

NARC

Building Regional Communities

Solar Financing Webinar

Tuesday, September 27, 2011, 1:00 pm EDT

The webinar will be starting shortly.

Audio – From the Audio box, please select **Telephone** as your audio mode, and enter both an access code and audio pin. All of this information is provided in the GoToWebinar box at right of your screen – call-in procedures are similar to a conference call.

Asking Questions – You are muted throughout the webinar. To ask a question, please “raise your hand” by clicking the icon near your audio controls; you will be recognized and unmuted. Or, type a question into the “Questions” or “Chat” box and this will be noted as quickly as possible during the Q&A section.

Slide Transition – At times, transition between slides will have a delay – approx. 5 to 20 seconds. Please be patient.

Technical Assistance – Please contact Lindsey Riley at 202.986.1032 or lindsey@narc.org.

About Solar America Communities

Solar America Communities is a U.S. Department of Energy (DOE) program designed to increase the use and integration of solar energy in communities across the United States. The International City-County Management Association (ICMA) and ICLEI-Local Governments for Sustainability were competitively selected by DOE to conduct outreach to local governments across the United States, enabling them to replicate successful solar practices and quickly expand local adoption of solar energy. **For more information visit www.solaramericacommunities.energy.gov.**

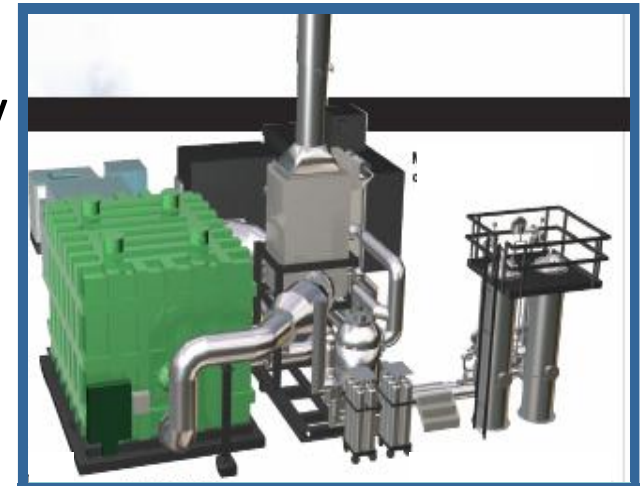
PARTICIPATING ORGANIZATIONS



Comprehensive Energy Project

Process

- RFP to select Energy Services Company
- AIRCON Energy Selected
 - Inventoried County Facilities
 - Prepared Investment Grade Audit,
 - 101 Energy Efficiency Measures (EEM) evaluated
- Obtained Private Loan Financing – based on Investment Grade Audit



Fuel Cell Module

Comprehensive Energy Project

- **38 EEMs at 24 buildings**
 - Lighting retrofits, 20 buildings, 1.3 MWh savings
 - HVAC replace or rebuild in 4 buildings
 - HVAC Motors & Controls MADF
 - Central Mechanical Plant (CMP) upgrade
 - Water retrofits, including detention, 20 M gallons/yr.
 - Ozonator for Detention Laundry Water
 - 1.4MW Fuel Cell Cogeneration Power Plant



1.4 MW Fuel Cell Power Plant

Fuel Cell Energy DFC 1500

- Generates 10,693,216 kWh/year
- Produces 45 billion BTUs year
- Produces virtually no NO_x or SO_x pollutants
- Reduce GHG emissions by 69% versus grid power
- Designated “Ultra-Clean” by CARB
- Categorically exempt from CEQA

