

Solar Powering Your Community

Solar and Planning





Powered by

SunShot

U.S. Department of Energy

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Solar Ready: Technical Assistance



One to One
Assistance



Regional
Workshops



Training
Materials



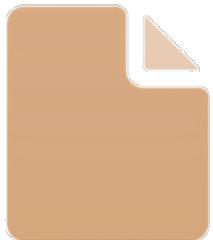
Resource
Toolkit

Solar Ready: Technical Assistance



One to One
Assistance

On call to help
execute specific
tasks or overcome
key barriers



Training
Materials



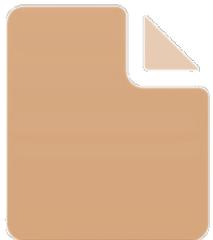
Resource
Toolkit

Solar Ready: Technical Assistance

One in-person workshop or training covering topics of your choice



Regional Workshops

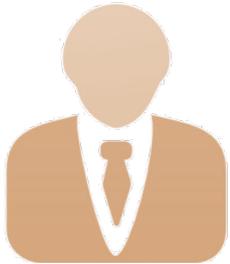


Training Materials



Resource Toolkit

Solar Ready: Technical Assistance



One to One
Assistance



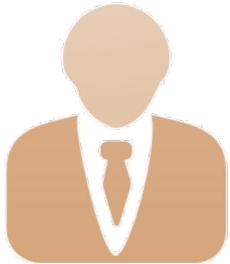
Regional
Workshops



Training
Materials

- Overview of best practice
- Key talking points
- Steps to implementation
- Links to resources

Solar Ready: Technical Assistance



One to One
Assistance



Regional
Workshops

Digital library of:

- Guidebooks
- Case Studies
- Examples



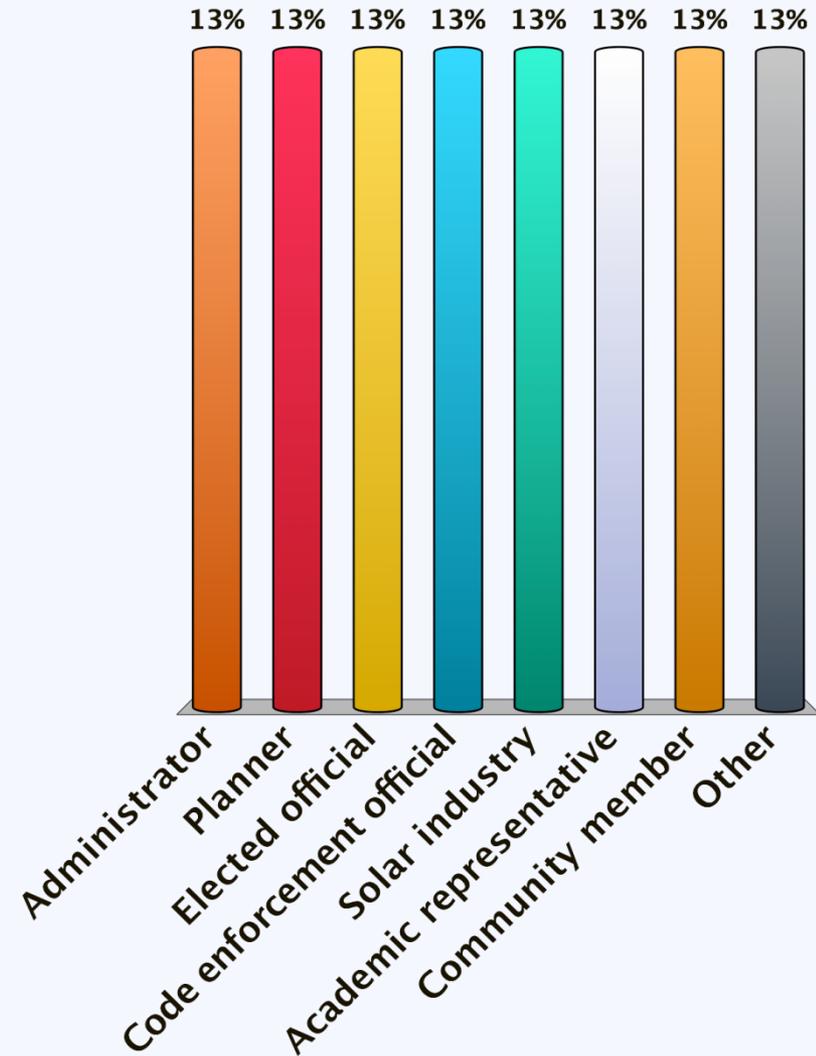
Resource
Toolkit

What are these remotes about?

We want to get to know you better

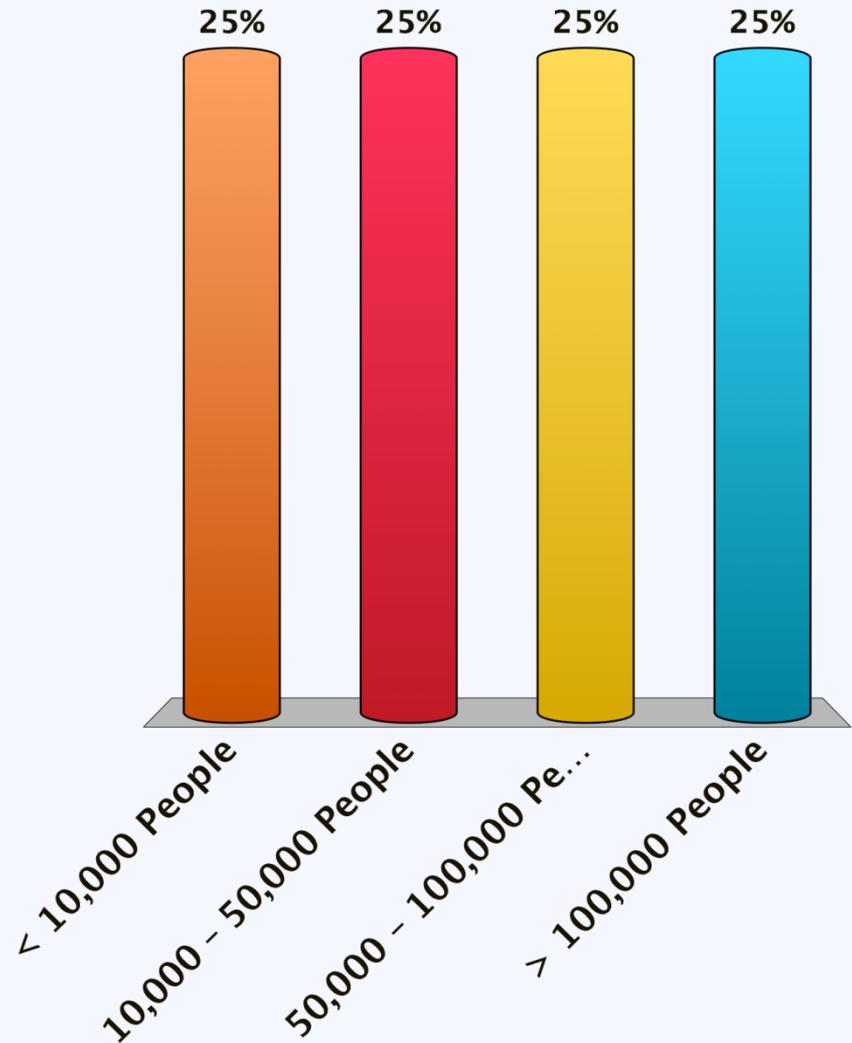
Who are you?

- A. Administrator
- B. Planner
- C. Elected official
- D. Code enforcement official
- E. Solar industry
- F. Academic representative
- G. Community member
- H. Other



