2017 NEW JERSEY SUSTAINABILITY SUMMIT

Welcome to
Shining the Light on Solar

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Speakers

Adam Beam
Research Analyst
Office of Energy and Climate Change Initiatives
Delaware Valley Regional Planning Commission

Liz Compitello, AICP
Senior Research Analyst
Delaware Valley Regional Planning Commission

Steven Neale
Department of Community Services
Township of Verona

SolSmart

Adam Beam
Delaware Valley Regional Planning Commission

June 21, 2017

SolSmart Overview

- SolSmart was funded by U.S. DOE SunShot with the goal of designating at least 300 municipalities as “open for solar business” by the end of October 2018.

- SolSmart will provide targeted technical assistance in critical **soft cost reduction areas** towards achieving SolSmart designation.

SolSmart Advisors

- Communities and regions can apply to host "SolSmart Advisors"
- Advisors will work one-on-one with communities to provide technical assistance towards achieving designation
- SolSmart Advisors will assist communities through **engagements lasting up to six months**.

DVRPC is the SolSmart Advisor for these eight communities in PA:

1. City of Philadelphia (Already Gold)
2. Chester City (Delaware County)
3. Edgmont Township (Delaware County)
4. Media Borough (Delaware County)
5. Cheltenham Township (Montgomery County)
6. Lower Merion Township (Montgomery County)
7. Pottstown Borough (Montgomery County)
8. Upper Merion Township (Montgomery County)

SolSmart Program Structure

SolSmart Program

TA Delivery

The SOLAR FOUNDATION™

NREL NATIONAL RENEWABLE ENERGY LABORATORY

MEISTER CONSULTANTS GROUP

RAP®

EPRI ELECTRIC POWER RESEARCH INSTITUTE

BROOKS ENGINEERING

Designation Program Expertise

ICMA Leaders at the Core of Better Communities

All-America City

Home Innovation RESEARCH LABS™

TA Pipeline

NACo National Association of Counties

NLC NATIONAL LEAGUE OF CITIES CITIES STRONG TOGETHER

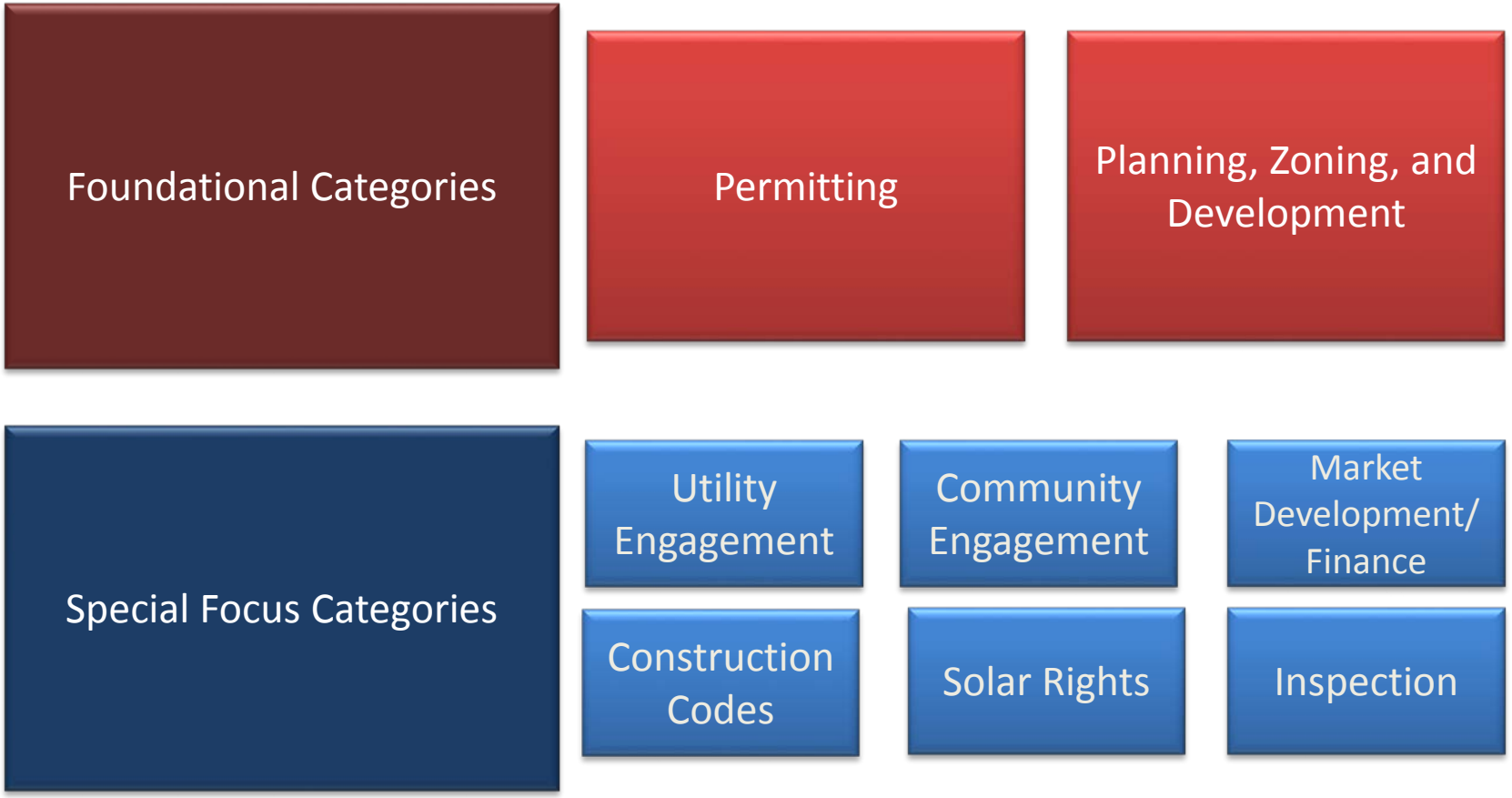
SEIA Solar Energy Industries Association®

Solar Outreach Experience

MEISTER CONSULTANTS GROUP

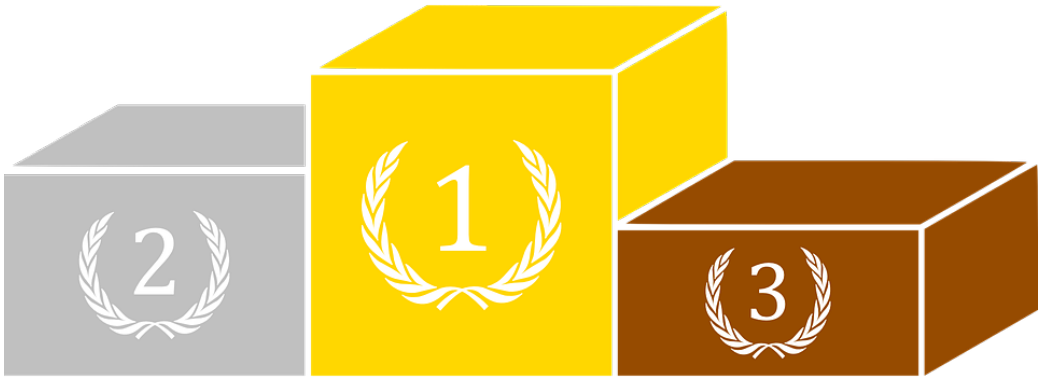
The SOLAR FOUNDATION™

SolSmart Designation Criteria



Designation Program

3 tiers to recognize progress



Ongoing competitions and awards to recognize outstanding achievement in special categories

Bronze Designation

- *Commitment Letter and public statement*
- Review zoning barriers, commit to reducing.
- Review Permitting Process, Create Checklist, Post Online
- Earn 20 Pts in Permitting
- Earn 20 Pts in Planning, Zoning, Development
- Earn 20 pts total in Special Focus

Silver Designation

- **Allow solar by-right** and as accessory use in all major zones
- Provide PV Cross Training to permitting and inspection Staff
- Achieve 100 total points

First earn Bronze, then…

Gold Designation

- **Achieve three-day turnaround**
- **Achieve 200 points total**

First earn Silver, then…

SolSmart Targets Reducing Soft Costs

1. Soft costs = non-hardware costs (permitting, inspection, financing, etc.)
2. Soft costs can account for over a third of total system cost
3. Municipalities can help lower soft costs by improving regulatory processes, encouraging solar in their communities, and educating residents and businesses on solar opportunities.
4. High soft costs can discourage local solar market growth
   - More than 1 in 3 installers **avoid selling solar in an average of 3.5 areas** because of associated permitting difficulties.

