

SOLAR READY NWI

May 28, 2014

Building our Solar Ready Road Map

Agenda

- 2:00 Introduction & Goals
- 2:10 Review Priorities from April meetings
- 2:30 Priority Best Management Practices
- 3:00 Building our Solar Ready Road Map
- 3:30 Next Steps

Goals of the Program

Reduce costs
through
regulatory
reform

Increase
access to
financing

Promote solar
adoption

Goals of Today's Session

At the end of today's session we should :

1. Understand what it takes to implement the BMPs we prioritized in April
2. Have a map of how to get there
3. Identify training and other deliverables needed from NIRPC

Opportunities

Communities in CA with favorable permitting practices saw

4 - 12% lower costs

and

25% shorter development time

as compared to standard communities

Solar Ready KC

Efforts from Rooftop Solar Challenge I teams

resulted in

12% lower permitting costs

and

40% faster permitting time

Priority BMPs from April Meetings

Top 5

1. Solarize Program (Finance)
2. Engage HOAs (Planning)
3. Streamlining Permits (Process)
4. Improve Solar Readiness (Planning)
5. Improve Solar Access (Planning)

Honorable Mention

- Engage Lenders (Finance)
- PACE (Not allowed in Indiana)
- Standardize Permit Fees (Process)
- Coordination with Utility (Process)
- Pre-Qualify Plans and Installers (Process)
- Educate and Engage Commercial Businesses (Planning)
- Educate Homeowners (Planning)
- Educate Developers (Planning)

Solar Ready NWI

	Step 1	Step 2	Step 3
Planning			
Process			
Financing & Adoption			

Planning & Permitting Roadmap

- ☀ Standardization
- ☀ Transparency
- ☀ Application
- ☀ Fees
- ☀ Coordination

Planning

Process

Priority Planning BMPs

- Improve Solar Readiness
- Improve Solar Access
- Engage HOAs
- Educate Homeowners, Businesses, Developers

#4. Improve Solar Readiness

**Solar Readiness is about local
Zoning and Building Codes**

Zoning Standards: Small Solar

Typical Requirements:

Permitted as accessory use

Minimize visibility if feasible

Requirements:

- ☀ District height
- ☀ Lot coverage
- ☀ Setback



Zoning Standards: Large Solar

Typical Requirements:

Allowed for primary use in limited locations

Requirements:

- ☀️ Height limits
- ☀️ Lot coverage
- ☀️ Setback
- ☀️ Fencing and Enclosure



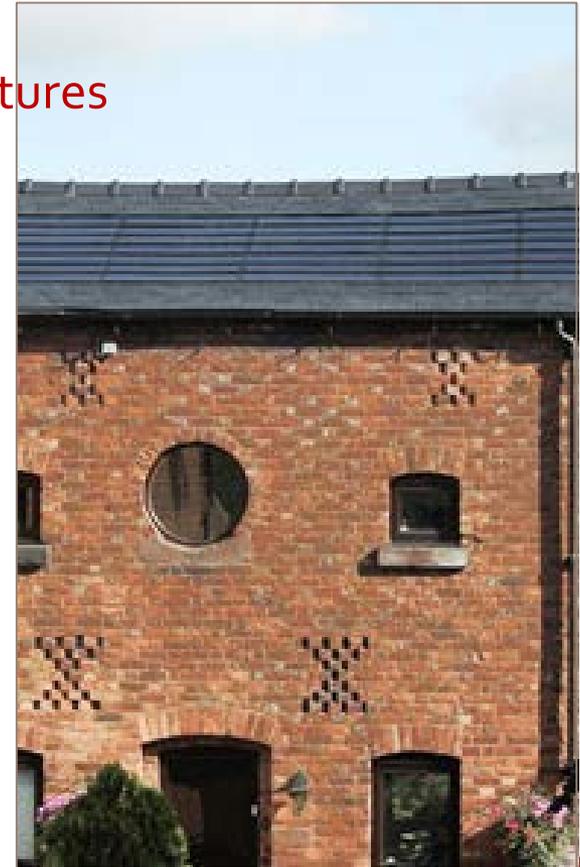
Zoning Standards: Historic

Typical Requirements:

Prevent permanent loss of “character defining” features

Possible design requirements

- ☀️ Ground mounted
- ☀️ Flat roof with setback
- ☀️ Panels flush with roof
- ☀️ Blend color



Source: SolarCentury

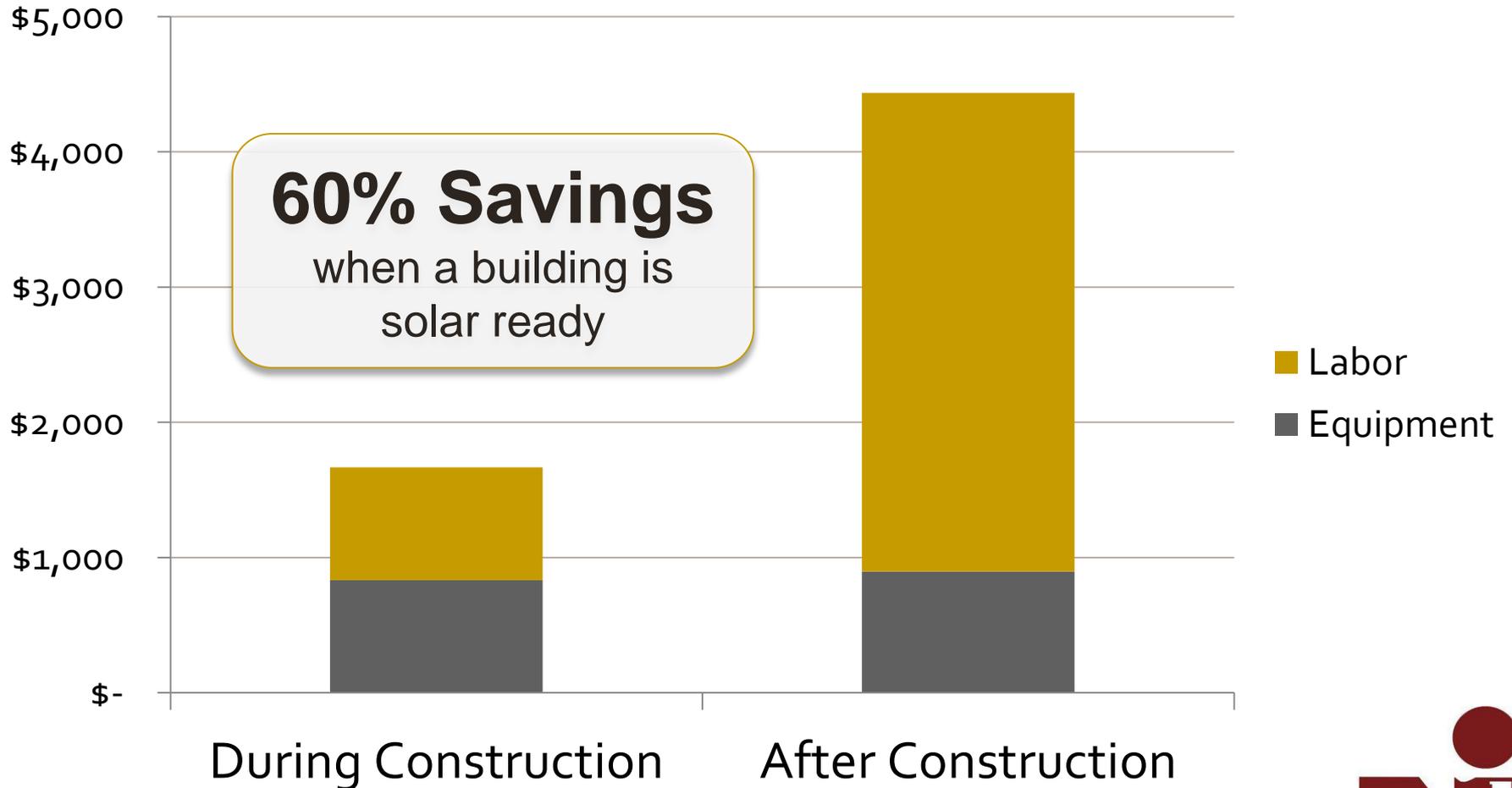
Building Code

Solar Ready Construction:

Preparing a building for solar at the outset can help make future solar installations easier and more cost effective.