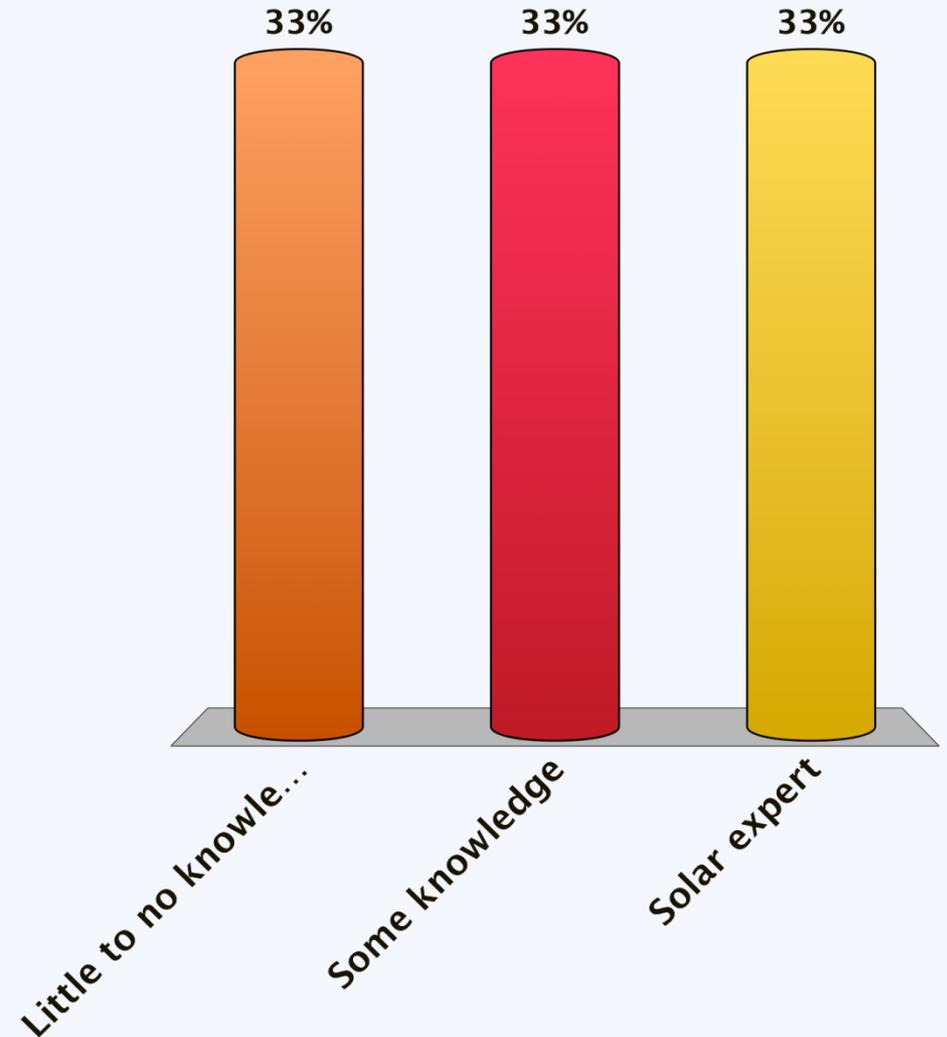
What Size is Your Community?

- A. < 10,000 People
- B. 10,000 – 50,000 People
- C. 50,000 – 100,000 People
- D. > 100,000 People



How Familiar Are You With Solar?

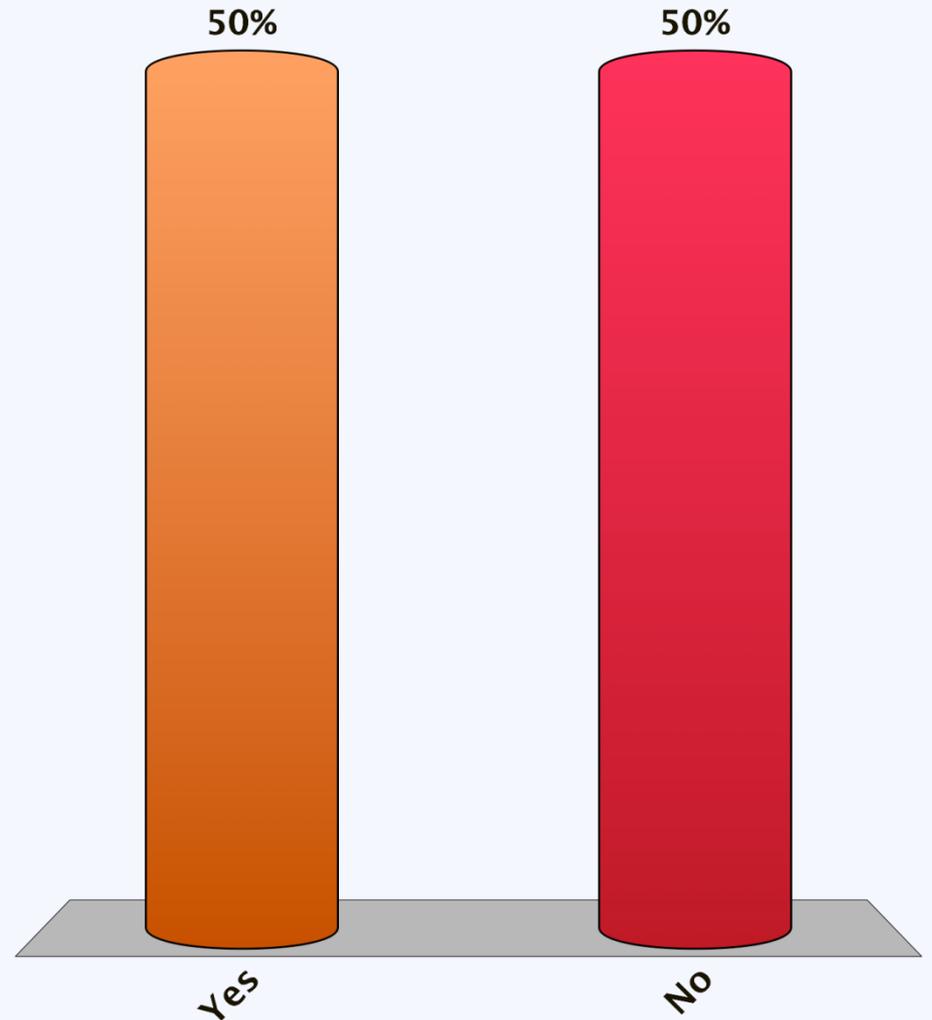
- A. Little to no knowledge
- B. Some knowledge
- C. Solar expert



Do you have solar on your home?

A. Yes

B. No



Solar Development in the US

In 2013, the US solar industry installed

131,000 new solar installations

of which

94% were residential projects

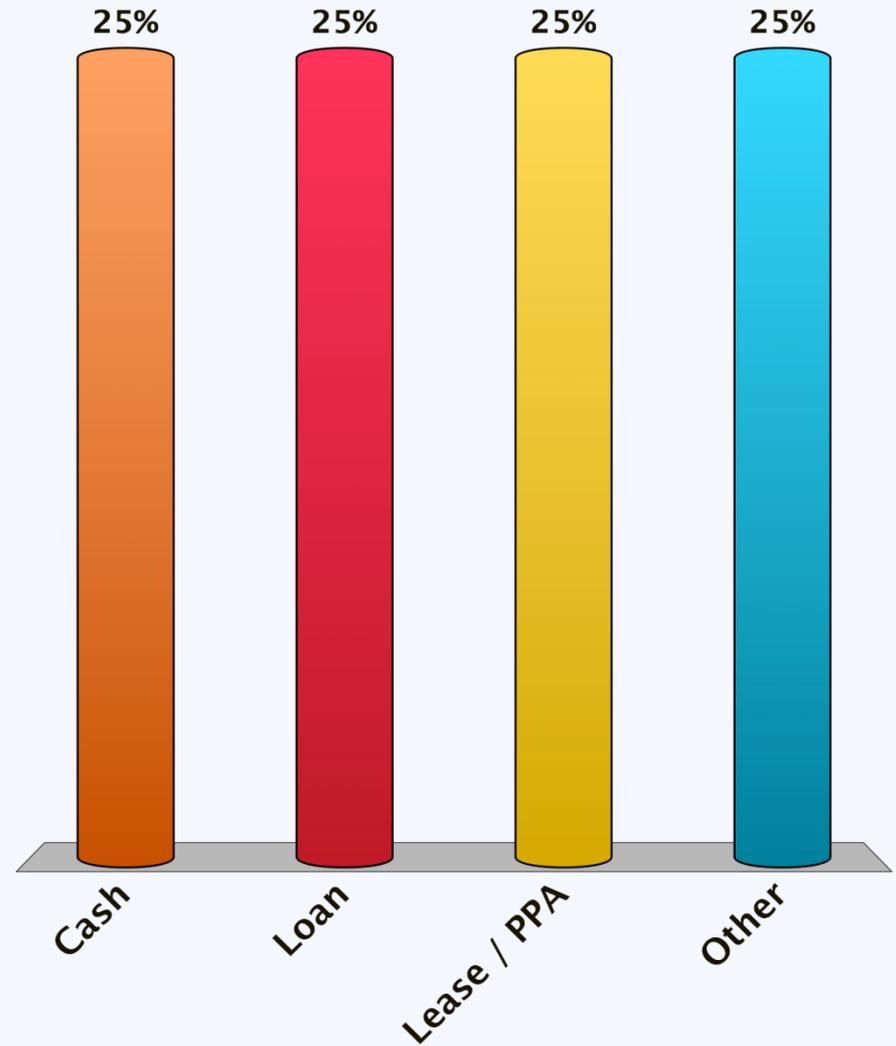
If you do have solar on your home:

How did you finance it?