Sources: LBNL, IREC

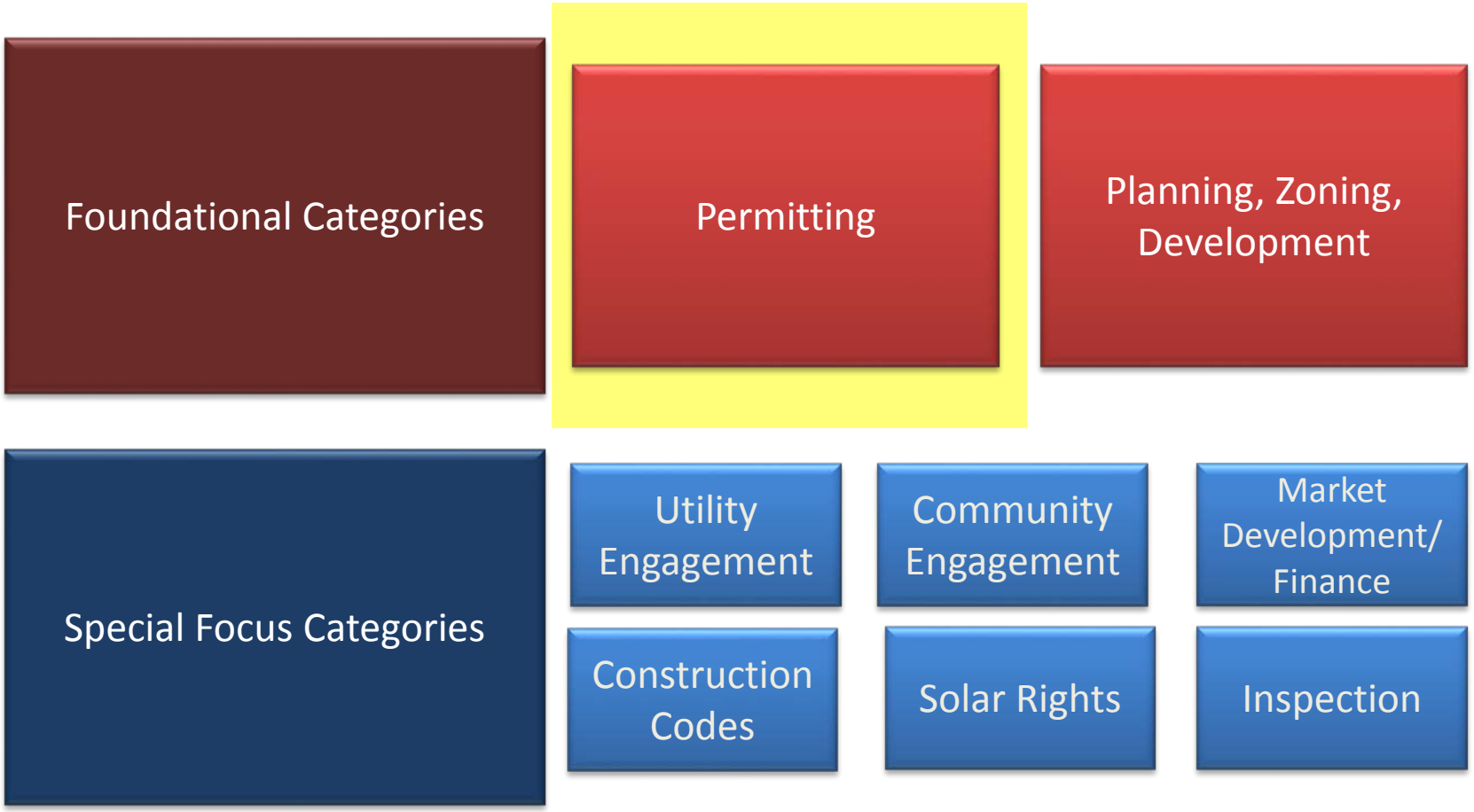
Prerequisite Actions

Solar Statement: A letter stating your community's commitment to the SolSmart designation process

P-1: Create and make available an online checklist detailing the steps of your community's solar permitting process.

PZD-1: Local government has reviewed zoning requirements and removed restrictions intentionally or unintentionally prohibiting PV development. Compile findings in a memo, and commit to reducing barriers to PV during next zoning review.

