

Capturing Regional Solar Potential Using the Solar Roadmap™



Ben Foster, Senior Vice-President
Optony Inc.



Webinar Agenda

Introduction

- Emma Zinsmeister, EPA's State & Local Climate & Energy Program

Program Overview

- Sponsors, Goals, Participants

Regional Solar Markets

- Market trends
- Solar potential impact

Solar Roadmap Resources

- Customized roadmaps
- Resource library
- Case studies



Program Sponsors & Leaders



Southwest Solar Transformation Initiative

Initiative to Reduce the Total Installed Costs of Solar Systems



Focus Areas:

- Local Permitting Process
- Planning & Zoning Regulations
- Utility Interconnection
- Education and Outreach
- Innovative Deployment Programs

(4) States, (40) Municipalities, (15) Utilities, (15) Partners

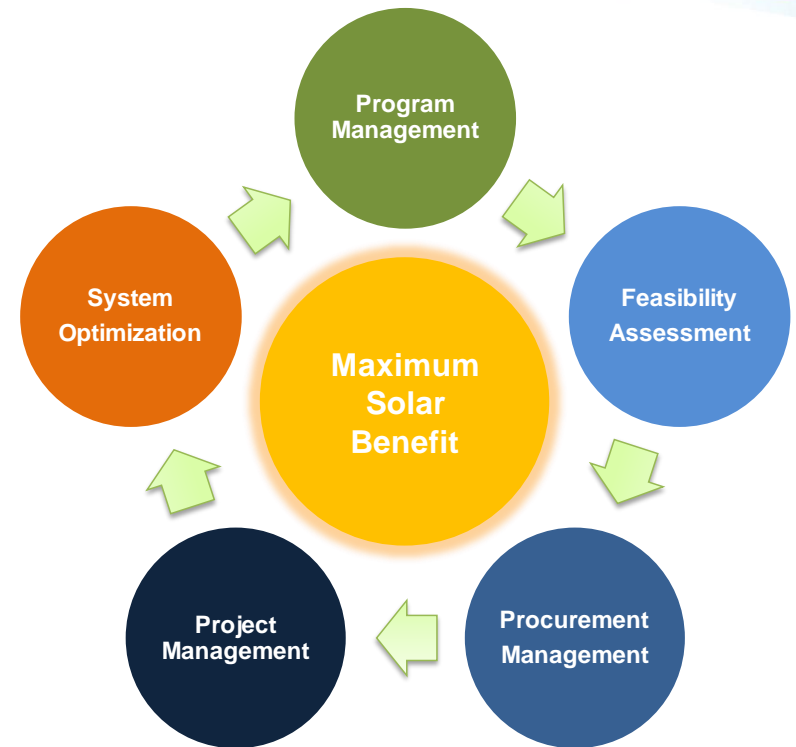


About Optony

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

Working with clients across all phases of solar projects creates deep insight into true performance drivers which is used to reduce costs and improve performance at any stage in the process.