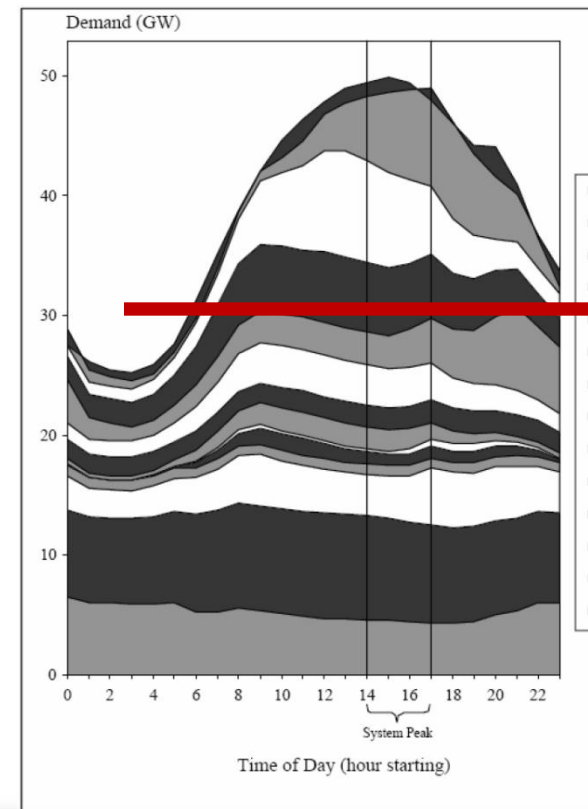


1.4 MW Fuel Cell Power Plant

County Utility Costs –

- Prior County electric bill \$5M annually
- New County power costs \$3.4M annually
 - Gas bill for fuel cell is \$350k
 - Amortize equipment costs (debt repayment)
 - Pay FCE maintenance costs
 - Prepay (amortize) stack replacement @ 5th year

Fuel Cell Payback is Seven Years!



A Recap on Our Process

- Hired an Energy Services Company to do an investment grade audit of almost all of our county facilities
- Obtained a private loan
- Began with lighting work
- Moved on to mechanical systems
- Fuel Cell installation
- Set up a revolving fund to capture efficiency dollars

Our Board



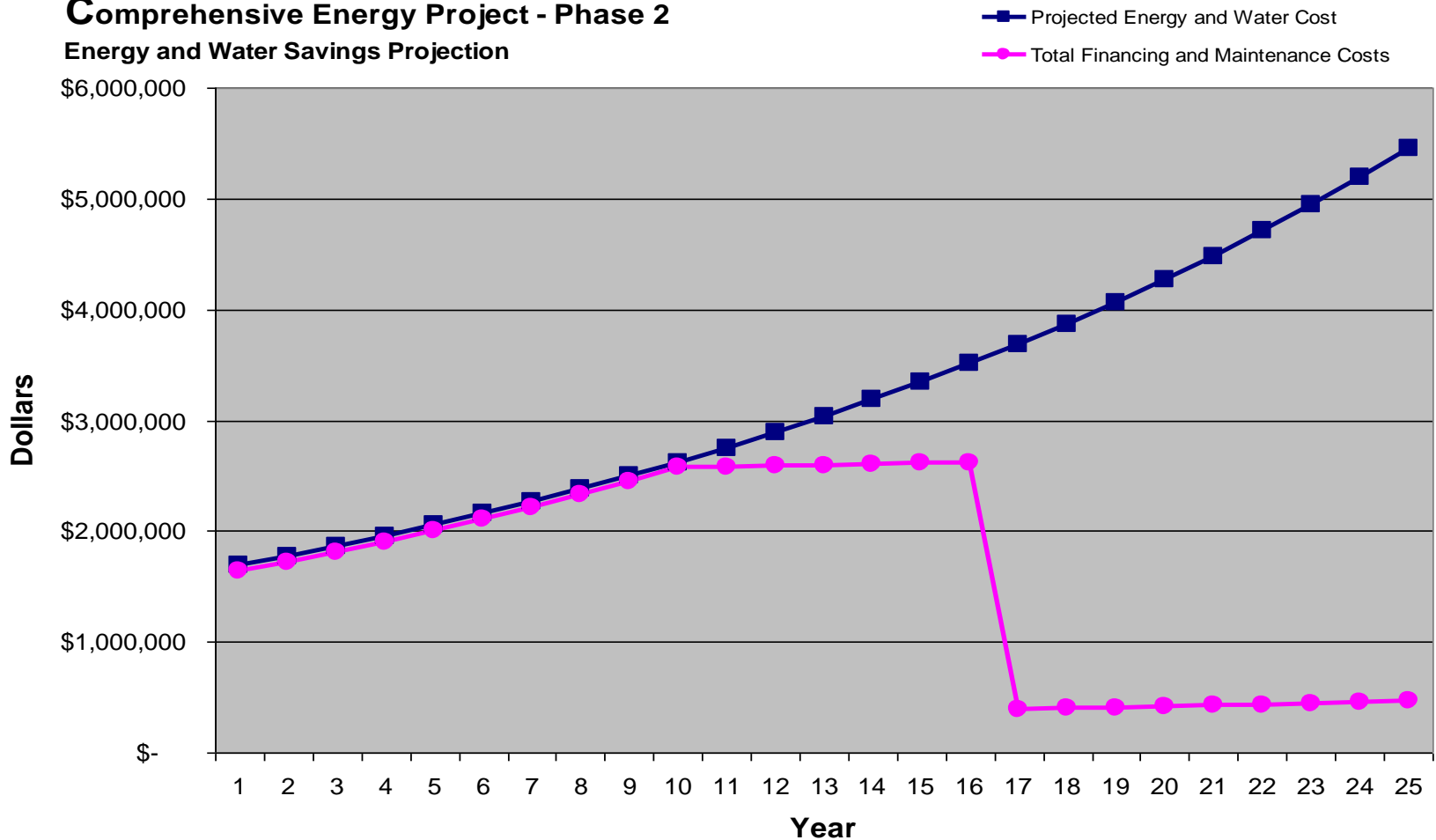
Directive: Make CEP Expense Neutral from Day 1