SolSmart Designation Criteria

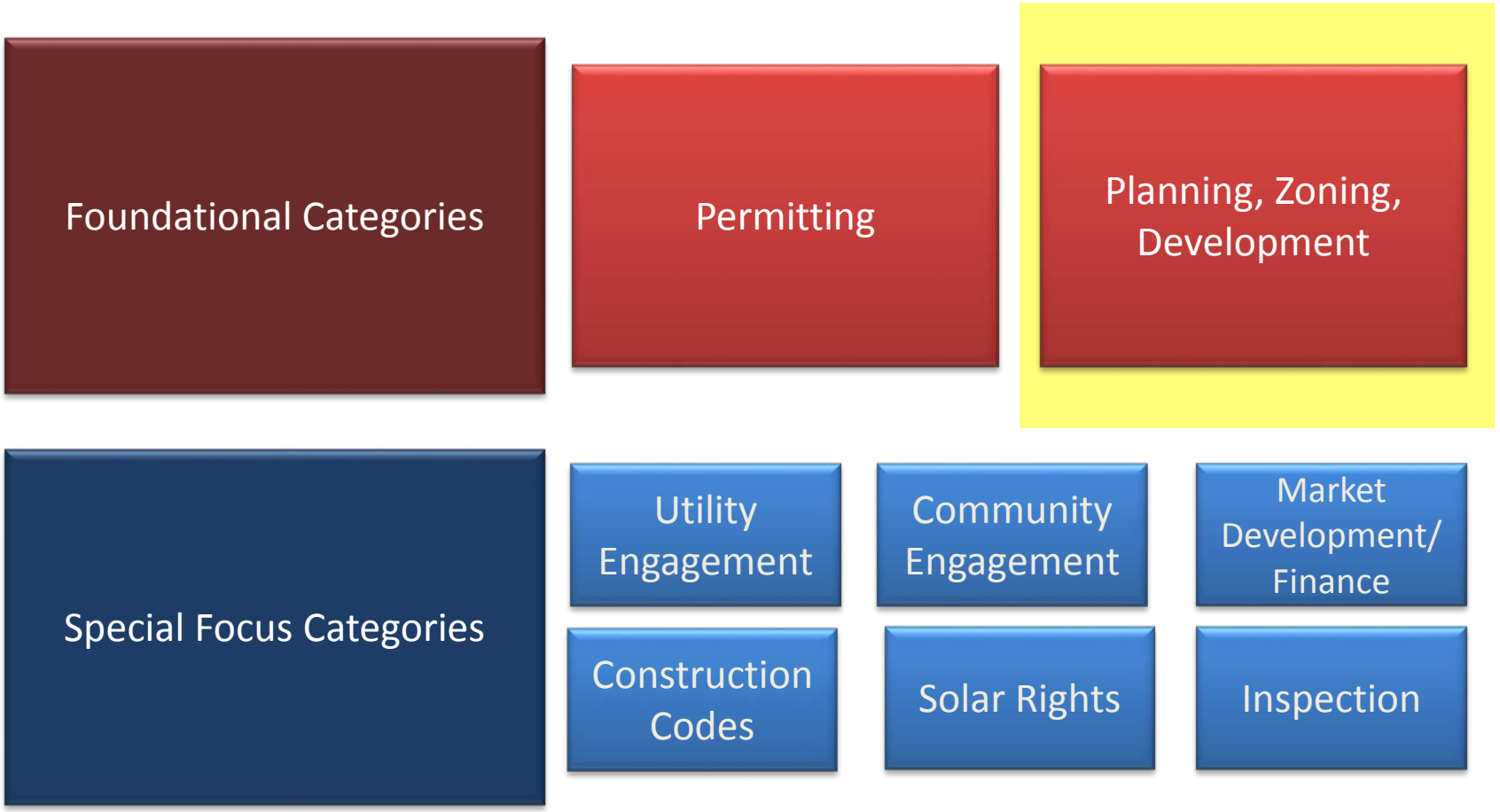


Foundational Category: Permitting

Summary of Best Practices

- Make the permitting process as transparent, simple, and efficient as possible
  - Checklist
  - One application form
  - Standard solar PV permit
  - Post requirements and application online
- Reduce permitting costs
  - Align with national best practices ($400 or less for residential and based on cost-recovery for commercial)
- Make sure all permitting and first responders are trained on solar PV
- Opening up permit data to other departments
  - Especially important for fire and safety as it's helpful for them to know if solar panels will be at an emergency site.