Building Code



Building Code

Require builders to:

- ✓ Minimize rooftop equipment
- ✓ Plan for structure orientation to avoid shading
- ✓ Install a roof that will support the load of a solar array
- ✓ Record roof specifications on drawings
- ✓ Plan for wiring and inverter placement

Building Code Guidelines

Building Form Planning:

- Site plan and organization
- Building massing
- Orientation
- Roof form

Space Planning

- Space for equipment
- Distance to inverter

Mechanical & Electrical:

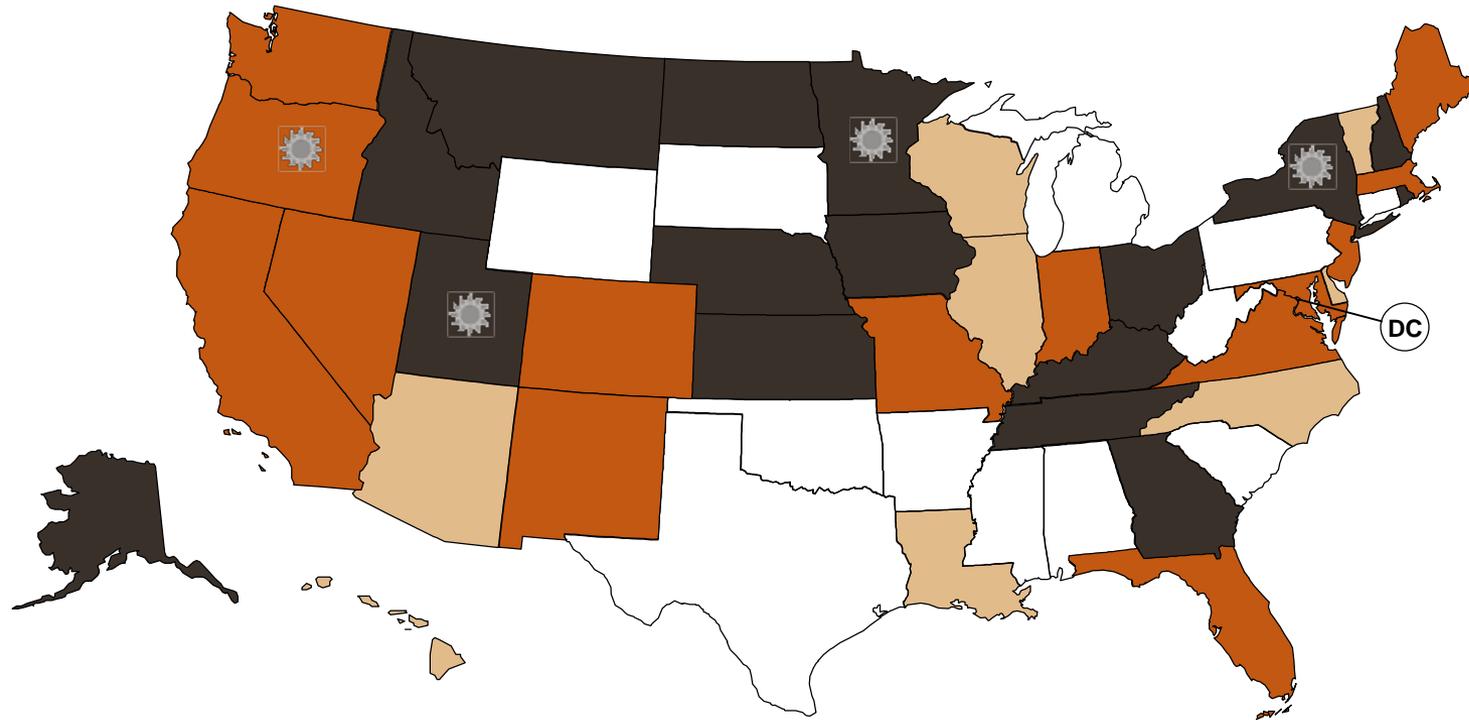
- Empty metal conduit
- Electrical panel space
- Space in breaker box
- Production meter
- Ground wire

5. Solar Access

Solar Access Laws:

- Increase the likelihood that properties will receive sunlight
- Protect the rights of property owners to install solar
- Reduce the risk that systems will be shaded after installation

Solar Access



-  Solar Easements Provision
-  Solar Rights Provision
-  Solar Easements and Solar Rights Provisions
-  Local option to create solar rights provision
-  U.S. Virgin Islands

Solar Access

Indiana state law includes both covenant restrictions and solar easement provisions.

- The state's covenant restrictions prevent planning and zoning authorities from prohibiting or unreasonably restricting the use of solar energy.
- Indiana's solar easement provisions allow parties to voluntarily enter into solar easement contracts which are enforceable by law.
- Passive solar structures are explicitly included in the type of solar-collection equipment that may be protected by solar easements.

Solar Access Ordinance

Local jurisdictions can offer solar access protections to supplement state regulations

2-1. Solar Access Ordinance

Section	Topics to Address
Voiding Prohibitions	Render private restrictions unenforceable
Allowable Restrictions	Defines restrictions that are acceptable
Protections	Quantifiable standard <i>Example: restrictions cannot limit production by more than 10%</i>
Permit	Register systems to protect access

Solar Readiness Ordinance Summary

Solar Zoning

Intent
Definitions
Applicability
Aesthetics
Glare
Solar Access
First Responder Safety
Compliance

Building Codes

Building Form Planning
Space Planning
Mechanical and Electrical

Solar Access

Voiding Prohibitions
Allowable Restrictions
Protections
Permit

Discussion:

Will local governments do this?

What is the best way for this team to help you make this happen?

What order does it make sense to work on these?

#2 Engage HOAs

Community Associations represent over

25 Million Homes

If 5% of homes invested in solar, this would equal

3.3 GW

in new solar development

Engage HOAs

Work with HOAs to come up with standards to:

- Maintain community aesthetics
- Preserve trees and vegetation
- Protect health and safety of neighbors

Engage HOA Resources



Encouraging Solar Development through
Community Association Policies and
Processes

SunShot Solar Outreach Partnership

Recommends steps neighborhood associations can
take to facilitate solar access in their communities

#6. Educate

NIRPC Solar Website:

<http://nirpc.org/environment/solar.aspx>

#6. Educate

Brochures & Fact Sheets?

Presentations?

What works?

Priority Process BMPs

1. Streamlining Permits

☀ Others with votes:

Standardize Permit Fees (Process BMP)

Notification Coordination with Utility (Process BMP)

Pre-Qualify Plans and Installers (Process BMP)



#3 Permit Process Improvements

Depth of Review

No Permit

Only interconnection agreement required

Expedient

Within established design parameters

Impacts are well understood

Quick, Easy, Cheap

Thorough

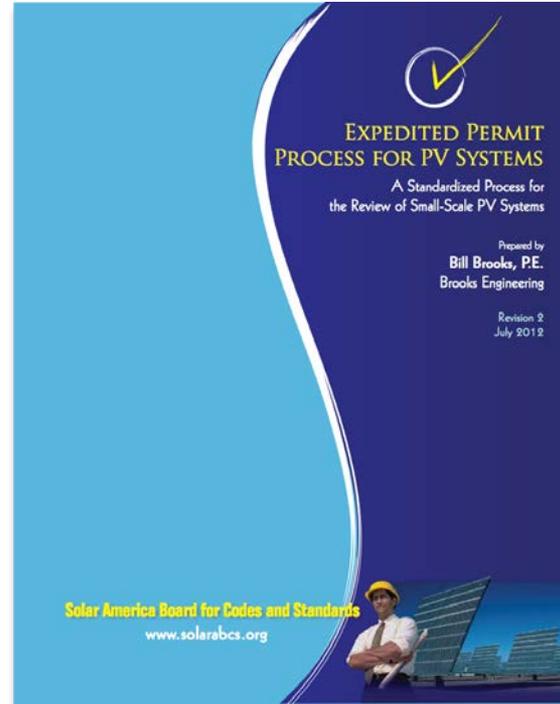
Outside of established design parameters

Review necessary to understand impacts

Flexible

Model Process

Municipal Examples
Regional Process
Examples



Permit Fee Simplification

Residential

Fee = (Est. Staff Time x Rate) + Additional Review

Cover costs 80% of the time for review and inspection. Allow for one minor correction review.