www.optony.com

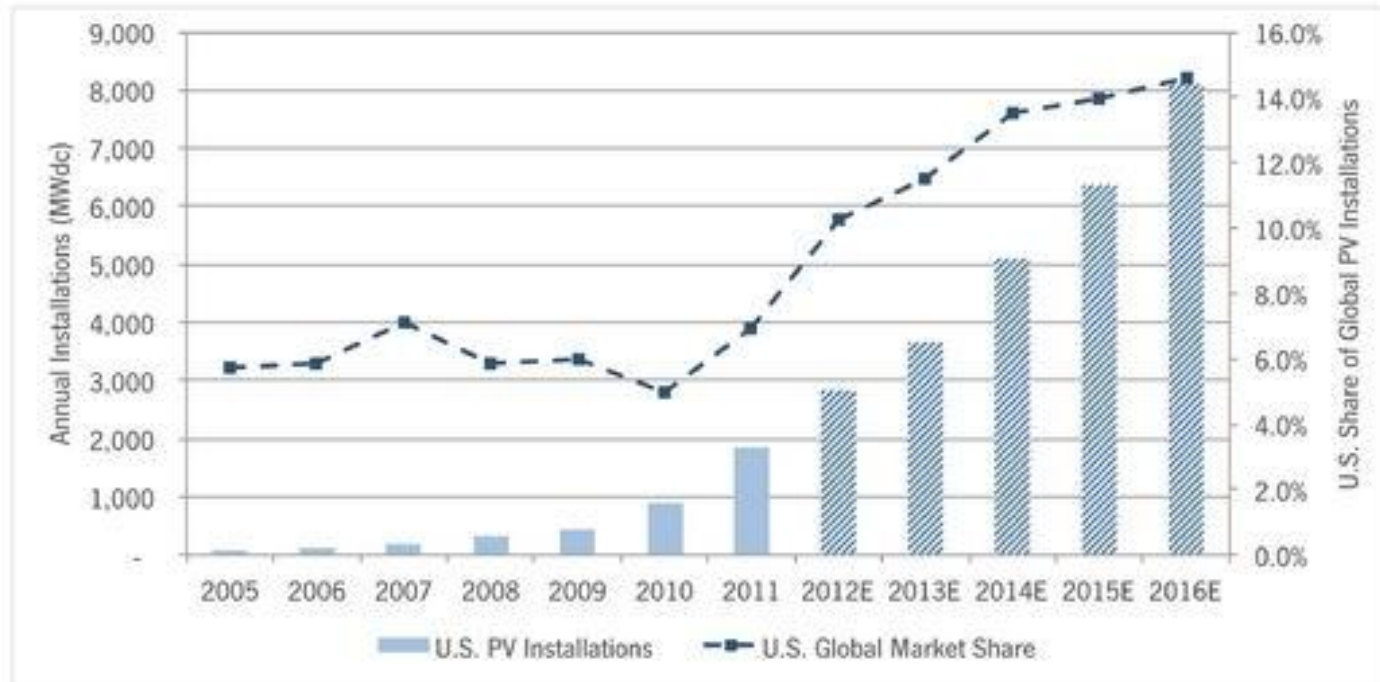


“Optony’s consulting service is a must-have for any organization considering an investment in solar. Based on Optony’s comprehensive analysis and recommendations, we now have a low-risk, high-return solar strategy.”



Solar Market Trends - Deployment

U.S. Market Growth



Source: GTM Research / SEIA *U.S. Solar Market Insight*

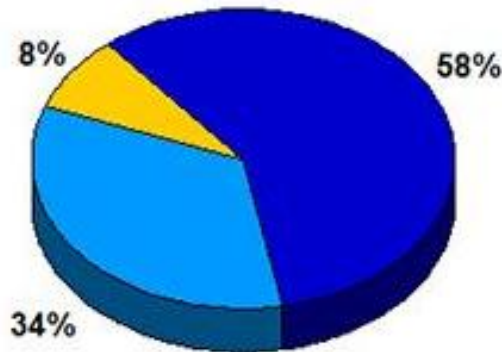


Broad Public Support for Solar Power

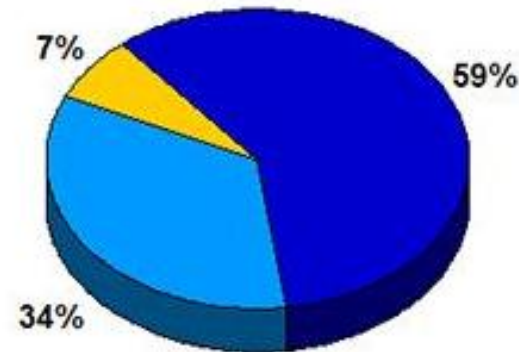
How important is it for the United States to develop and use solar power?

■ Very important ■ Somewhat important ■ Not important

All voters



Swing voters



Voters' Perceptions of Solar Energy/Solar Industry – September 2012 – Hart Research for