SolSmart Designation Criteria

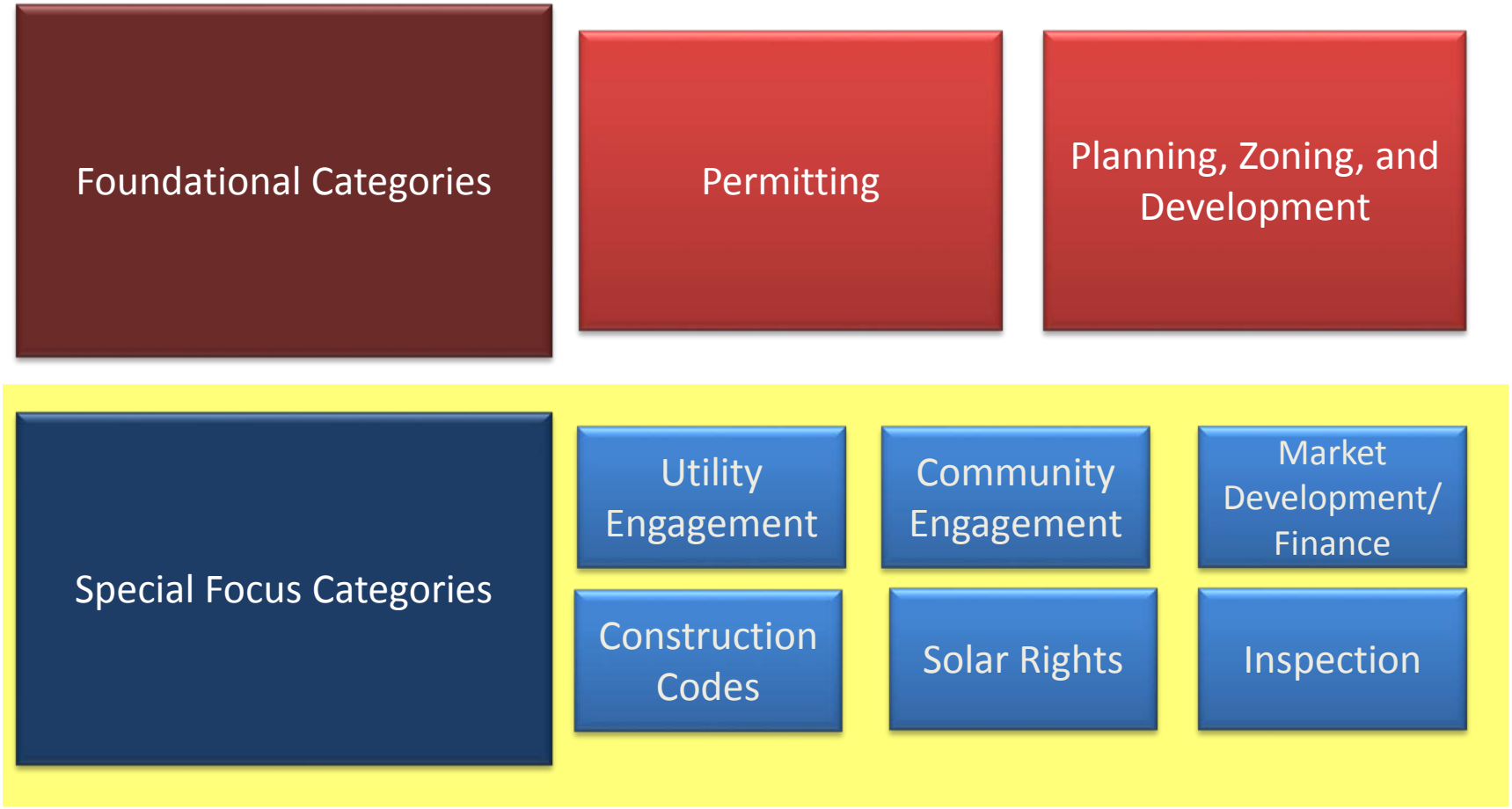


Foundational Category: Planning, Zoning, and Development

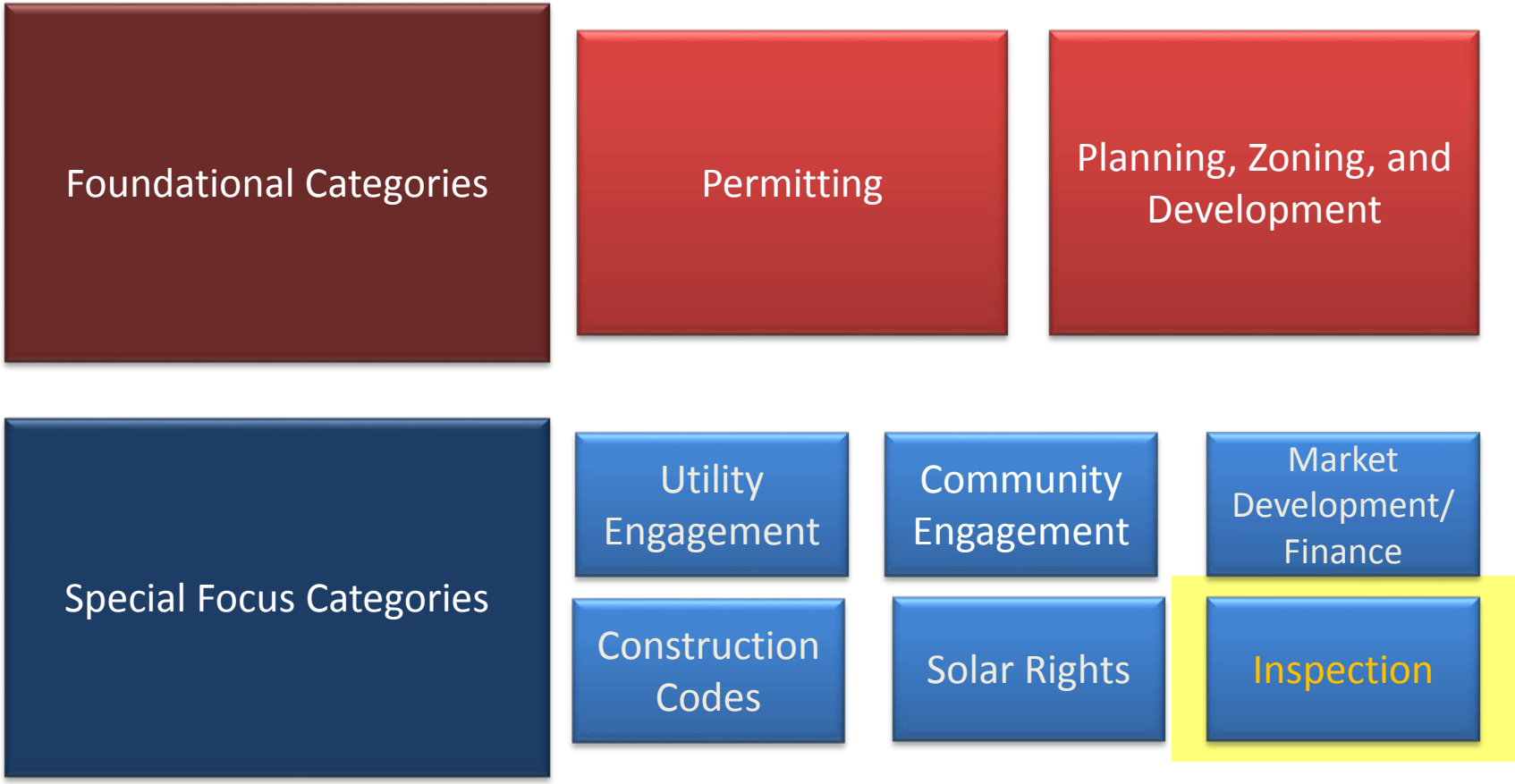
Summary of Best Practices

- Reduce unnecessary restrictions on solar PV in the zoning code and other ordinances
  - This includes making it clear and transparent
  - ***By right***, sensible setbacks, exempt from height restrictions, exempt from impervious cover
- Find ways to incentivize solar PV adoption
  - Density bonuses
- Include solar PV goals in community plans

SolSmart Designation Criteria



SolSmart Designation Criteria

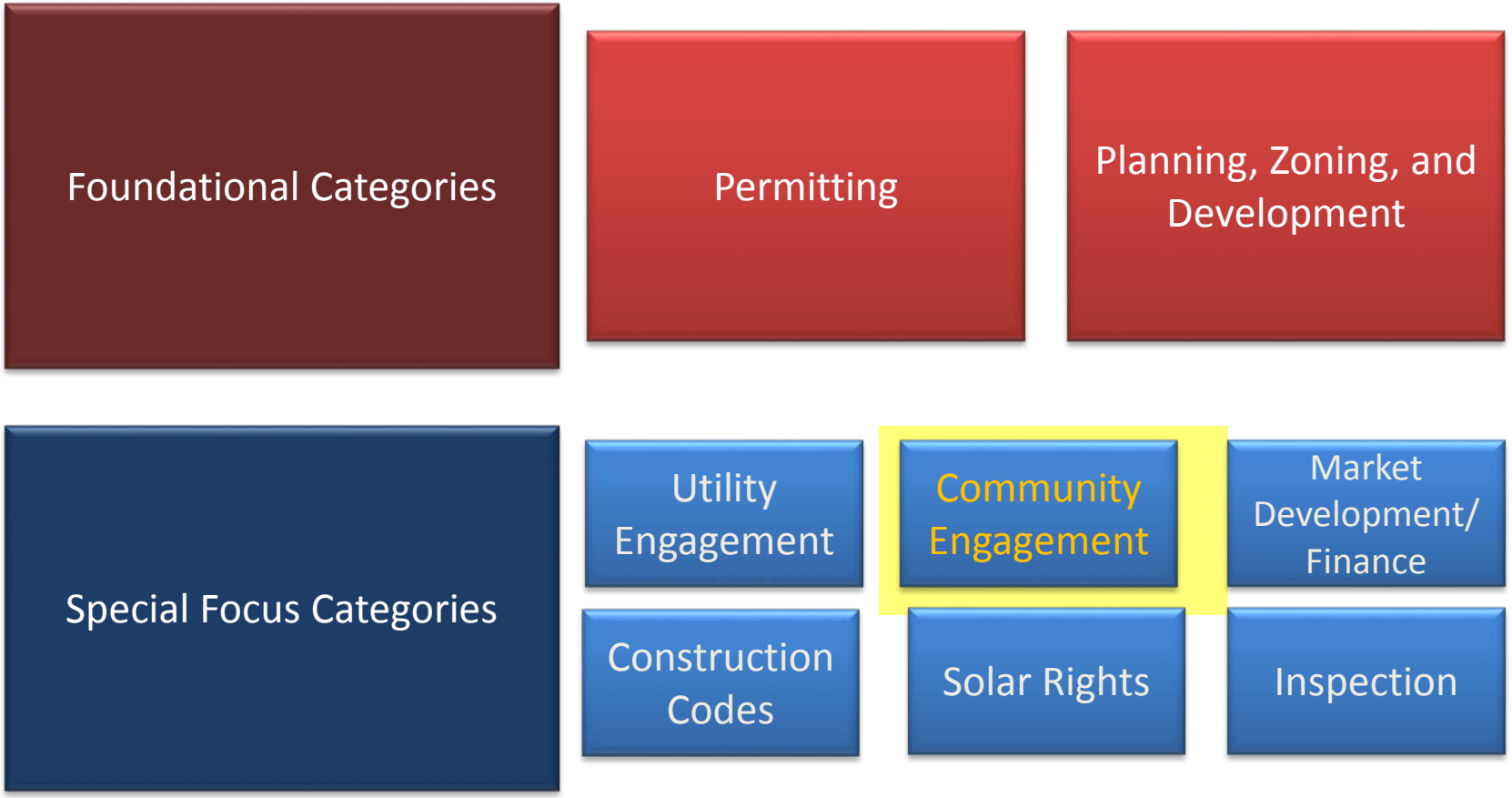


Inspection

Summary of Best Practices

- Providing a quick turn around for inspection requests and appointments
  - Less than 10 days
  - Offering appointment times instead of windows
- Training inspection staff on best practices for solar PV