A. Cash

B. Loan

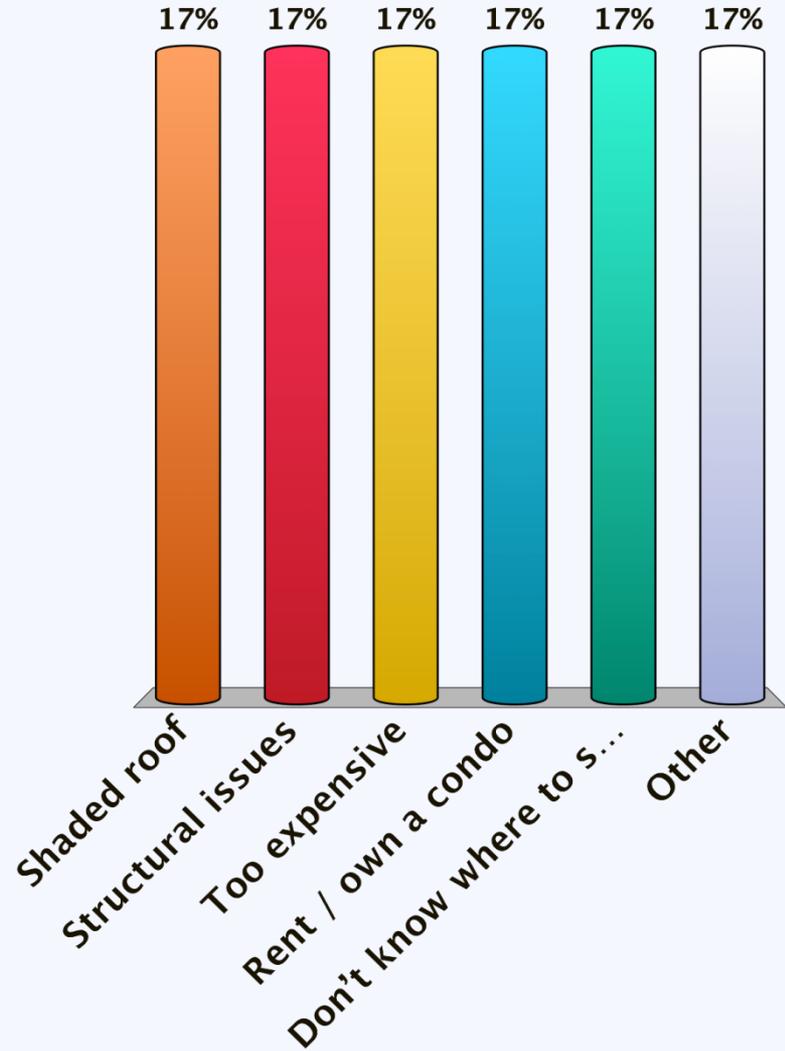
C. Other



If you don't have solar on your home:

Why not?

- A. Shaded roof
- B. Structural issues
- C. Too expensive
- D. Rent / own a condo
- E. Don't know where to start
- F. Other

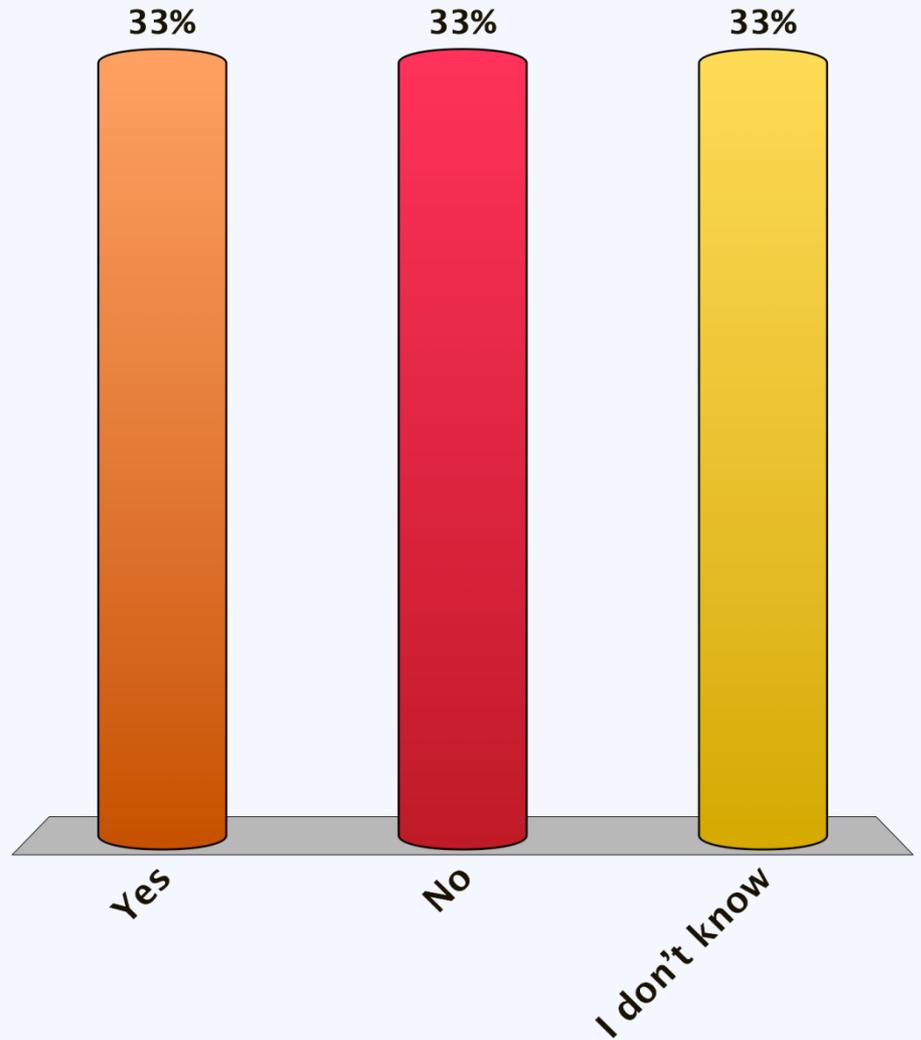


Does Your Local Government Have Solar?

A. Yes

B. No

C. I don't know



Agenda

Solar and the Role of Local Governments

- Solar Technologies
- Solar and Local Governments

Visioning and Goal Setting

- Group Activity and Discussion

Plan Making

- Overview and Case Examples

Regulations and Incentives

- Introduction
- Walkthrough with Hobart, IN Regulations

Private and Public Development

Group Discussion and Wrap-up

- Planning Policy Audit

Questions and Feedback

Solar Technologies



Solar Photovoltaic (PV)



Solar Hot Water



Concentrated Solar Power

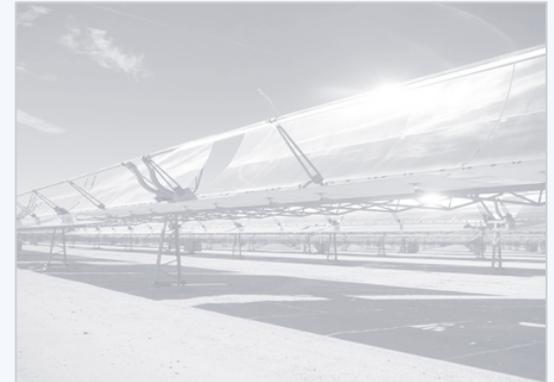
Solar Technologies



Solar Photovoltaic (PV)