Additional reviews or inspections incur additional fees

Permit Fee Simplification

Commercial

Hours spent on:

- Electrical Plan Review
- Structural Plan Review
- Fire Review
- Planning Review
- Clerical Time

Fee = (Plan Review Hours + Inspection Hours) x Rate + Issuance Fee

Hours spent inspecting:

- Building attachment
- Building racking
- Electrical work
- Fire safety



Example calculator
output for 149 kW
system

TRUE

Pre-Qualify Installers

Requirements:

Standard Certifications

Minimum Qualifications

NABCEP accredited

In-state installs

In-region installs

Financing options

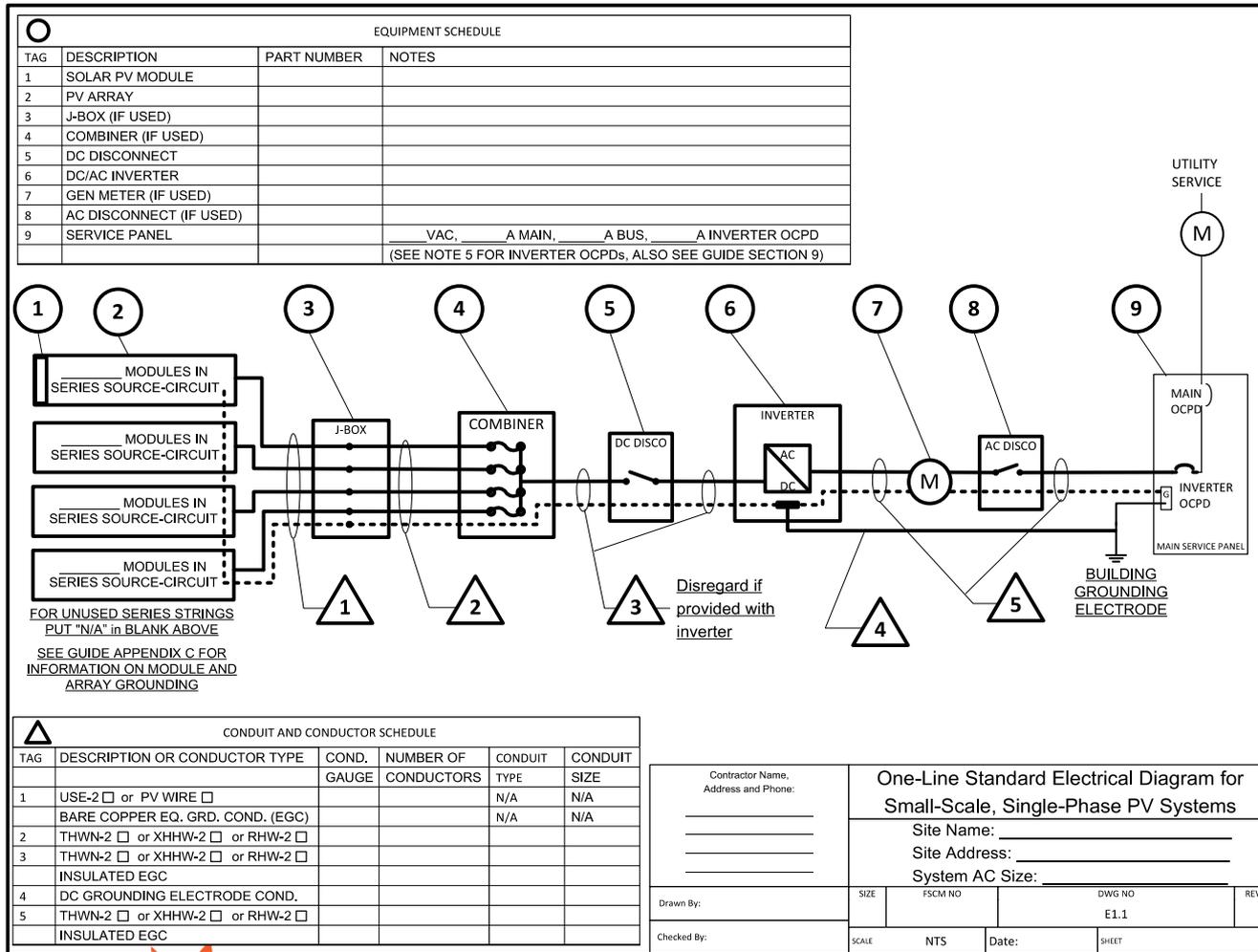
Benefits:

Qualified Installers

Expedited permitting

Pre-Qualify Electrical Plan

STANDARD ELECTRICAL DIAGRAM



EXPEDITED PERMIT PROCESS FOR PV SYSTEMS



Discussion:

What aspects of Permit Processing would local governments we willing to consider?

How can NIRPC facilitate this?

Priority Finance BMPs

1. Solarize Program

Other Finance BMPs

- Engage Lenders

#1 Enact a Solarize Program

Solarize: Group purchasing for residential solar PV projects



Solarize Program

A household is

0.78% more likely to adopt solar

for

each additional installation in their zip code

Solarize Program

Barriers

High upfront cost →

Complexity →

Customer inertia →

Solutions

Group purchase

Community outreach

Limited-time offer

Solarize Program

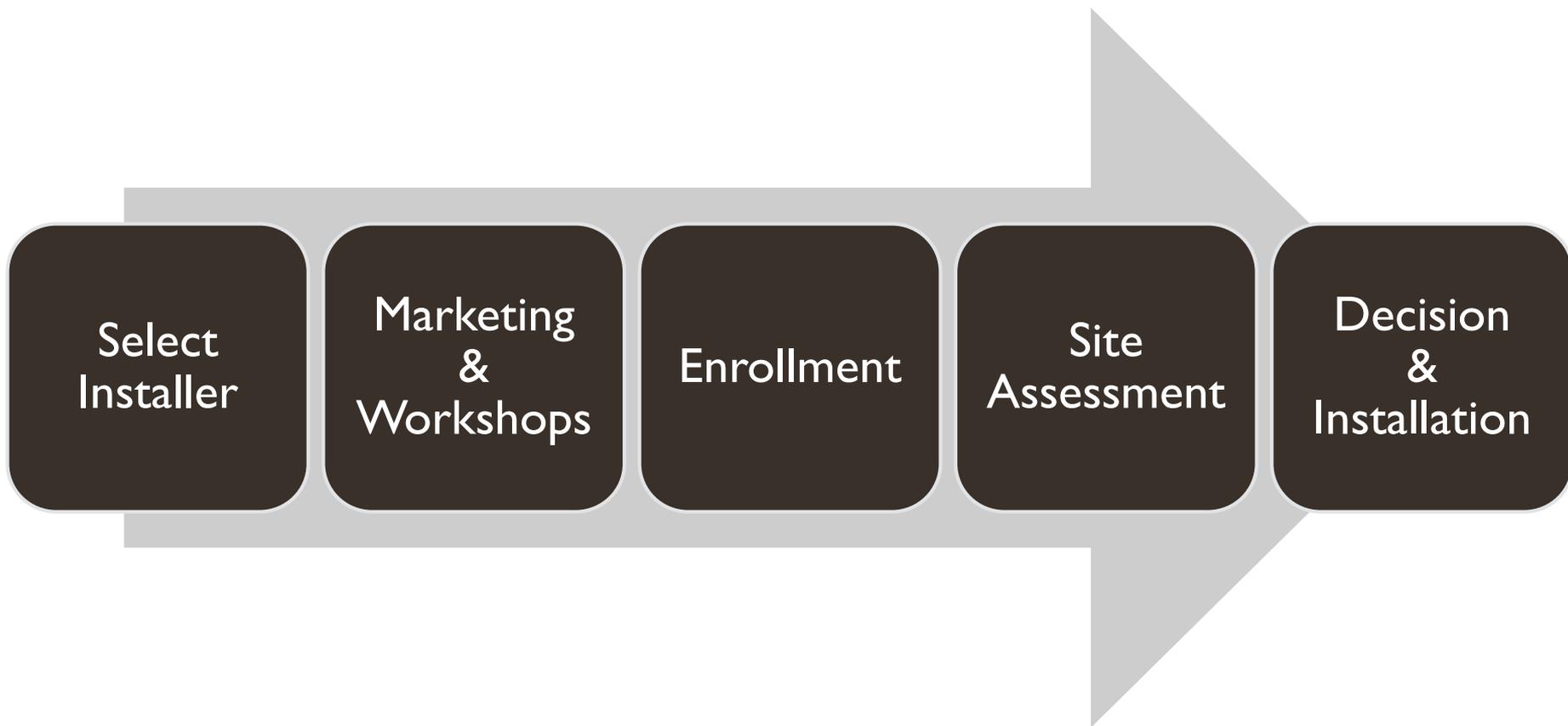
Benefits to Local Government:

Low implementation cost: \$5,000 - \$10,000

Quick turn-around: 9 Months

Long-term impact: Sustainable ecosystem

Solarize Program



Enact a Solarize Program

Solarize Mass Harvard

Select
Installer

April 2011

Marketing
&
Workshops

Enrollment

Site
Assessment

Decision
&
Installation

April 2011

Dec 2011



2013 SOLARIZE MASSACHUSETTS PROGRAM: Round 1
Request for Proposals for Installers of Small-Scale Solar Photovoltaic Systems
RFP ID: MassCEC 2013-SMP-03
Posting Date: February 11, 2013

Standard RFP Process for all Solarize Mass Communities

1. OPPORTUNITY SUMMARY:

The Massachusetts Clean Energy Center (“MassCEC”), in conjunction with the Department of Energy Resources (“DOER”), is requesting proposals from solar photovoltaic (“PV”) Installers (“Installer(s)”) to participate in Round 1 of MassCEC’s 2013 Solarize Massachusetts Program (the “Program”). (MassCEC and DOER plan to announce the selected Communities on or around March 14, 2013, and will make the selected Community marketing and outreach proposals available for review at that time.) This program will drive community adoption of solar photovoltaic (PV) projects through a partnership focused on localized marketing and installation efforts, which in turn will help to drive down the installation cost of small-scale solar PV installations within the selected communities through a group purchasing model. Round 1 of the 2013 Solarize Mass Program is based on the tremendous success of the initial Pilot, which took place in four communities in 2011, and the 2012 Solarize Massachusetts program, which took place in 17 communities in 2012. Read the *Solarize Massachusetts Pilot Overview* and the *2012 Solarize Massachusetts Program Update* (posted at www.SolarizeMass.com) for more information on the 2011 and 2012 programs, the results, and some important lessons learned.