Financing Plan

Project Cost	\$22,272,029
Incentives, Grants, and Rebates	(\$3,941,226)
Financed Amount	\$18,730,803
Estimated Interest Rate*	4.98%
Repayment Term	16 years
Assumed Closing/Funding Date	1/1/09
Assumed Annual Energy Cost Escalation*	5%
First year of positive cash flow	Year 12
Total payments	\$31,794,615
Total cumulative positive cash flow after 25 years (estimate life of equipment)	\$38,404,231

Cost Savings

Comprehensive Energy Project - Phase 2 Energy and Water Savings Projection



CEP Results

CEP Objectives Met ?

1. **GHG reduction 6,135 tons***
 - Electricity reduction 13,365,226 kWh
 - Water savings = 19,138,260 gallons
 - Utility savings = \$1,689,316
 2. **Saving \$\$\$, No General fund impact**
 3. **Replaced old worn out equipment**
- * **Now in 1 year Measurement and Verification**
- + **Created jobs, collaboration, other benefits**

Other renewable projects

- **Various 20th Century Efficiency Projects**
- **First decade 21st Century Projects:**
 - 5-6 MW Landfill Gas
 - Local Government Electric Vehicle Partnership
 - County plus 9 J^x = 240 hybrids, plug-ins and EV's
 - 820 MW Solar 2 projects, more planned with PPAs
 - **CEP w/ 1.4 MW Fuel Cell CHP Power Plant**
 - 1MW biogas (compost) in development
 - 5MW in solar to date – SCEIP
 - Off bill, ARRA, and QCEB funded projects
 - 5 MW savings – SCEW
 - 42 MW of installed solar countywide



Benefits of the Program

- GHG reduction
- Saving money by saving energy
- Local economic stimulation and Job creation
- Saving local resources

Leverage the Power of PACE



SCEIP opened on March 25th, 2009

Over 1,600 projects already completed

**Over \$50 million has been financed for
efficiency upgrades!**

Over 90 eligible improvements

Sonoma County – Other Agencies

- **Sonoma County Water Agency (SCWA)**
 - Goal of carbon free water delivery by 2015
 - 22.4MW in development including CCA feasibility
 - 2.2 MW Solar 3 projects – \$15.5M, projects received \$4.49M in PG&E rebates
 - 2.64 MW Hydro
 - 32 hybrids and plug-in hybrids
 - Wave power feasibility study – 2 to 5 MW at each of 3 locations, potential expansion 40 MW.
 - Geothermal project in development
- **Sonoma County Fair and Exposition**
 - 1.36 MW Photovoltaic, State grant funding



Thank you!

Sam Ruark— Energy & Sustainability Coordinator

sruark@sonoma-county.org

707- 565-2125



Silicon Valley Collaborative Renewable Energy Procurement (SV-REP) Project



Innovative Solutions for Solar Financing Webinar

September 27, 2011

Rachel Massaro
Associate Director, Climate Initiatives

Ben Foster
SVP, Americas



Background

Launched by Joint Venture's Public Sector Climate Task Force

- Silicon Valley cities, counties, and other public agencies
- Developing effective, collaborative, solutions for the reduction of greenhouse gas emissions from public agency operations

in partnership with the County of Santa Clara, CA



Why Collaborate on Renewable Energy Projects?

