

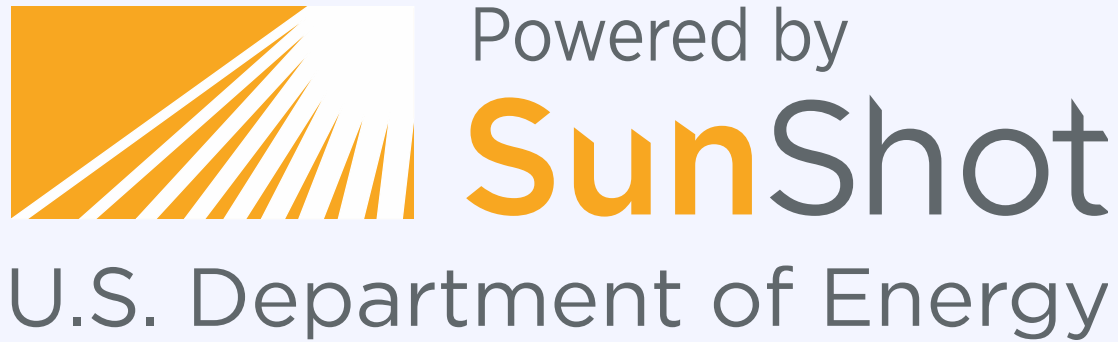
Solarize Program Design and Implementation



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U.S. Department of Energy



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NARC

Building Regional Communities

MARC

Mid-America Regional Council



MEISTER

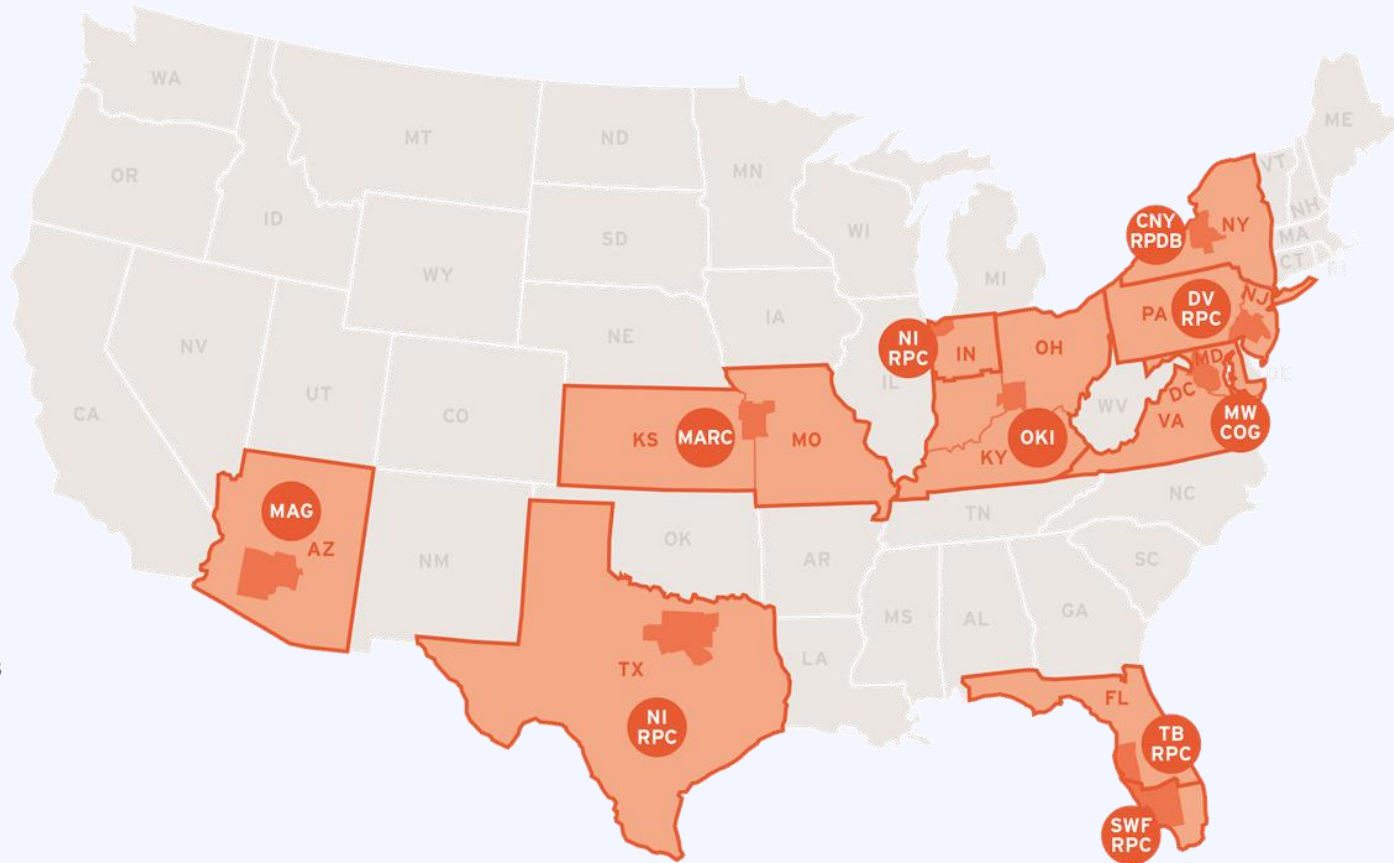
CONSULTANTS GROUP



Sharing capitol ideas.

Solar Ready II: Regional Partners

- CNY RPDB** Central New York Regional Planning and Development Board
- DV RPC** Delaware Valley Regional Planning Commission
- MAG** Maricopa Association of Governments
- MW COG** Metropolitan Washington Council of Governments
- MARC** Mid-America Regional Council
- NCT COG** North Central Texas Council of Governments
- NI RPC** Northwestern Indiana Regional Planning Commission
- OKI** Ohio-Kentucky-Indiana Regional Council of Governments
- SWF RPC** Southwest Florida Regional Planning Council
- TB RPC** Tampa Bay Regional Planning Council



Who Are We?