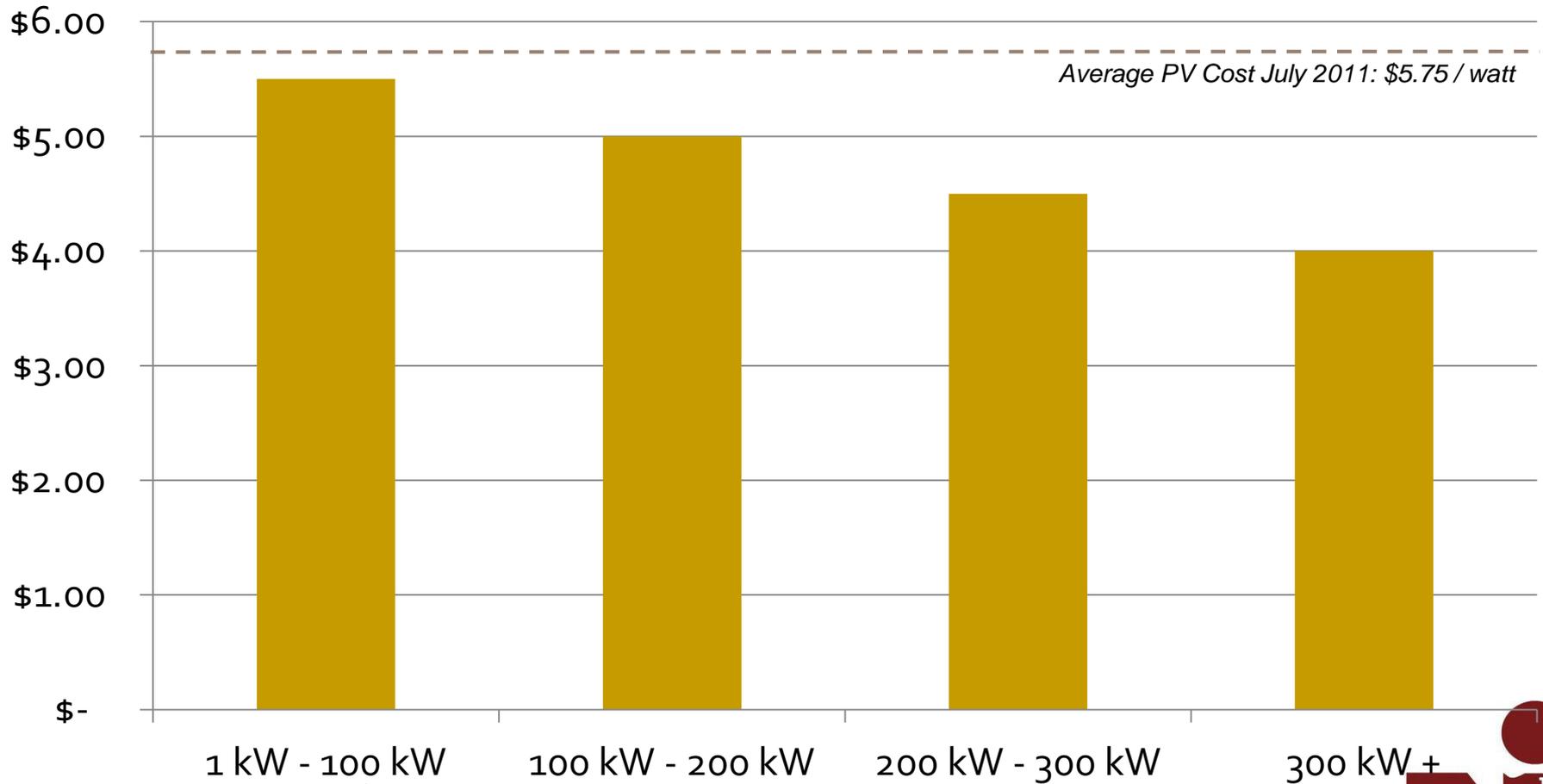
MassCEC and DOER will plan to select a minimum of eight (8) communities (or groups of communities) to participate in Round 1 of the 2013 program.

MassCEC seeks proposals from Installers that can provide competitive, tiered pricing for a direct-ownership model (“Purchase Price”), along with a leasing or power purchase agreement (“PPA”) model (“Lease/PPA Price”) for residential and small-scale commercial solar PV installations. It is expected that customers who purchase a system under the program will receive competitive tiered pricing that results in a progressively greater reduction in the total purchase cost as more people contract for solar PV in the Community (or group of Communities). Customers that enter into PPAs or Leases will receive a greater financial incentive from the Installer as higher tiers of aggregate capacity within a community are reached. Installers are also required to assist with the customers directly, or identify a partner to provide aggregation or brokerage services for the sale of customer solar renewable energy certificates (“SREC(s)”).

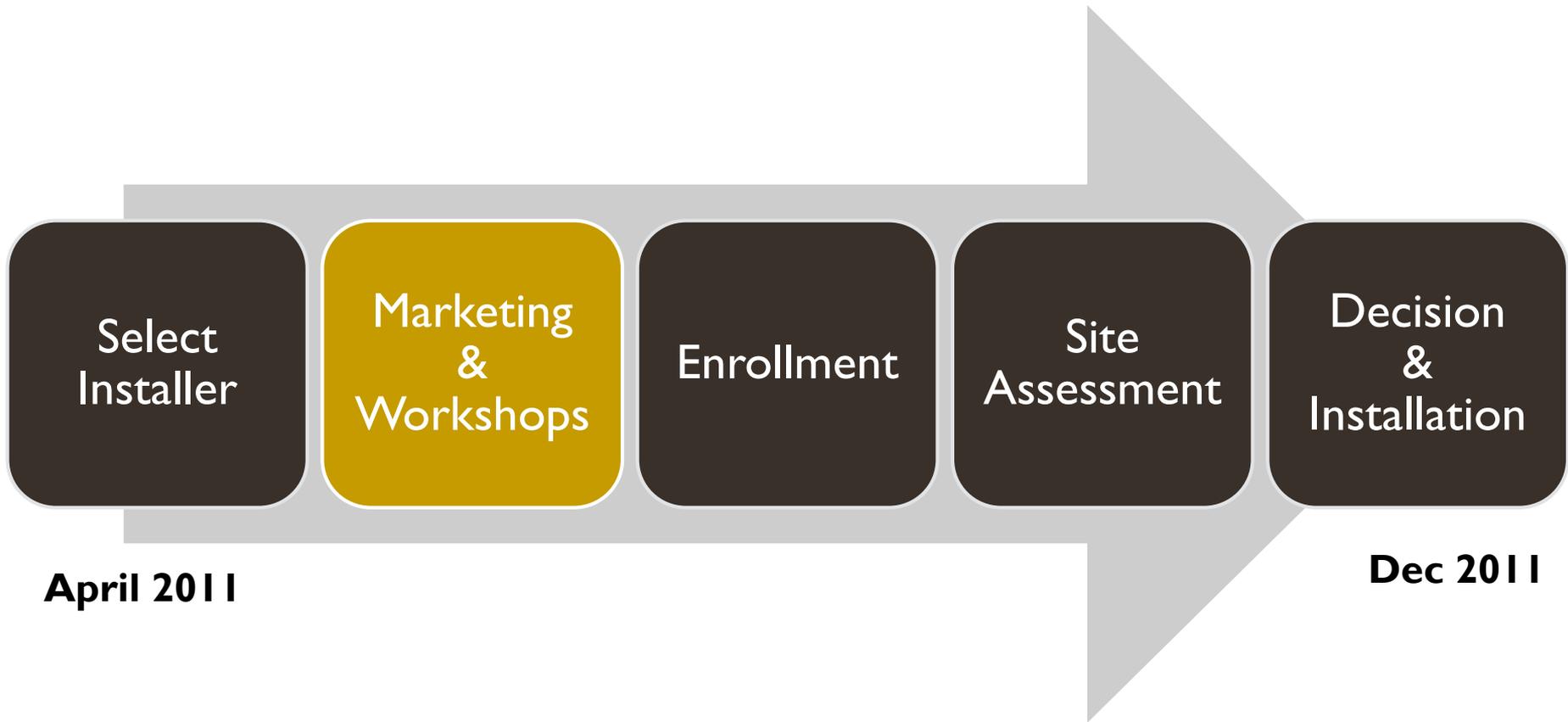
Installers may bid on, and be selected for, up to three (3) Communities or groups of Communities. Proposals will be evaluated individually in order to provide each Community or group of Communities with the greatest opportunity to succeed in the Program. MassCEC and each Community will work to review the Installer proposals. Quality of the proposal, proposed equipment, proposed pricing, and installation practices will be factors in the selection process. Refer to section 2.C. for more information on the evaluation criteria.