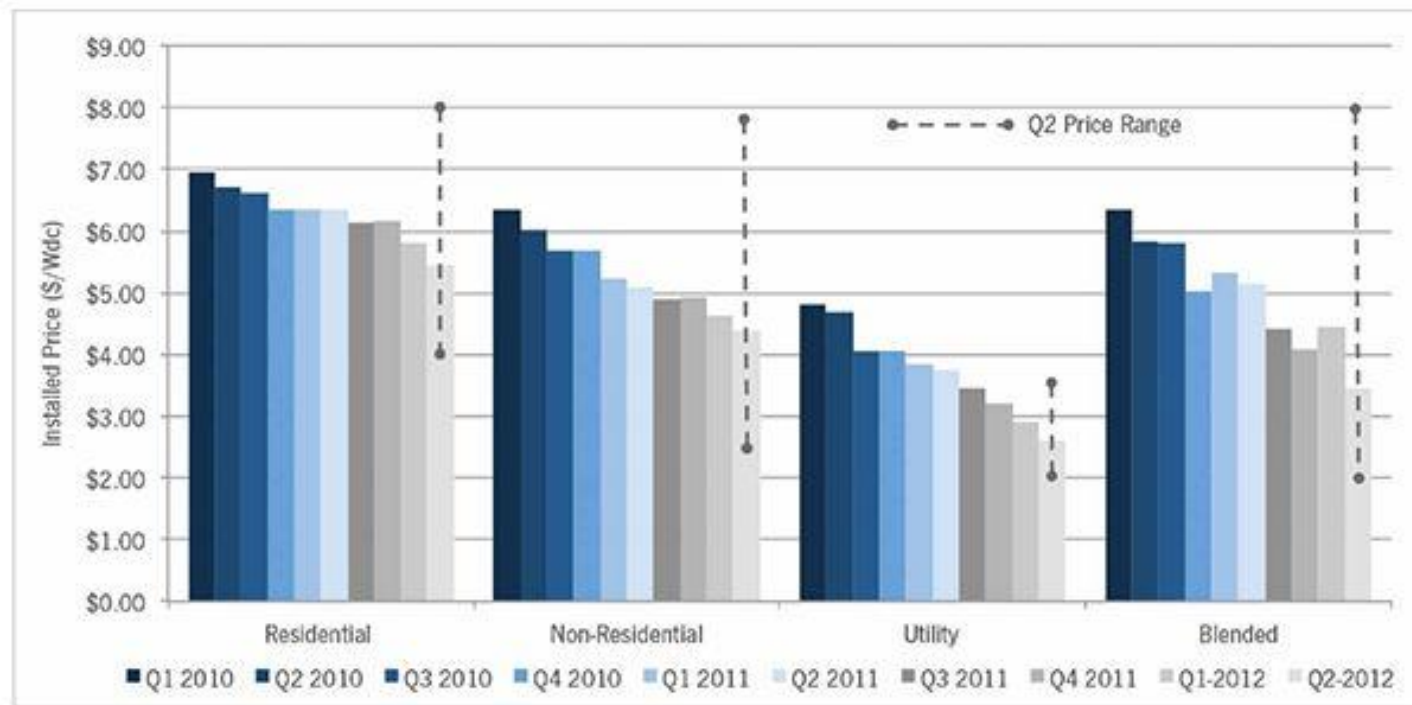


From a national poll conducted Sept 2012



Solar Market Trends - Costs

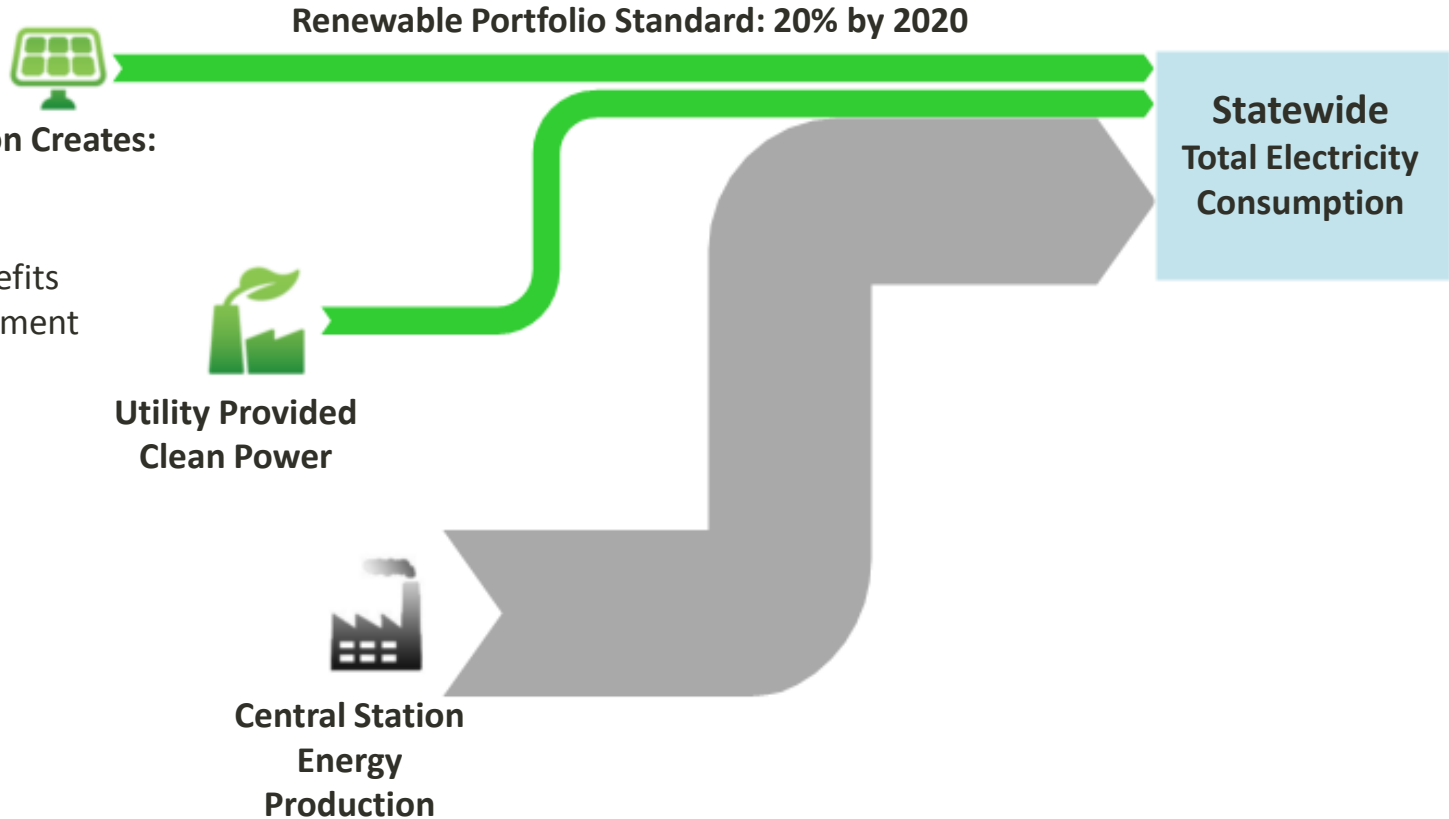
Falling Total System Costs



Source: GTM Research / SEIA *U.S. Solar Market Insight*



Targeting Distributed Generation Potential



Solar Market Potential Impact: Example CA

	Solar Viable Residences	Size Potential (MW)		Solar Viable Residences	Size Potential (MW)
Arvin	1,781	9.1	Madera	7,092	36.2
Atwater	3,378	17.2	Mendota	910	4.6
Clovis	14,051	71.7	Merced	9,157	46.7
Delano	4,308	22.0	Modesto	29,002	147.9
Fresno	57,251	292.0	San Joaquin	362	1.8
Hanford	7,382	37.7	Turlock	10,616	54.1
Livingston	1,593	8.1	Visalia	18,256	93.1
			TOTAL	165,138	842.2

Regional Economic Impact: \$1.56B

Annual Clean Energy Production: ~1 Billion kWh

Additional opportunities in the commercial, government, and utility sectors



SSTI – Solar Roadmap Platform – Local/Regional

Local Solar Resources



General Solar Resources



Solar Roadmap

To facilitate efforts to capture the local solar opportunity, the Solar Roadmap team has worked in close coordination with the County to develop a customized, interactive solar roadmap as described and accessible below. This solar roadmap contains specific, actionable steps that can be pursued to improve permitting and inspection processes and develop solar friendly municipal regulations and guidelines.

Inform Your Decision



Consumer Guide. "Get Your Power From the Sun" offers a high-level overview of key considerations for home and business owners that are interested in going solar.



Solar PV Decision-Making Guide. This guide provides fundamental information to understand as you decide whether or not to install a solar electric system at your home or business.

