

Solar Powering Your Community

Addressing Soft Costs and Barriers



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SunShot

U.S. Department of Energy

About the SunShot Solar Outreach Partnership

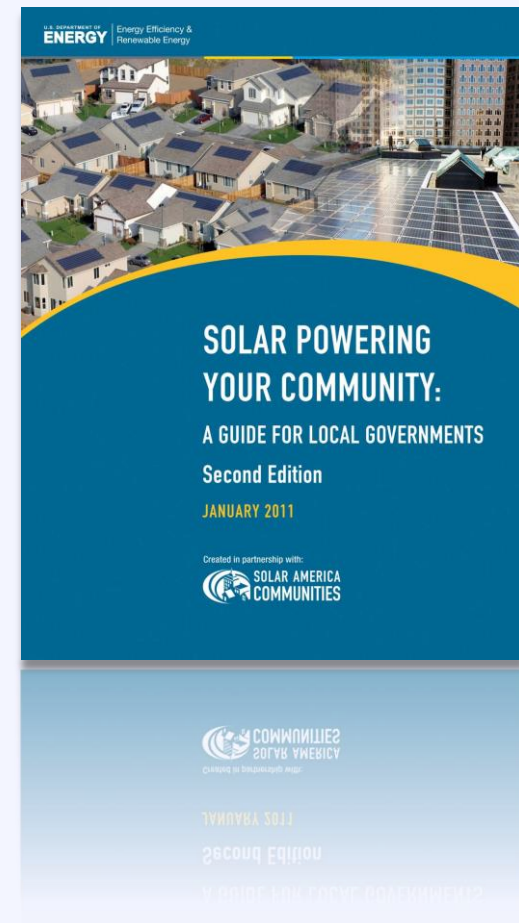
- Increase installed capacity of solar electricity in U.S. communities
- Streamline and standardize **permitting and interconnection processes**
- Improve **planning and zoning codes/regulations** for solar electric technologies
- Increase access to **solar financing options**

About the SunShot Solar Outreach Partnership

Resource Solar Powering Your Community Guide

A comprehensive resource to assist local governments and stakeholders in building local solar markets.

www.energy.gov



About the SunShot Solar Outreach Partnership

Resource Sunshot Resource Center

- Case Studies
- Fact Sheets
- How-To Guides
- Model Ordinances
- Technical Reports
- Sample Government Docs

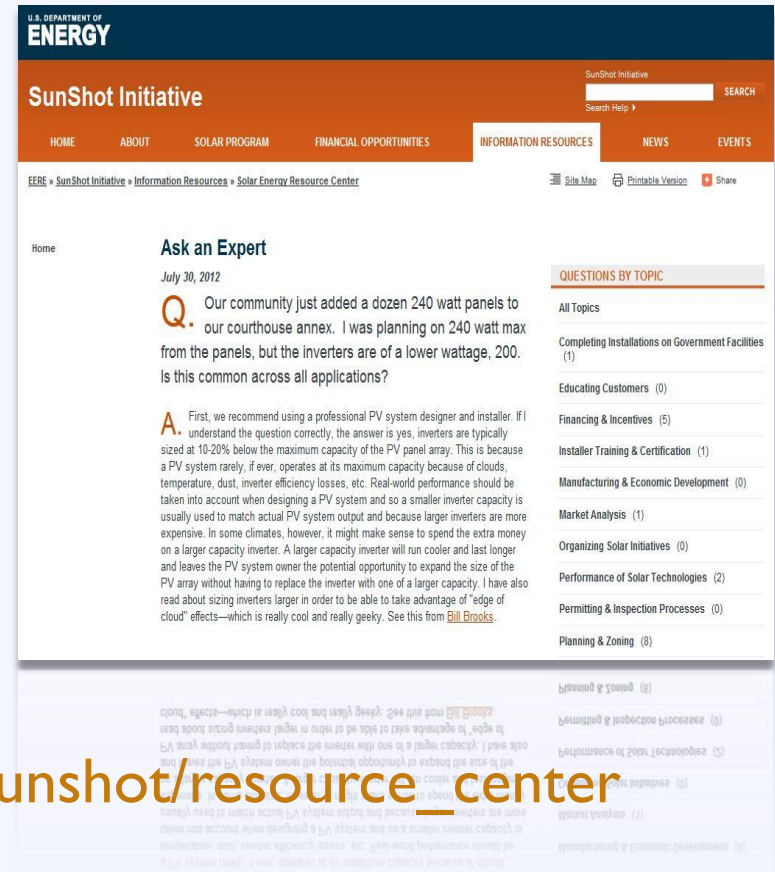
www4.eere.energy.gov/solar/sunshot/resource_center

The screenshot shows the SunShot Resource Center website. The header includes the U.S. Department of Energy logo and the SunShot Initiative title. The main navigation menu includes Home, About, Solar Program, Financial Opportunities, and Information Resources. The page content features a sidebar with filters for Topic, Audience, Resource Type, and State. The main content area is titled "Solar Energy Resource Center" and includes a search bar and a map of the United States for finding resources by state. The map is color-coded by state, with orange representing the SunShot Initiative region. Below the map, there is a list of resources with columns for Title, Date, and Location.

About the SunShot Solar Outreach Partnership

Technical Support

- ‘Ask an Expert’ Live Web Forums
- ‘Ask an Expert’ Web Portal
- Peer Exchange Facilitation
- In-Depth Consultations
- Customized Trainings



www4.eere.energy.gov/solar/sunshot/resource_center

For more information email: solar-usa@iclei.org

Poll

Who's in the room?

Poll

What is your experience with solar?

Workshop Goal

Enable local governments to replicate successful solar practices and expand local adoption of solar energy

Explore benefits

and

Overcome barriers

Activity: Identifying Benefits

What is the greatest benefit solar can bring to your community? **[Blue Card]**

Right Now



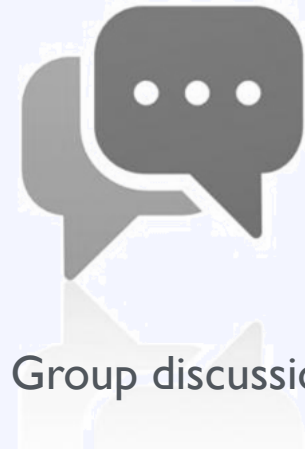
Write answer on card

During Session

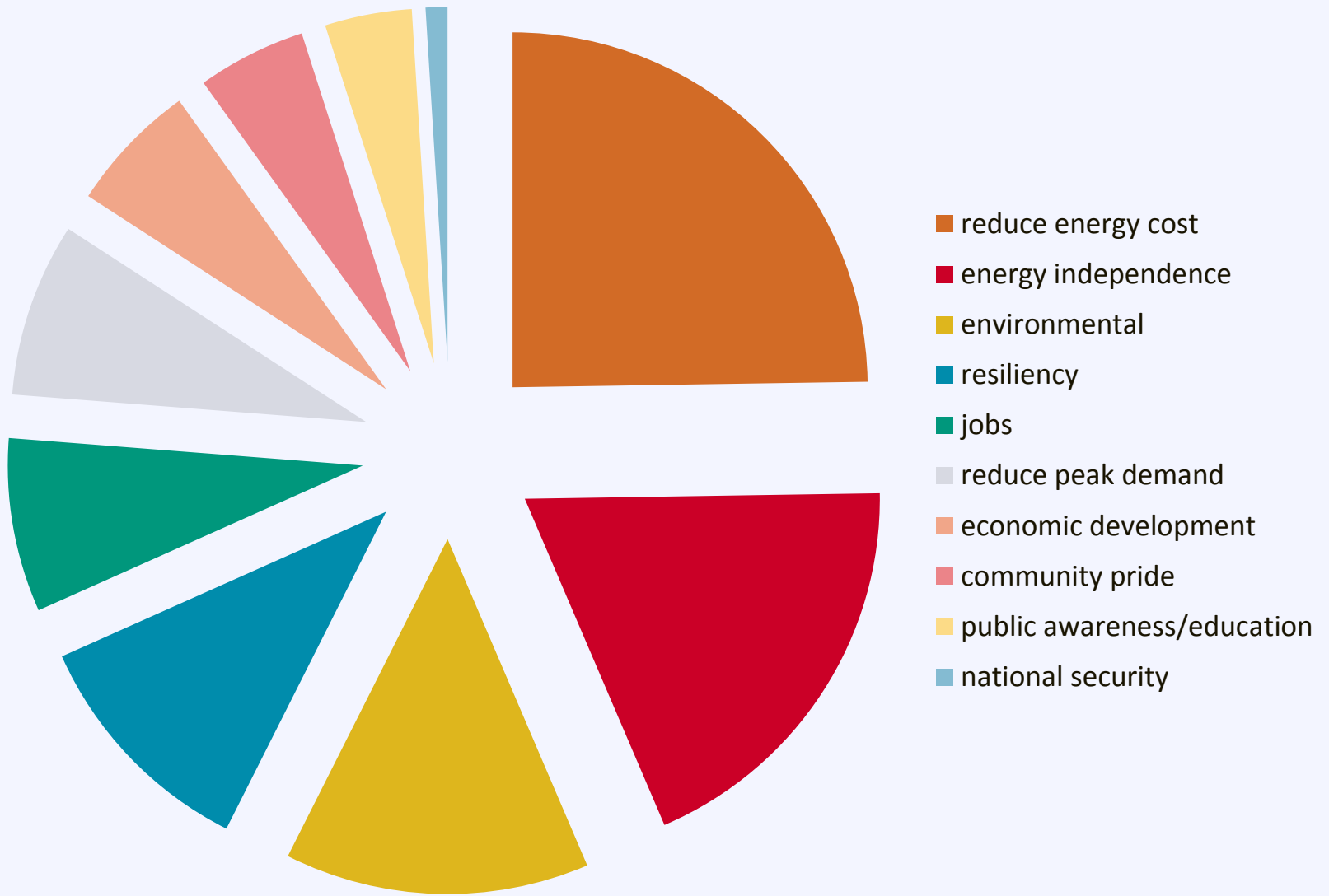


Compile results

After Break



Group discussion



Activity: Addressing Barriers

What is the greatest barrier to solar adoption in your community? [Green Card]

Right Now



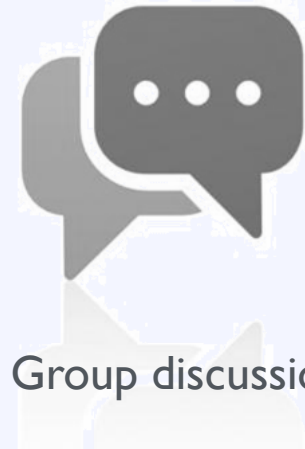
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During Session