Solarize Program

Harvard Mass Group Purchasing Tiers



Solarize Program



Solarize Program

Marketing Strategy:

Electronic survey of 1,100 households

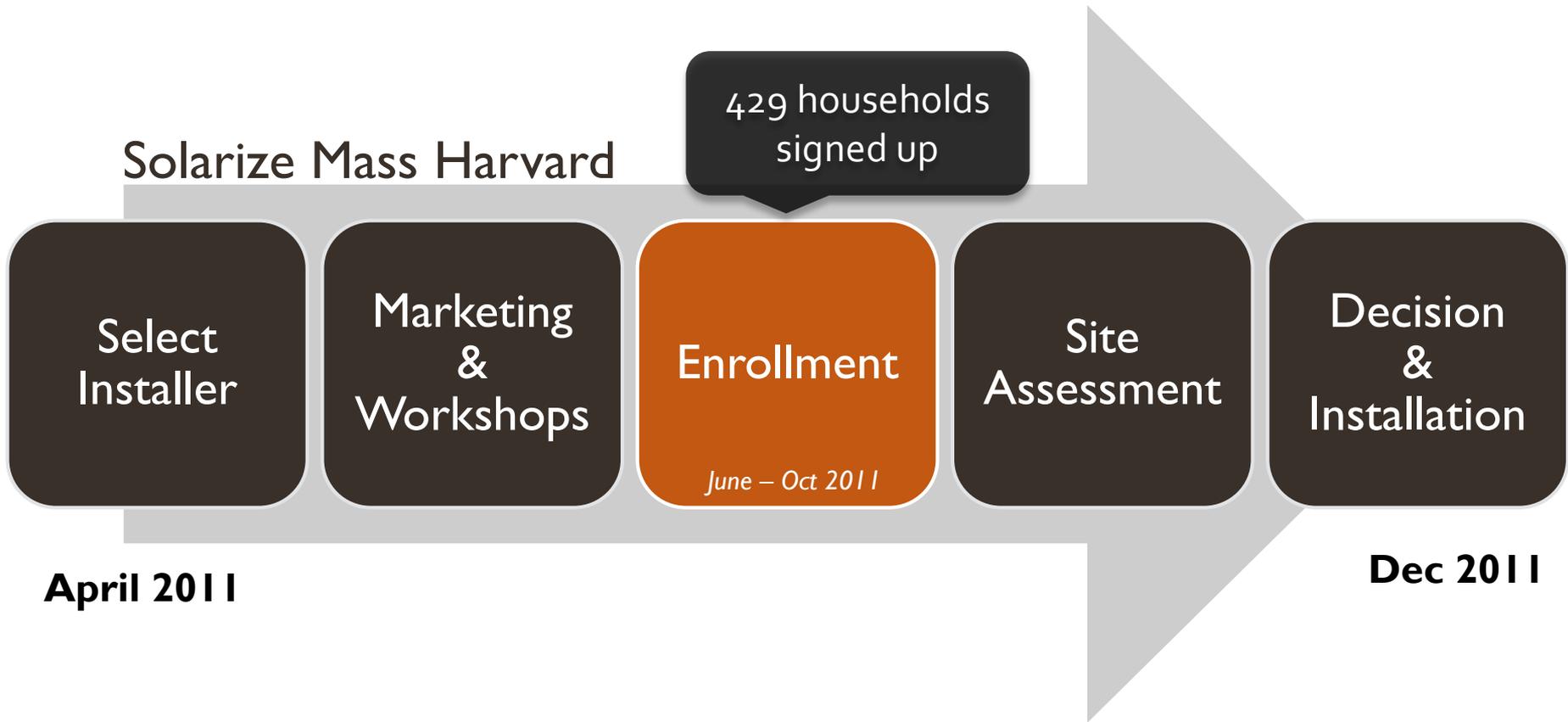
Email newsletters and direct mailings

Float in July 4 parade

Articles and advertisements in local newspaper

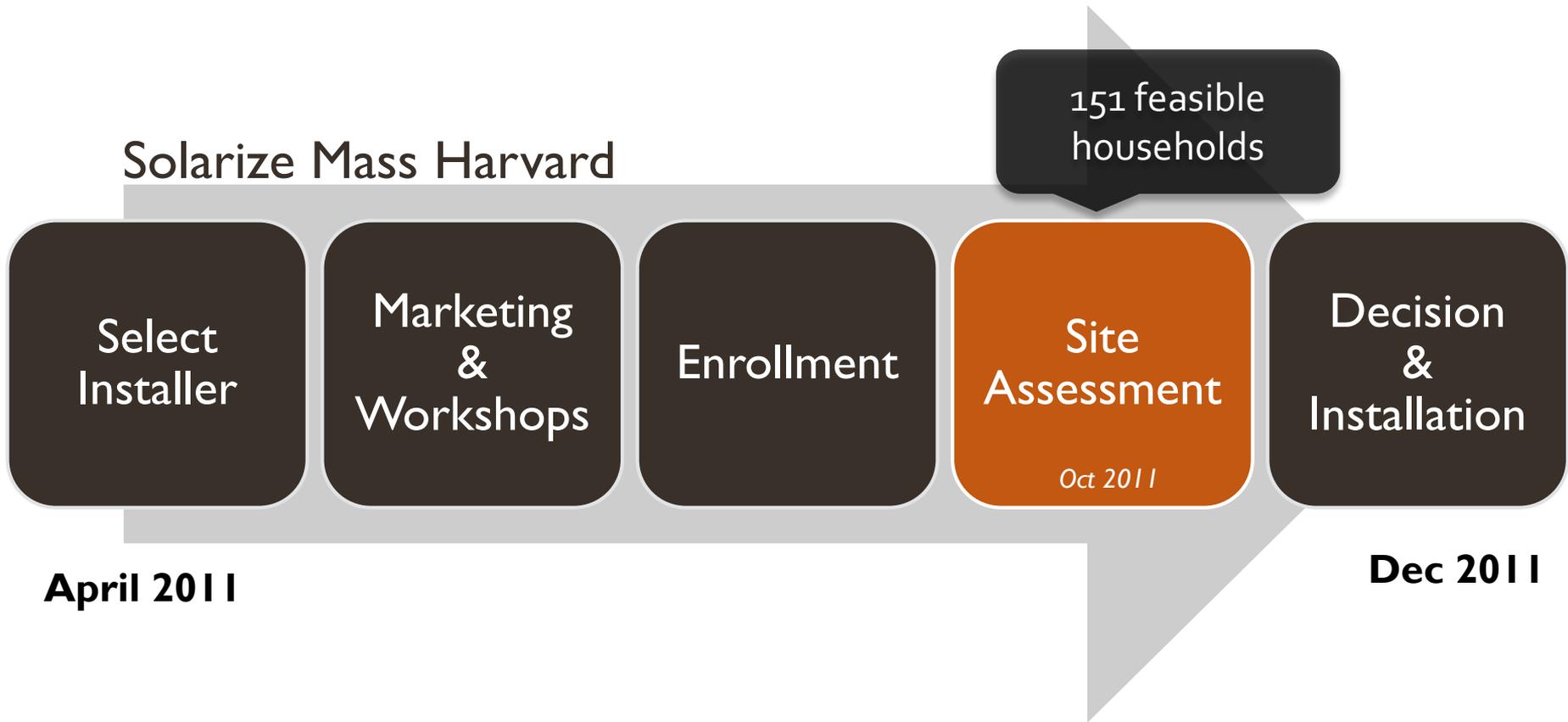
Facebook page and online discussion board

