

Workshop 3:

Leading Practices in Solar Contracting & Procurement

Commercial Acceleration of Solar Energy
in Silicon Valley (CASE-SV)

Moderator: Eileen Hays, Optony

October 30, 2014

11:00AM-12:00PM PT



Joint Venture
SILICON VALLEY



OPTONY

Agenda

Welcome and CASE-SV Overview (5 min)

Eileen Hays, Project Manager for Optony

Don Bray, SEEDZ Executive Director for Joint Venture

Commercial Solar Procurement Process (30 min)

Featured Speaker: Ben Foster, Senior VP for Optony

Solar Contracts and Negotiations (15 min)

Featured Speaker: Donald Simon, Attorney and Partner at Wendel, Rosen, Black and Dean LLP

Q&A (10 min)



Program Sponsors

American Solar Transformation Initiative

Goal to reduce the total installed costs of solar PV and increase deployment across the US by partnering with 200+ local governments, utilities, and regional organizations to improve their solar markets.

- Created and led by **Optony**, funded by the US DOE
- More information at www.SolarRoadmap.com/case-sv



Smart Energy Enterprise Development Zone (SEEDZ) Initiative

Unites key stakeholders in building the smart energy network of the future: reliable, high quality, affordable, and sustainable power.

- Created and led by **Joint Venture Silicon Valley**
- More information at www.JointVenture.org/seedz



Commercial Acceleration of Solar Energy (CASE-SV) Initiative

Support accelerated deployment of solar PV energy for commercial facilities in Silicon Valley with an aggregated purchasing program.



Target: Advance solar energy by at least 5 MW, and/or 10 commercial sites in Silicon Valley by Q3 2015

Key stakeholders: Business leaders, Municipalities, and Regional organizations.

Solar purchase options

- Onsite Systems
 - Direct purchase
 - Power purchase agreements
- Offsite Options
 - Remote solar projects
 - Regionally-sourced solar renewable energy credits

What is the rationale for a CASE-SV program?

Why are businesses and property owners participating?

- Offset high energy consumption and escalating costs
- Achieve clean energy commitments
- Demonstrate community leadership
- Leverage CASE-SV team, resources and regional solution providers

Why now?

- Federal 30% Investment Tax Credit to sunset Q4 2016
- State Net Metering rules and rates will change in 2017
- Average PV installation costs are at an all time low
- Recognition programs from EPA and JVS



Featured Speaker

Ben Foster, CMA, CMF
Senior VP
Optony, Inc.



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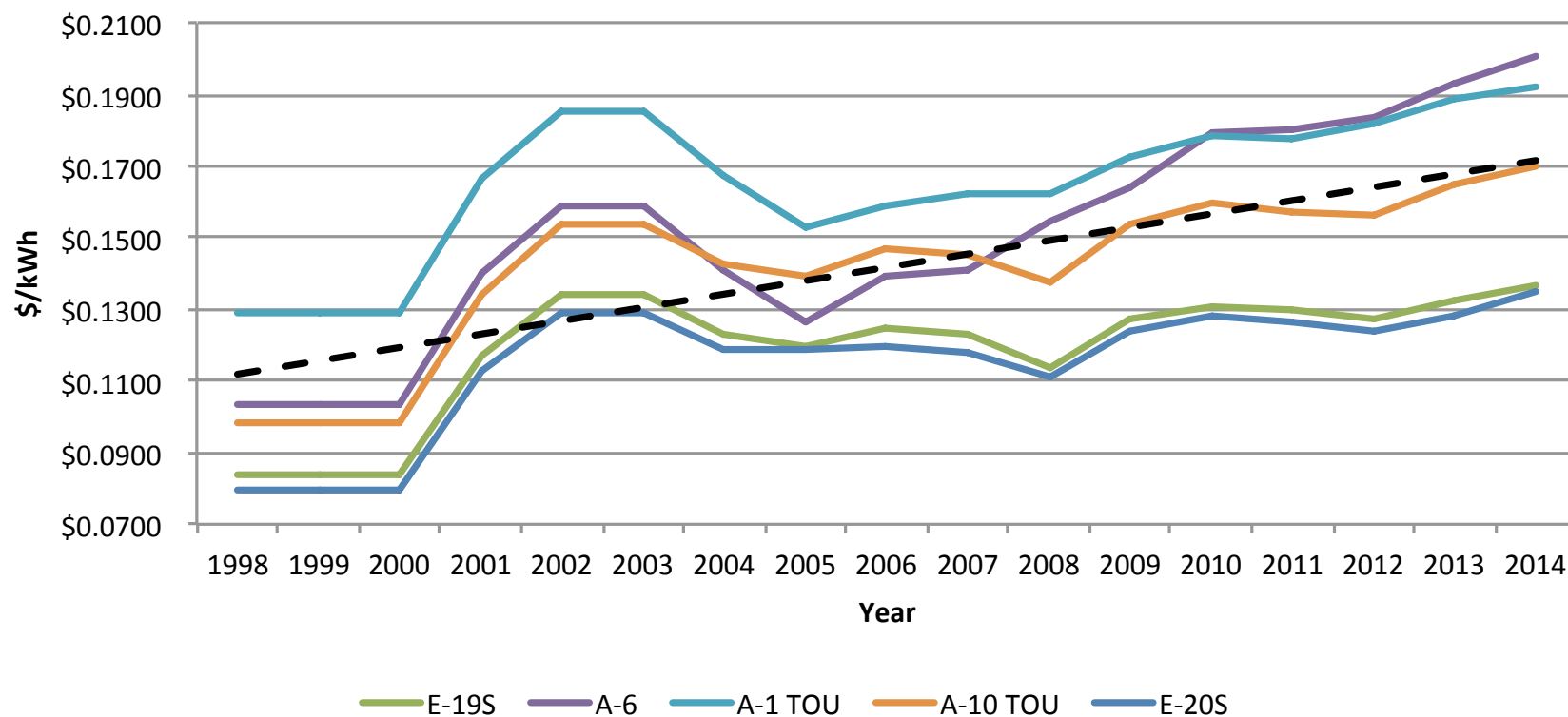
Topics