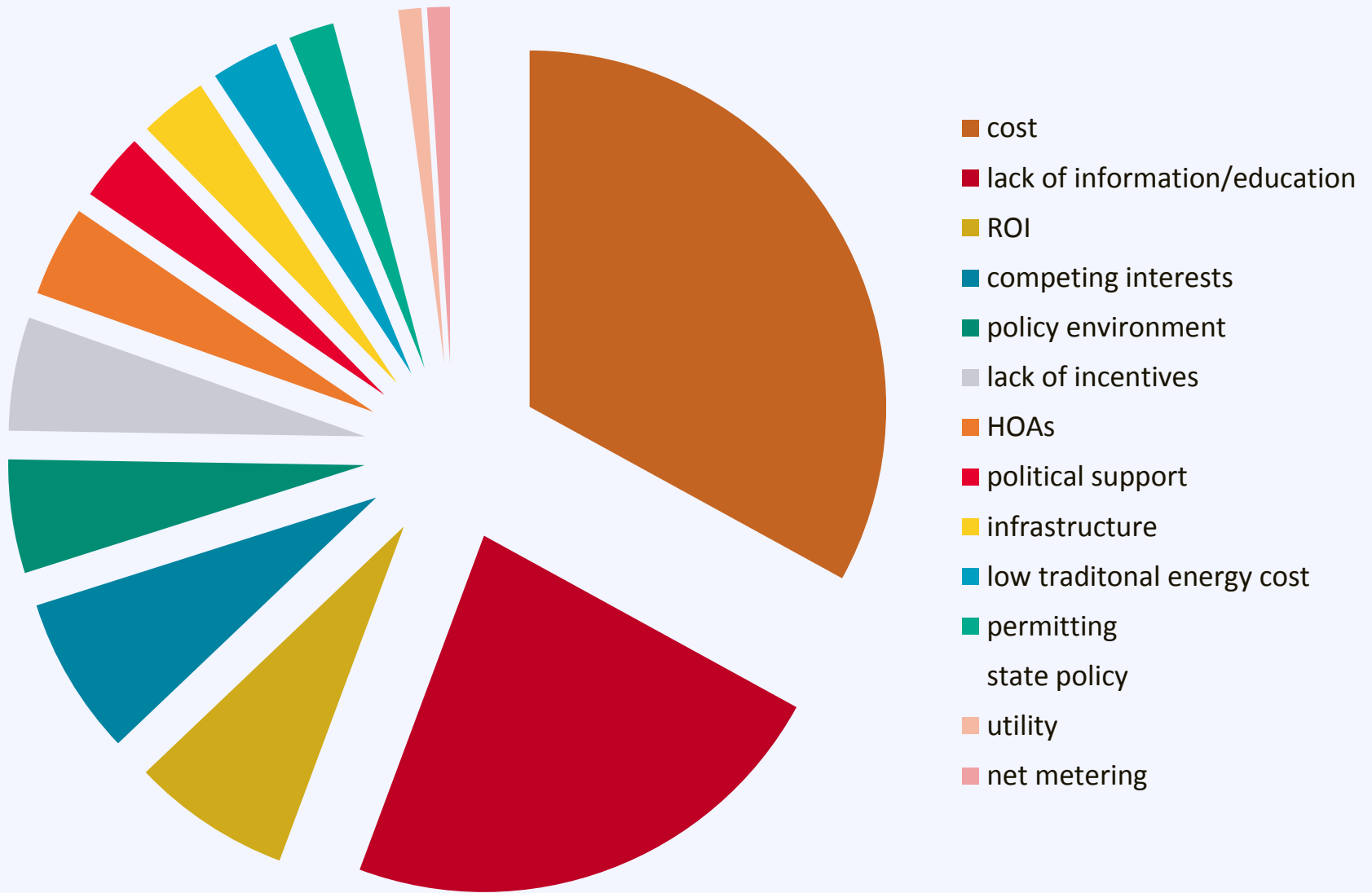


Compile results

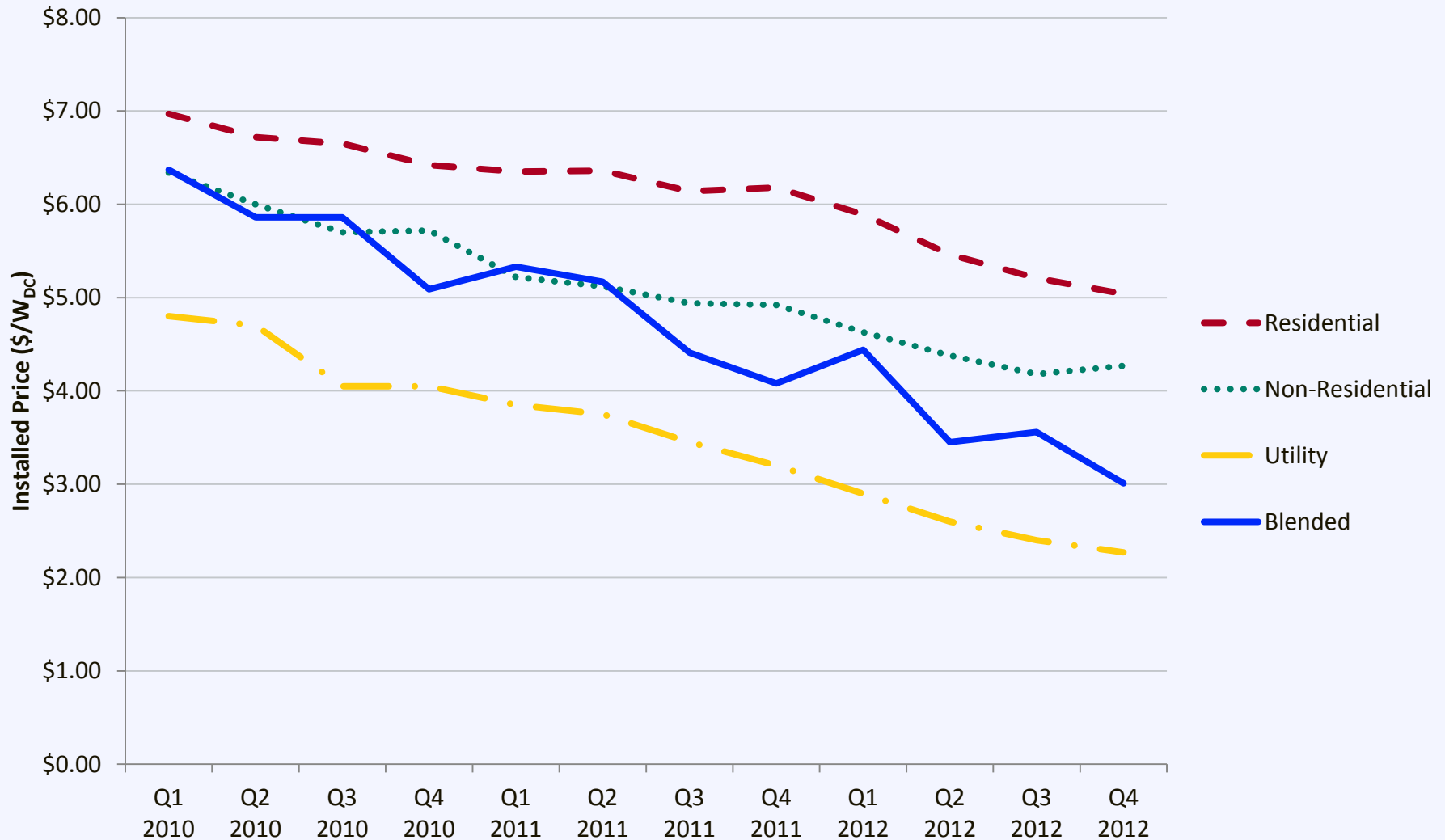
After Break



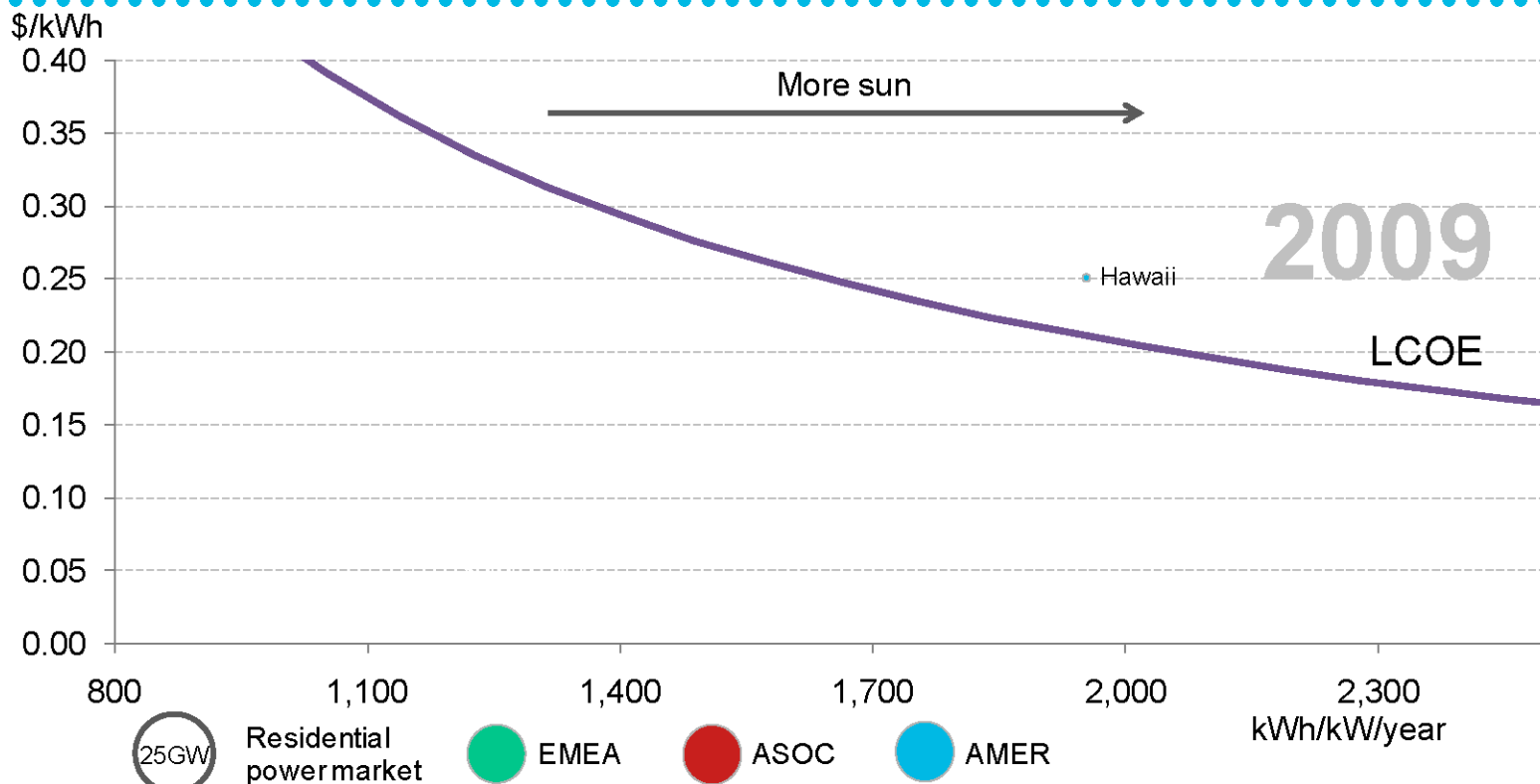
Group discussion



Installed Costs are Falling



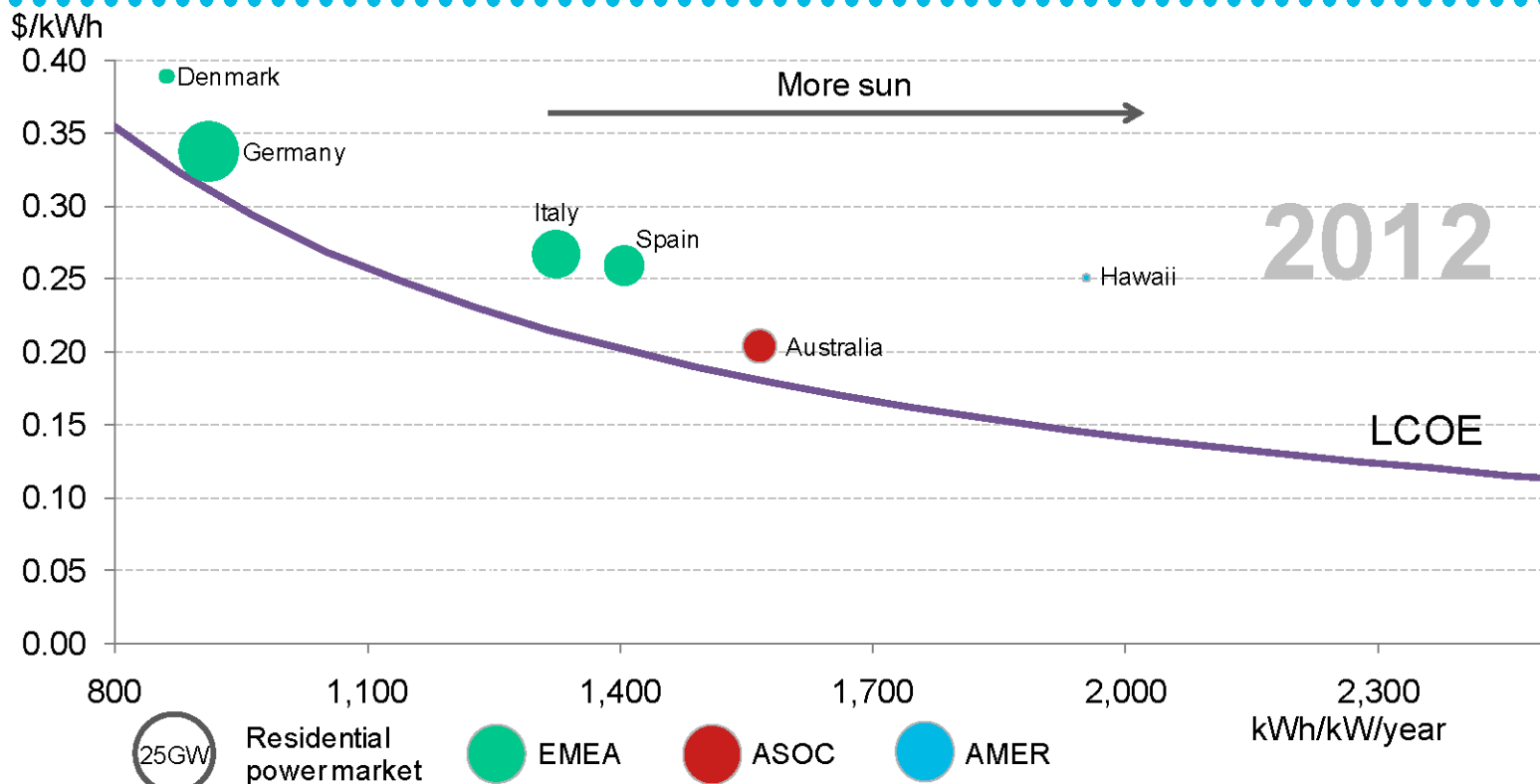
RESIDENTIAL PV PRICE PARITY



Note: LCOE based on 6% cost of capital, 0.7%/year module degradation, 1% capex as O&M annually.

Source: Bloomberg New Energy Finance, EuroStat, grid operators