**Using global best practices
to inform local decisions**



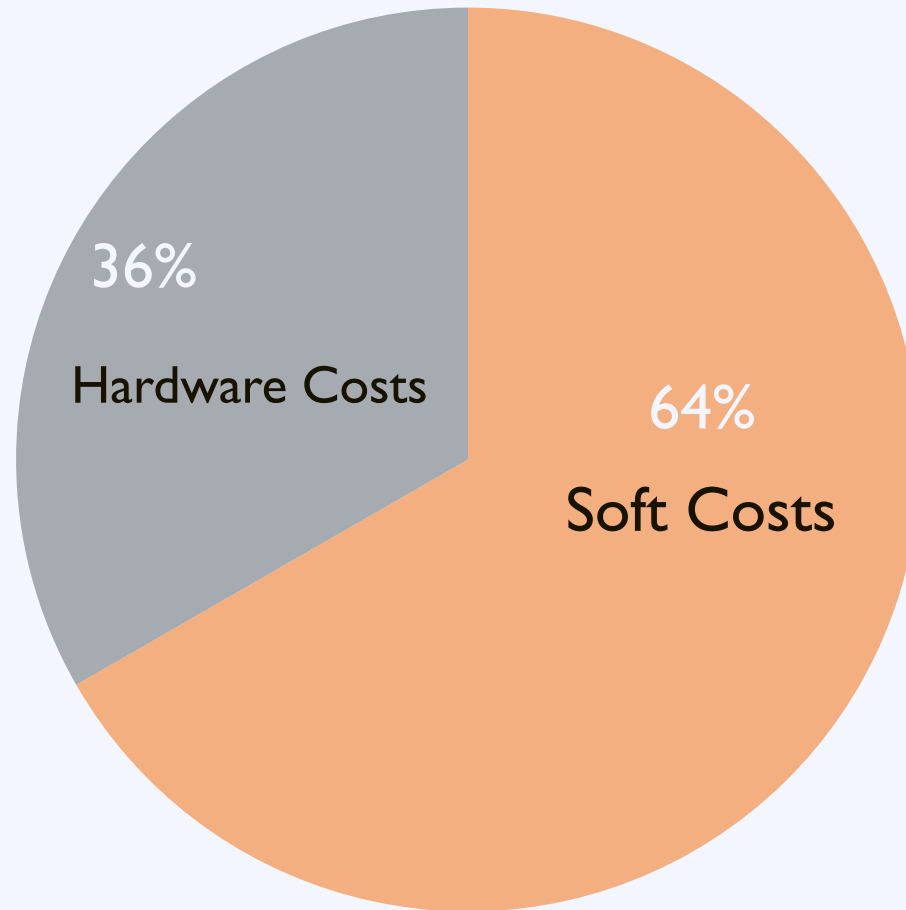
100 Consultants

7 offices worldwide

U.S. HQ in Boston

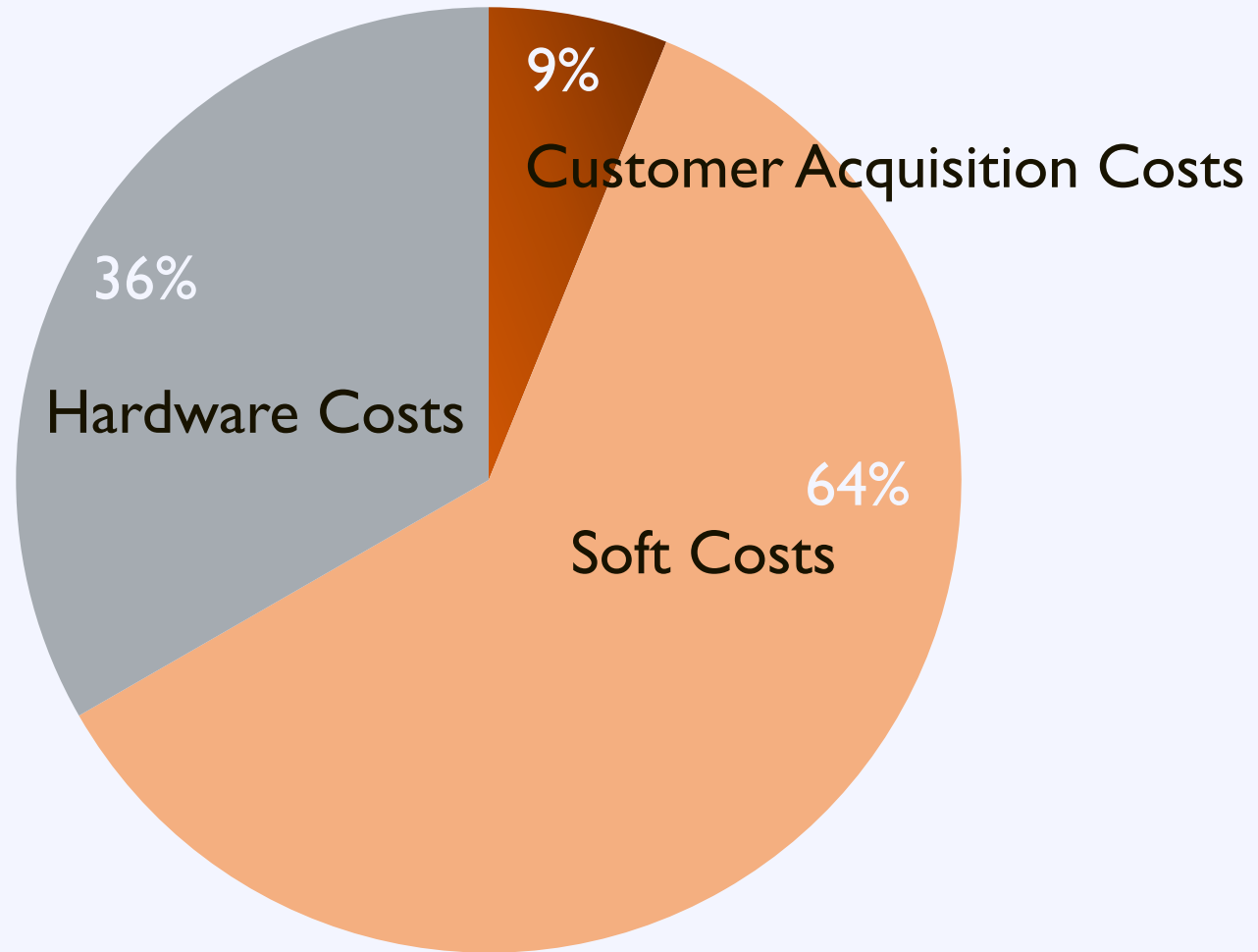
15 years experience

Cost of Solar



Total Installation Cost

Cost of Solar



Total Installation Cost

Customer Acquisition

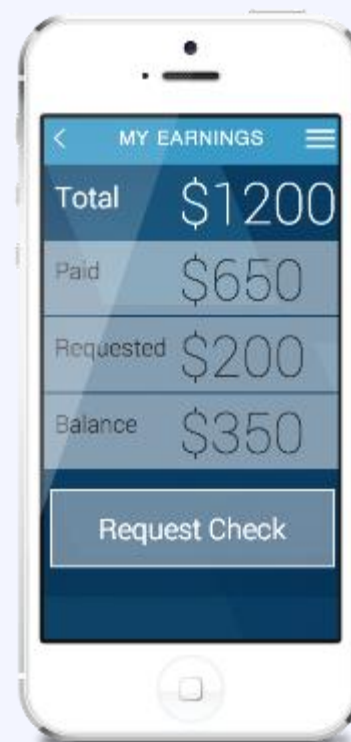
— **10%** of homeowners that request a quote choose to install solar.

Customer Acquisition

5 % of homeowners that request a quote choose to install solar.

Example: SolarCity Solar Ambassador Program

- \$250 referral fee
- In 2011-2012 offering up to \$900 per referral in some states



Example: Sungevity Sunshine Network

- “Refer a friend, and you'll get \$1,000 when they sign up and they'll save \$500 too...”
- No limit



Why don't more interested homeowners end up installing solar?

Customer Acquisition

Barriers

High upfront cost

Complexity

Customer inertia



Solarize Reduces Solar Cost



For Solar



The Solarize Program

Group purchasing for residential solar PV



Solarize is an “open source” model

- State administered programs (Connecticut and Massachusetts)
- Local non-profit driven (Asheville, Syracuse)
- Coops (Community Power Network, Salem, Oregon)
- EnergySage “Expedia of solar” model