- Solar project contracting approach
- Procurement and contracting process
- Deep-dive into Power Purchase Agreements
- Planning for operations & maintenance



Solar Power as Hedge for Electricity Costs

**PG&E prices per kWh for
Representative Commercial Facilities**



Traditional Electricity Contracting Process



- “Take it or leave it” terms and conditions
- No control over type or location of electricity supply
- Pricing increases every 6-12 months (non-negotiable)
- No long-term contracting for prices or terms
- No warranties or performance guarantees

Solar Procurement Process Outline

Gather Project Data

- Include 12+ months of utility data, technical details and requirements, and financing preferences for all high-potential locations



Create RFP Package

- Use standardized procurement documents for specifications, key terms and conditions, and evaluation criteria



Issue RFP & Evaluate Proposals

- Manage procurement process and perform a detailed review of proposals using levelized cost of electricity for cost comparisons



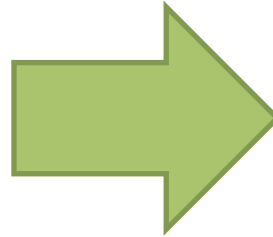
Contract Negotiation & Construction Planning

- Ensure continuity between proposed systems and pricing through the contracting process and develop realistic timeline for installations

Financing Changes Project Expectations

Financing Structures

- Direct Purchase
- Power Purchase Agreement
- Equipment Leasing
- Bond Financing
- Enhanced Use Lease
- Utility Financing
- Energy Service Contract



Changes Project

- Performance Risks
- Up-Front Costs
- Long-Term Returns
- Procurement Process
- System Design
- Project Benefits
- Operations & Maintenance

Proposal and Contract Evaluation Factors

Cost and performance

- Pricing and production are important factors
- Compare to current utility provider and pricing
- Assess importance and price of Renewable Energy Credits
- Technical details will vary by provider, but should be both robust and appropriate for site
- Permitting process will ensure safety and code compliance – but not performance

Vendor qualifications

- Provider capabilities is the most important factor
- Demonstrated experience managing similar projects will be an important success factor

Proposal standards

- Ensure that all contract documents are available for review in advance
- Verify production forecasts, costs and savings calculations over lifetime
- Standardize system lifetime analysis (20-year recommended)
- Consistent approach to assumptions across all proposals
 - PPA Price escalation & Utility rate increases
 - Facility energy usage & production forecasts
 - O&M services and costs
 - Financing costs, discount rate, SREC/rebate values

Direct Purchase

○ Ownership

- Customer owns, operates, and maintains the system
- Owner has full responsibility for performance
- Maintenance contracts and performance guarantees can be purchased

○ Capital Costs

- Full cost of system due at delivery (some interim payments may be required)
- May be partially offset by rebates & incentives (higher for non-profits/gov' t)
- Could be financed directly with existing processes (loan, lease, internal investment)

○ Financial Benefits

- Long-term savings begin immediately and may be the highest with direct purchase
- Customer retains Solar Renewable Energy Credits (SREC)
- Customer receives federal, state, and local incentives and rebates
- However, non-taxable organizations cannot capture any tax benefits
- Very low operating costs, effectively capping electricity costs for 25 years



Power Purchase Agreement Overview

What is a PPA?