Evaluate Your Solar Potential



In My Back Yard. This tool estimates the amount of electricity you can produce with a solar electric array at your home or business using an interactive map-based interface.

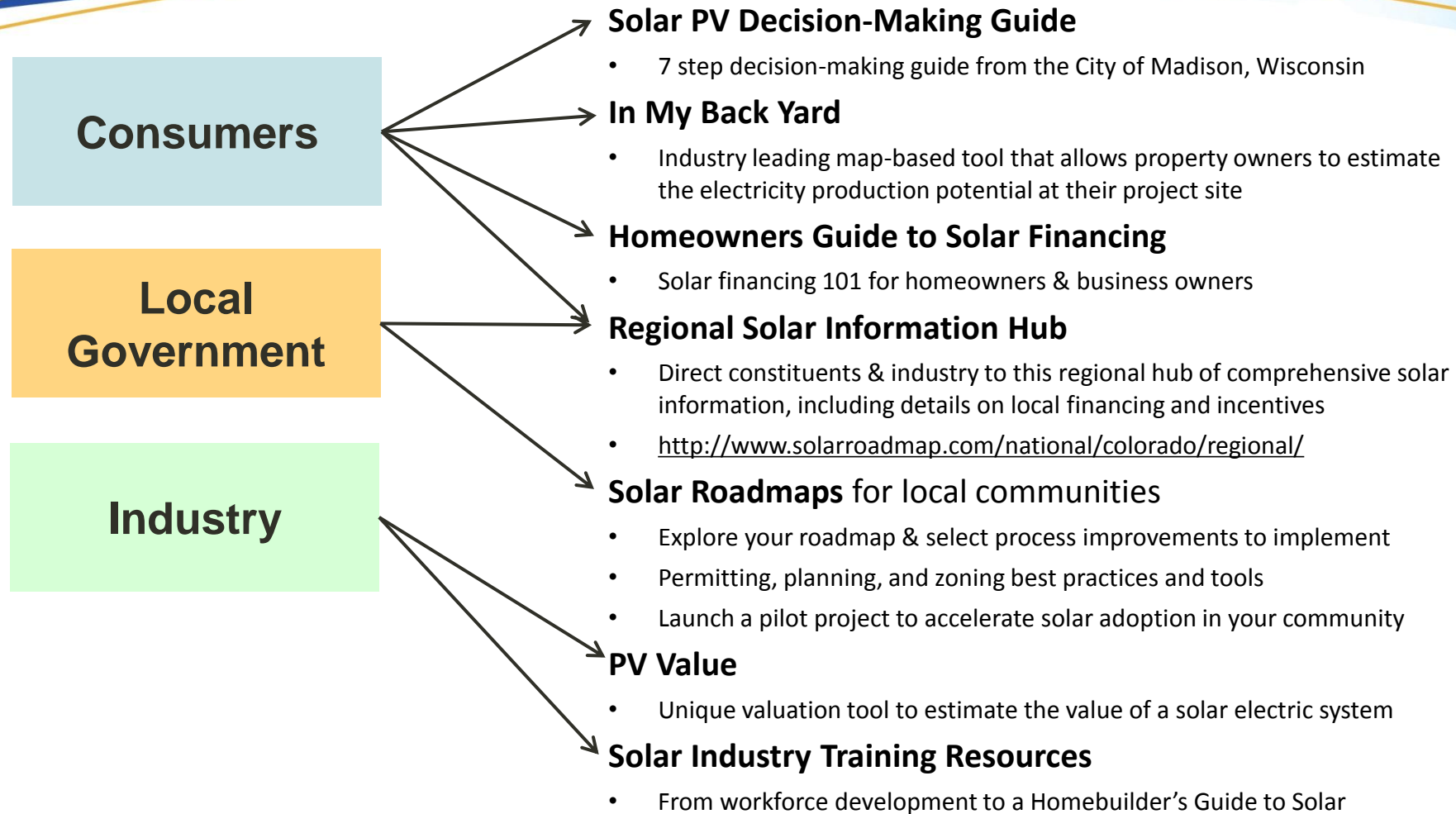


PV Value. This tool is intended to help determine the value of a new or existing solar electric system installed on residential and commercial properties.