SolSmart Designation Criteria



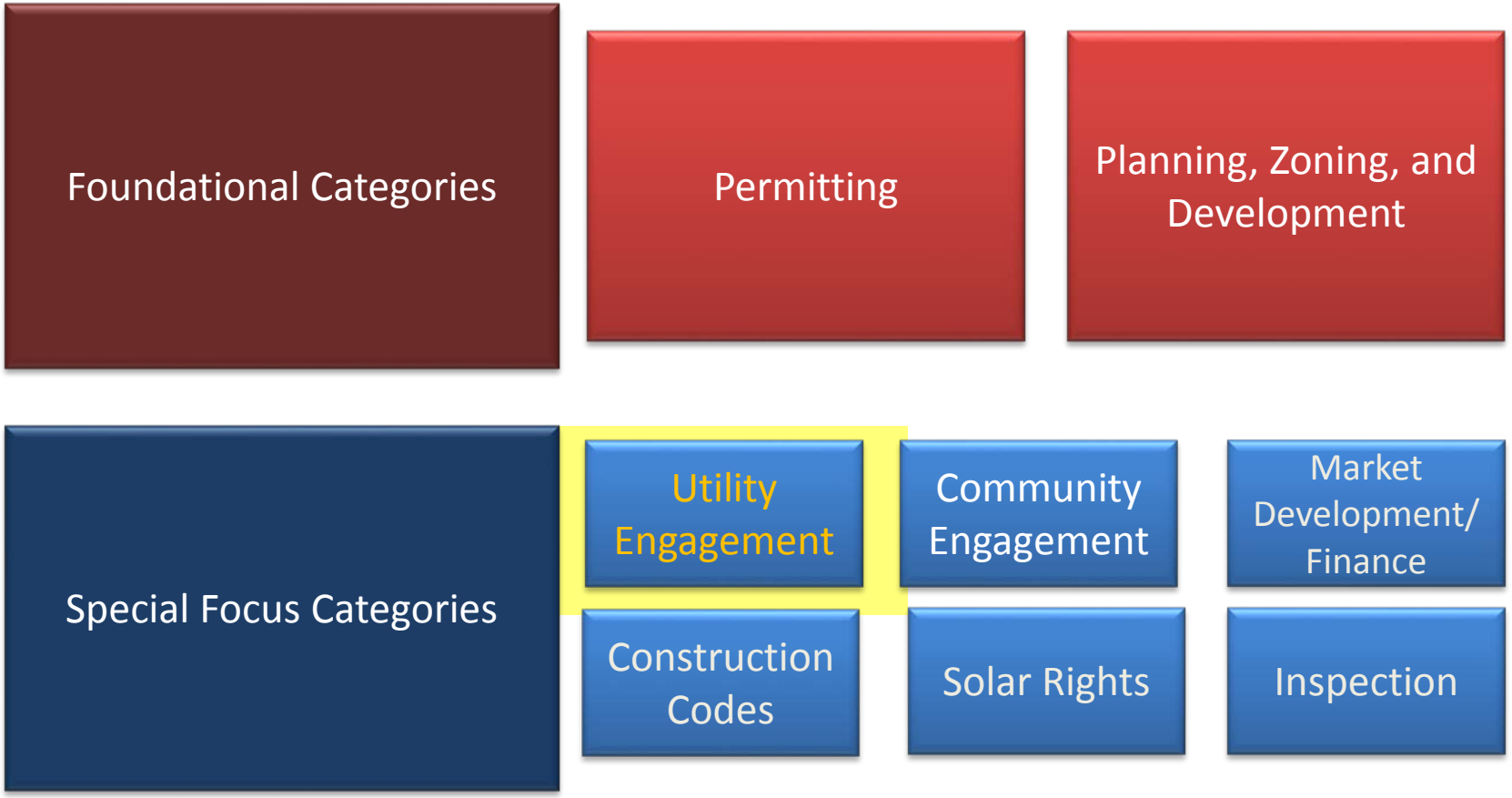
Community Engagement

Summary of Best practices

Engaging, educating, and empowering residents on solar.

- Involvement and awareness of regional conversations, state-level policy
- Support or encouraging existing community-driven or stakeholder-driven engagement in solar.
  - Supporting local **Solarize** efforts

SolSmart Designation Criteria

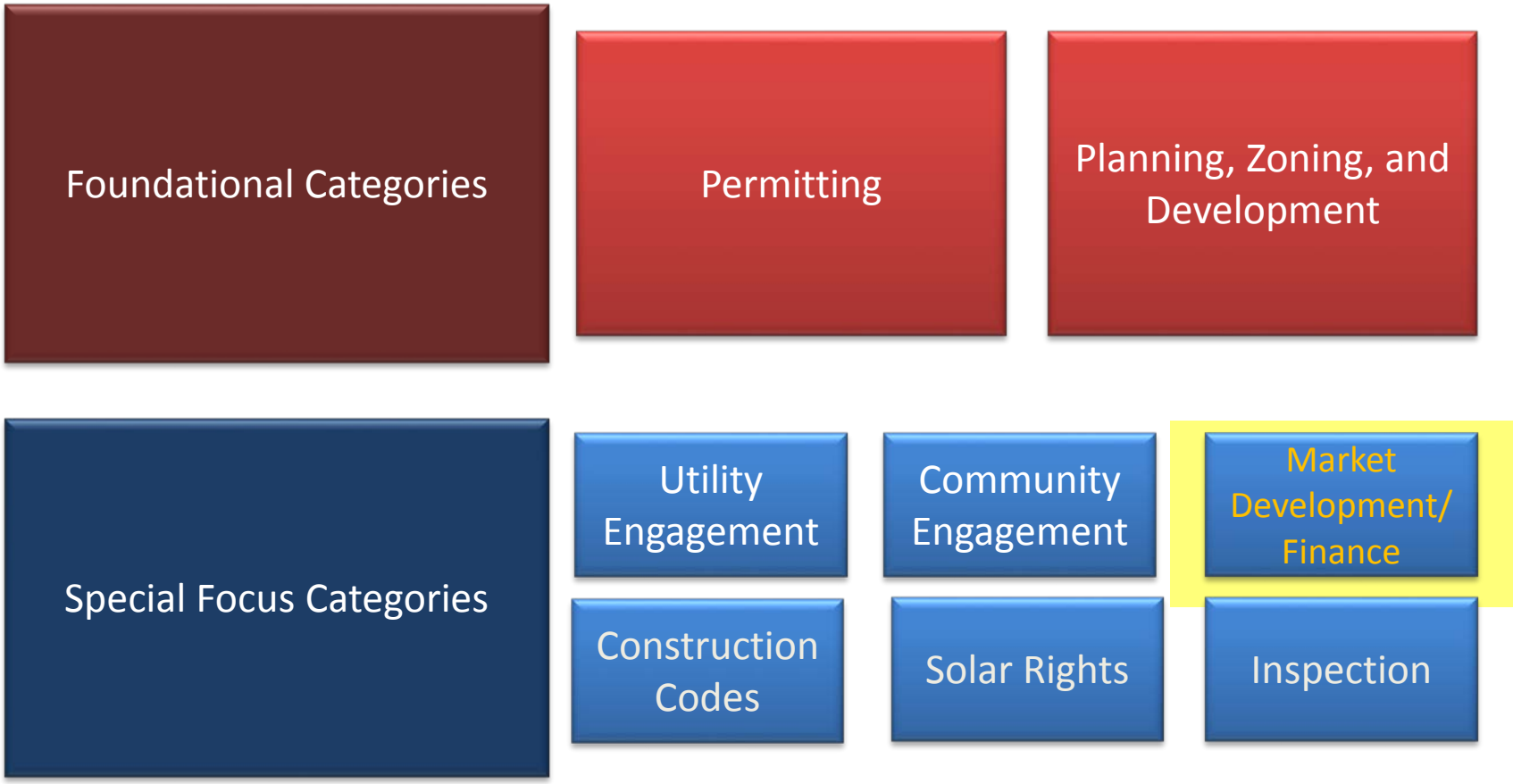


Utility Engagement

Summary of Best Practices

- Understanding challenges and value proposition to solar for utilities
- Engaging utilities on improving processes and opportunities for solar
  - In our region, we engaged with PECO:
    - Interconnection Roundtable
    - Whitepaper on Interconnection
    - PECO Solar Collaborative