- A Power Purchase Agreement is a legal contract between a Host Customer and Energy Producer guaranteeing that the Buyer will purchase all energy produced by an electricity-generating system owned, operated, and maintained by the Seller.
- PPA, LLC has investors, owners, developers, vendors, installers, insurance

Documents

- Master agreement
- Price and escalation factors
- System specifications
- Termination/buyout schedule
- Monitoring, O&M Protocols
- Lease for property usage
- Production & savings forecasts
- Warranties and performance guarantees
- Ownership of SRECs and Incentives
- Insurance requirements

Contract Term & Termination

Term and Buyout

- 20 year contract from “Commercial Operations Date”
- Construction must begin and end by certain dates
- Buyout potential starting at Year 6, and periodically thereafter
- Buyout is “Fair Market Value” (FMV) based on independent appraisal
- End-of-term extension for 5 year periods, if agreed
- If terminated, all equipment will be removed and site restored to original condition

Early Termination

- Available from Year 1
- Payment schedule included with prohibitive costs through Year 6
- After Year 6, can be based on FMV plus removal costs
- PPA provider must remove all equipment and restore facility to original condition

Pricing & Payments

Pricing & Payments

- Set price per kWh, must buy ALL kWh produced
- Billing based on calculation of electricity generated times fixed rate
- Annual escalation of fixed rate by 1-4% (based on final contract)
- Payments due monthly – will be higher in the summer

Renewable Energy Credits

- Buyer can select to own the RECs or not at the inception of the PPA
- Owning the RECs will add to PPA cost, but can hold or sell them later
- Some hybrid solutions (SREC arbitrage and partial-term sales)

System Design

System Design & Construction

- System designs should include industry best practices and appropriate size
- All equipment must meet or exceed contracted specifications
- All construction conforms to jurisdictional requirements and permitting processes
- Construction plan should minimize site disruption
- Environmental review will be completed as required in advance, if needed

Why is it important?

- » Optimize system sizing, technology and design for proposed location
- » System output determines payments and savings
- » Site management risks and costs should be minimized
- » Availability and quality drive faster installation and long-term performance
- » System warranty information needed for potential system buyout

Performance & Warranties

Performance

- System will perform on an annual basis to the forecasted kWh output, adjusted for weather and Force Majeure
- If the system under performs, PPA only bills for energy delivered (may impact savings)
- If the system over performs above xx%, Buyer may not required to purchase, but may, if beneficial
- Under performance below yy% over a full year could be considered a default

Warranties

- Equipment warranty throughout the entire lifetime of the PPA
- Any failures will be promptly fixed by PPA provider
- Remaining warranties will be transferred if Buyer purchases system

Other Terms & Conditions

Insurance

- Fully insured during construction
- General liability and all other standard coverage

Force Majeure

- Weather, earthquakes, flood, accidents and other typical events included
- Utility interruption or curtailment could be included
- Equipment failure or system under performance not included

Other Terms

- Contract may be assigned by PPA provider
- Construction and operations can be inspected, reviewed, and audited
- Default enables other party to seek damages and remedies
- Disputes can be mediated first to reduce costs

Contracting Challenges & Opportunities

Challenges

- Lack of preparation and transparency (seller and buyer)
- Financial stability (seller)
- Credit risk (buyer)
- 'Over-negotiation' can drive costs up
- Misperceptions of risks (by all parties) can delay project and increase costs
- Revisiting contract terms after negotiation

Opportunities

- Consider utility rate schedules and energy efficiency measures
- Leveraging existing efforts will reduce staff time and accelerate the process
- Use standardized procurement documents and Power Purchase Agreement to streamline process
- *Demonstrate Leadership and Community Engagement*
- *Potential pass-through opportunities for employees*



Operations & Maintenance

Performance Management

- Monitoring – System AND Process
 - On-site irradiance and power measurements
 - On-line system monitoring
 - Primary responsible party internally
- Purchase or Lease
 - Self-perform
 - Installer or 3rd-party O&M provider
- Power Purchase Agreement
 - Owner/installer