Finance Your Project



Solar Roadmap Market Sector Tools & Resources



Customized Roadmaps

+ Permitting Process Current Progress: 12 of 16 goals achieved
75%

- Planning & Zoning Current Progress: 1 of 3 goals achieved
33%

[Z4] Solar Planning Guidelines

Initial Status: City in process of vetting/ adopting update to General Plan
Guidance: As part of General Plan update, consider adoption of solar specific language, such as standards for new construction and solar access. See examples and model language associated with this objective. [Take Action](#)

[Z5] Solar Related Zoning and Regulations

Initial Status: No current solar-specific zoning ordinances
Guidance: Consider adoption of zoning codes that have solar specific guidance and adoption of solar friendly design review standards. See examples and model language associated with this objective. [Take Action](#)

[Z6] Minimize Restrictive Ordinances for Solar

Initial Status: No ordinances creating a barrier to solar
Guidance: City currently at market best practice. [Take Action](#)
Goal Achieved!

+ Financing Options Current Progress: 2 of 2 goals achieved
100%

+ Solar Market Development Current Progress: 4 of 4 goals achieved
100%

Essential Resources

1. **Benefits of Incorporating Solar into Regional Plans**
Author: US Department of Energy
2. **Model Solar Language for General Plans**
Author: Pueblo County
3. **Sample Solar General Plan Policies**
Author: Alameda County
4. **Benefits of Solar Ready Buildings**
Author: US Department of Energy
5. **Model Efficient Building Program**
Author: Town of Carbondale
6. **Model Solar Ready Ordinance Language**
Author: City of Tucson
7. **Model Solar Ready Ordinance Building Requirements**
Author: City of Chula Vista
8. **Green Building Code Guidelines for Renewable Energy**
Author: California Building Standards Commission



Goals, Resources and Templates

Roadmap Goal: [Z4] Solar Planning Guidelines

Description: Integrating solar-friendly standards and guidelines into general plans and broader local and regional planning efforts supports a growing market in the community.

Essential Resources

1. Benefits of Incorporating Solar into Regional Plans

Solar energy can help a community reach its economic and environmental goals. This resource provides an overview from incorporating provisions for solar energy into local and regional planning efforts.

[Click to Download](#)

Source: US Department of Energy. "Solar Powering Your Community: A Guide for Local Governments." Published January 2012. Available at http://www4.eere.energy.gov/solar/sunshot/resource_center/resources/solar_powering_your_community_guide_121212.pdf

2. Model Solar Language for General Plans

This resource offers model solar language to incorporate into general plans. The hyperlink below displays a strategy goals, objectives and actions related to renewable energy and energy efficiency across various sectors within the county.

[Click to Download](#)

Source: Pueblo County. "Pueblo County Strategic Sustainability Plan." Published June 2012. Available at http://county.pueblo.org/sites/default/files/documents/scam-alerts/sustainability_plan.pdf.

3. Sample Solar General Plan Policies

The Alameda County Planning Department has undertaken a review of existing county policies applicable to Solar Energy Facilities (SEF), as well as consideration of new policies to facilitate and inform the review of proposed amendments to the general plan to maximize solar PV generation.

[Click to Download](#)

Source: Alameda County. "Draft Solar General Plan Policies." Published May 2012. Available at http://www.acgov.org/cda/planning/landuseprojects/documents/draft_ECAP_amendments.pdf.

4. Benefits of Solar Ready Buildings

This resource provides an overview of solar-ready buildings, their benefits, and direction for integrating standards into general plans.

DRAFT SOLAR GENERAL PLAN POLICIES

To be added to the East County Area Plan (ECAP)

Solar

Goal: *To maximize the production of solar photovoltaic energy to the extent feasible, while minimizing potential biological, agricultural, visual, and other environmental impacts.*

Policies

Policy [1]: The County shall support the State of California's efforts to fulfill the Renewable Portfolio Standard (RPS) which requires utilities to obtain 33% of electricity from renewable energy sources by 2020.

Policy [2]: The County shall support the goal in Governor Brown's "Clean Energy Jobs Plan" to develop 12,000 megawatts of localized energy (defined as onsite or small energy systems of up to 20 megawatts capacity located close to where energy is consumed) by 2020.