SolSmart Designation Criteria



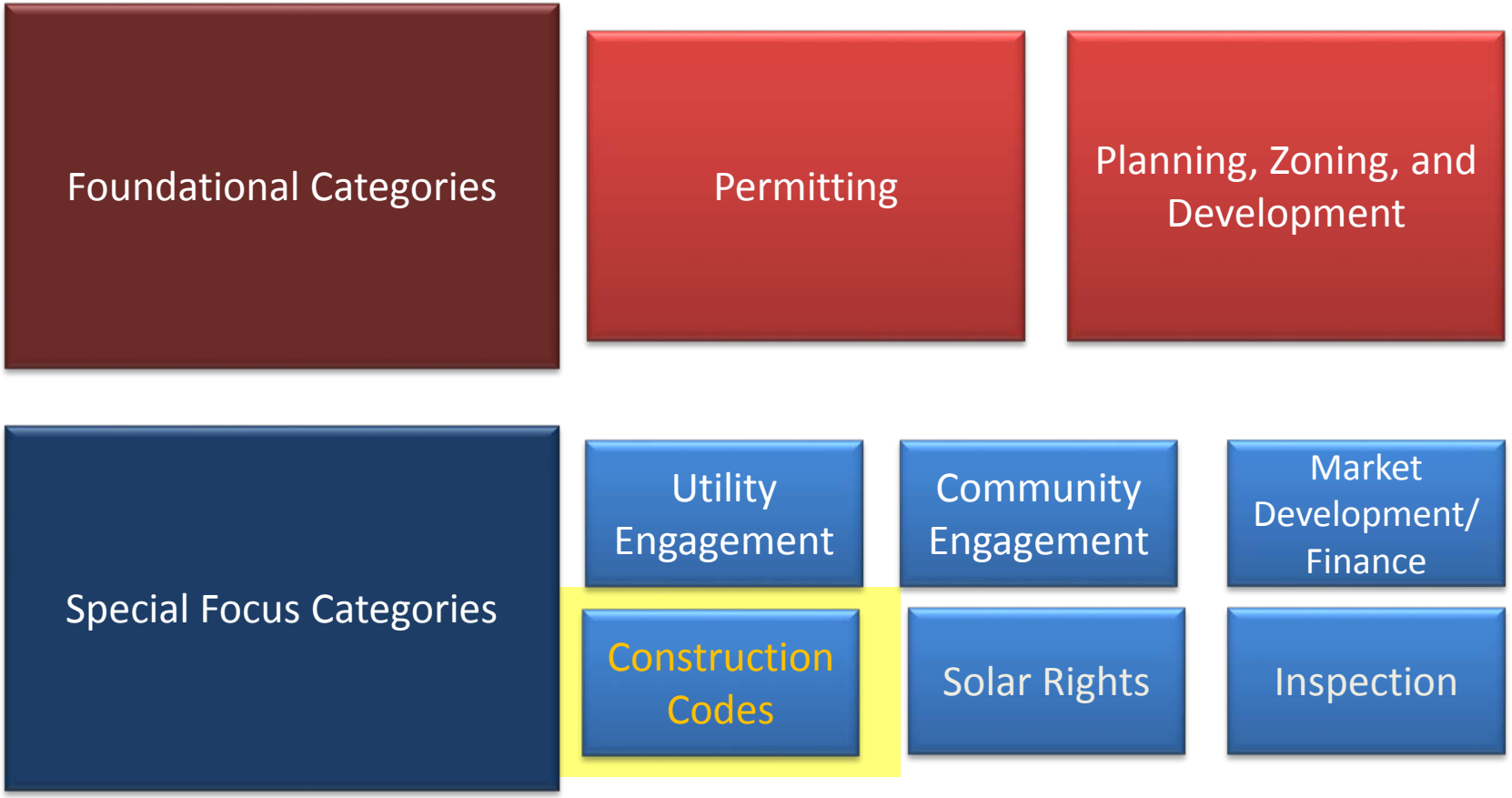
Market Development and Finance

Summary and Best practices

- Various financing options available – but need to be understood, some need to be developed.

- Enact PACE in your municipality
- Facilitate conversations with local lenders to provide solar financing options
- Market Development: Promote solar
  - Make metrics transparent, show growth
  - Lead by example: Conduct feasibility/install solar on facilities

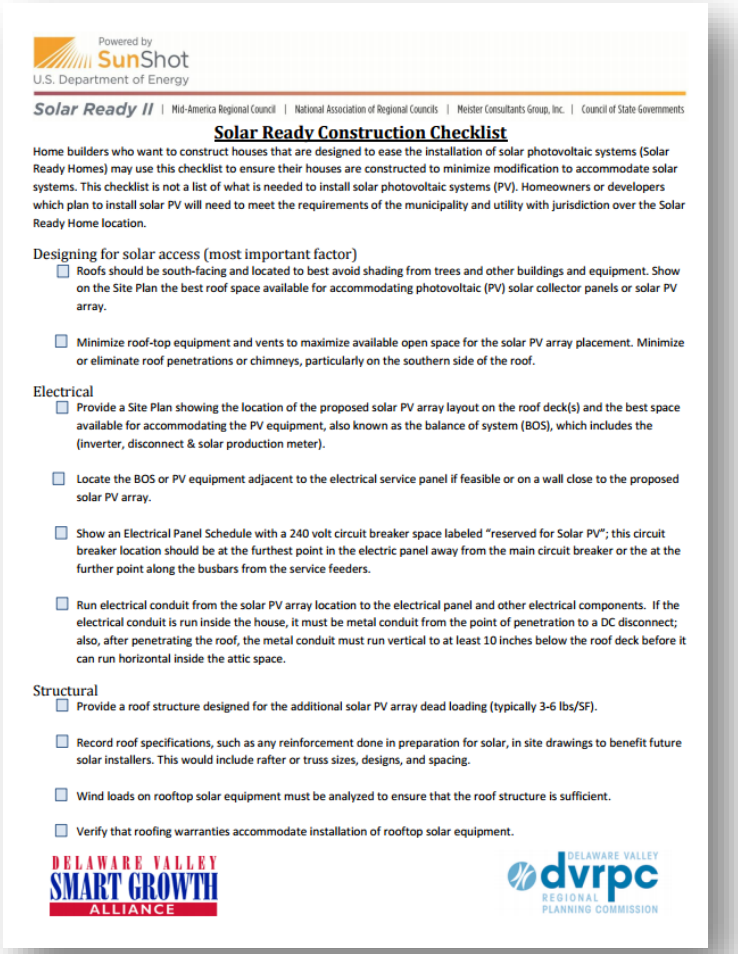
SolSmart Designation Criteria



Construction Codes

Resources and example

- Solar Ready New Construction Checklist



Powered by SunShot
U.S. Department of Energy

Solar Ready II | Mid-America Regional Council | National Association of Regional Councils | Meister Consultants Group, Inc. | Council of State Governments

Solar Ready Construction Checklist

Home builders who want to construct houses that are designed to ease the installation of solar photovoltaic systems (Solar Ready Homes) may use this checklist to ensure their houses are constructed to minimize modification to accommodate solar systems. This checklist is not a list of what is needed to install solar photovoltaic systems (PV). Homeowners or developers which plan to install solar PV will need to meet the requirements of the municipality and utility with jurisdiction over the Solar Ready Home location.

Designing for solar access (most important factor)

- ☐ Roofs should be south-facing and located to best avoid shading from trees and other buildings and equipment. Show on the Site Plan the best roof space available for accommodating photovoltaic (PV) solar collector panels or solar PV array.
- ☐ Minimize roof-top equipment and vents to maximize available open space for the solar PV array placement. Minimize or eliminate roof penetrations or chimneys, particularly on the southern side of the roof.

Electrical

- ☐ Provide a Site Plan showing the location of the proposed solar PV array layout on the roof deck(s) and the best space available for accommodating the PV equipment, also known as the balance of system (BOS), which includes the (inverter, disconnect & solar production meter).
- ☐ Locate the BOS or PV equipment adjacent to the electrical service panel if feasible or on a wall close to the proposed solar PV array.
- ☐ Show an Electrical Panel Schedule with a 240 volt circuit breaker space labeled "reserved for Solar PV"; this circuit breaker location should be at the furthest point in the electric panel away from the main circuit breaker or the at the further point along the busbars from the service feeders.
- ☐ Run electrical conduit from the solar PV array location to the electrical panel and other electrical components. If the electrical conduit is run inside the house, it must be metal conduit from the point of penetration to a DC disconnect; also, after penetrating the roof, the metal conduit must run vertical to at least 10 inches below the roof deck before it can run horizontal inside the attic space.