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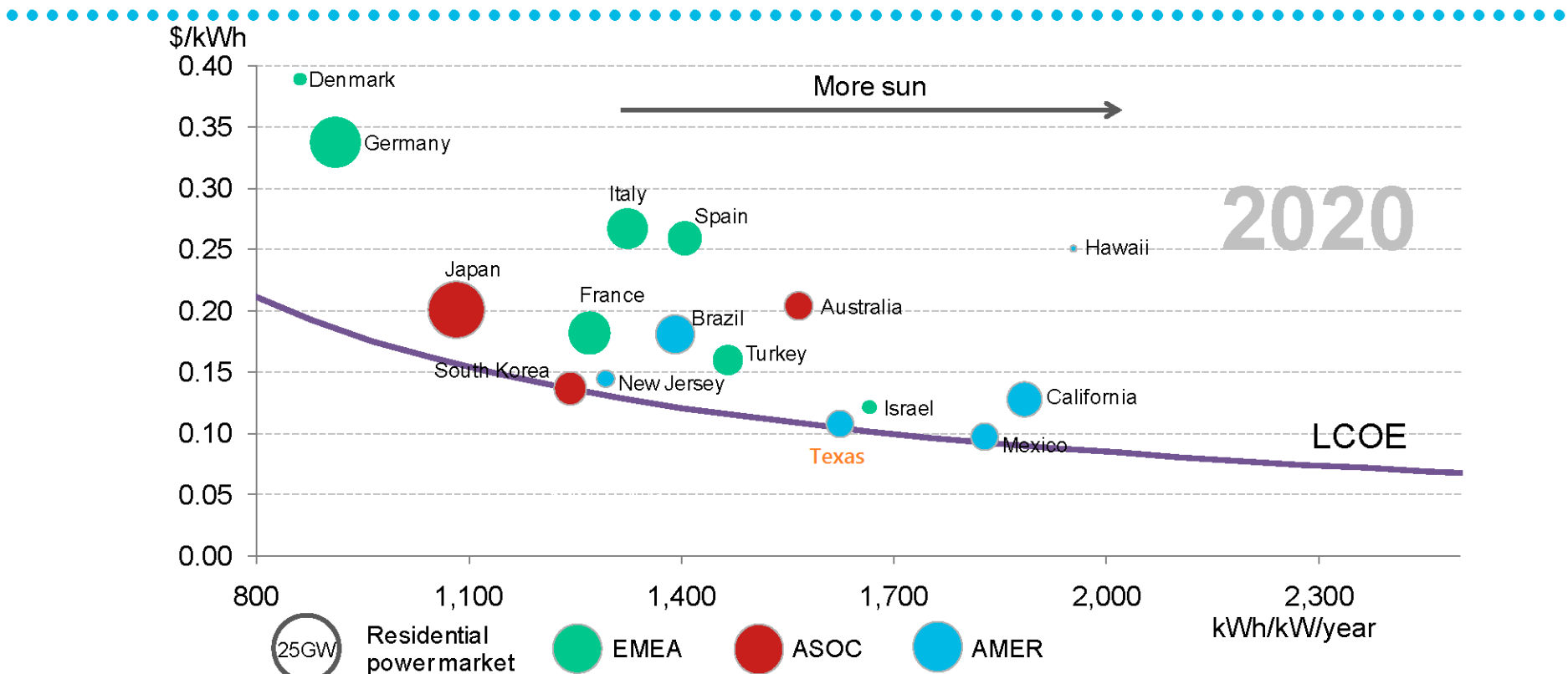
Source: Bloomberg New Energy Finance, EuroStat, grid operators



MICHAEL LIEBREICH KEYNOTE, 20 MARCH 2012

TWITTER: @MLiebreich

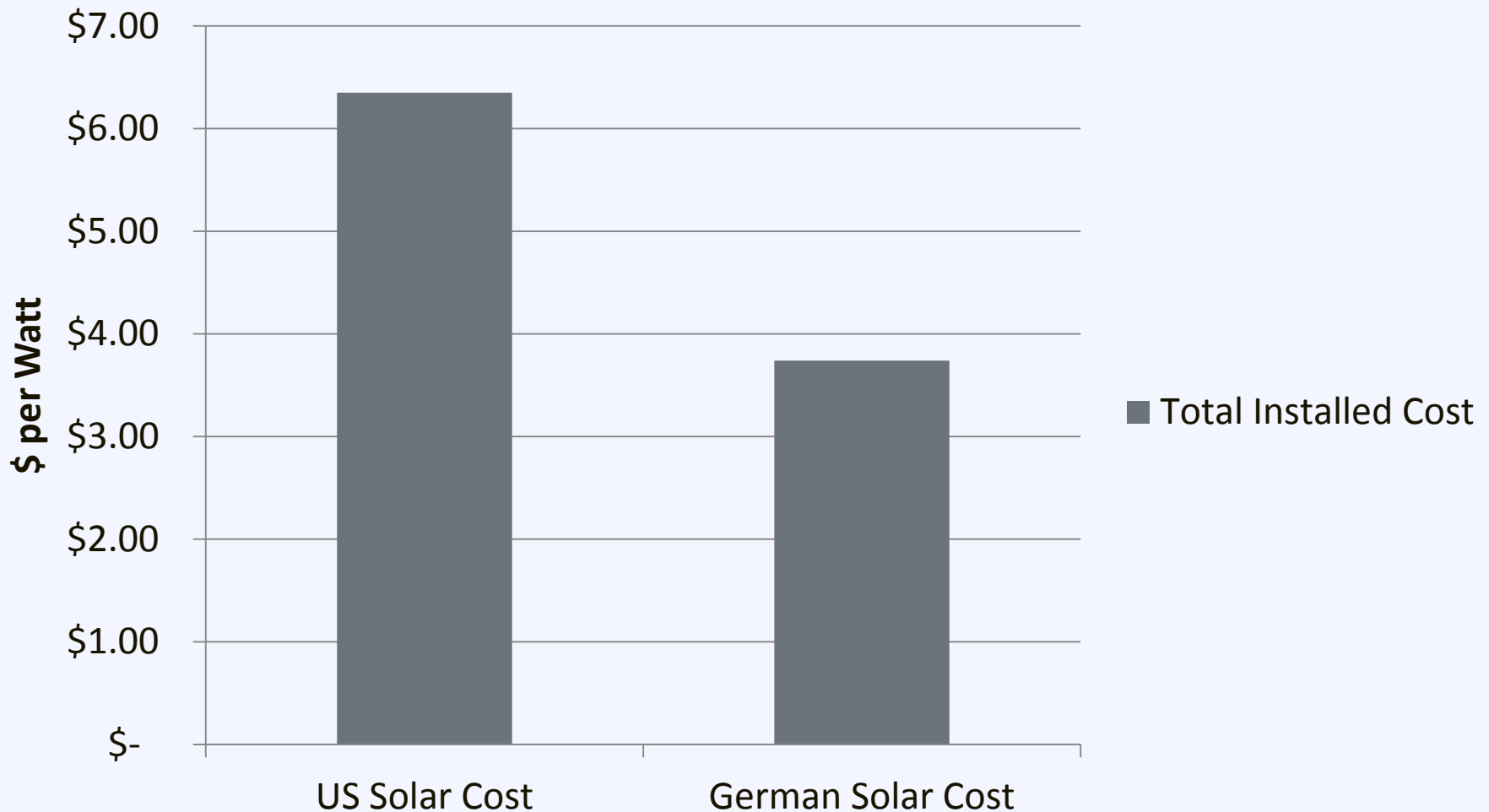
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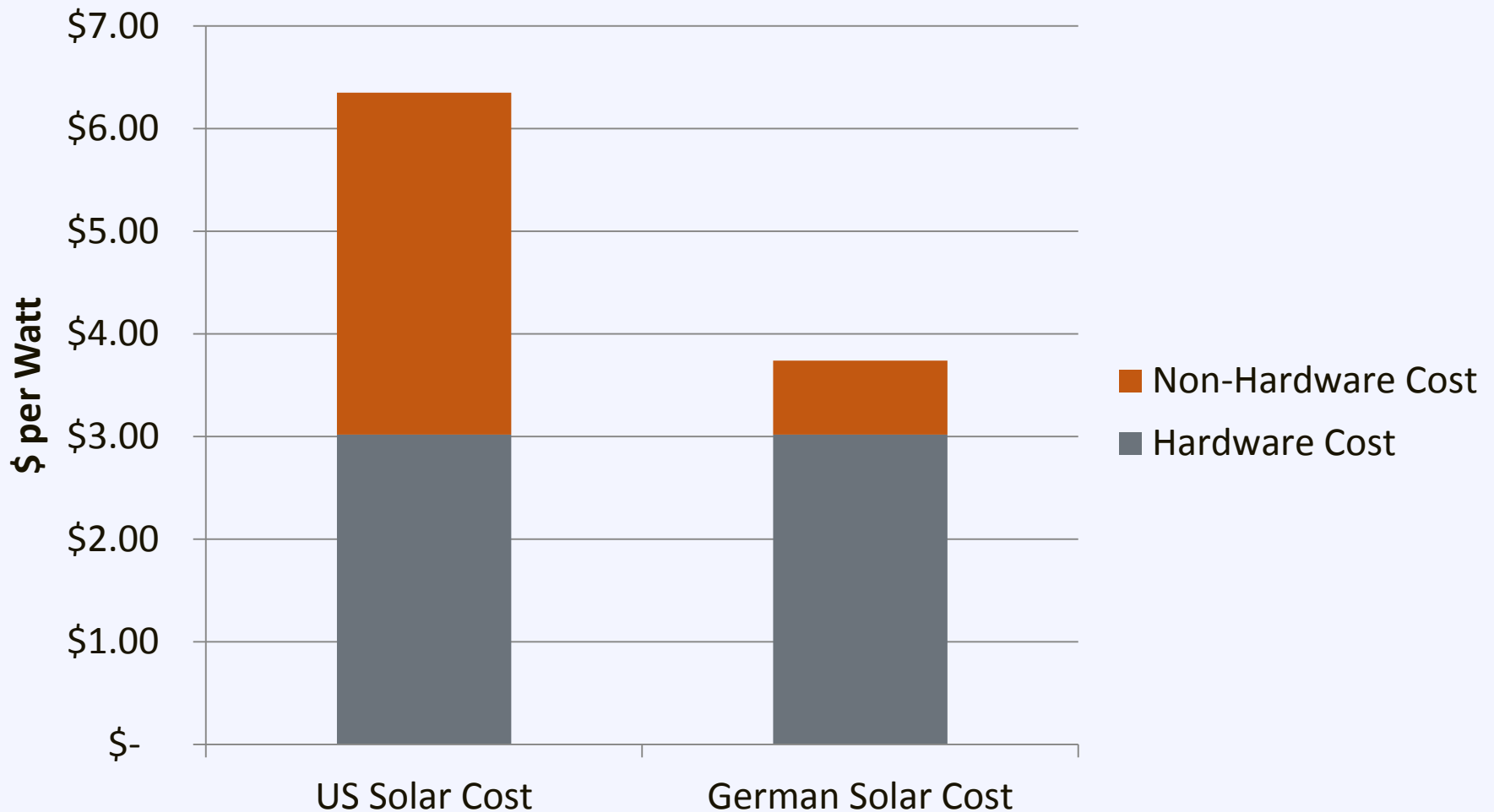
The Cost of Solar in the US