Address Customer Acquisition

Barriers

High upfront cost

Complexity

Customer inertia



Address Customer Acquisition

Barriers

Solutions

High upfront cost



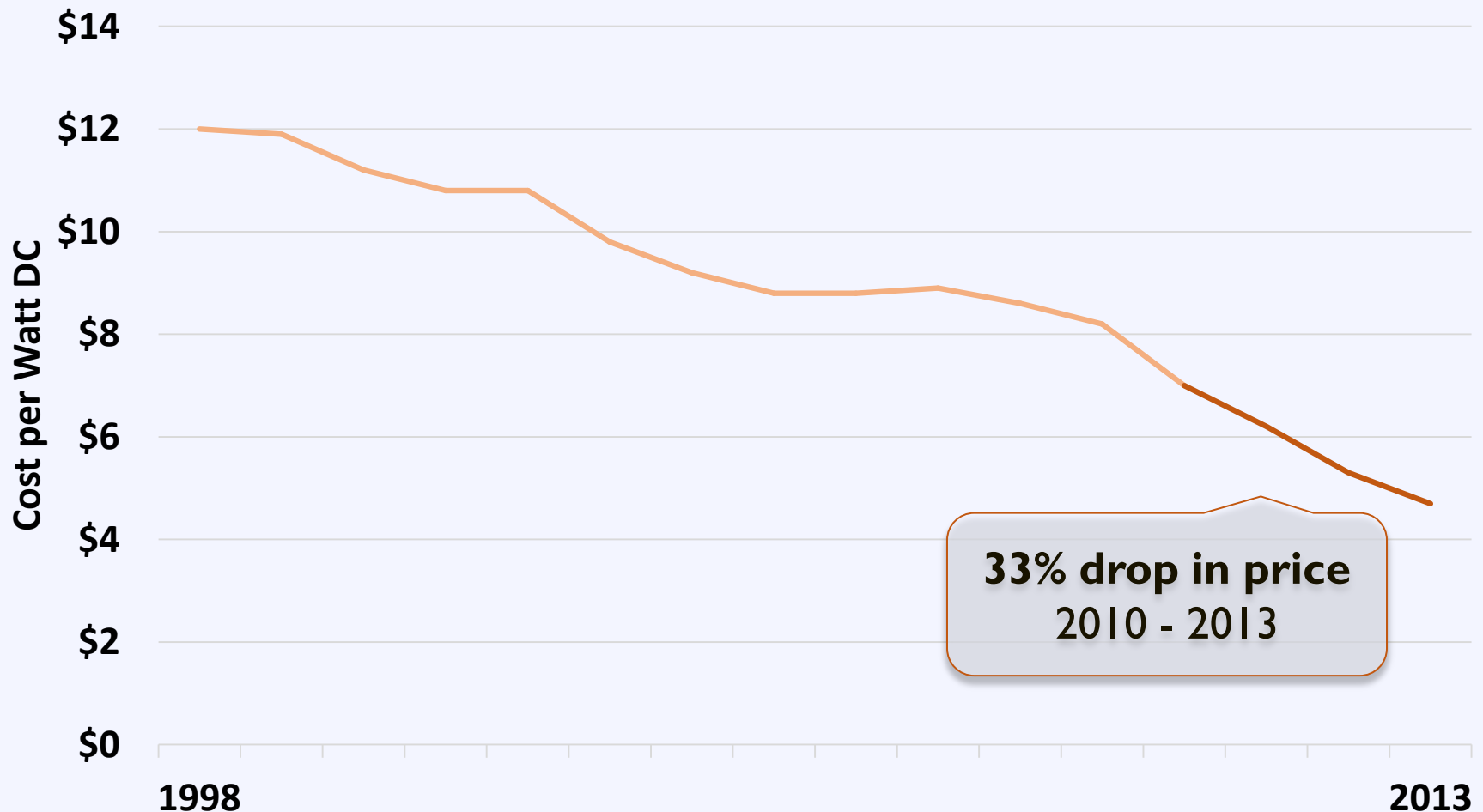
Group purchase

Complexity

Customer inertia

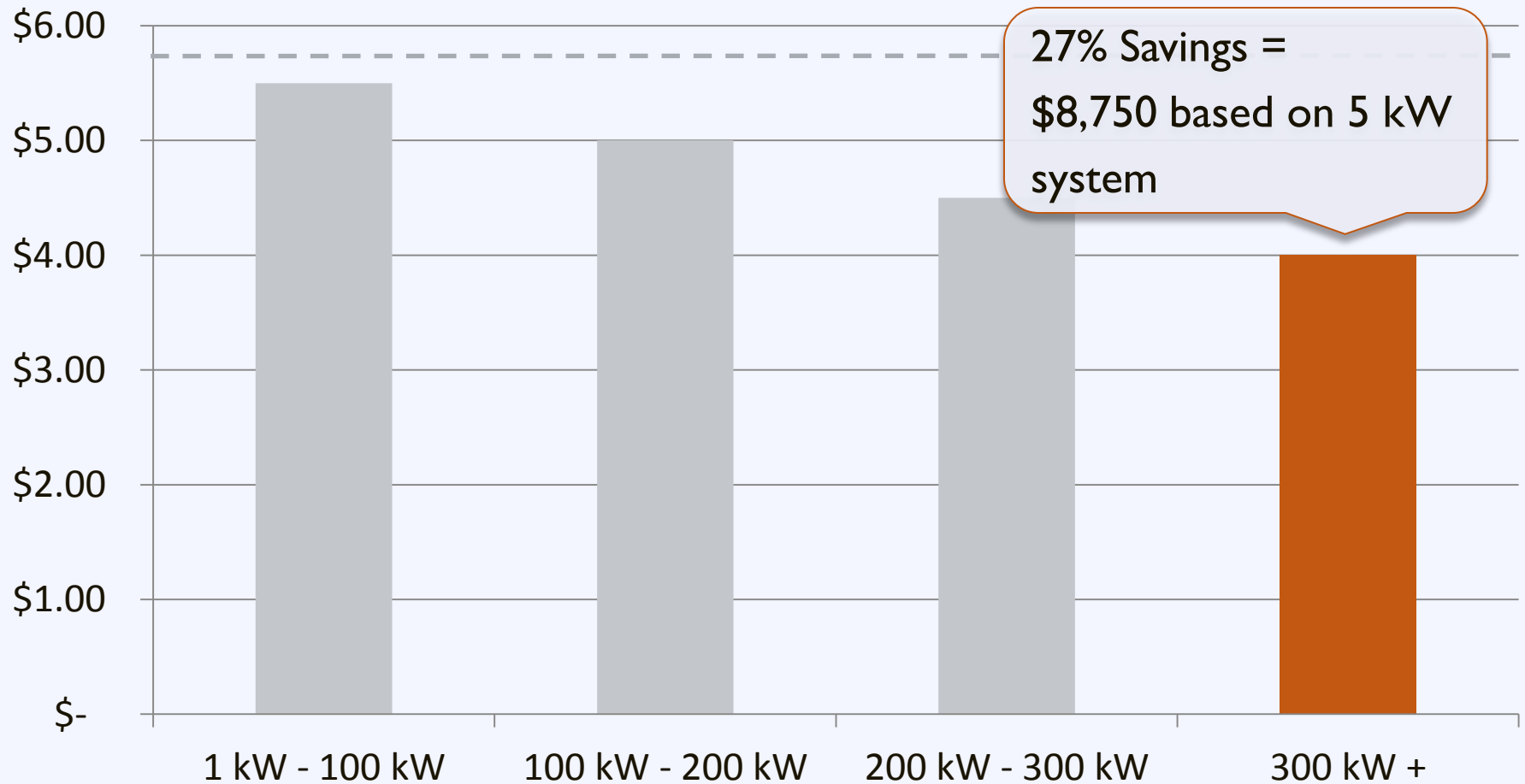
The Cost of Solar PV

US Average Installed Cost for Behind-the-Meter PV



Group Purchasing Tiers

Group Purchasing Tiers



Address Customer Acquisition

Barriers

High upfront cost



Solutions

Group purchase

Complexity



Procurement & education

Customer inertia

Complexity

- Installers are unknown entities to most residents
- Residents uncertain if pricing is competitive
- Incentives are complicated
- Policies are complicated
- Calculating value of investment is complicated

Safety in numbers

The Solarize Program Peer Effects

A household is

more likely to adopt solar

for

each additional installation in their zip code.

Peer Effects Continued

"The installation of one additional solar photovoltaic rooftop project within the past six months in a given area **increased the average number of installations within a half mile radius by almost one half.**"

Complexity

- Installers are unknown entities to most residents
- Residents uncertain if pricing is competitive

Procurement process
to select installer(s)

- Calculating value of investment is complicated

Complexity