Solarize Program



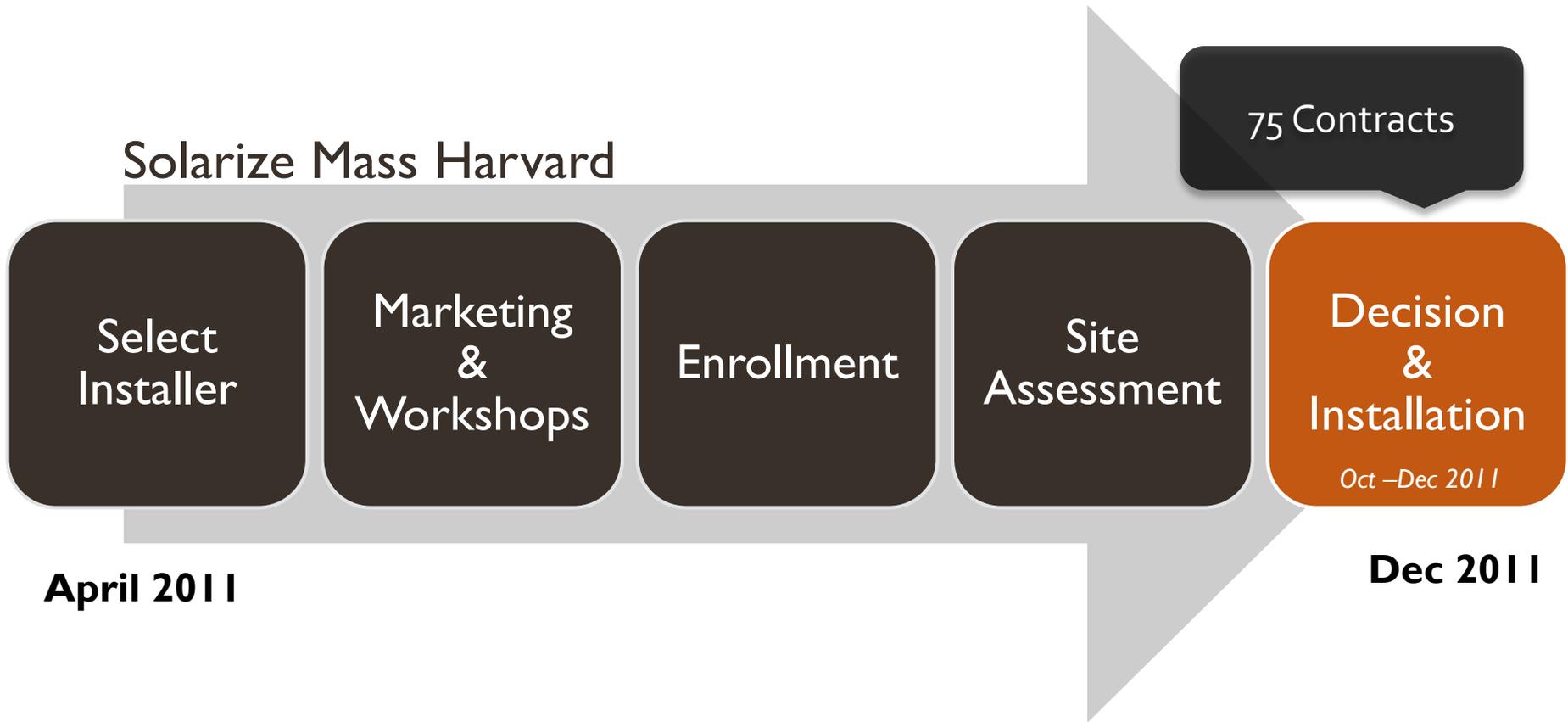
Solarize Program

Solarize Mass Harvard



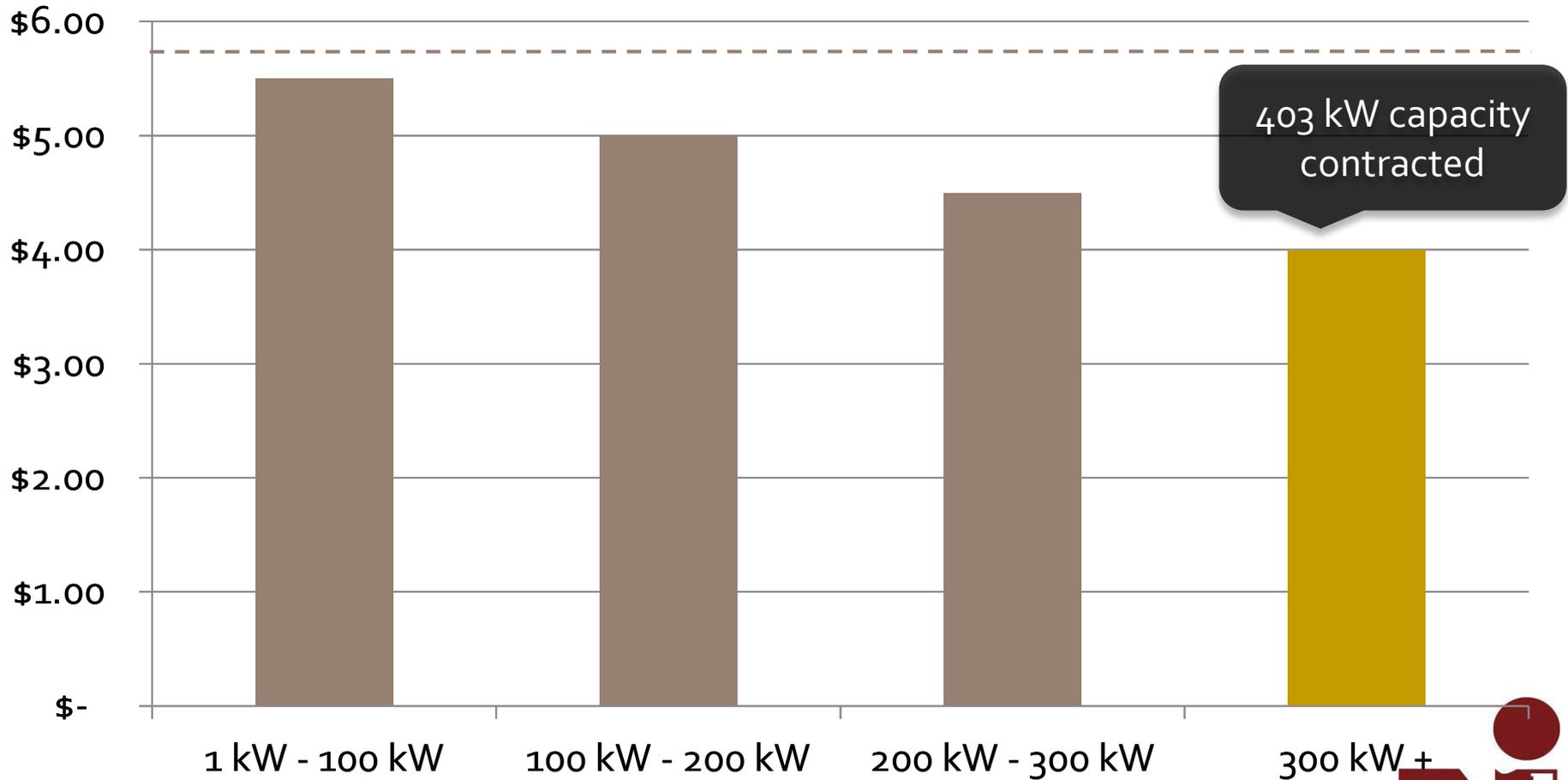
Solarize Program

Solarize Mass Harvard



Solarize Program

Harvard Mass Group Purchasing Tiers



Solarize Program

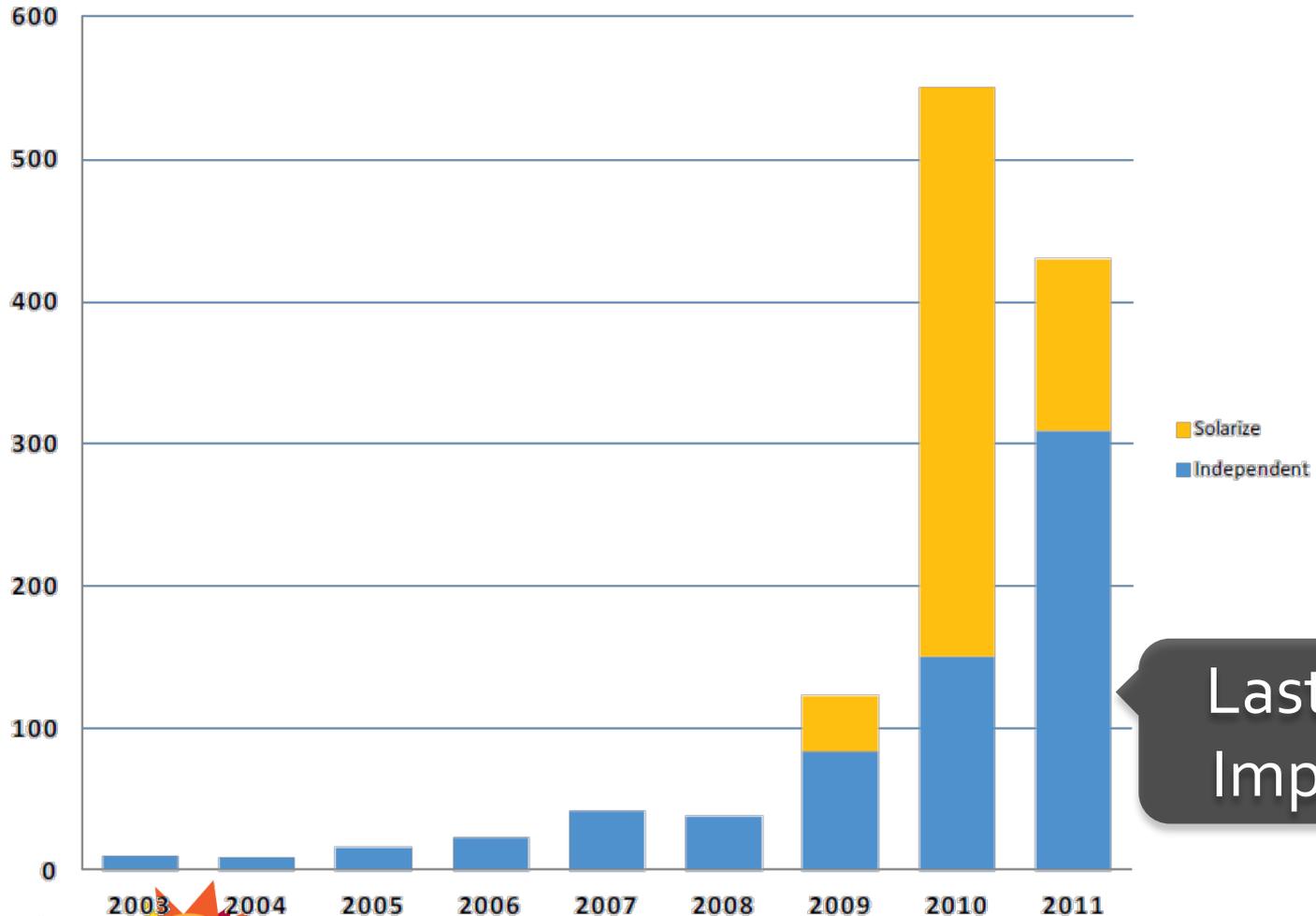
75 new installations totaling 403 kW

30% reduction in installation costs

575% increase in residential installations

Solarize Program

Annual Portland Residential PV Installations



Lasting Impact

Solarize Resources



The Solarize Guidebook

National Renewable Energy Laboratory

Resource for project planners and solar advocates who plan to organize a Solarize campaign.



Solarize Marketing Materials

Massachusetts Clean Energy Center

A suite of marketing materials available to local governments implementing a solarize program.

Discussion:

Could we pull off a Solarize?

What incentives could we offer?

When?

Engage Local Lenders

Fewer than **5%**

of the

6,500 banks in the US

are

actively financing solar PV projects



U.S. Department of Energy



Engage Local Lenders Resource



Lending for Solar PV: A Guide for Local Governments Seeking to Engage Lenders Meister Consultants Group

Assists local governments in engaging lending institutions for the purpose of providing cost effective loans for residential and small commercial solar PV installations.