Cleaning & Inspection

- Module cleaning
- Inverter cleaning
- Fuse and wiring check





Featured Speaker

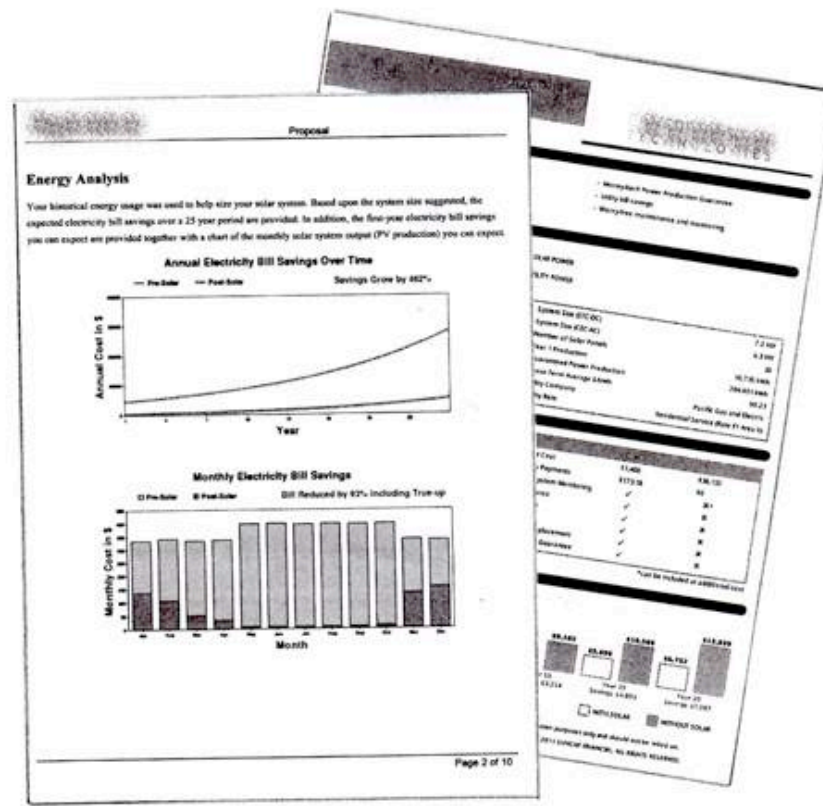
Donald Simon, Partner
Wendel, Rosen, Black, and Dean LLP

MAINTAINING YOUR EXISTING ROOF WARRANTY

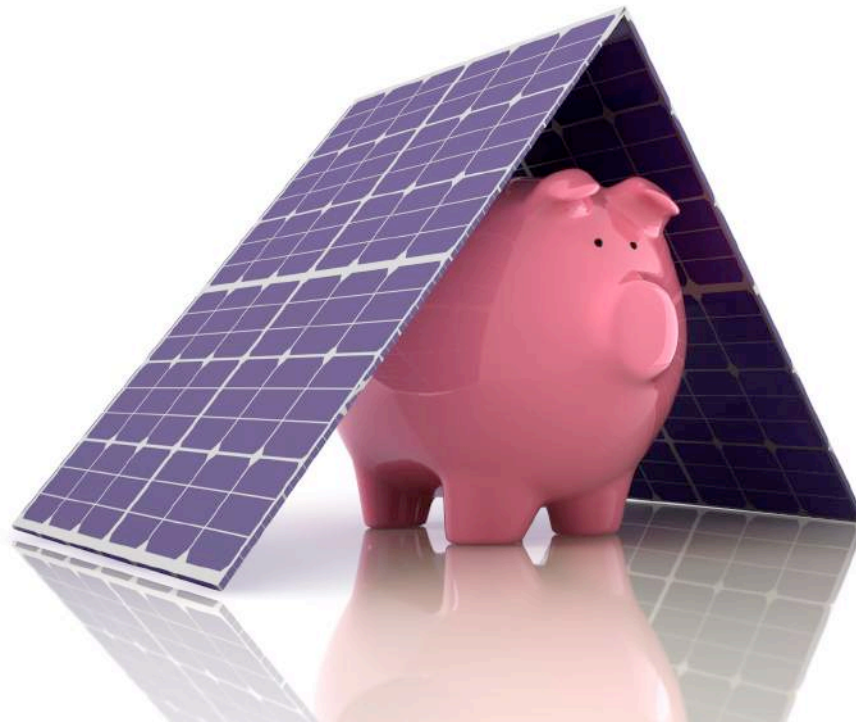


Target retail outlet in Connecticut
Photo courtesy of Eagle Rivet Roof Service Corp.

OBTAIN VENDORS' PROPOSED CONTRACT IN RFP PROCESS



MAKE CERTAIN THE SOLAR SYSTEM IS INSURED
DURING CONSTRUCTION AND AFTER



OBTAIN PERFORMANCE GUARANTEES



GET SEPARATE WARRANTIES FROM INSTALLER AND EQUIPMENT MANUFACTURERS



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OTHER PRACTICAL TIPS

Questions?



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Visit www.solarroadmap.com/case-sv

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About Optony

Optony develops and deploys solar best practices across the entire solar project lifecycle for government agencies, schools and commercial organizations.

"Optony's consulting service is a must-have for any organization considering an investment in solar. Based on Optony's comprehensive analysis and recommendations, we now have a low-risk, high-return solar strategy."

www.optony.com