- Installers are unknown entities to most residents
- Residents uncertain if pricing is competitive
- Incentives are complicated
- Policies are complicated
- Calculating value of investment is complicated

Education & Outreach

- Workshops
- Volunteers
- Marketing

Address Customer Acquisition

Barriers

Solutions

High upfront cost → Group purchase

Complexity → Procurement & education

Customer inertia → Limited-time offer

Customer Inertia

Competing with the **status quo**

Some Results

- Some 2013 analysis from CT, MA, WA, and OR
 - Highest number of signed contracts = **157** (857 signups) in Arlington, Mass. (pop. ~43,000)
 - Highest total kW installed = **951 kW** in Durham, CT (pop. ~7,000)
 - Lowest cost/Watt = **\$3.14/W** in 5 Mass. Towns (Brookline, Chelmsford, Carlisle, Lee, and Newton)

We are currently in the process of surveying solarize programs across the country in order to obtain a complete and up-to-date data set.

Example Solarize Roles

Lead Organization or Local Gov.

- Program Management
- Installer RFP & Contract
- Marketing & Education
- Technical Support

Community

- Installer Selection
- Local Outreach
- Volunteers
- Solarize Leaders

Installer

- Tiered Pricing & Financing Options
- Free Site Assessments
- Permitting & Rebate Processing
- Installation

Residents and Businesses

- Sign Up for Free Assessments
- Talk to Neighbors
- Get Solar
- Lower Energy Bills!