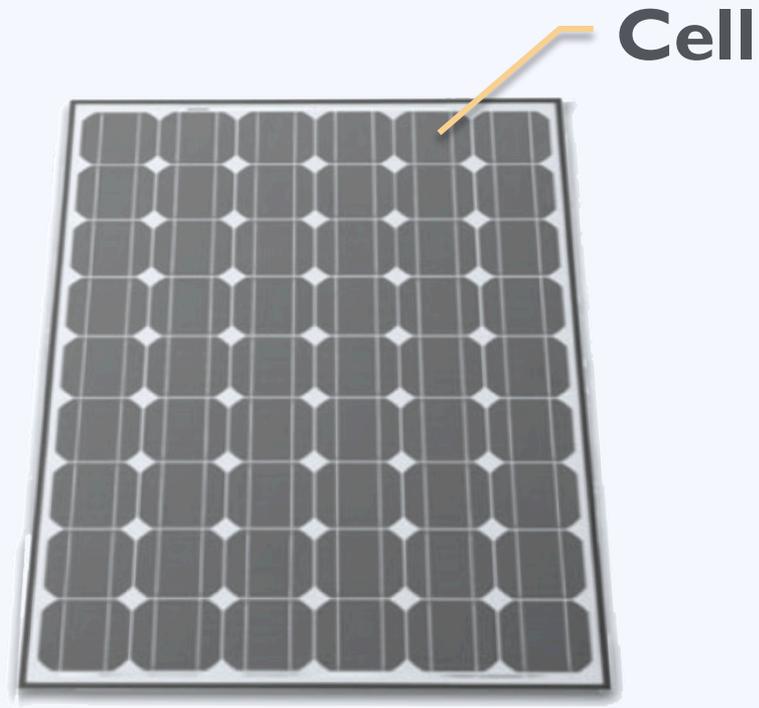


Solar Hot Water



Concentrated Solar Power

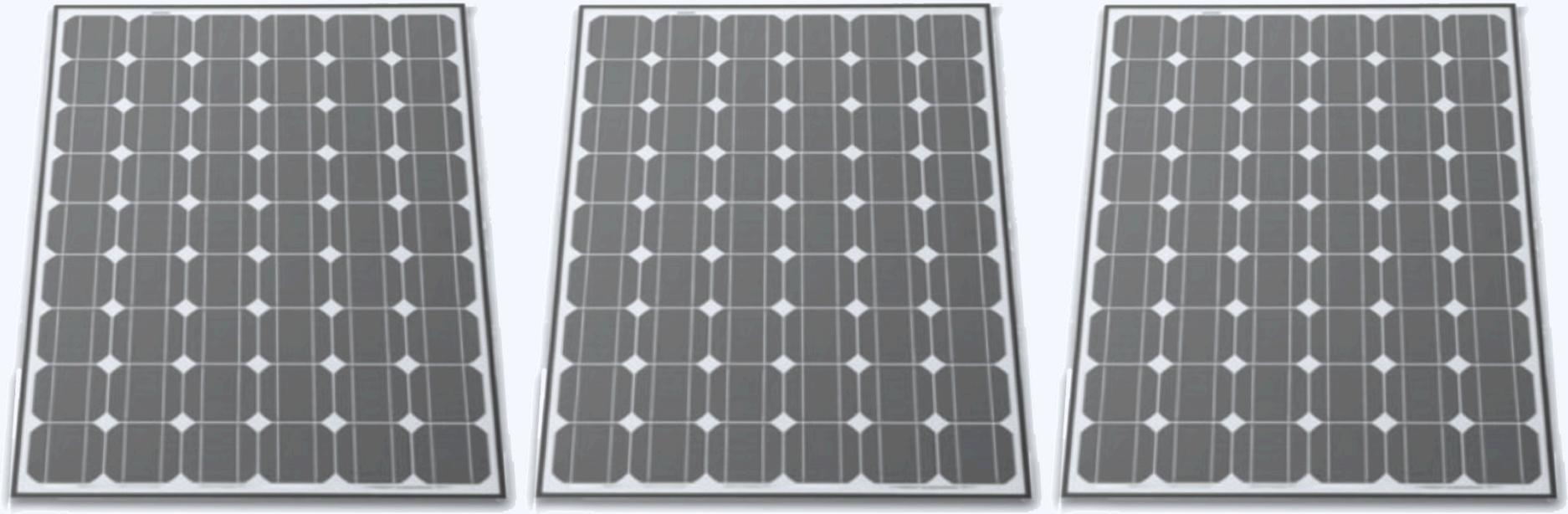
Some Basic Terminology



Cell

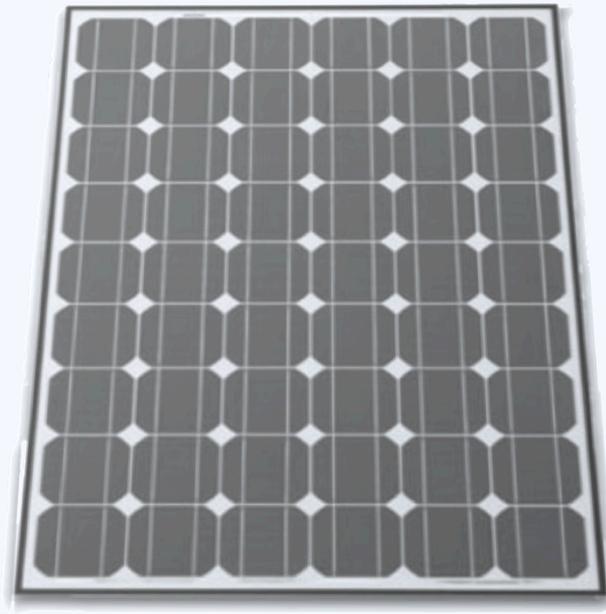
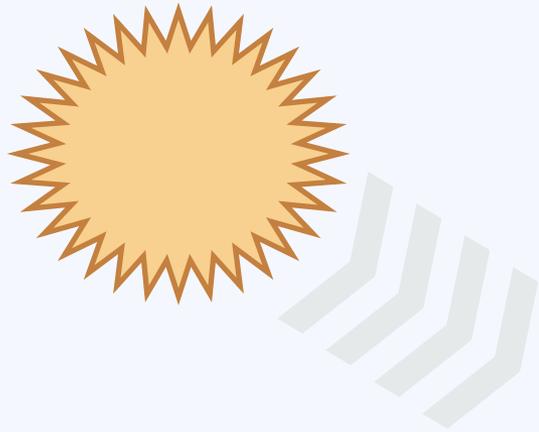
Panel / Module

Some Basic Terminology



Array

Some Basic Terminology



Production
Kilowatt-hour (kWh)

Capacity / Power
kilowatt (kW)