Comparison of US and German Solar Costs



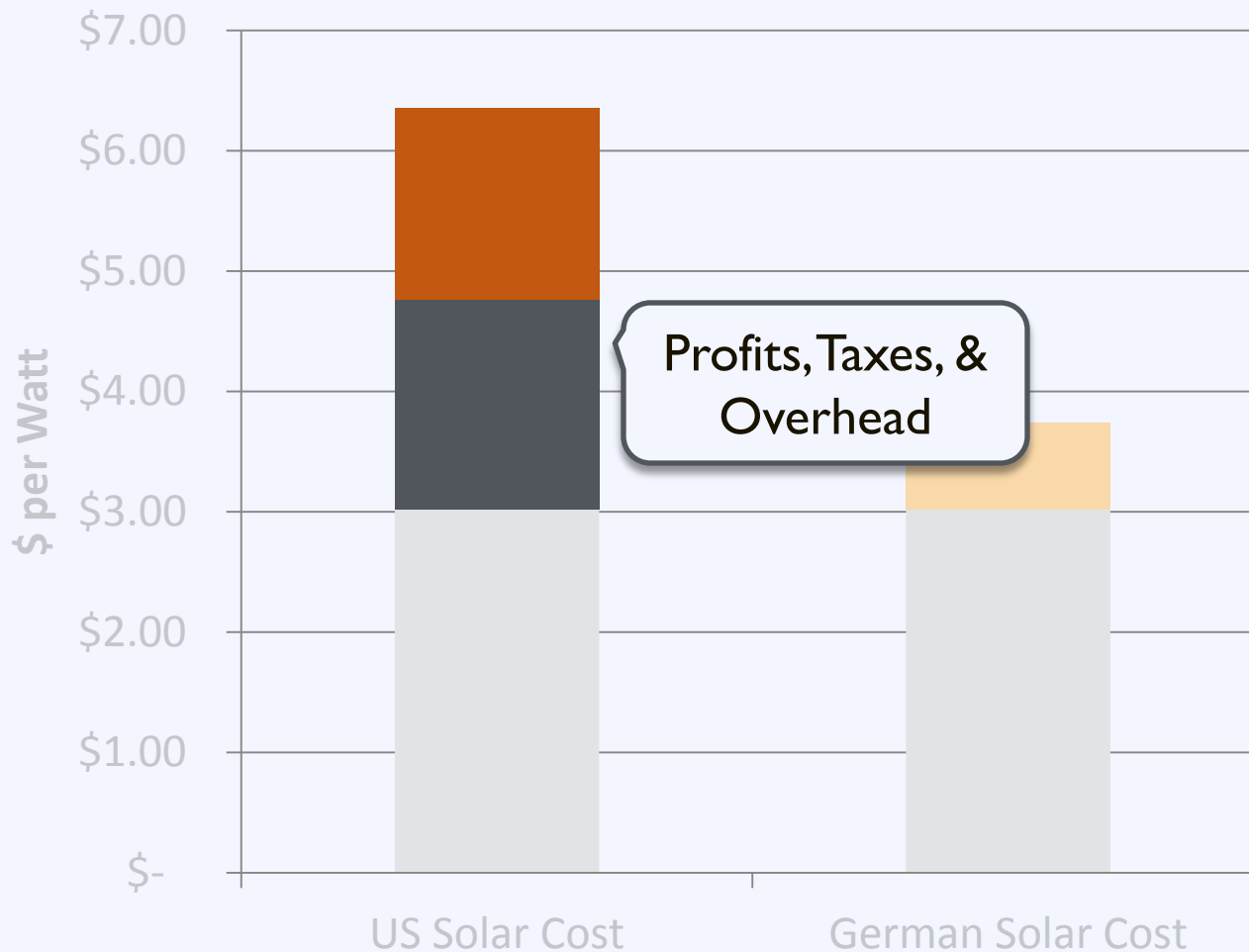
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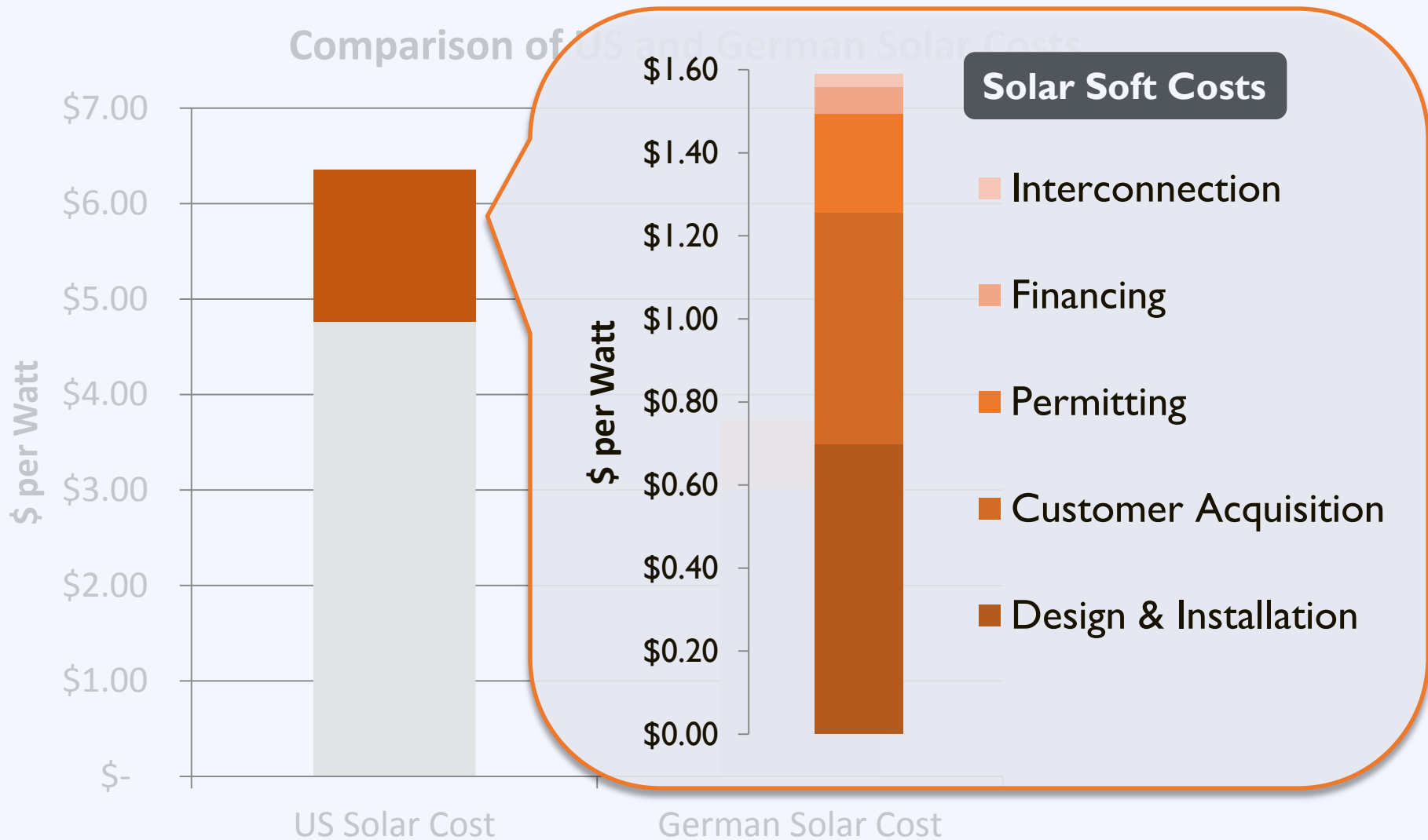