Structural

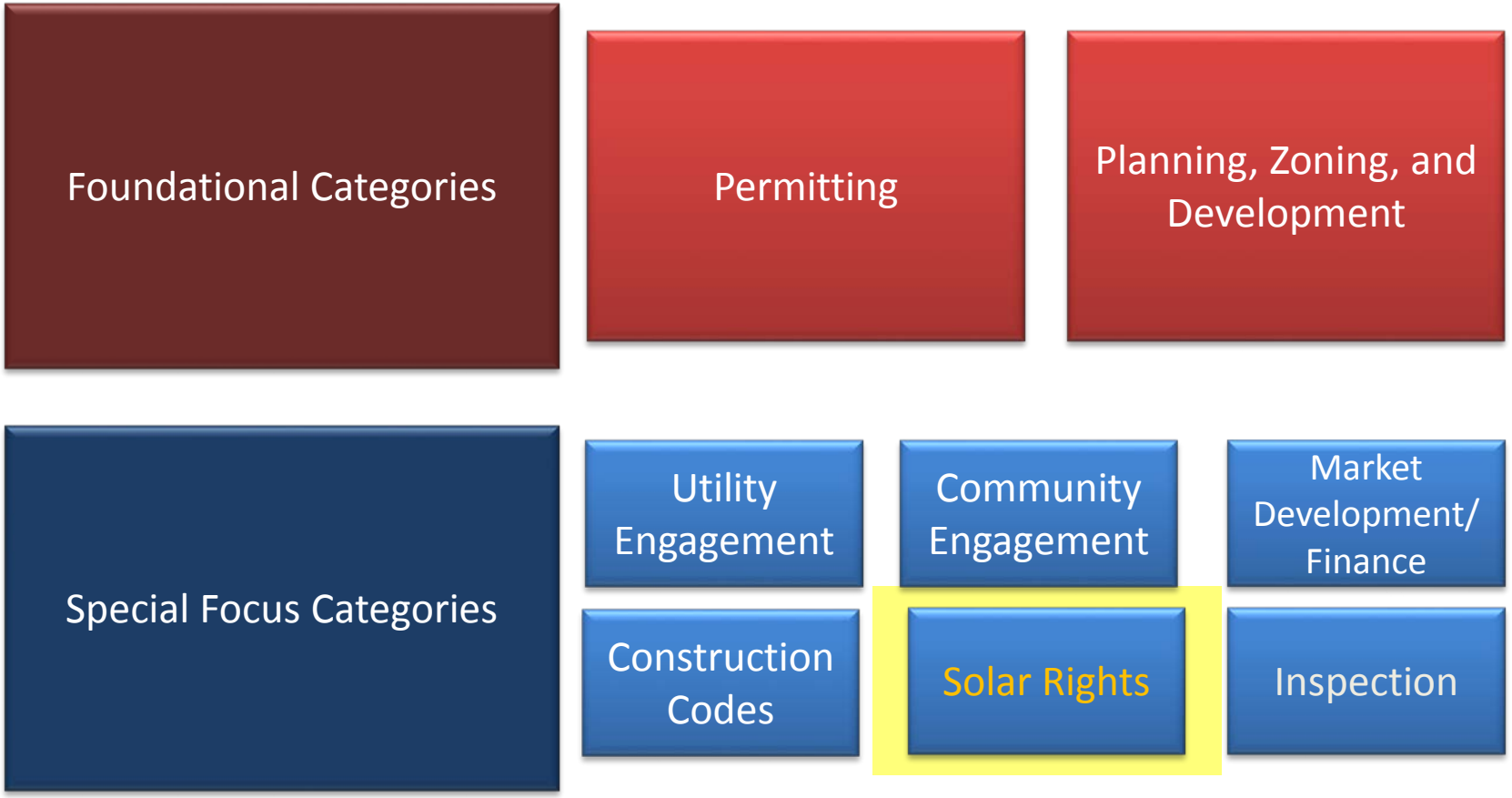
- ☐ Provide a roof structure designed for the additional solar PV array dead loading (typically 3-6 lbs/SF).
- ☐ Record roof specifications, such as any reinforcement done in preparation for solar, in site drawings to benefit future solar installers. This would include rafter or truss sizes, designs, and spacing.
- ☐ Wind loads on rooftop solar equipment must be analyzed to ensure that the roof structure is sufficient.
- ☐ Verify that roofing warranties accommodate installation of rooftop solar equipment.

DELAWARE VALLEY SMART GROWTH ALLIANCE

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

http://www.delawarevalleysmartgrowth.org/wp-content/uploads/2015/11/SolarReadyConstructionChecklist.pdf

SolSmart Designation Criteria



Solar Rights

Summary of Best Practices

- Make information on state policies available to residents
- Develop local ordinances to protect solar access
  - N.J.S.A. 45:22A-48.2. The “Solar Rights Law” prevents homeowner associations from prohibiting solar collectors.
- Offer procedure for recording solar easements for property owners
  - N.J.S.A. 46:3-24-26. The “Solar Easement Act” explicitly allows for voluntary creation of easements for access to direct sunlight.

Thank you!

Adam Beam
Research Analyst
DVRPC
(215)238-2897
abeam@dvrpc.org

Solarize

solarize portland

SOLARIZE MASS

solarize washington
a program of northwest seed

Solarize CONNECTICUT

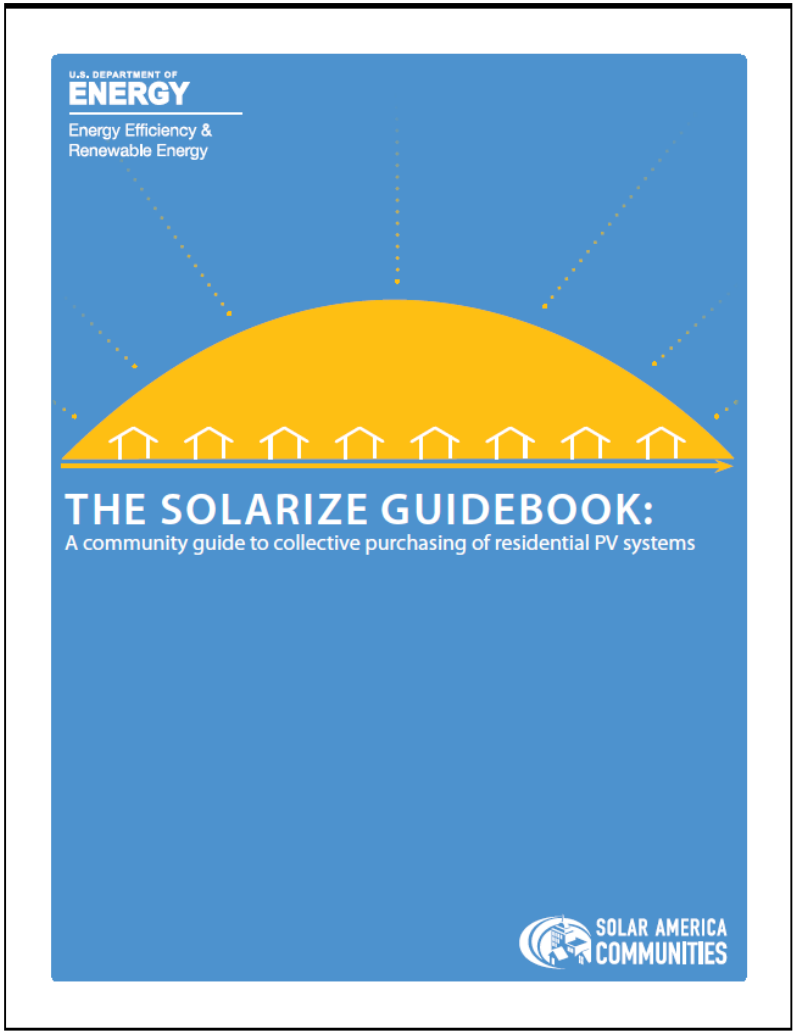
solarize pendleton oregon

SOLARIZE BROOKLYN

SOLAR TOMPKINS

solarize ASHEVILLE

SOLARIZE SYRACUSE



www1.eere.energy.gov/solar/pdfs/54738.pdf

Solarize

Barriers

High upfront cost ➡

Complexity ➡

Customer inertia ➡

Solarize

Barriers		Solutions
High upfront cost	→	Group purchase, volume discount
Complexity	→	Installer selection, community outreach
Customer inertia	→	Limited-time offer