Some Basic Terminology



Residence
5 kW



Factory
1 MW+



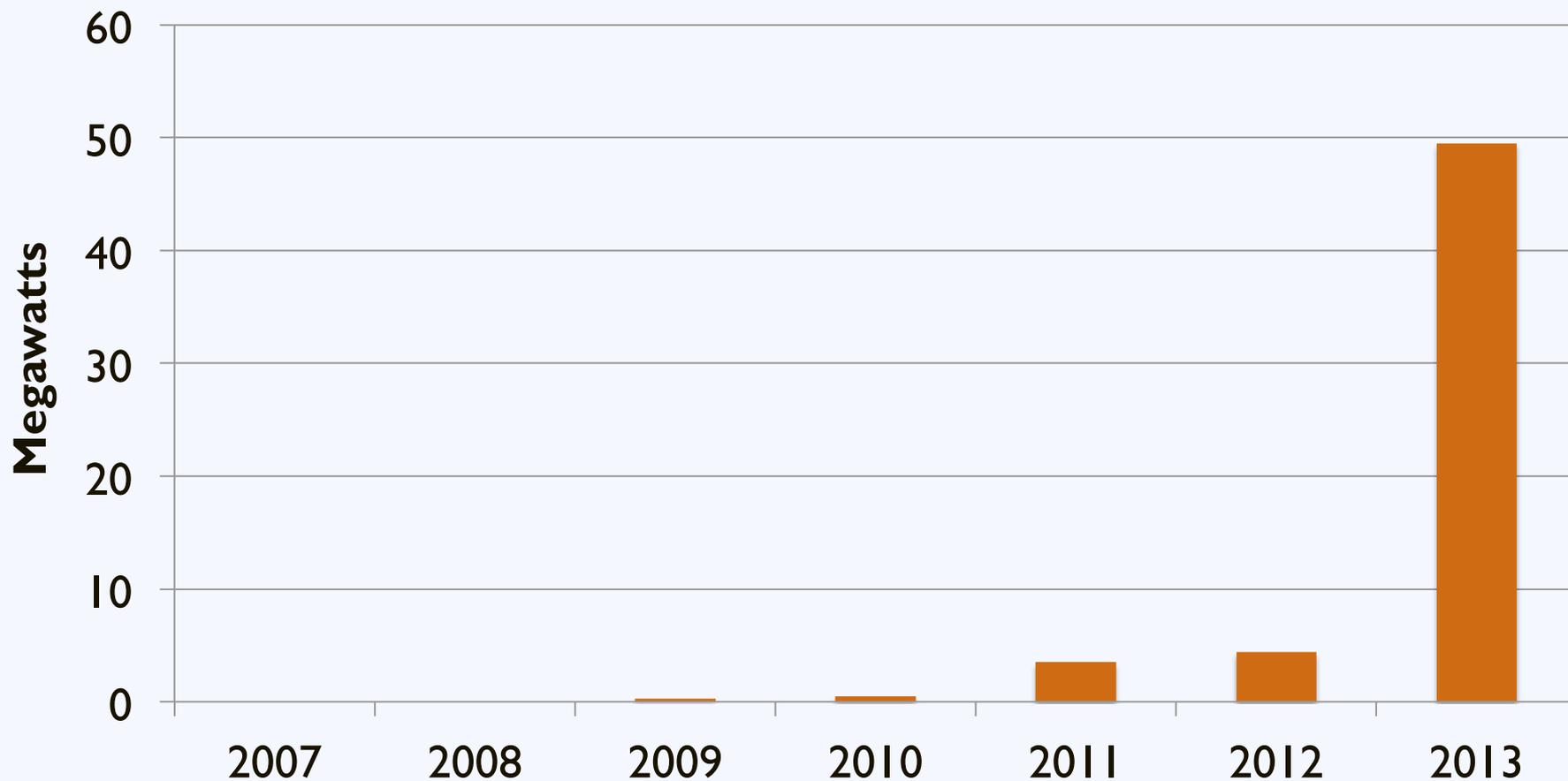
Office
50 – 500 kW



Utility
2 MW+

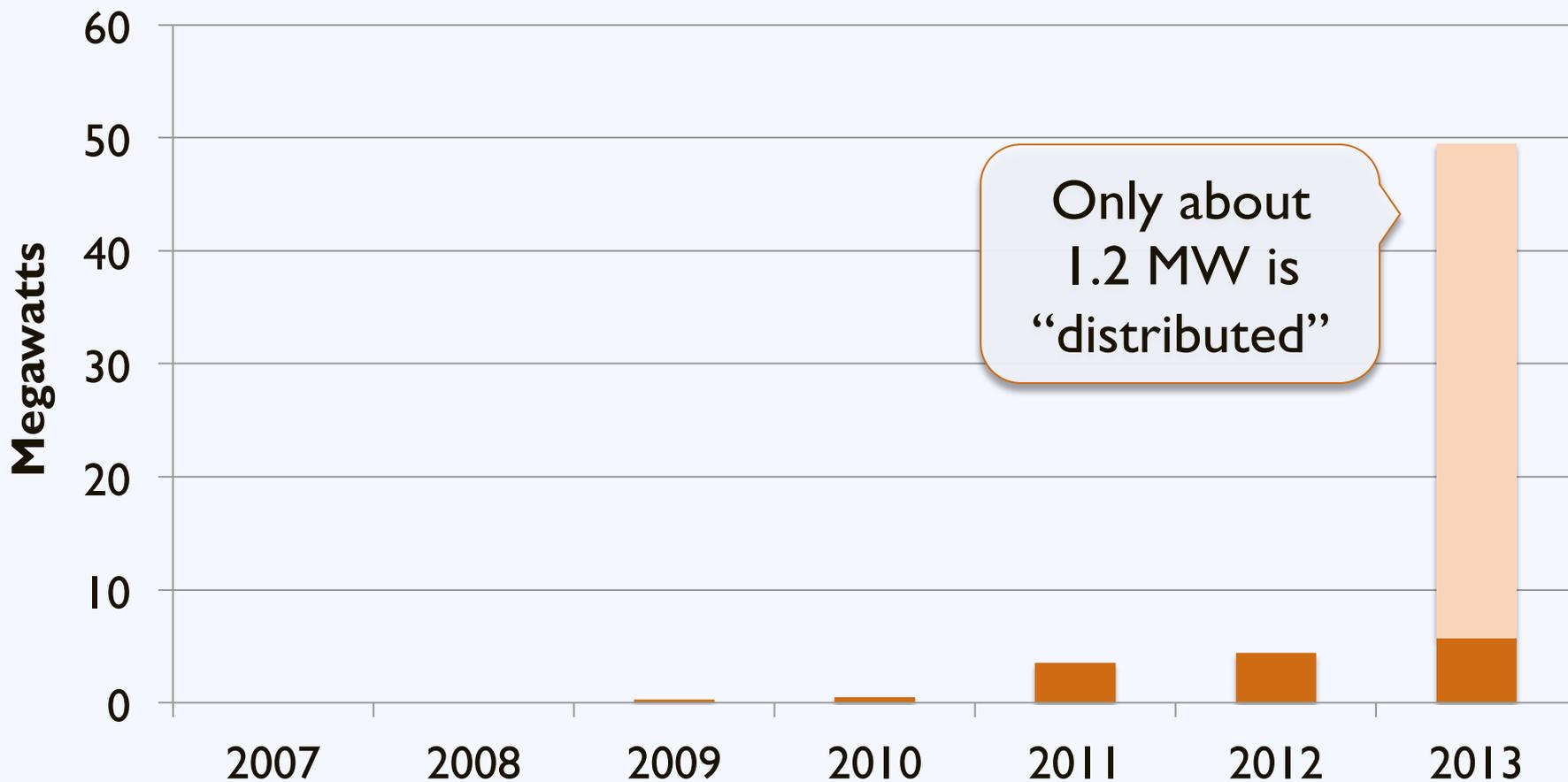
Indiana Solar Market

Cumulative Installed Capacity



Indiana Solar Market

Cumulative Installed Capacity



Indiana Solar Market