The Cost of Solar in the US

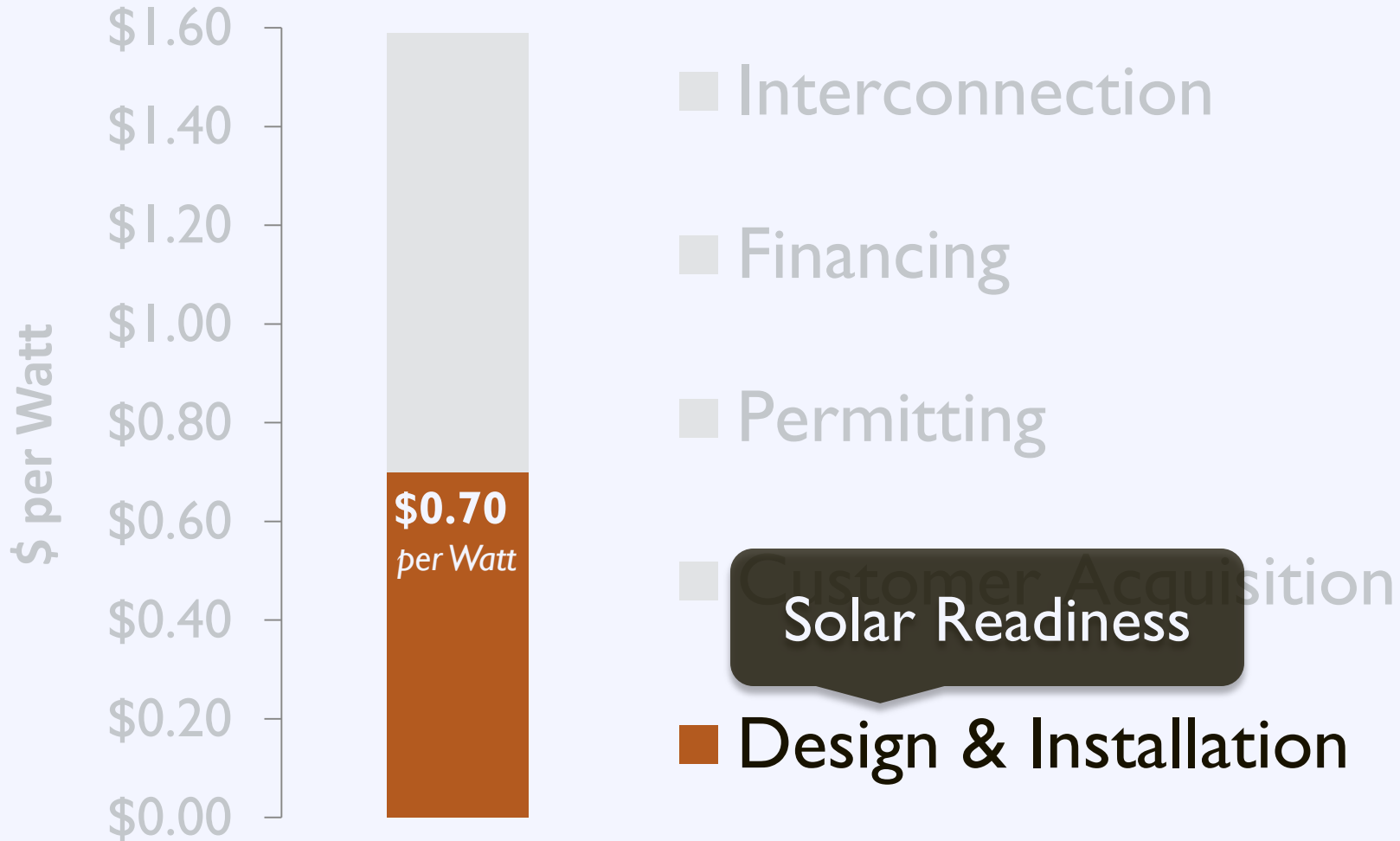
Comparison of US and German Solar Costs



The Cost of Solar in the US



Mitigate Soft Costs

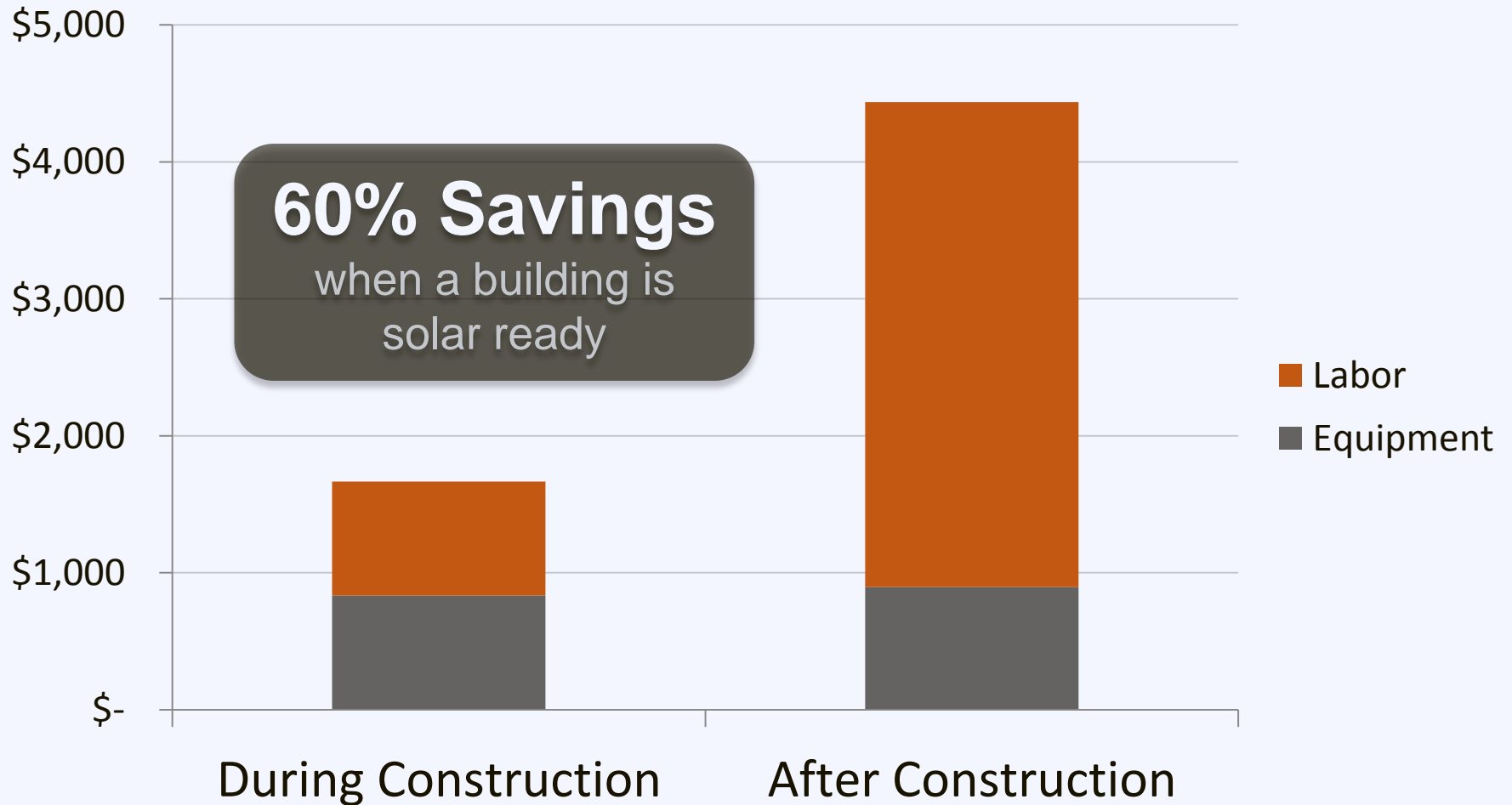


Solar Readiness

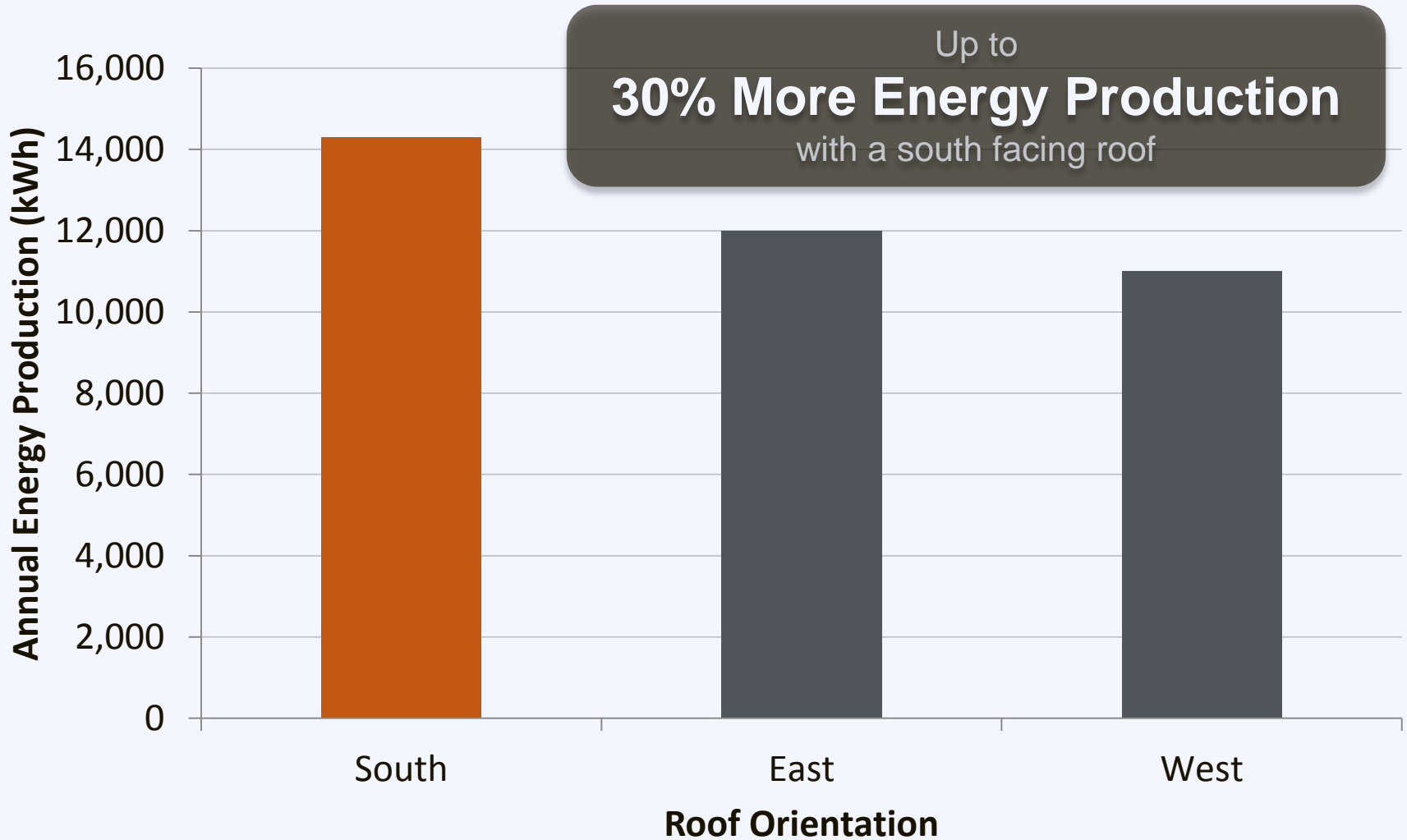
Require builders to:

- ✓ 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

Solar Readiness



Solar Readiness



Solar Readiness

Resource NREL

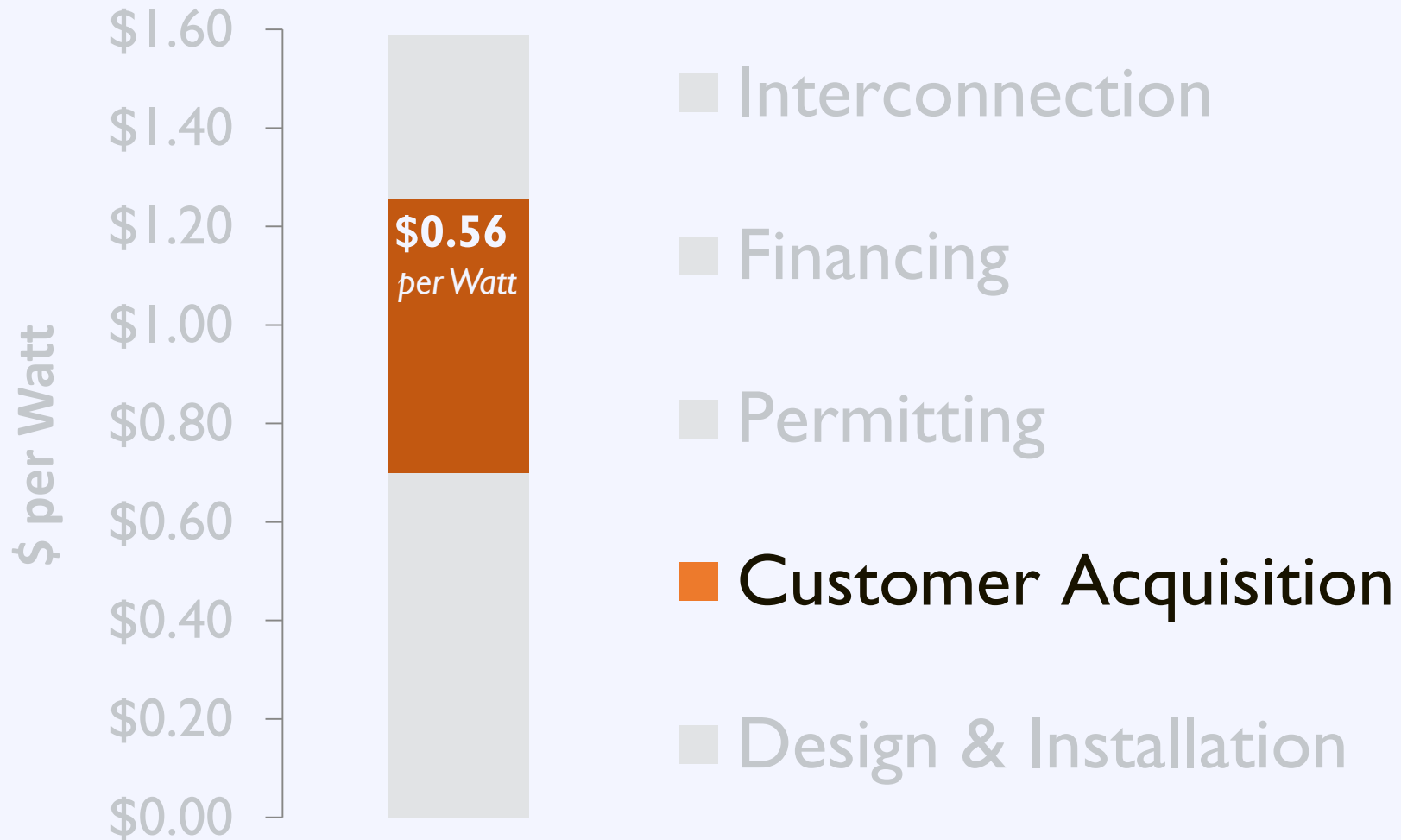
Creating a solar ready guide for buildings:

- Legislation
- Certification programs
- Stakeholder Education

www.nrel.gov



Mitigate Soft Costs



Customer Acquisition



Solarize
Group Purchasing

solarize portland →



Solarize: Advantages

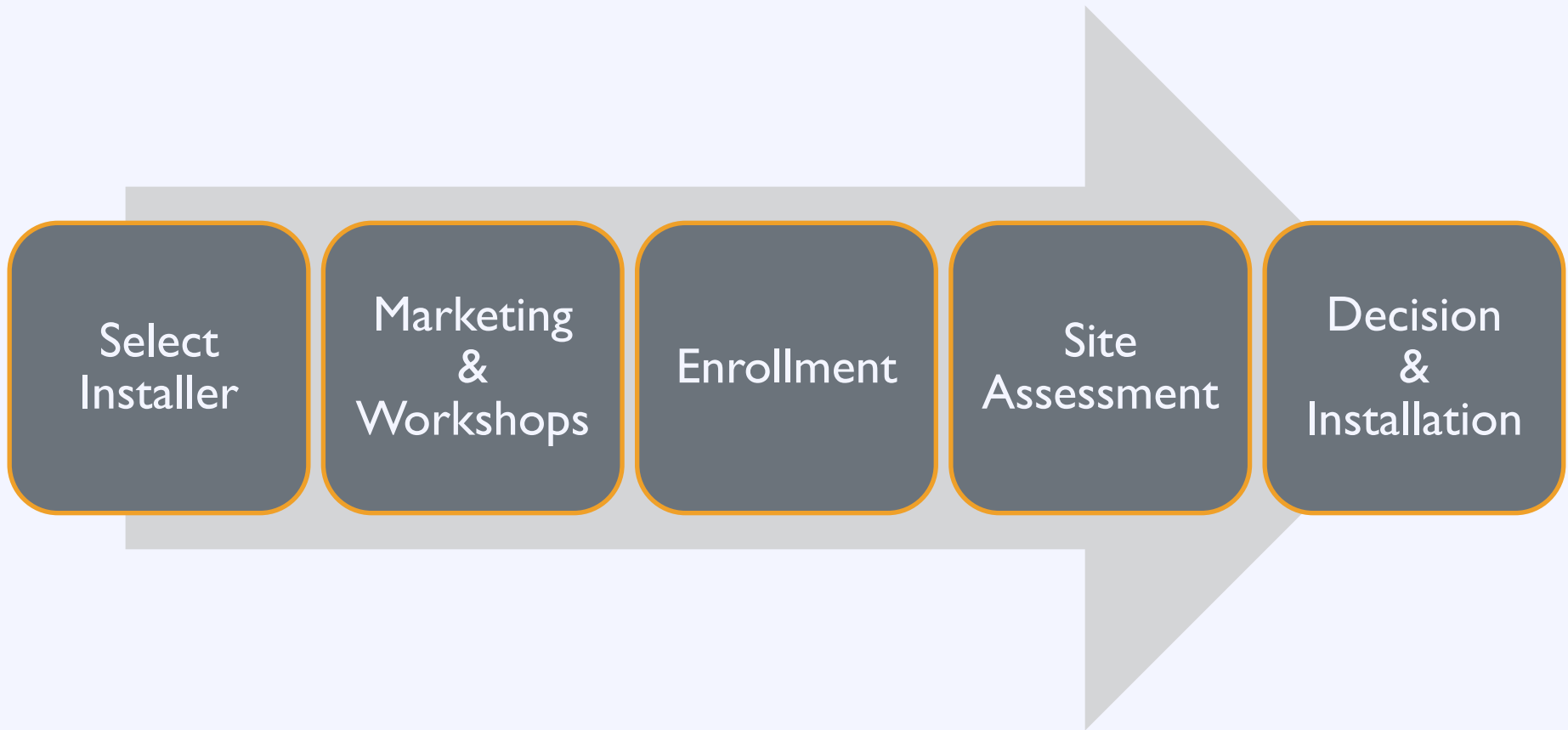
Benefits to Local Government:

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

Quick turn-around: 9 Months

Long-term impact: Sustainable ecosystem

Solarize: Process



Solarize: Case Study

75 new installations totaling 403 kW

30% reduction in installation costs

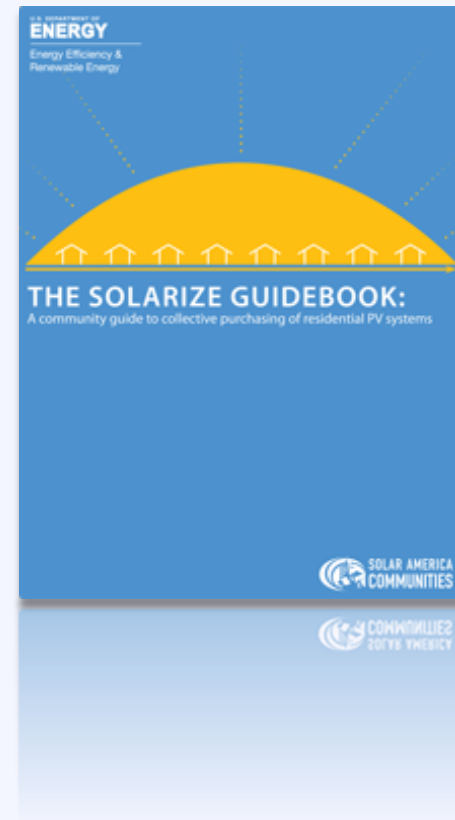
575% increase in residential installations

Solarize: Resources

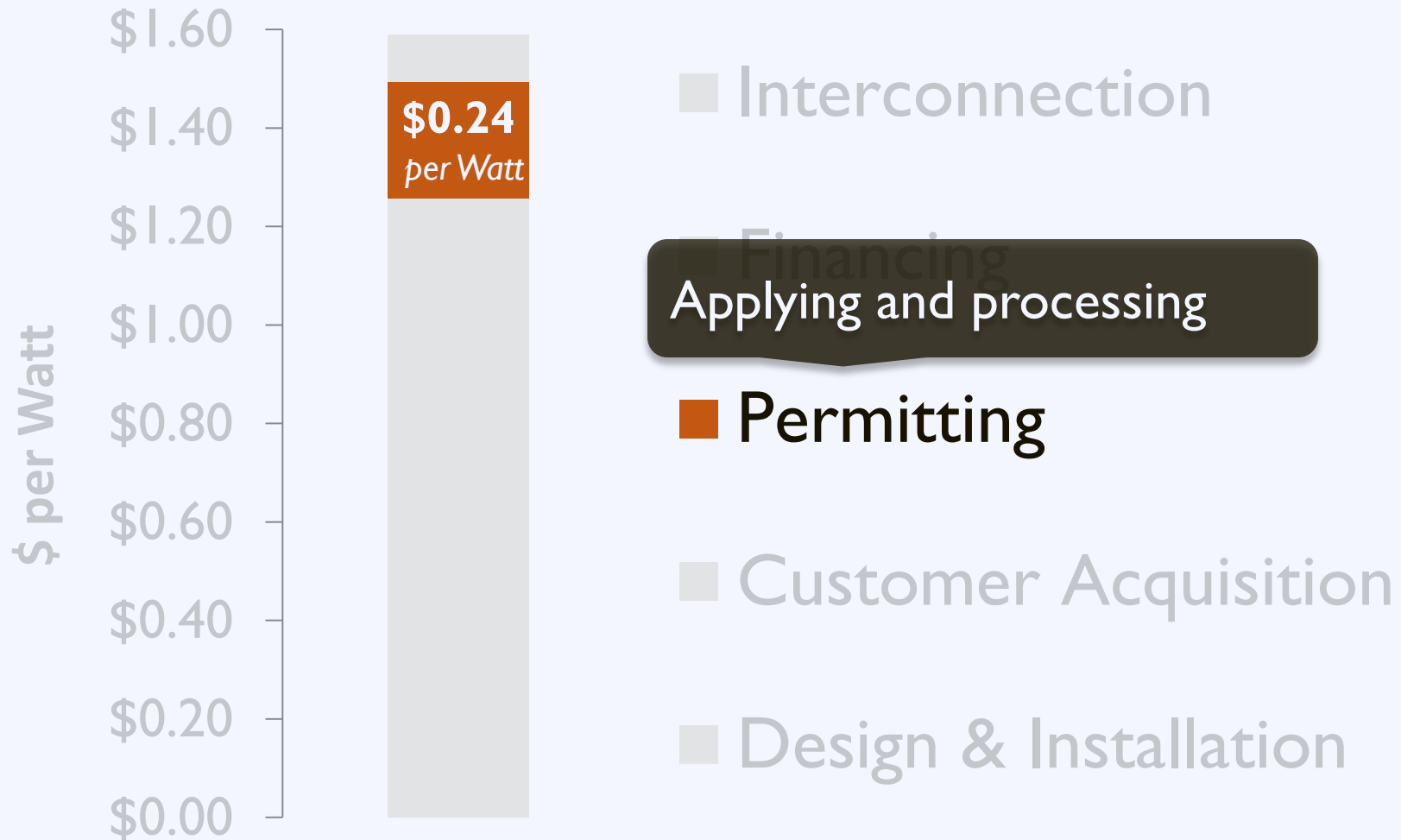
Resource The Solarize Guidebook

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

www.nrel.gov



Mitigate Soft Costs



The Permitting Process: Challenges

Local permitting processes add on average

\$2,516

to the installation cost of residential PV

Due to permitting difficulties

1 in 3 Installers Avoid

selling in an average of 3.5 jurisdictions

Expedited Permitting

Solar Permitting Best Practices:

- ✓ Fair flat fees
- ✓ Electronic or over-the-counter issuance
- ✓ Standardized permit requirements
- ✓ Electronic materials

Expedited Permitting

Solar Permitting Best Practices:

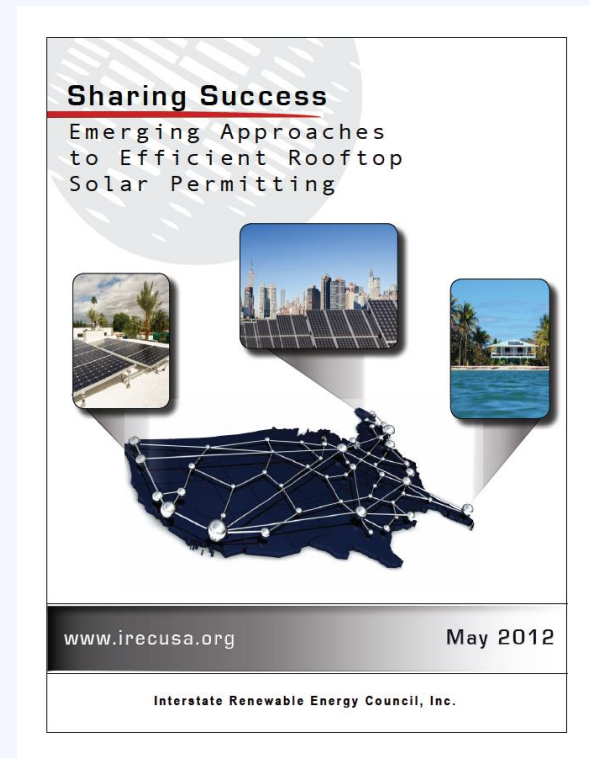
- ✓ Training for permitting staff in solar
- ✓ Removal of excessive reviews
- ✓ Reduction of inspection appointment windows
- ✓ Utilization of standard certifications

Permitting

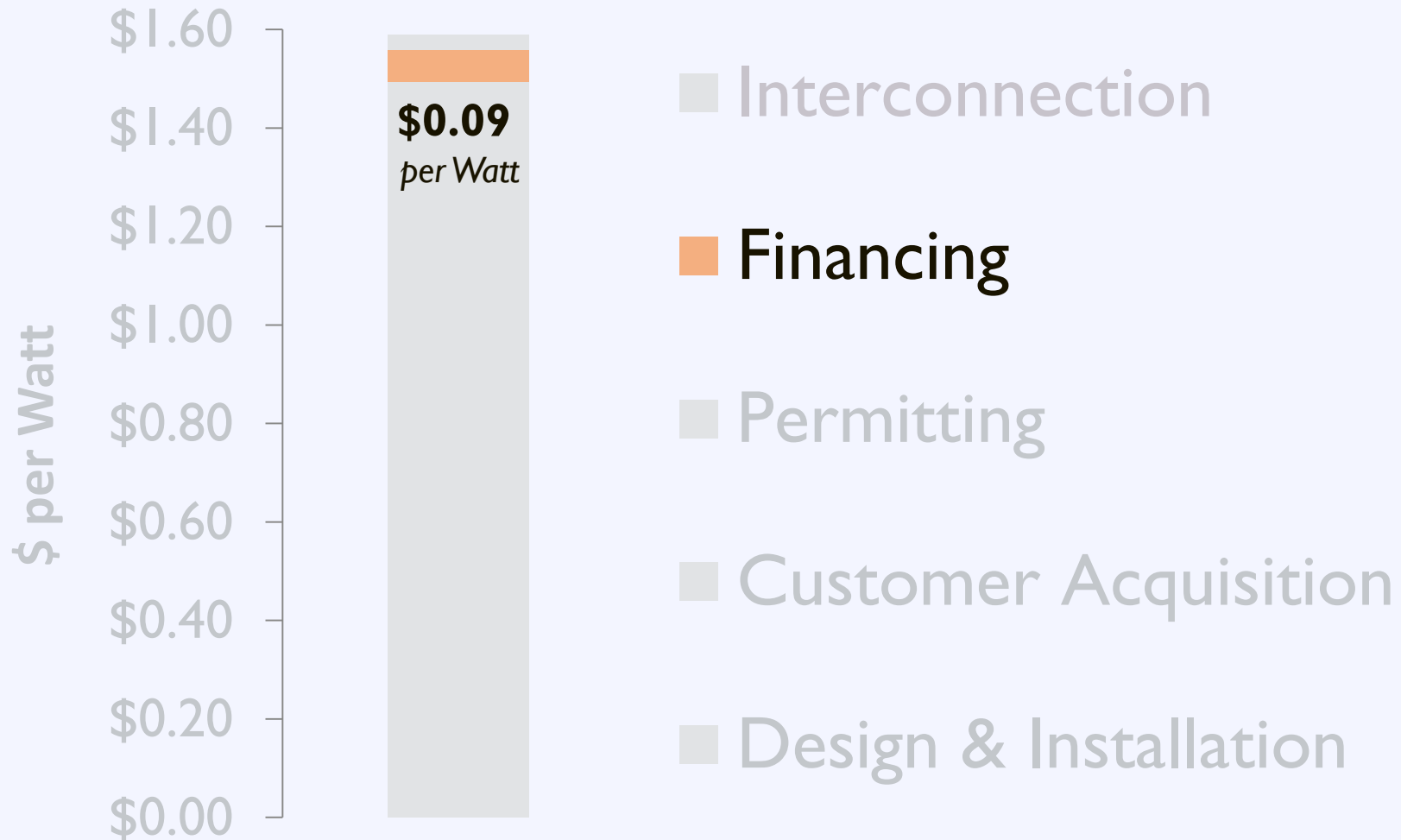
Resource **Sharing Success**

Provides a detailed discussion on how both solar installers and municipalities can do their part to enable effective improvements to permitting processes.