Solarize

Barriers

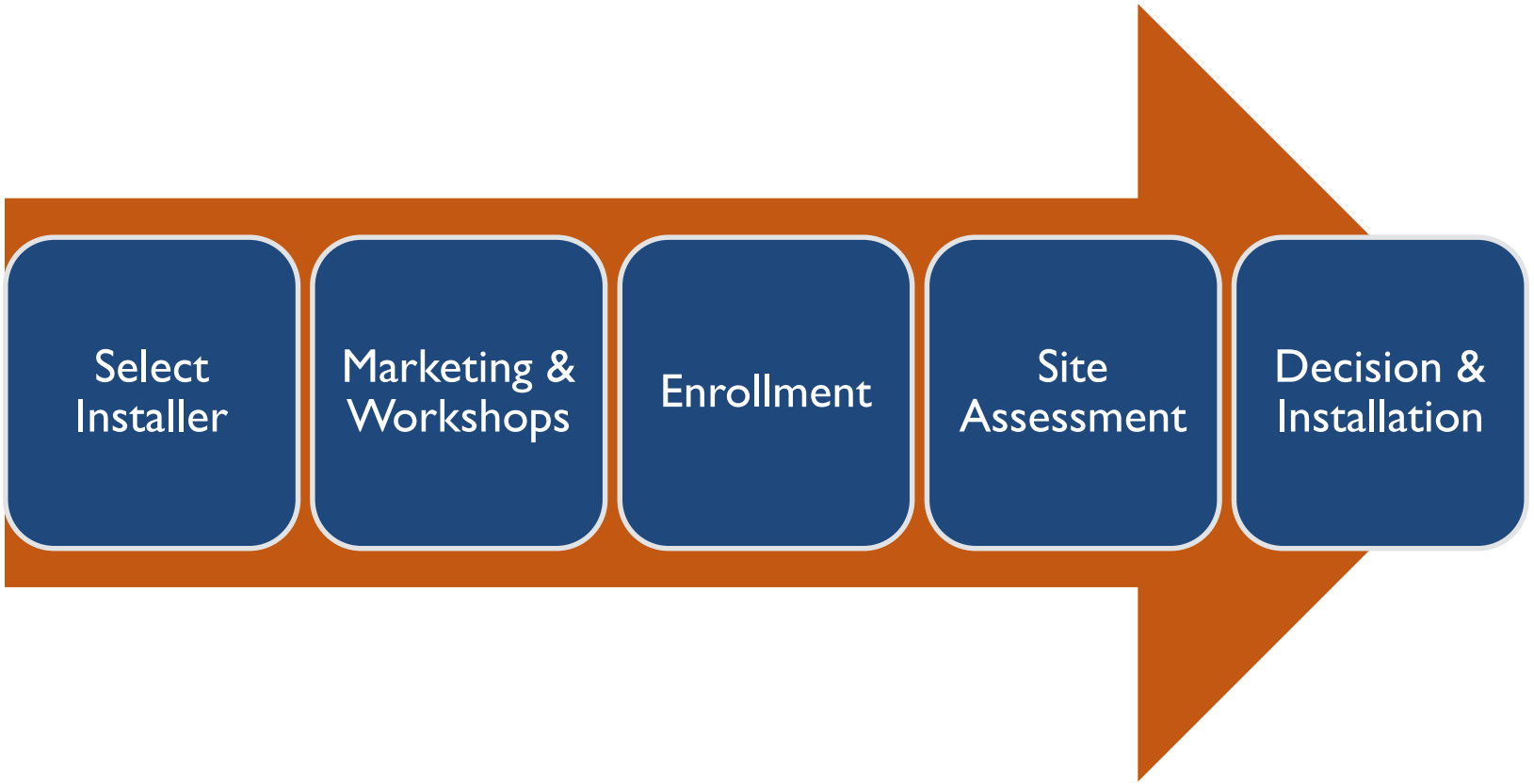
High upfront cost

Complexity

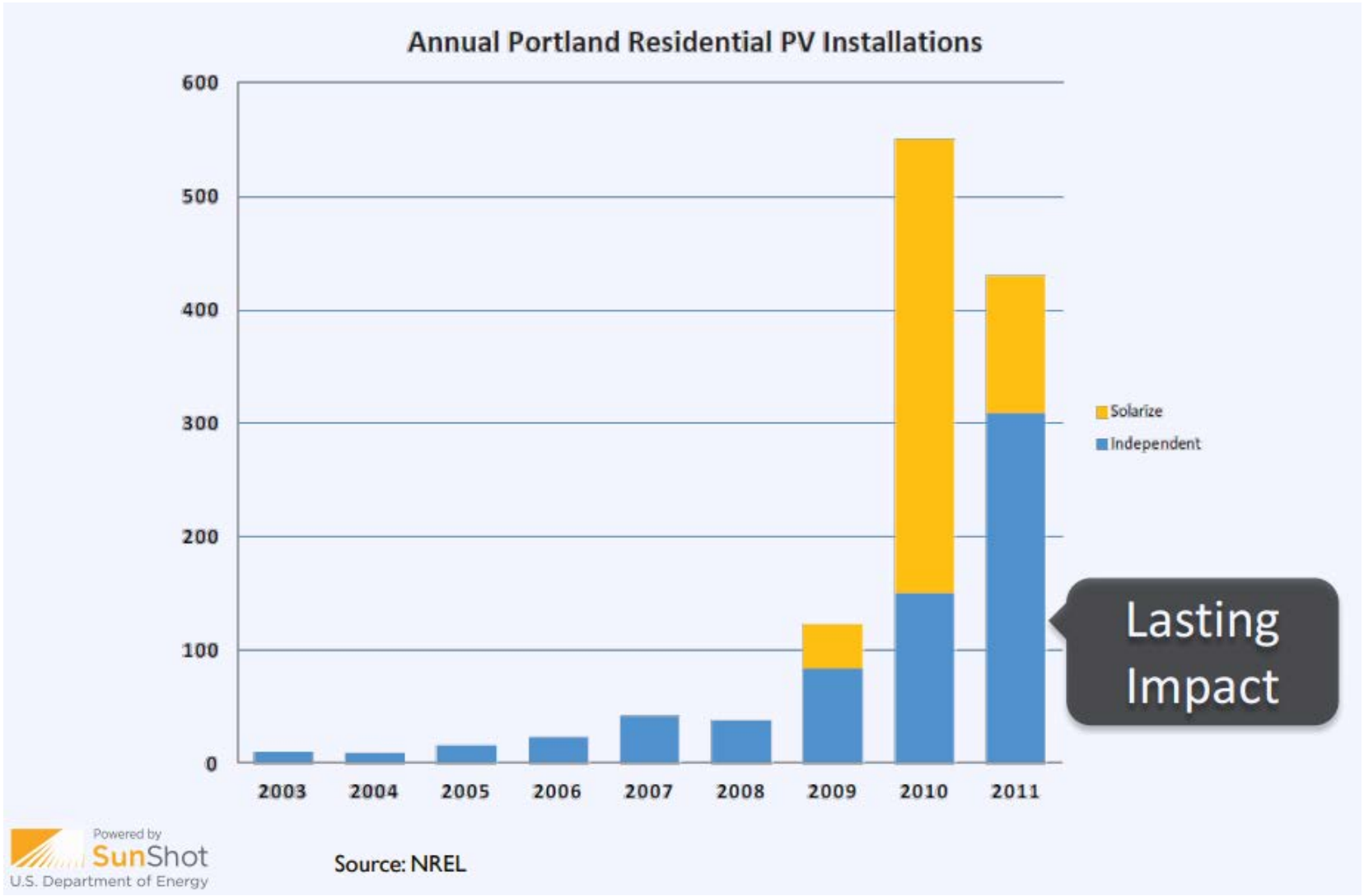
Customer inertia

- 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

Solarize Process



Solarize – Lasting Impact



Solarize Media

- **Led by Transition Towns Media**
- **Targeting communities within a 5-mile radius of Media (13 communities total)**

Solarize Greater Media

Results:

288 Customers signed up for sites assessments

50 new contracts signed

37 new systems installed totaling 274 kW

9 systems denied for interconnection.

$2.75/W solar price

Final Thoughts

Collective Impact:

n. the commitment of a group of actors from different sectors to a common agenda for solving a specific social problem, using a structured form of collaboration