- Challenges
 - High upfront costs associated with purchase and installation
 - Need to minimize transaction costs and admin time
 - Lack of understanding of financing options and available incentives
 - Reach greenhouse gas emissions reduction goals and meet state mandates
- Opportunities
 - Collaborative effort conserves funds and staff time
 - Standardize procurement documents, PPA, and process
 - Accelerate deployment of regional projects
 - Serve as a model for similar efforts across the region and USA

Roles & Responsibilities

Lead Agency



Regional
Convener



Technical
Adviser

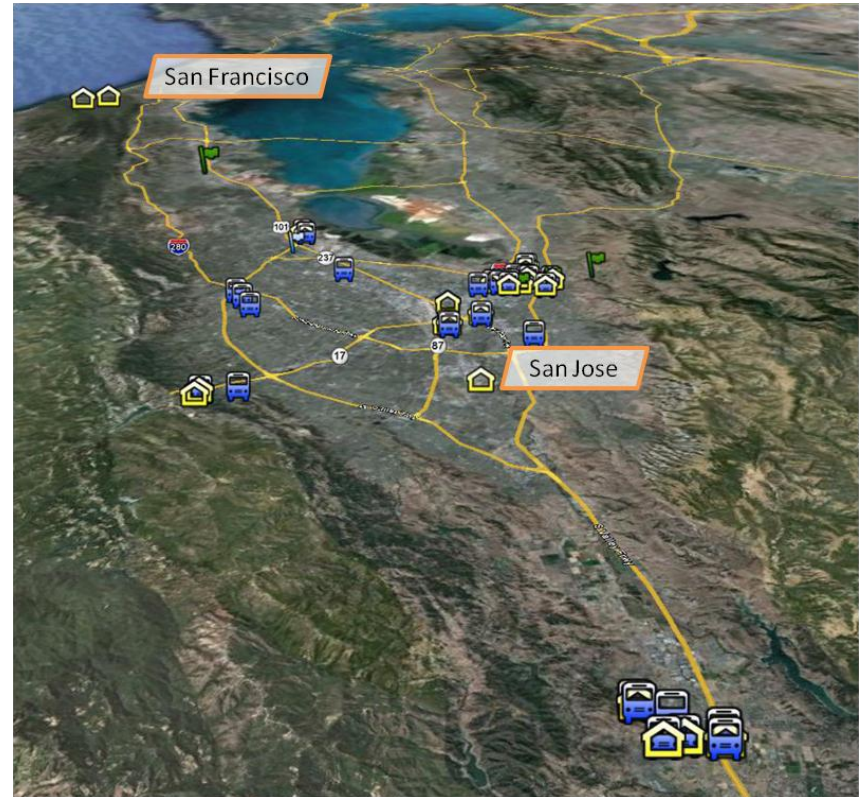


Participants

Other Silicon Valley Public Agencies

Participants

- County of Santa Clara
- City of Cupertino
- City of Milpitas
- City of Morgan Hill
- City of Mountain View
- City of Pacifica
- Town of Los Gatos
- Santa Clara Valley Transportation Authority
- South Bayside Waste Management Authority



 rooftop,  carport, and  ground-mounted installation sites

Agency Collaborative Working Structure

- How it was structured
 - Initial expression of interests with site information from various agencies
 - Formal letter of cooperation (MOU) between partners committed to process
 - All sites bundled and bid out together – however final contracts at each agency
- Lead agency (County of Santa Clara) perspective
 - Providing leadership across County and region
 - Volume discounts and better competition
 - Increased economic activity within and around the County
- Other participating agency perspective
 - Could not easily or cost-effectively pursue this project on their own
 - Much better outcome and can leverage regional expertise
 - Competitive bids for individual site that might otherwise not be attractive to vendors