Partner with Lender Solarize



+

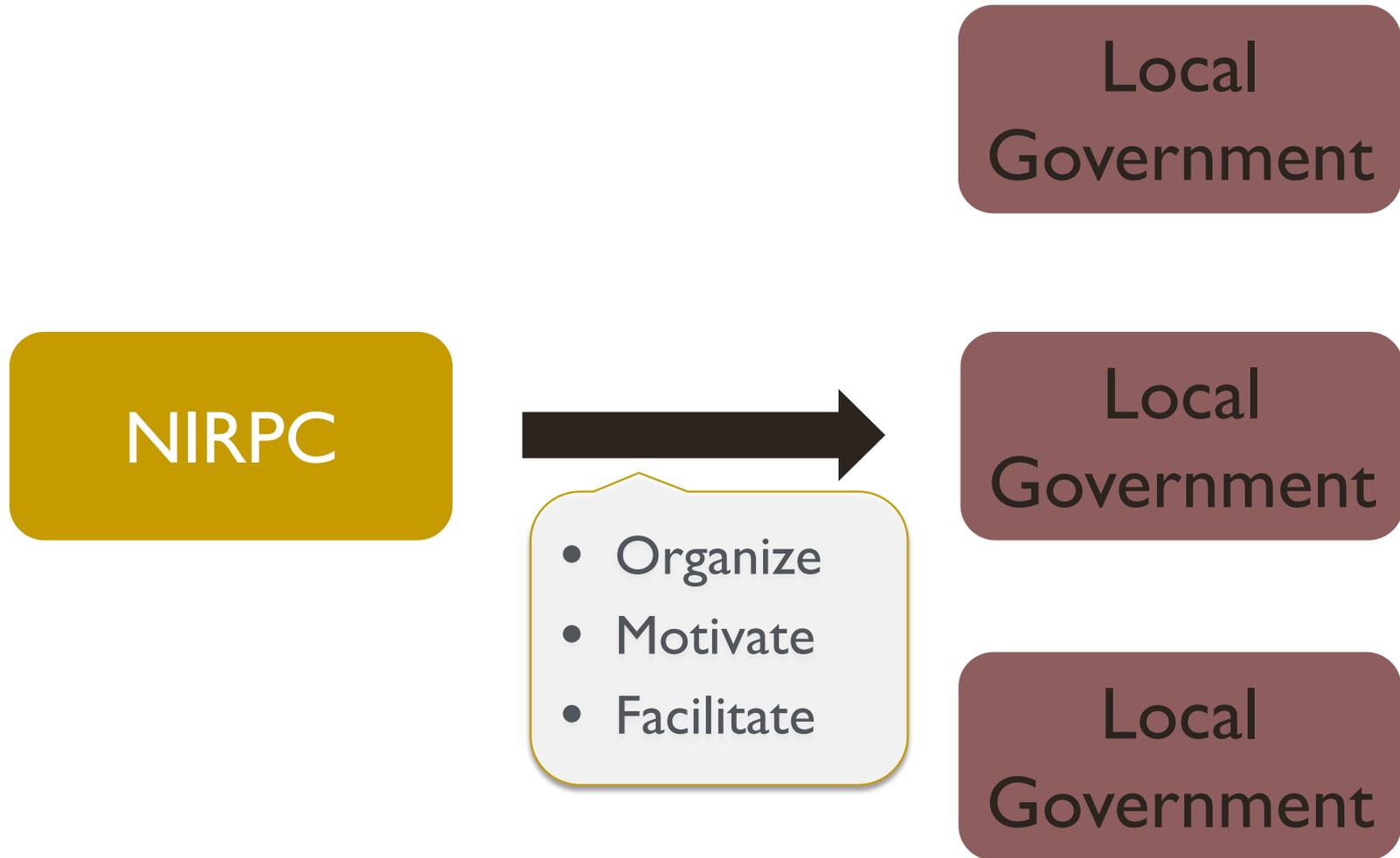


Let's Take a Break

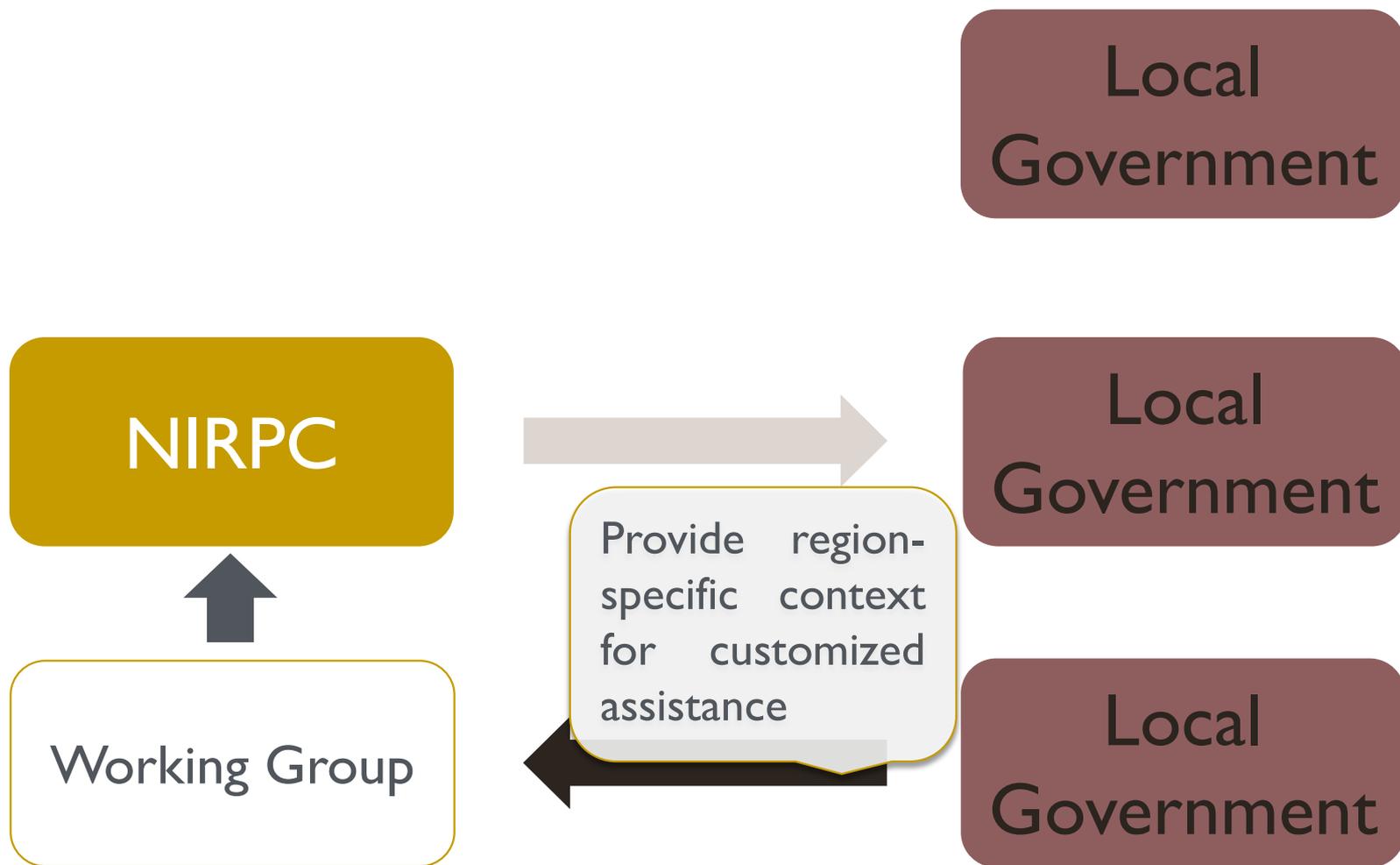
Building our Solar Road Map

	Step 1	Step 2	Step 3
Planning			
Process			
Financing & Adoption			

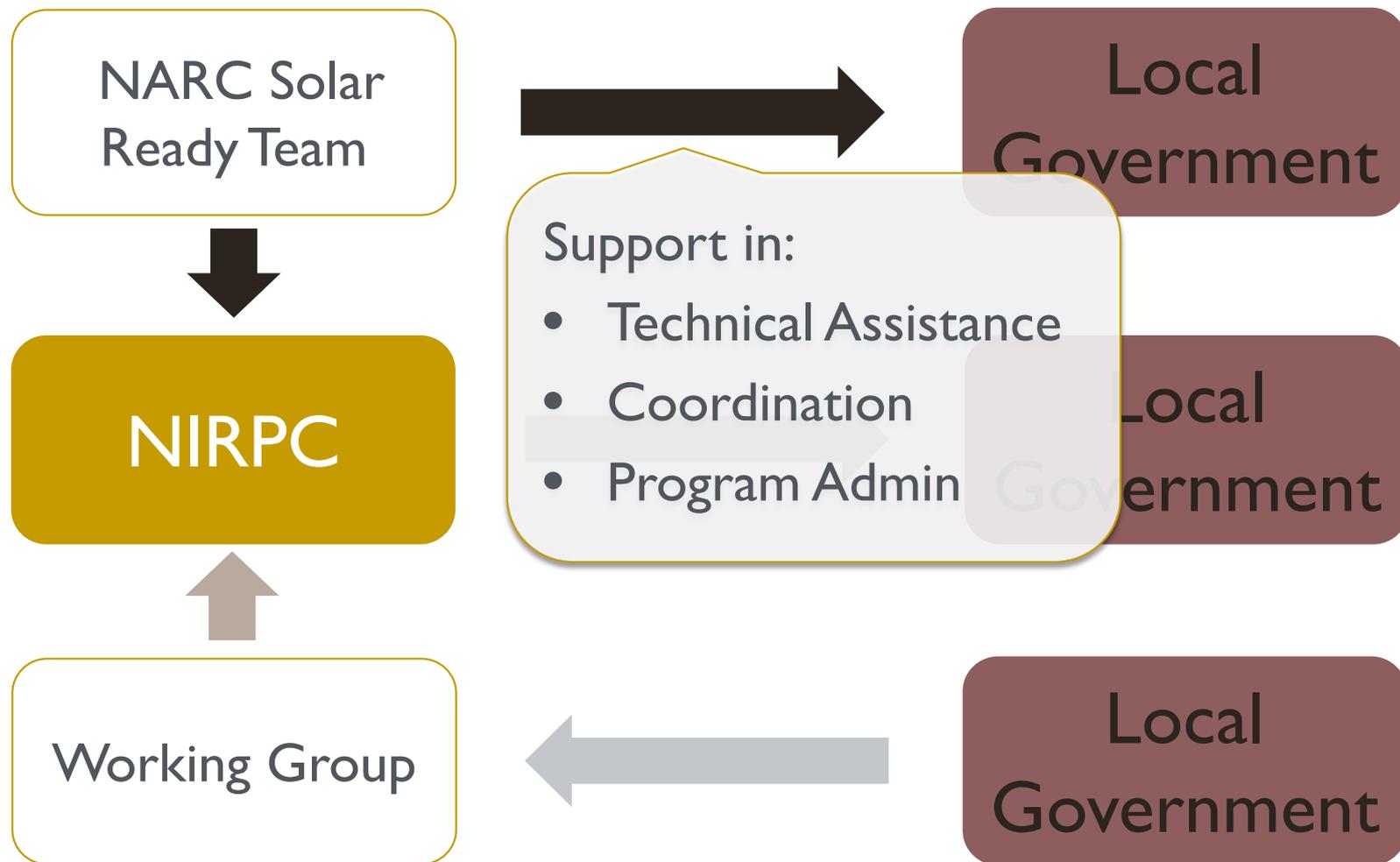
Roles and Responsibilities



Roles and Responsibilities



Roles and Responsibilities



Solar Ready: Technical Assistance



One to One
Assistance



Regional
Workshops



Training
Materials



Resource
Toolkit

Solar Ready Resources



Training
Materials

Each subtask will have an accompanying topic overview

A custom package of materials will be created for each region

Solar Ready Resources



Resource
Toolkit

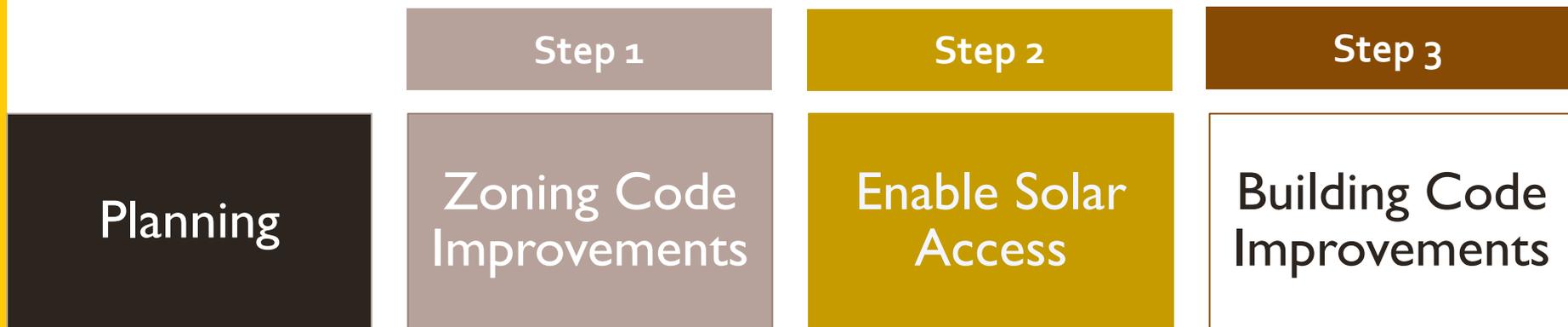
A toolkit will be developed for each topic area with the latest resources.

Key resources will be highlighted based on unique regional considerations

Building our Solar Road Map

	Step 1	Step 2	Step 3
Planning			
Process			
Financing & Adoption			

Solar Ready Roadmap Example



Steps for local jurisdictions:

- 2-1. Adopt a Solar Access Ordinance
- 2-2. Engage homeowner's associations

RPC Support:

- Model Ordinance
- Educational Materials
- Workshops

Adoption

Solar Ready Roadmap - Examples

Steps for Local Jurisdictions:

- I-1. Develop criteria for expedited process
- I-2. Create a permit checklist
- I-3. Provide a central information source

RPC Support:

- Model Criteria
- Model Checklist

Process

Permitting
Process
Improvements

Permit Fees

Prequalify
Installers

Financing &
Adoption

Steps for Local Jurisdictions:

- 2-1. Residential: fixed fees
- 2-2. Commercial: fee calculator

Solar Ready Roadmap

Steps for Local Jurisdictions:
Lenders Workshop

RPC Support:
Administration

Steps for Local Jurisdictions:

Launch a Solarize program
Partner with Lenders

RPC Support
Document preparation

Financing &
Adoption

Distribute
Cost Survey
to Installers

Engage Local
Lenders

Enact a
Solarize
Program

Training workshops

- ☀ Meister available week of July 7th.
- ☀ Topics?
- ☀ Next Meeting