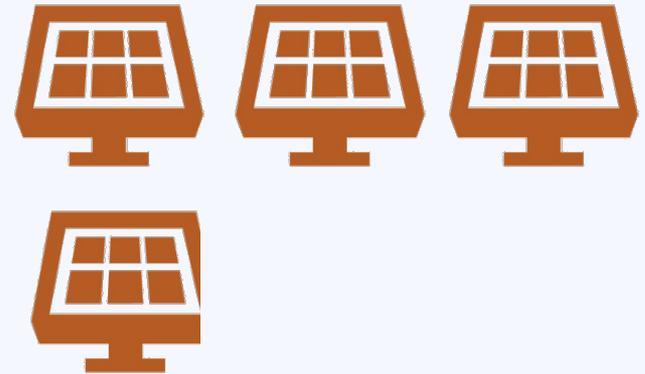
Indiana



7.5

watts per person

US

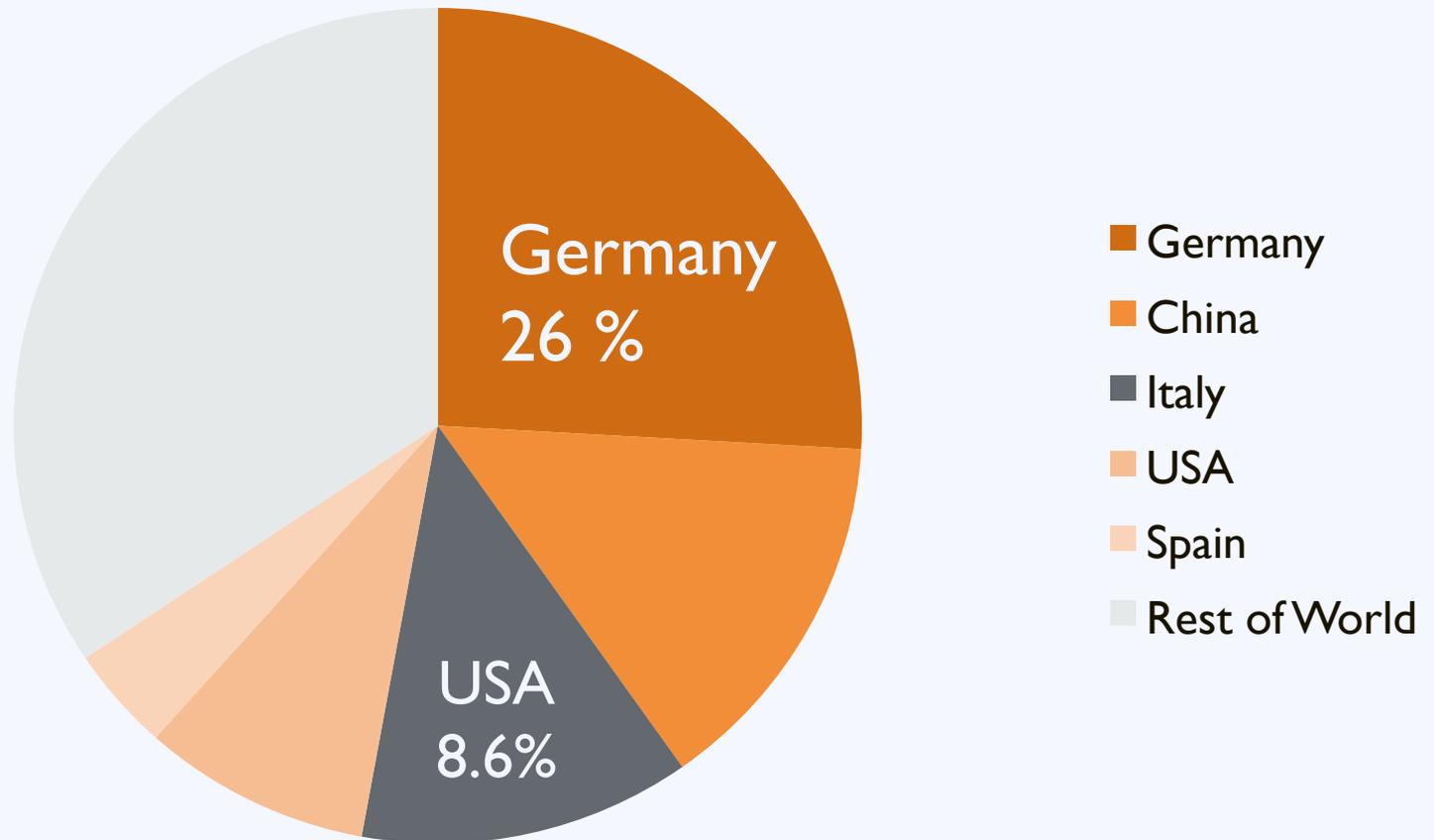


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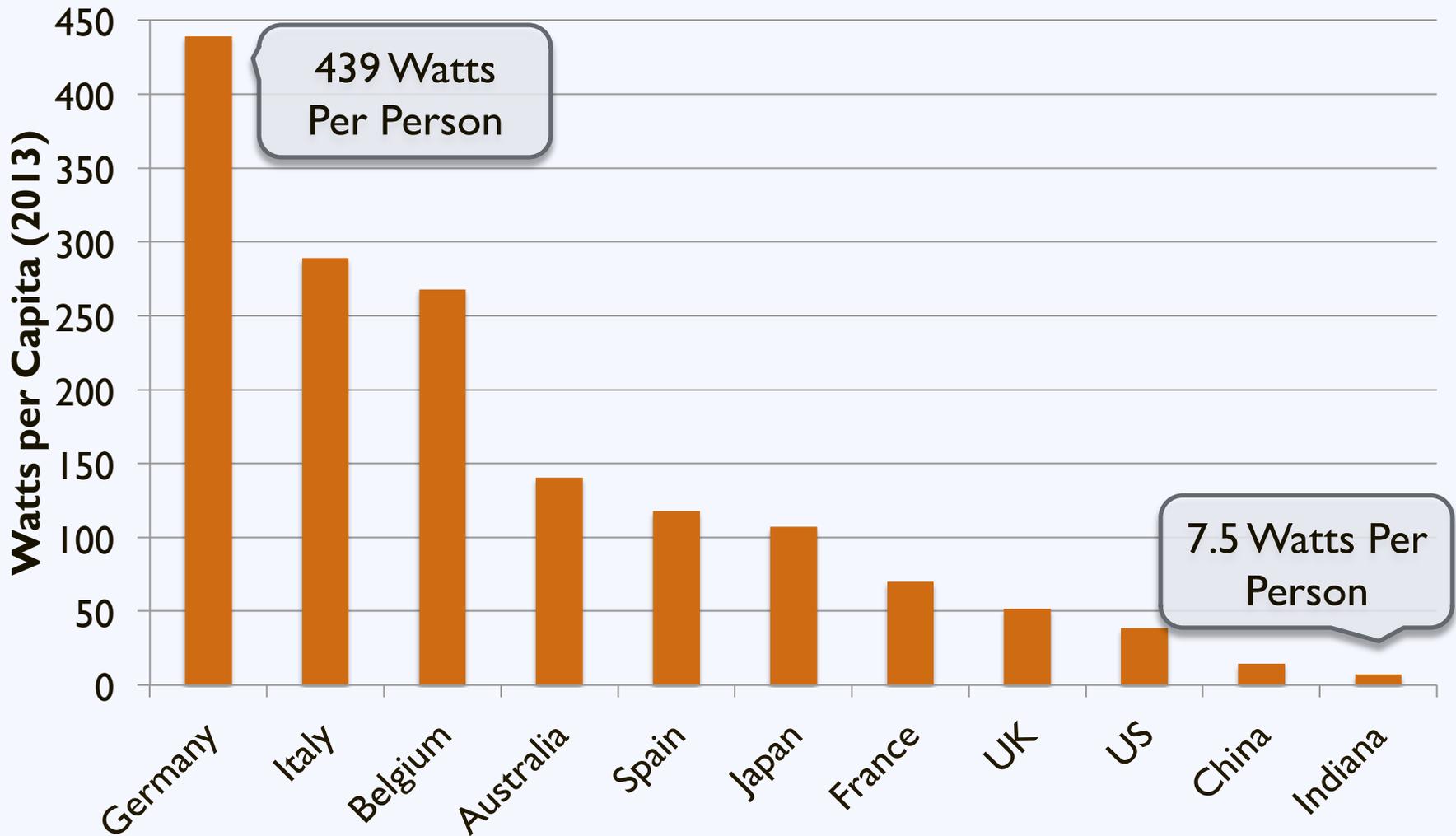
watts per person

World Solar Market

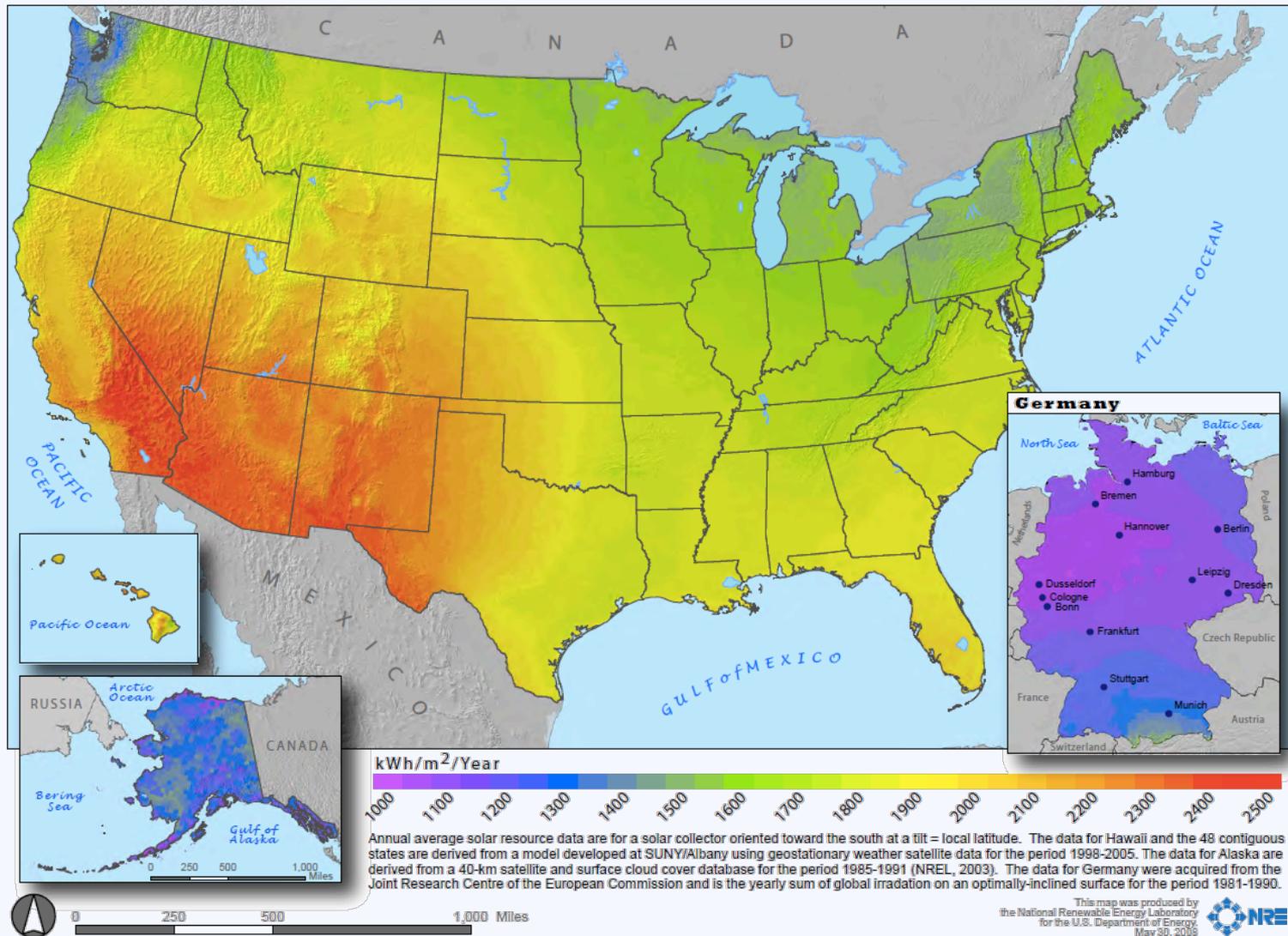
Top 5 Countries Solar Operating Capacity (2013)