Policy [3]: The County shall place the highest priority on the development of solar energy capacity in the existing built environment in order to minimize environmental impacts.

Policy [4]: The County shall encourage and promote economic development and workforce development programs in conjunction with solar energy projects.









Solar Development on Agricultural Land

Policy [5]: For Solar Energy Facilities (SEFs) proposed on Important Farmlands, which include lands designated as Prime, Farmlands of State-wide Importance, or Unique Farmlands by the California Department of Conservation Farmland Mapping and Monitoring Program, the County shall require the applicant to do one of, or a combination of, the following:

- place farmland of equivalent quality either on-site or off-site within Alameda County under permanent easement at a 1:1 ratio of farmland used for solar installation. The land under easement shall be maintained in perpetuity in a state of equivalent (or better)

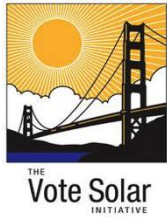


Solar Roadmap Leaderboard

Progress	Name	State	Population	Type	Recognized Achievements Milestones
 79% (P) (Z) (F) (M)	City & County of San Francisco	CA	805,235	County	
 64% (P) (Z) (M)	City of Visalia	CA	124,442	City	
 60% (Z) (M)	Esmeralda County	NV	783	County	
 59% (Z) (F)	Pueblo County	CO	159,063	County	
 58% (P)	City of Fernley	NV	19,368	City	
 56% (P) (Z)	City of Madera	CA	61,416	City	
 54% (P) (Z)	City of Modesto	CA	201,165	City	
 50% (P)	City of Merced	CA	78,958	City	



Solar Roadmap Tools & Resources



SOLAR ROADMAP

Home SSTI Program National View Regional My Roadmap Resources News About

Resource Library

Welcome to the Resources Page. This site contains a comprehensive resource library containing over 250 documents from 100 different sources including best practice guides, case studies, industry reports and easy-to-use templates. You can search by keyword, focus area, or type of reference.

Keyword: Focus Area: **Solar Market Development** Type: **- Select All -** Show Titles Only?

< previous 1 2 3 next >

49 Results Found. Showing Page 2 of 3

Green Power Purchasing Programs	Type: Article
Focus Area(s): Solar Market Development	
Author: US Environmental Protection Agency	
Guide to Developing Solar PV at Landfills	Type: How-To Guide
Focus Area(s): Solar Market Development	
Author: Massachusetts Department of Energy Resources	



Regional Opportunities – Deployment

Market Outreach and Education

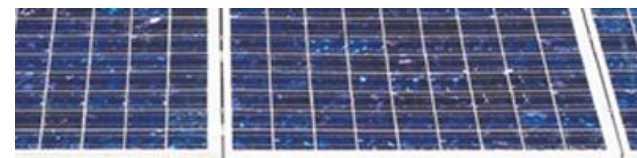
- Increase consumer awareness

Opportunities

- Online information portals
- Active outreach via public events, publications
- Generate homeowner and consumer awareness
- Residential/commercial/municipal aggregation
- Community solar
- Brownfield redevelopment

Benefits

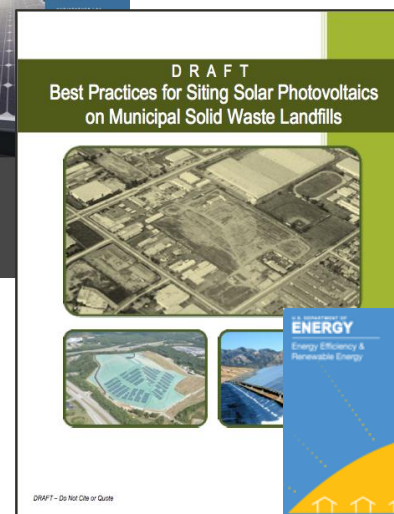
- Widen customer base
- Lower total installed cost
- Reduce transaction costs



Latest Policies and Programs

Policy & Program Innovation

- Community Shared Solar
- Aggregated Purchases
 - Residential
 - Commercial
 - Government and Education
- Brownfield Development
- Utility Programs
- Community Choice Programs
- PACE Financing
- DG-Value net metering (Austin)
- SREC Market Evolution
- Cap & Trade (CA)
- Regional financing programs



Thank you!

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