formal meeting and negotiation followed by mediation and finally, litigation.





**“I’d put my money on the sun and solar energy. What a source of power!”**

- Thomas A. Edison, 1931, in a comment to Henry Ford

Question & Answer  
Session

# Thank You

For questions or comments, please contact:

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