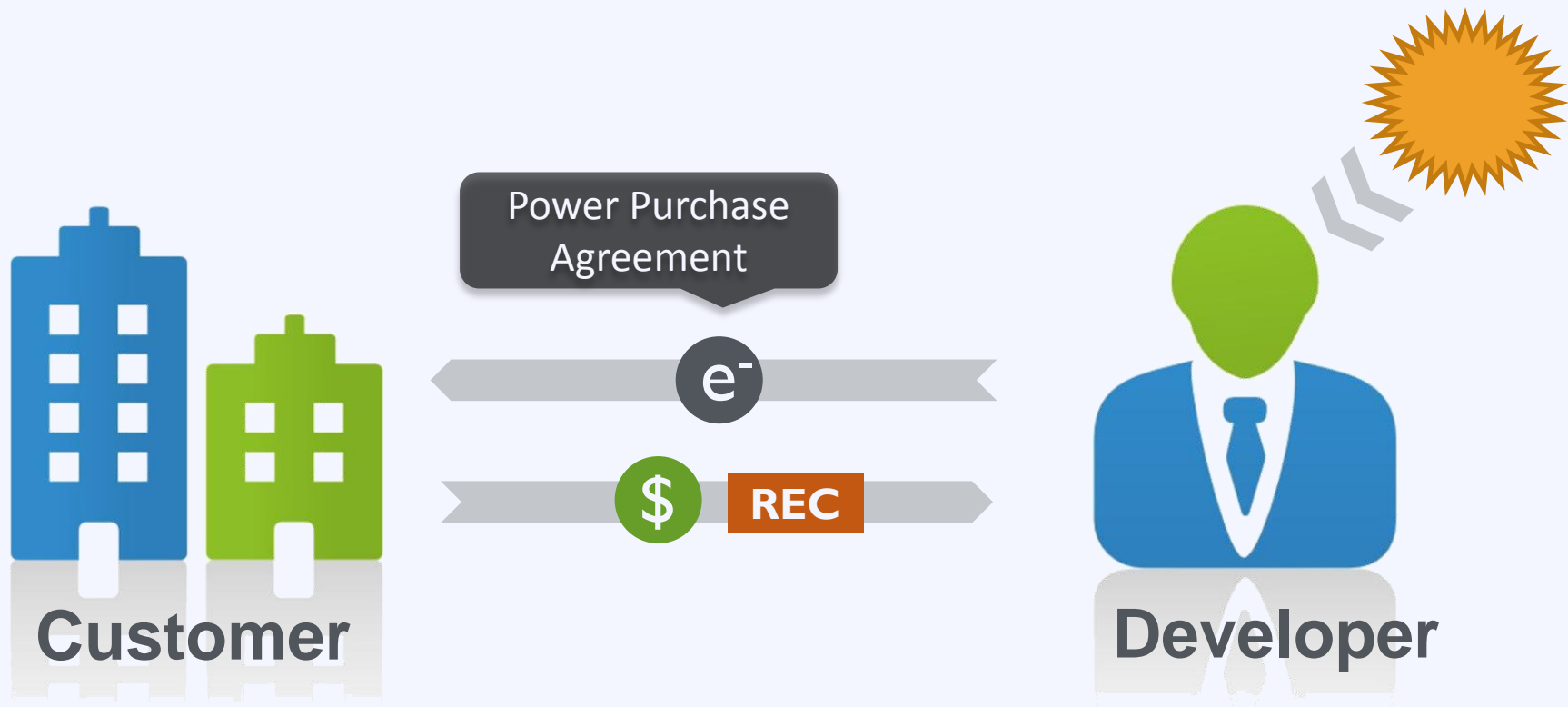
www.irecusa.org



Mitigate Soft Costs



Third Party Ownership



Third Party Ownership

Pros

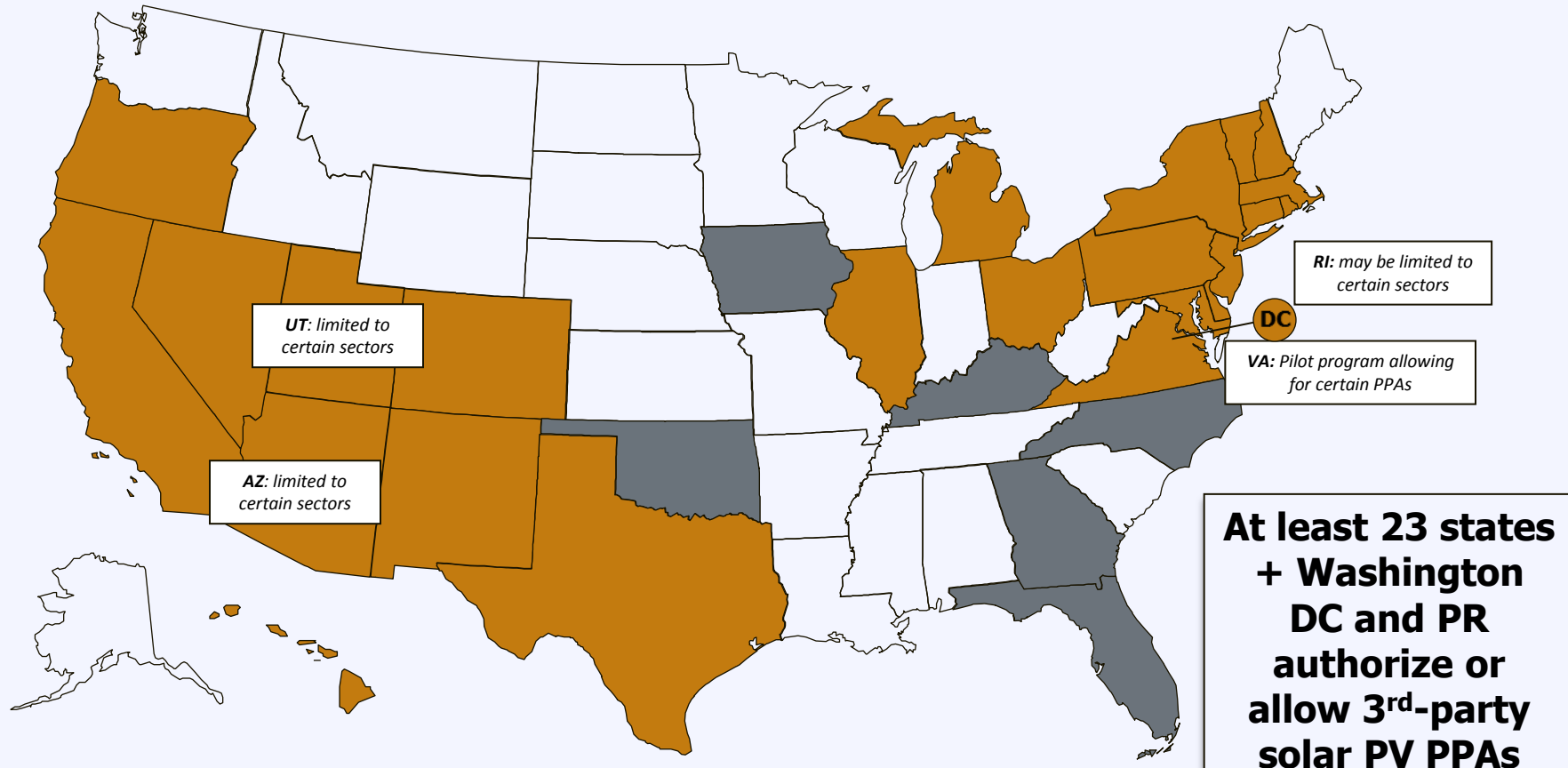
- No upfront cost
- No O&M costs
- Low risk
- Predictable payments
- No need to deal with
RECs

Cons

- Market electricity price risk
- Opportunities may be limited in some locations
- Don't keep RECs

3rd-Party Solar PV Power Purchase Agreements (PPAs)

www.dsireusa.org / February 2013



- Authorized by state or otherwise currently in use, at least in certain jurisdictions within in the state
- Apparently disallowed by state or otherwise restricted by legal barriers
- Status unclear or unknown

 Puerto Rico

Note: This map is intended to serve as an unofficial guide; it does not constitute legal advice. Seek qualified legal expertise before making binding financial decisions related to a 3rd-party PPA. See following slides for additional important information and authority references.

Qualified Energy Conservation Bonds

- What?

Tax credit or direct payment subsidy

- Why?

Subsidy lowers the effective cost of capital

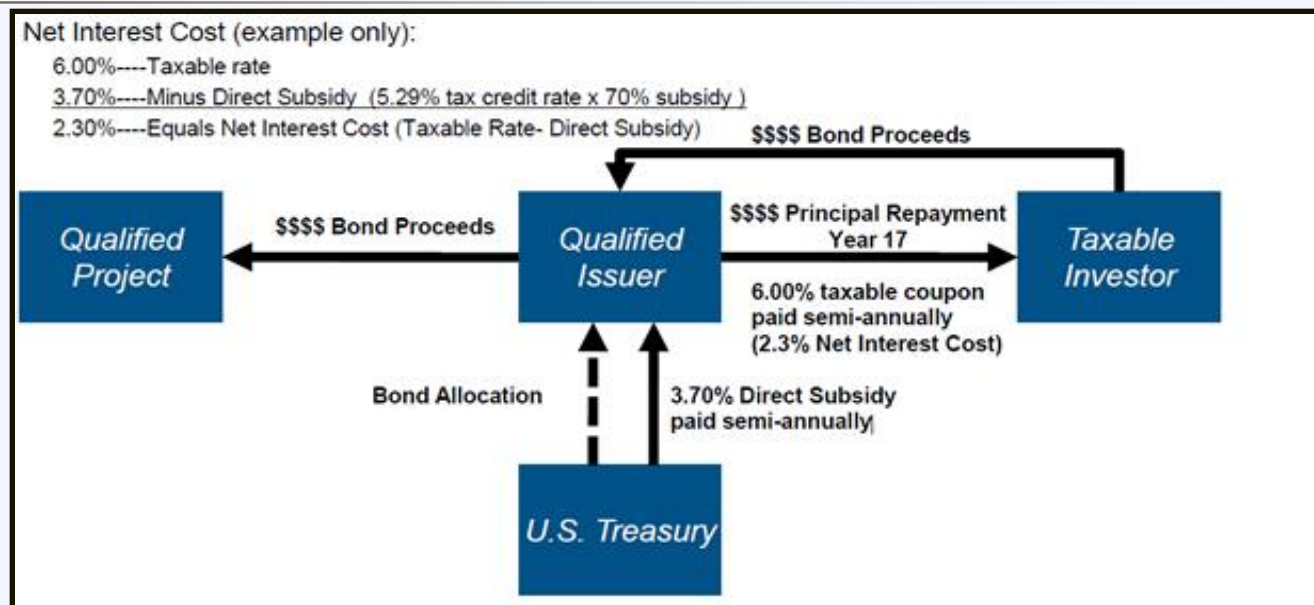
- Relevance?

Can be used for certain renewable energy facilities
(including solar)

- How?

State allocation or automatic allocation

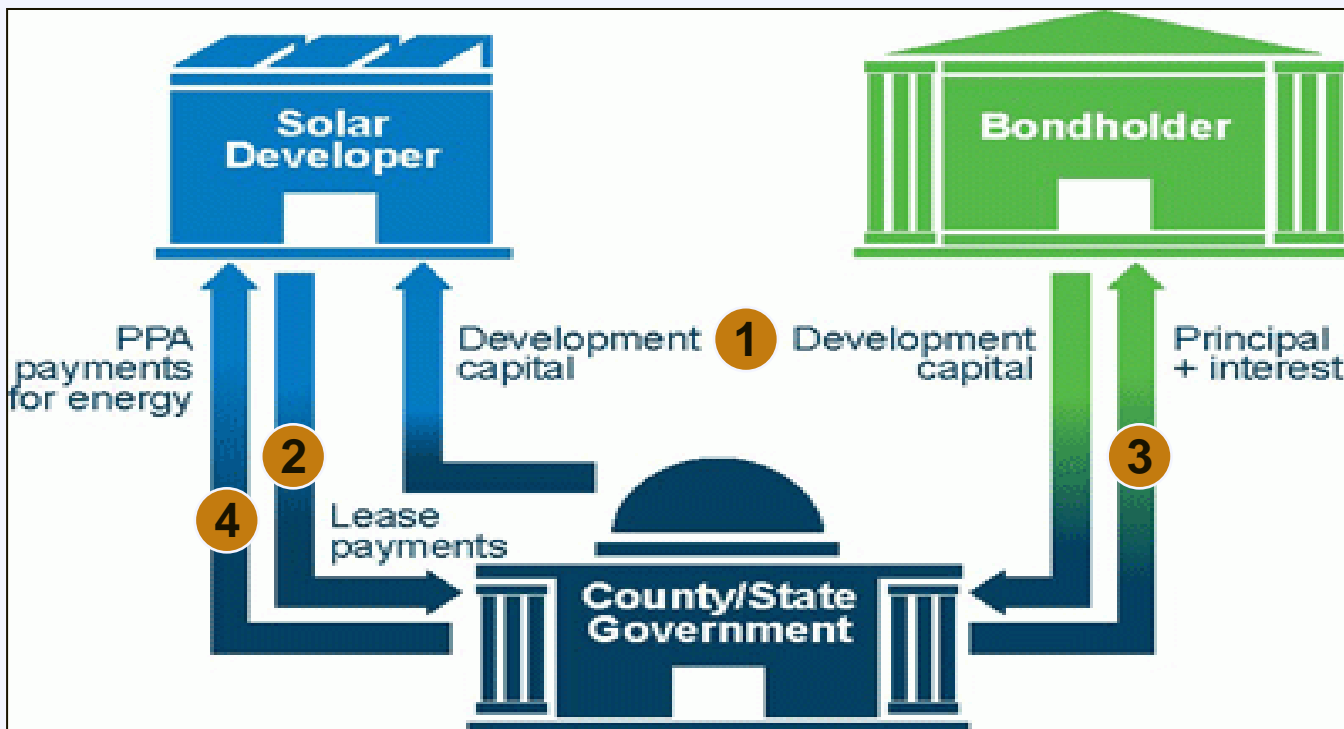
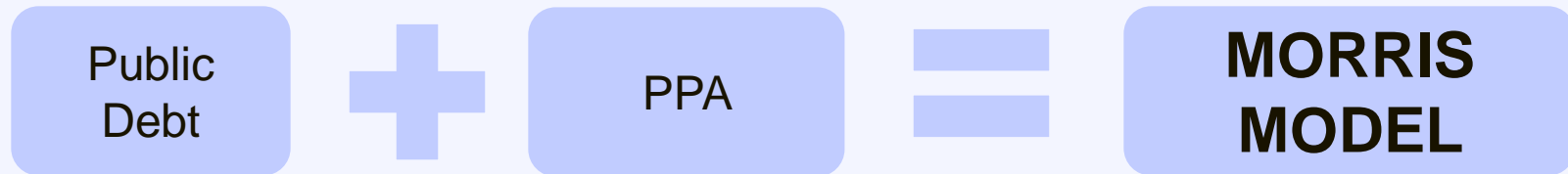
Qualified Energy Conservation Bonds



- Texas' \$252m allocation untouched (as of 9/2012)
- Local Sub-allocations:
 - Houston City \$23.37m
 - Harris County \$16.89m

Info on QECBs and Application: www.brb.state.tx.us/QECB/QECB.aspx

Innovative: Morris Model



Replication of Morris Model

- Renewable Energy Law
 - Renewable Portfolio Standard; RECs; tax credits; incentives
- Legality of PPA Model
- Laws Governing Public Contracts
 - PPAs require multi-year contracting (≥ 15 years)
- Laws Governing Bond Issuance
 - Best when streamlined (no vote required)
- Laws Governing Procurement
 - Best when gov can consider certain criteria other than price

Activity: Next Steps

What do you pledge to do when you leave today's workshop? [Orange Card]



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