Solarize: Process

Solarize Timeline

Create Team &
Establish Goals

Issue RFP & Select
Installer

Marketing and Workshops

Enrollment

Site Assessments

Decision & Installations

**6-12
Months**



Solarize: Process

Create Team &
Establish Goals

Issue RFP &
Select Installer

Marketing and Workshops

Enrollment

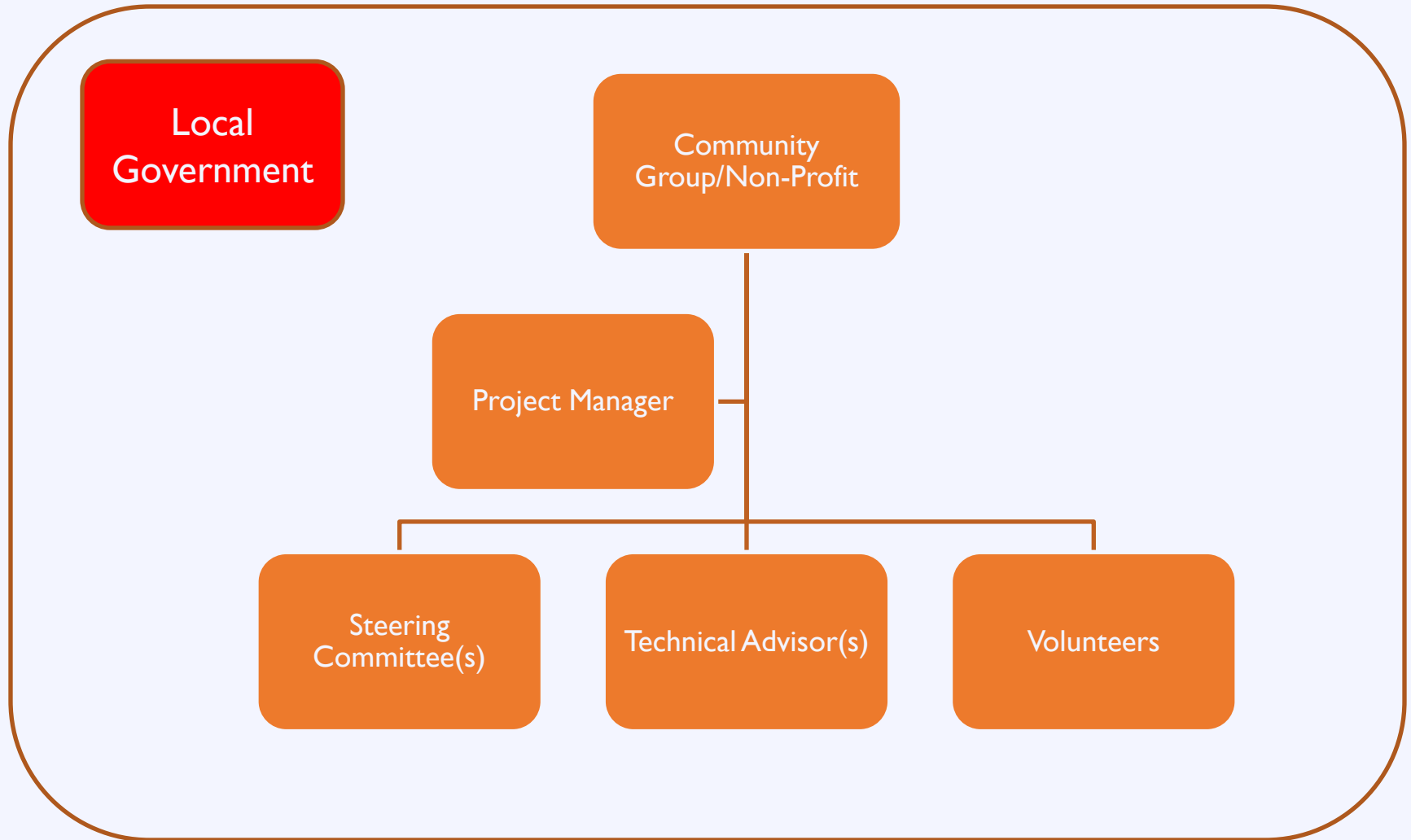
Site Assessments

Decision & Installations

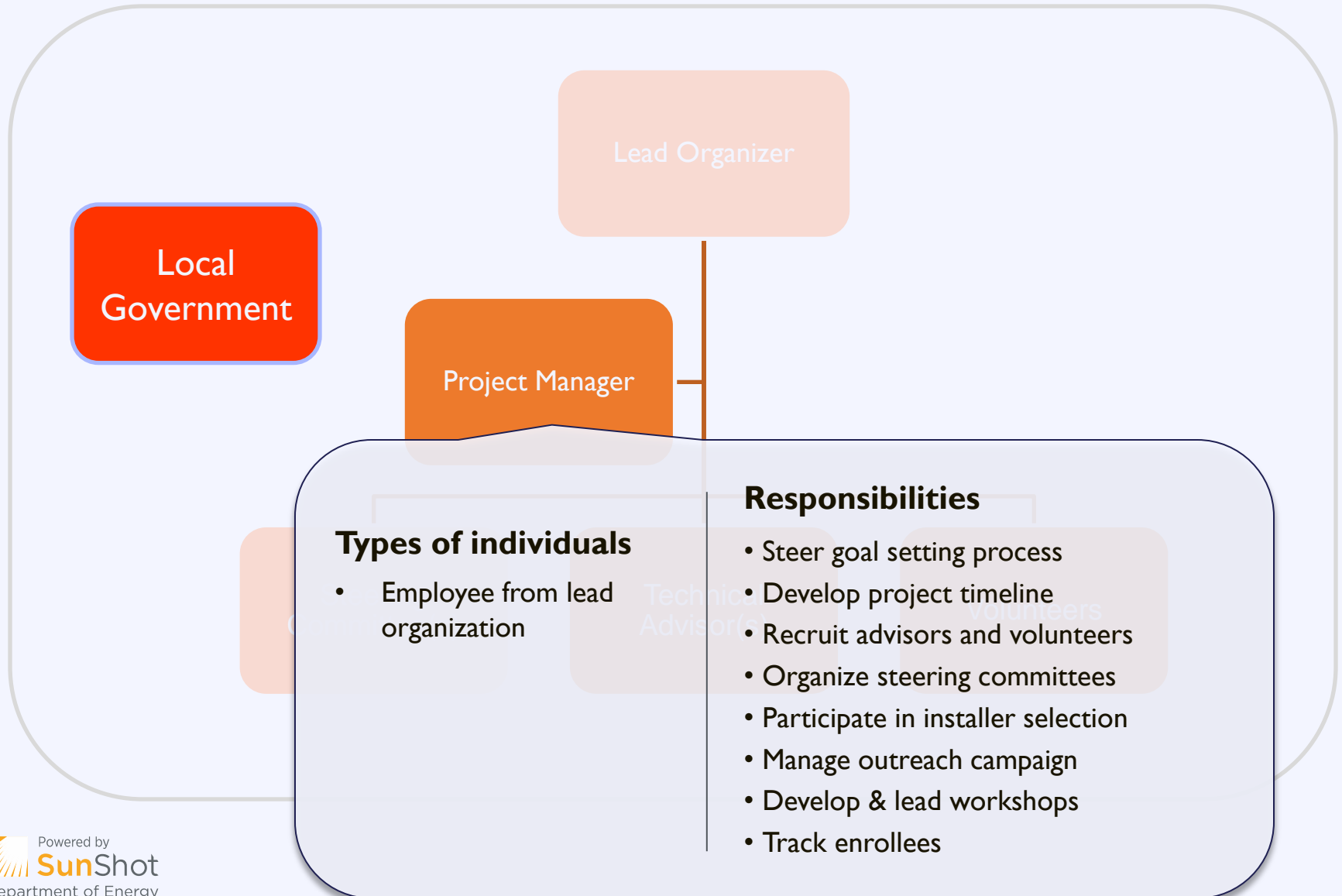
**6-12
Months**



Create a Team



Create a Team



Create a Team

Types of individuals

- Rep from law firm
- Solar experts
- Web developer
- Social media expert

Responsibilities

- Develop RFP
- Review installer proposals
- Develop website
- Design outreach materials