Project Timeline

2009

Project Defined
Agencies Recruited
Sites Identified
RFI Conducted

2010

RFP Issued
Vendor Awards
PPA Contracts
Construction Begins

2011

Construction Underway

Phase 2
Additional Agencies & Sites

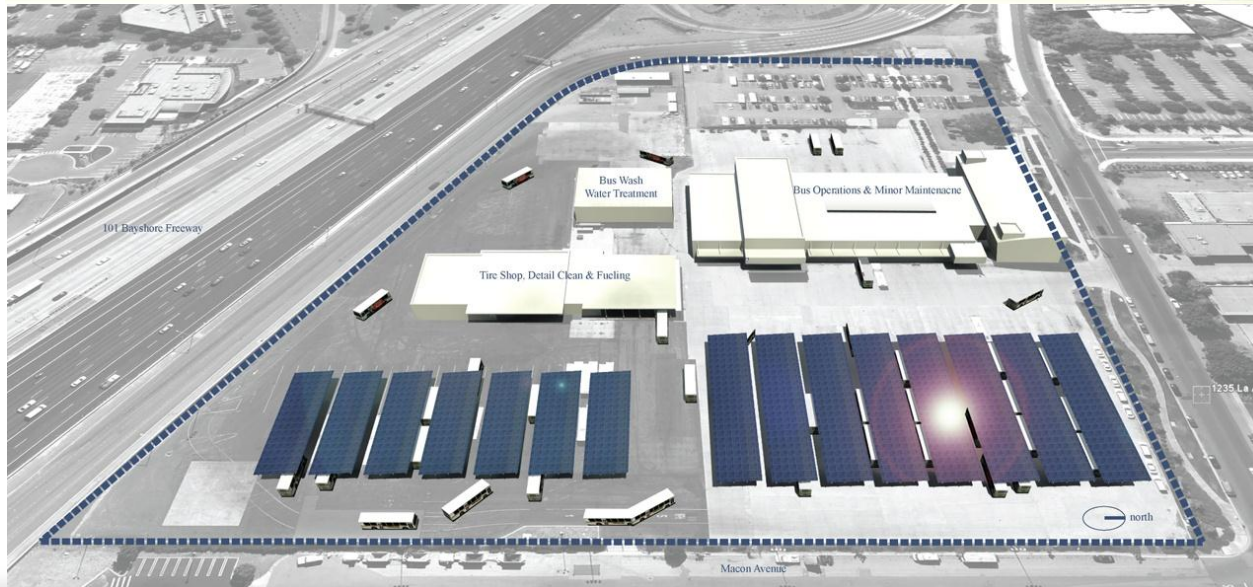
Strategic Bundling Approach

- Thorough review of individual site characteristics
- Consider site-specific and agency-level constraints
- Bundling sites by installation type, host facility, size and other attributes
- Incorporate solar market input and best practices
- Consider total size (MW) and number of sites per bundle

Site Bundle Descriptions

TABLE OF RPG SYSTEM BUNDLES	
RPG System Bundle Type	Description/Characteristics
Bundle 1 - Large systems	This bundle includes rooftop and ground mounted PV systems with a capacity to generate 650kW or more power at a single site.
Bundle 2 – Medium size systems	This bundle includes rooftop and ground mounted PV systems with a capacity to generate between 160 kW and 650kW at a single site.
Bundle 3 – Small size combined systems	This bundle includes rooftop and ground mounted PV systems with a capacity to generate upto 160 kW at a single site.
Bundle 4 – Small size rooftop only systems	This bundle includes exclusively rooftop mounted PV systems with a capacity to generate upto 220 kW at a single site.
Bundle 5 – Other systems	This bundle includes solar thermal PV, Fuel cell, and micro-wind turbine systems of various capacities yet to be determined based on the type of application.