Installed Capacity per Capita

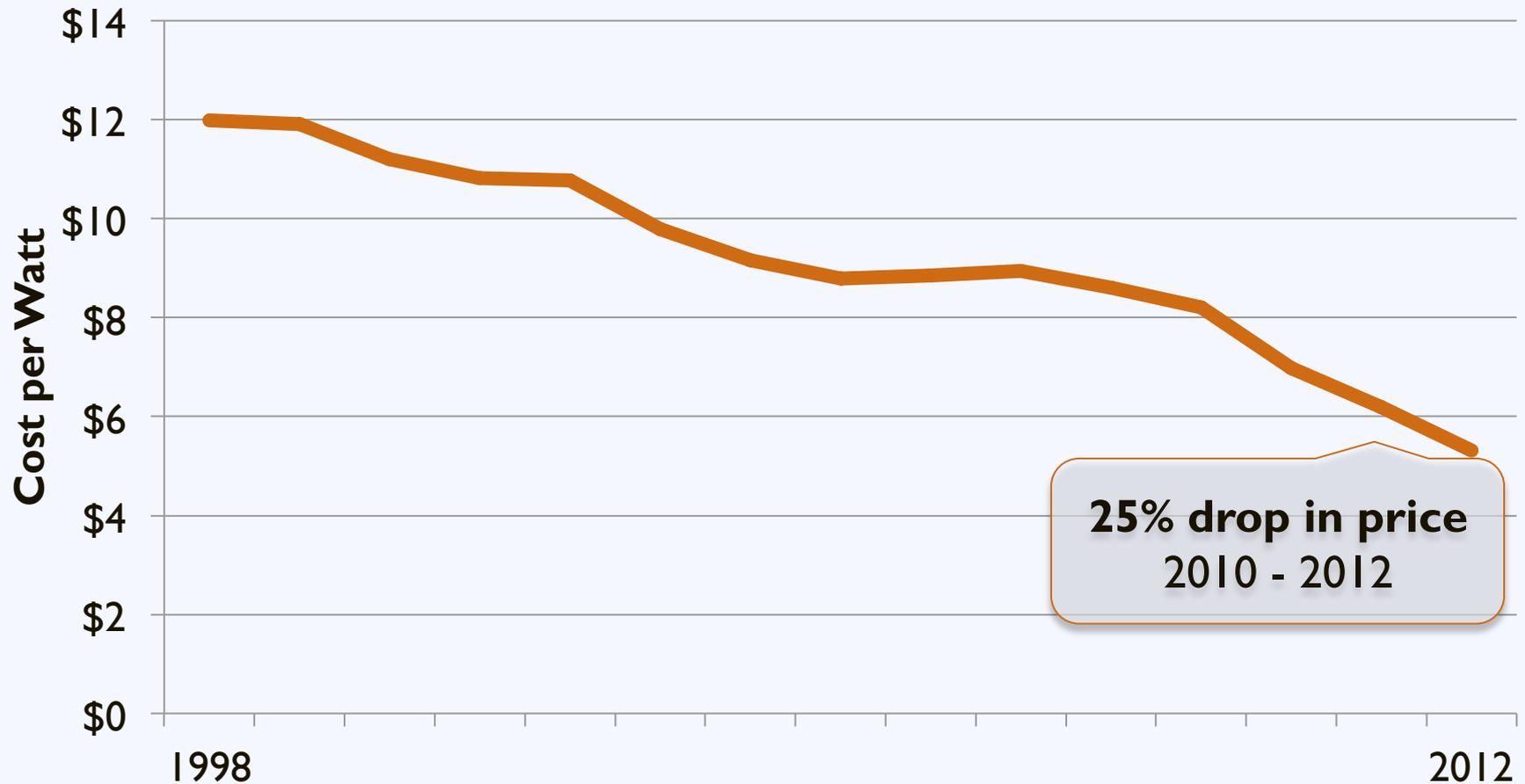


US Solar Resource

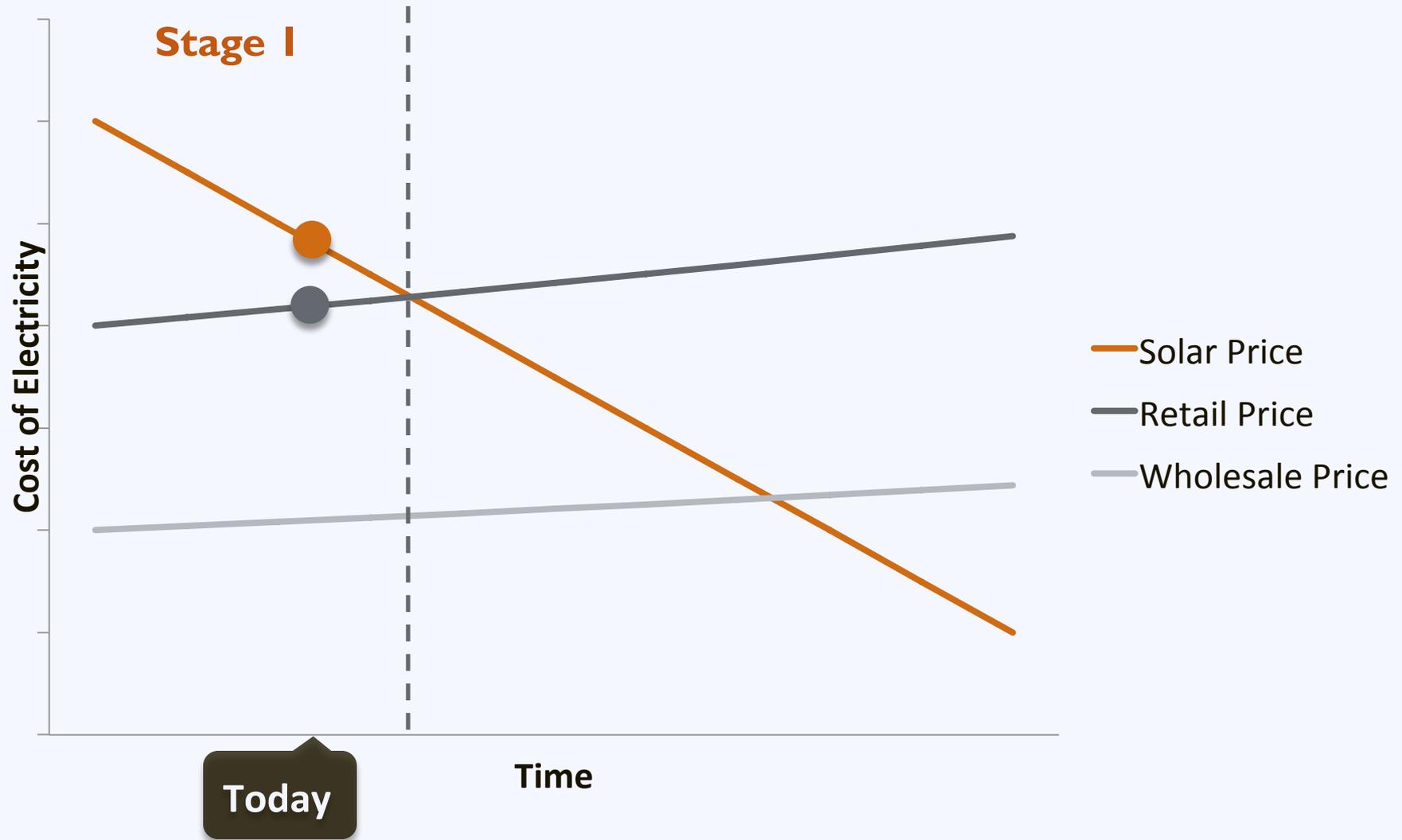


The Cost of Solar PV

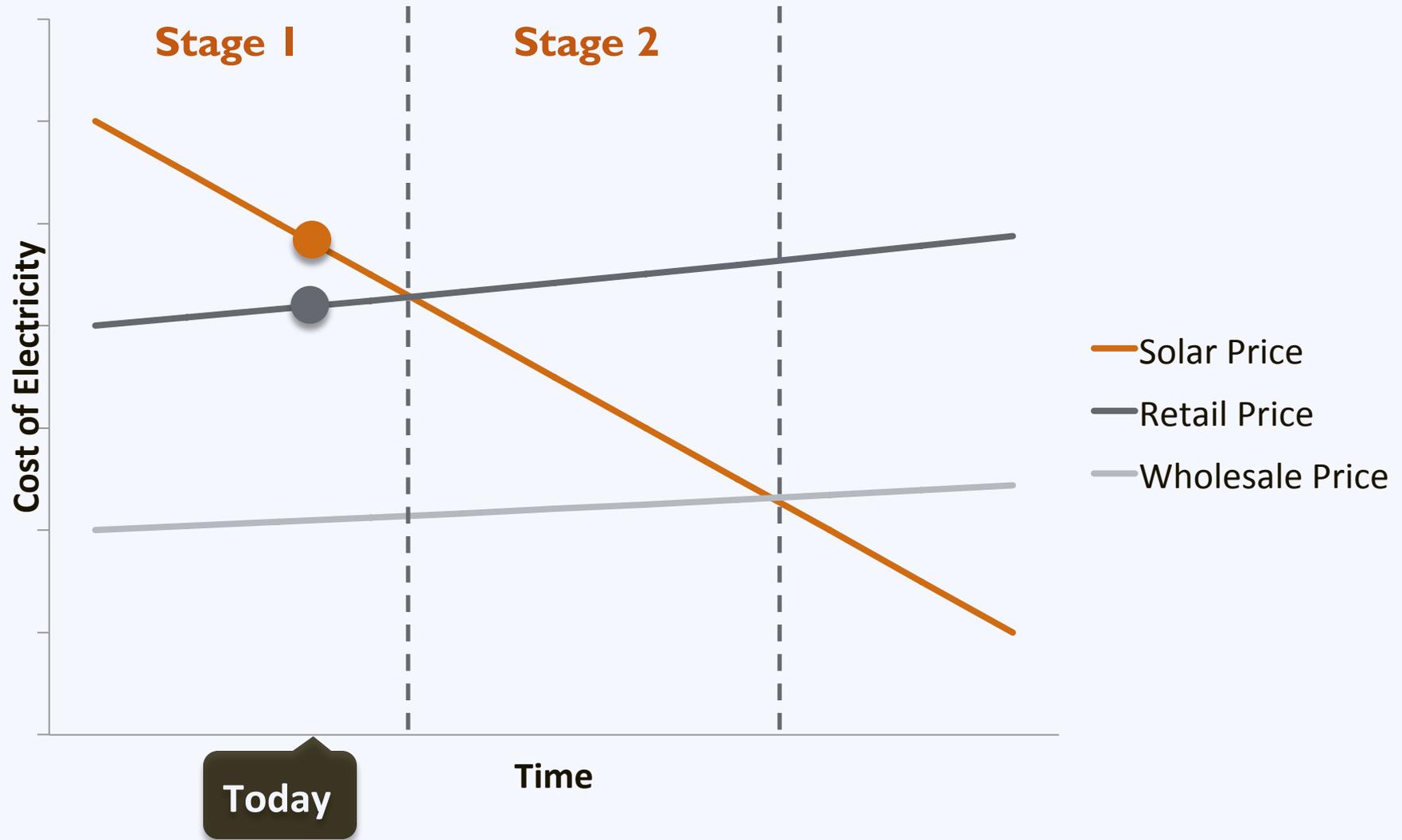
US Average Installed Cost for Behind-the-Meter PV