- Social media campaign
- Participate in Steering Committees
- Develop & lead workshops

Steering
Committee(s)

Technical Advisor(s)

Volunteers

Create a Team

Types of individuals

- Employee from lead organization
- Technical Advisors
- Local government officials & leaders

Responsibilities

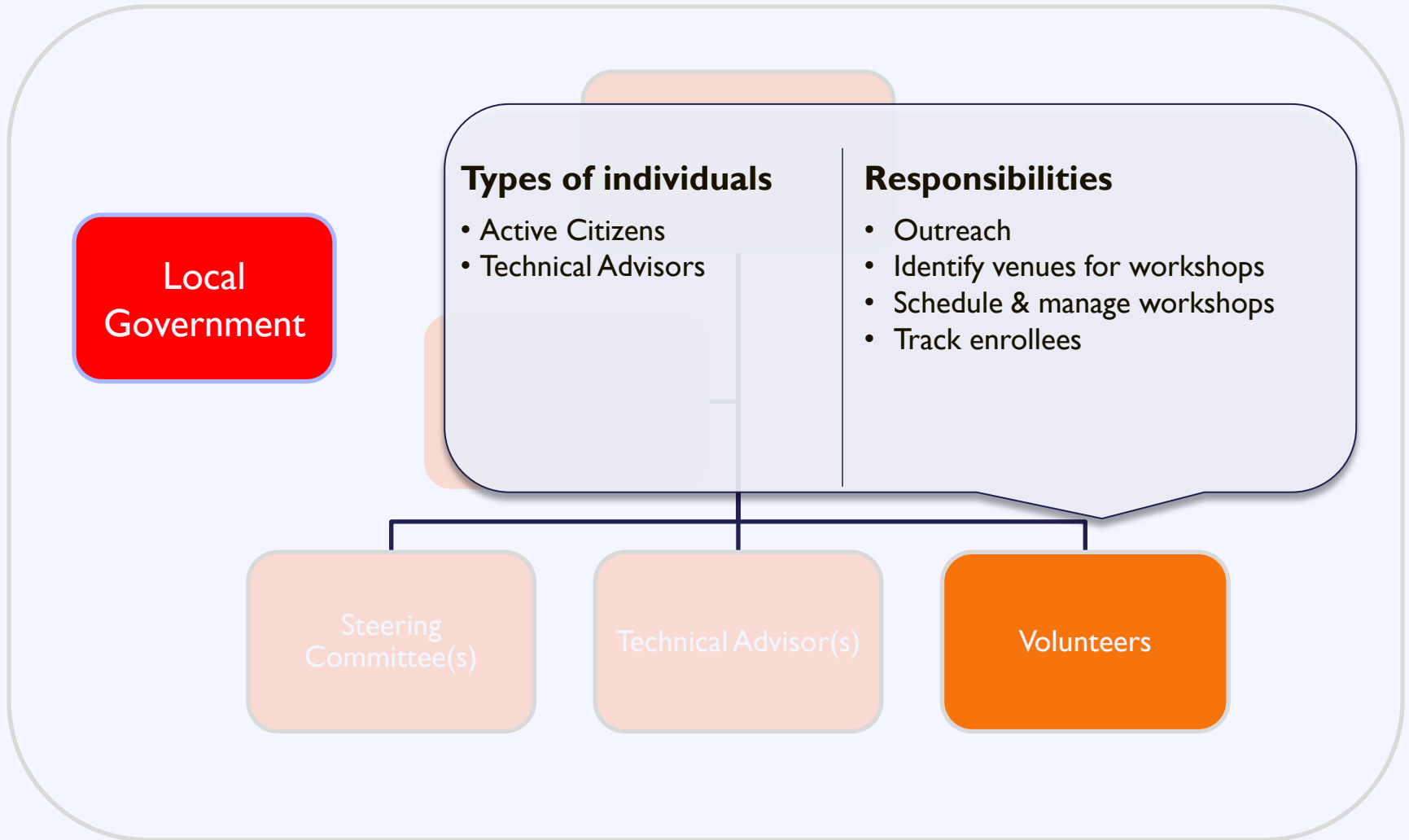
- Goal setting for program
- Develop & vet RFP
- Review & select installers
- Develop workshop curriculum
- Lead workshops

Steering
Committee(s)

Technical Advisor(s)

Volunteers

Create a Team



Establish Goals

Goal Setting

- What would a successful program look like?
- What are community's priorities/preferences?
- Which community values inform the program?