Santa Clara Valley Transportation Authority



SITE: Bus Depot
TYPE: Bus Canopy
SIZE: 1,100 kW

Estimated to provide
>100% of onsite power
needed

South Bayside Waste Management Authority



SITE: Shoreway Environmental Center
TYPE: Roof, Standing Metal Seam
SIZE: 187 kW



Santa Clara County



Ground Breaking Event

Project Under Construction



SITE: County of Santa Clara, Sheriff's Office

TYPE: Parking Canopy

SIZE: 800 kW total

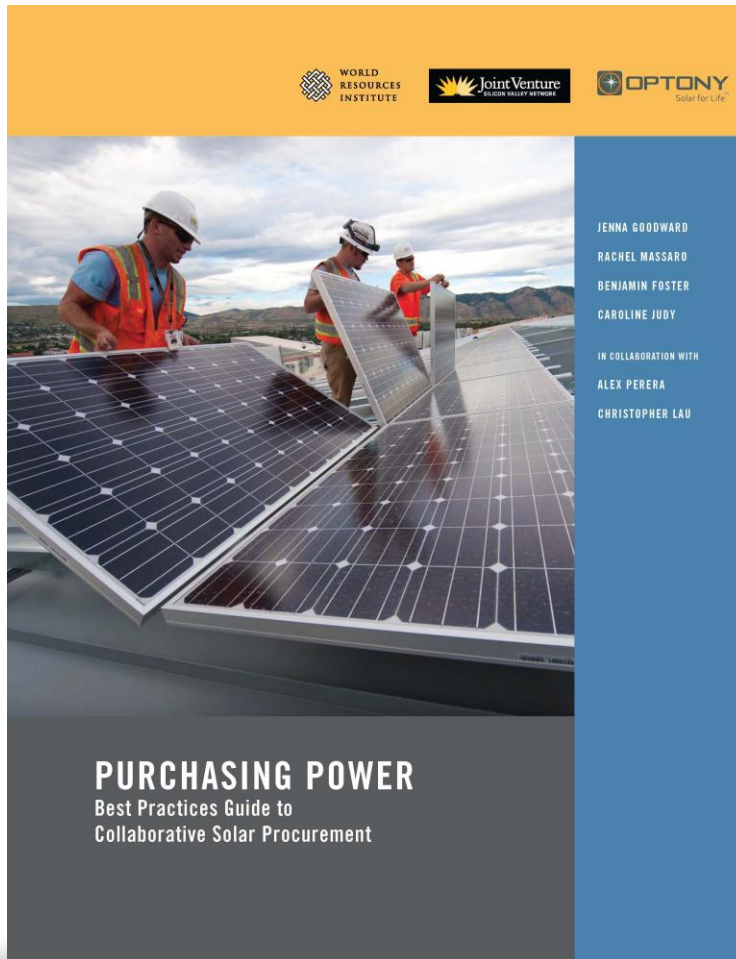
Agency & Regional Project Benefits

- Reduced greenhouse gas emissions from local government operations
- Reliable cost of electricity over 20 year term, escalation rates 2%-4.5%
- Volume and competitive pricing yielded 10-14% cost reductions
- Electricity consumption completely offset for 25% of sites
- Projected to generate \$70M+ in local economic activity and 300+ jobs
- Over \$30M in Federal tax benefits captured via PPA (ITC + Depreciation)
- Demonstrated leadership with large number of installations
- Capture long-term REC benefits with future potential for resale

Broad Applications of Lessons Learned

- Adoption of Best Practices in Creation of Model Documents
 - Attractive agreements
 - Standardization of process
 - Communication strategy
- Strategic Bundling of Sites
 - Achieving economies of scale
 - Competition for bids
- Vendor Outreach
 - Outreach partners
 - Feedback and effective communication

Best Practices Guide



Available for download at:
www.jointventure.org/purchasingpower

The Model is Catching On...

- EPA launched an effort in Metropolitan Washington, D.C. (www.epa.gov/cecpc)
- Portland, OR evaluating the model
- Cities in China evaluating the model for domestic projects
- Potential for Phoenix, AZ
- New York State Department of Environmental Conservation
- Los Angeles County

Expanded Effort in the Bay Area

- Joint Venture, Alameda County & the Contra Costa Economic Partnership
- Launched in September 2011
- 4-County Effort
- Lead Agency = Alameda County
- Expected to be 2-3 times larger than the SV-REP



Additional Information available at:

www.jointventure.org/renewableenergyprocurement

www.wri.org/buying-solar

www.epa.gov/cecpc

Contact Information:

Ben Foster
Ben.Foster@optony.com
(646) 250-4241

Rachel Massaro
massaro@jointventure.org
(408) 298-9340

 Joint Venture
SILICON VALLEY NETWORK

Established in 1993, Joint Venture: Silicon Valley Network provides analysis and action on issues affecting our region's economy and quality of life. The organization brings together established and emerging leaders - from business, government, academia, labor and the broader community - to spotlight issues and work toward innovative solutions.



Joint Venture provides
Analysis

Joint Venture drives
Action

Joint Venture Is
Building the Next Silicon Valley

www.jointventure.org

www.jointventure.org/renewableenergyprocurement

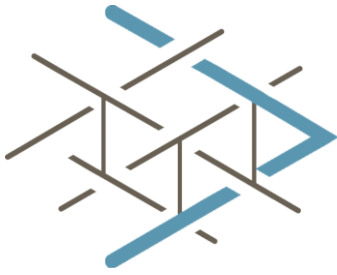
Optony creates value for government, commercial and financial institutions in the USA and China by developing and deploying solar best practices across the entire solar project lifecycle.

www.optony.com



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Questions/Comments?

Anna Read

aread@icma.org

202.962.3641