Example Goals

- Support economic development by prioritizing local installers
- Obtain 30 installation contracts
- Meet 100 kW of installed solar through program

Solarize: Process

Create Team &
Establish Goals

Issue RFP &
Select Installer

Marketing and Workshops

Enrollment

Site Assessments

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**6-12
Months**



Develop RFP

Opportunity

- Incorporate program goals
- Incorporate community priorities

Example Criteria

- Local installer
- Provides work force training opportunities
- Equipment made in the US
- Fair labor practices & equal opportunity employer
- Incorporates sustainable practices

Evaluation

- Establish criteria
- Establish scoring system
- Evaluate proposals

Solarize: Process

Create Team &
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Issue RFP &
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**6-12
Months**



Marketing

- Electronic survey of households
- Email newsletters & direct mailings
- Articles and advertisements in local newspaper
- Tabling at local events
- Facebook page and online discussion board
- Community Based Organization outreach



Let's Solarize!
Solar. Simple. Together.

Solarize Connecticut is a proven model for advancing residential solar.

Solarize Connecticut launched in the fall of 2012 in four pilot communities in a partnership between Clean Energy Finance and Investment Authority (CEFIA), SmartPower and the John Merck Fund. It has since expanded to include more than 30 cities and towns across the state. During the pilot program, and in just 20 short weeks, the program was able to at least double the amount of solar in participating communities compared to the total over the previous 7 years.

Solarize by the numbers:
(results from 2012 pilot in 4 communities)

- More than 2.2 Megawatts of new solar deployed, almost triple already existing solar.
- 280 contracts signed in just 20 weeks, with all four towns doubling the number of homes with solar, and one town quintupling their solar.
- Savings of over \$2.2 million for solar customers, with the average Solarize customer saving \$7,500.

www.SolarizeCT.com

energize CONNECTICUT

energize CT

CONNECTICUT SOLARIZE

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Workshops

- Identify venues
- Develop workshop schedule
- Publicize & advertise workshops
- Deliver multiple workshops throughout the enrollment process
- “Meet the Installer” workshops
- Invite homeowners who have gone solar



Solarize: Process

Create Team &
Establish Goals

Issue RFP &
Select Installer

Marketing and Workshops

Enrollment

Site Assessments

Decision & Installations

**6-12
Months**



Enrollment

- Create Solarize website
- Provide digital/online enrollment form
 - Include customer information fields (avg. monthly bill, roof type, age of roof, etc.)
- Offer paper form for participants to enroll at workshops, tabling events, etc.

The screenshot displays the Solarize Williamstown website. At the top left is the logo for "SOLARIZE MASS WILLIAMSTOWN" featuring a sun icon. To the right is the "REALGOODS SOLAR" logo. Below the main logo, there is a section titled "The Solarize Williamstown Program was a Success!" with text explaining that over 70 homeowners are saving on their bills with solar power. A "Sign up for a free quote" button is prominently displayed. Below this button is a form with fields for First Name, Last Name, Email, Phone Number, Address, City, State (with a dropdown menu), and Zip Code. There is also a section for "Additional Information" with a text area. At the bottom of the page, there are two gauges: "Systems to be installed" showing 71 and "Total KW" showing 483. The footer includes the "Powered by SunShot U.S. Department of Energy" logo.

Solarize: Process

Create Team &
Establish Goals

Issue RFP &
Select Installer

Marketing and Workshops

Enrollment

Site Assessments

Decision & Installations

**6-12
Months**



Site Assessment & Installation

- Installer provides no-cost site assessment
- If home or business is suited for solar, installer designs solar system
- Customer signs contract with installer for direct purchase or lease/PPA
- Installs system and interconnects to utility grid
- Turn system on and generate clean, renewable energy
- Speak with enrollees that didn't install

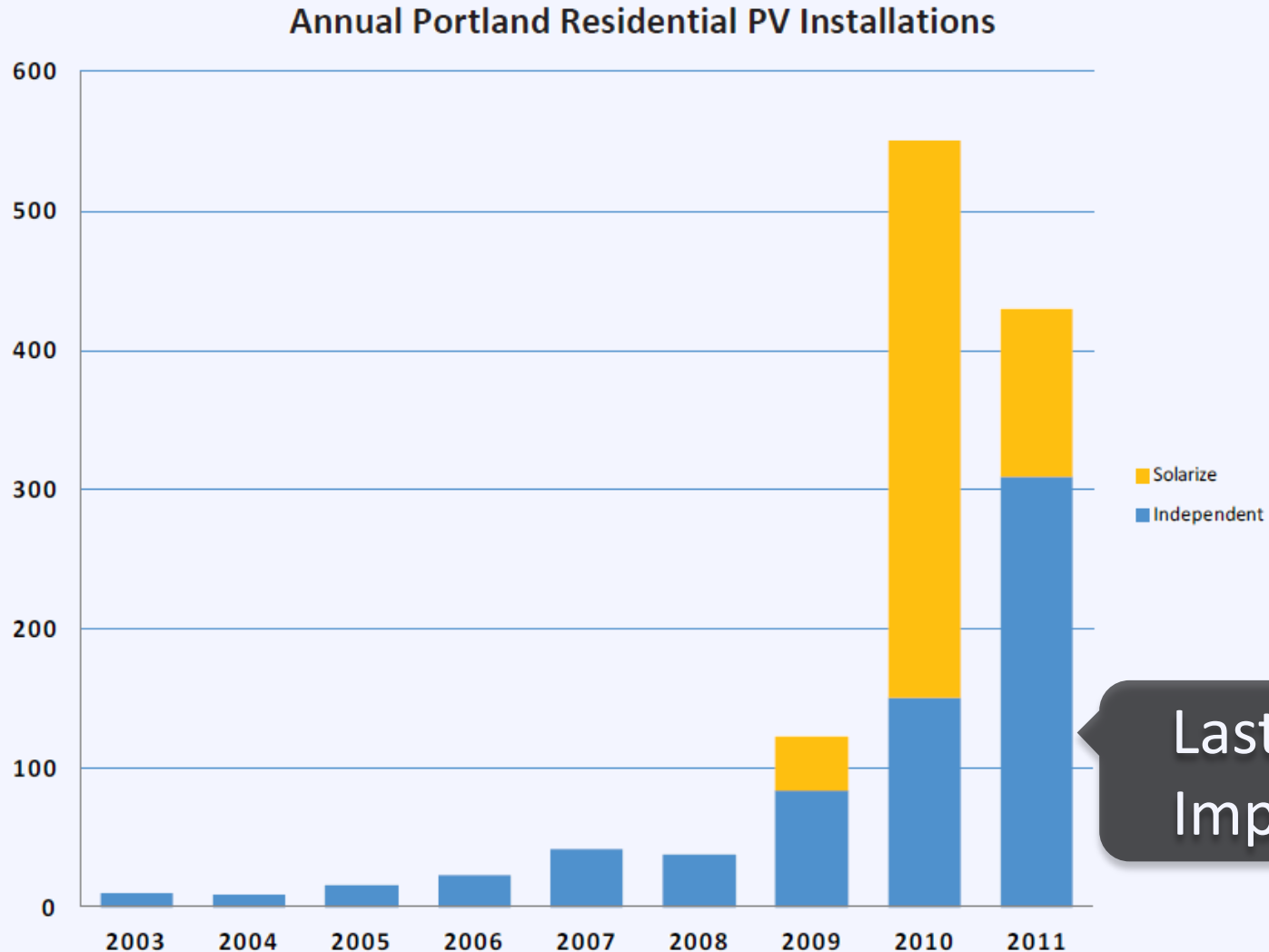


Solarize: Process

Follow-up and Program Evaluation

- What worked and what didn't?
- How do we better manage data and contacts?
- Who signed-up?
- Are people happy with their systems?
- Round 2?
- Track system performance over time?

Solarize: Lasting Impact



Lasting Impact

Things to Consider

What makes a good site?

- Southern exposure
- PV panels angled 30-45 degrees on roof line or on the ground
- 4-6 hours of direct sunlight
- Open roof area, about 100 sq. ft. per 1 kW



Things to Consider

Installation Cost Adders

- Reinforce rafters
- Split arrays on multiple roof pitches
- Metal roof
- Steep roof (more than 45 degrees)
- Electrical upgrade
- Ground mounted
- Production Monitoring System
- Extended warranty
- Increased shading
- Storage (batteries)
- Premium panels



Things to Consider

Issue

Solution

Concerns with selecting a single installer



Competitive, transparent process

Installer faces cash flow issues



Work with installers to mitigate cash flow concerns

Process can be confusing



Volunteer staff well trained

Volume of applications difficult for installer



Allow installer to use contractors

Requirements of Installer

- At least 10 previous installations
- NABCEP certified and licensed GC and electrician
- Propose marketing strategy
- Demonstrate ability to meet increasing demand
- Identify project add-ons
- Guarantee tiered pricing
- List components make and model

Things to Watch Out For

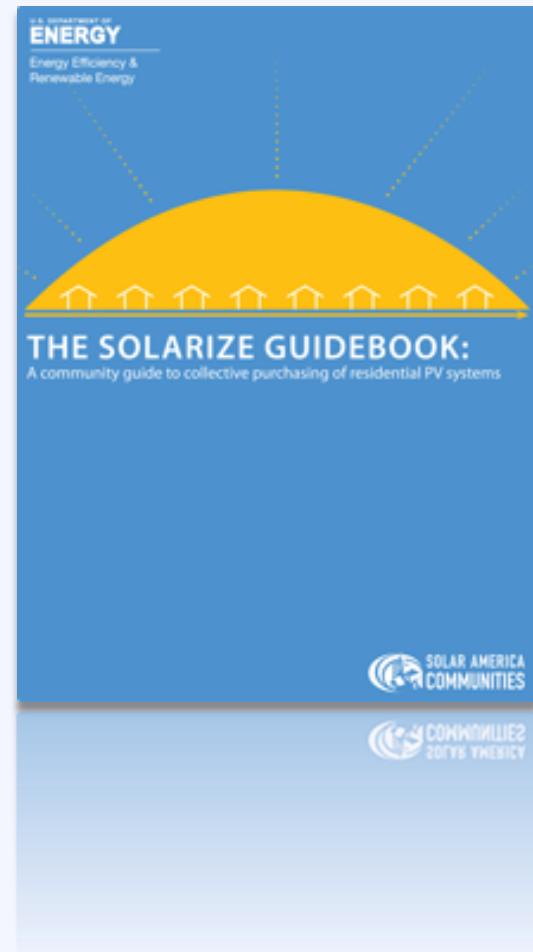
- Selecting a single installer could be perceived as unfair or anticompetitive
- Could be challenging cash flow conditions for contractor(s)
- Process can still be confusing so make sure staff is trained to answer questions
- Can allow for contractor teams to apply in order to address volume concerns
- “Solarize” trademarked in some states

Solarize: Resources

Resource The Solarize Guidebook

A roadmap for project planners and solar advocates who want to create their own successful Solarize campaigns.

www.nrel.gov

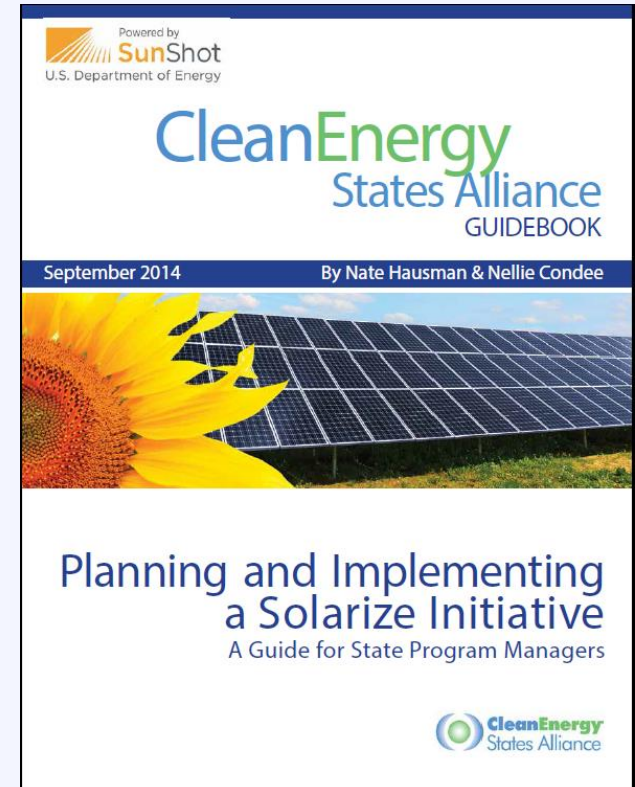


Solarize: Resources

Resource Planning and Implementing Solarize

A guide for state solarize program managers on how to plan in implement solarize initiatives.

www.cesa.org





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