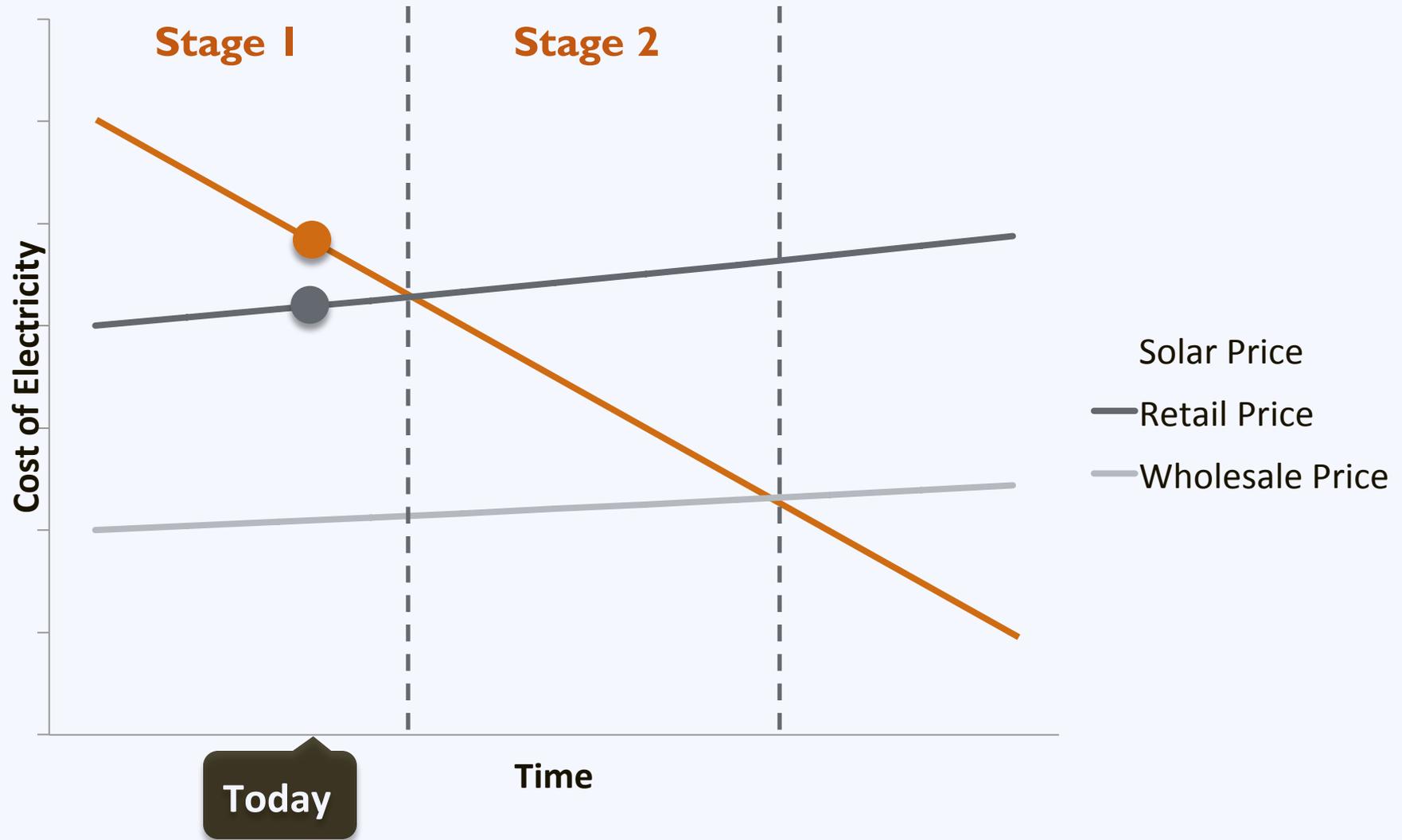
The Cost of Solar PV



The Cost of Solar PV

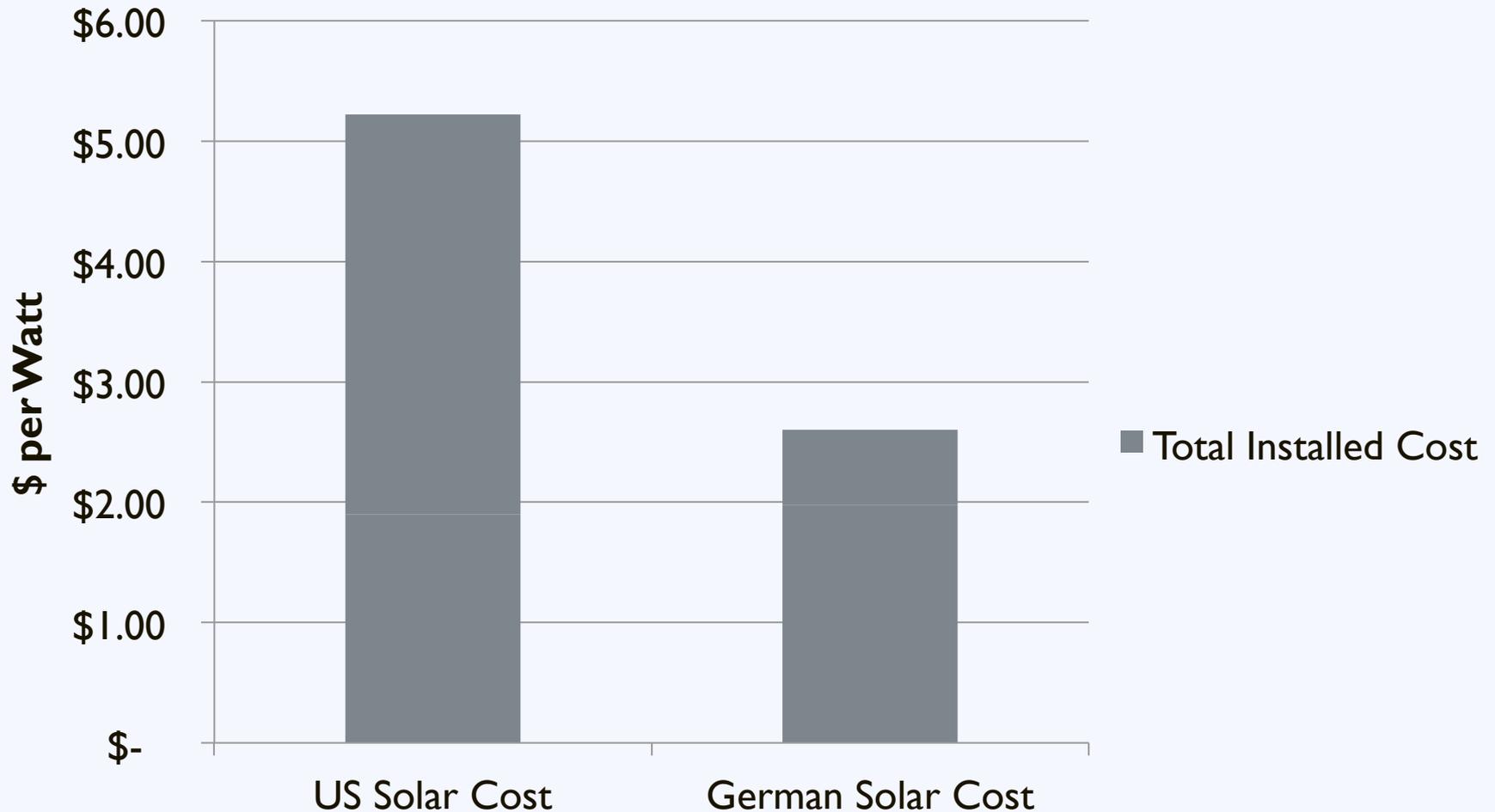


The Cost of Solar PV



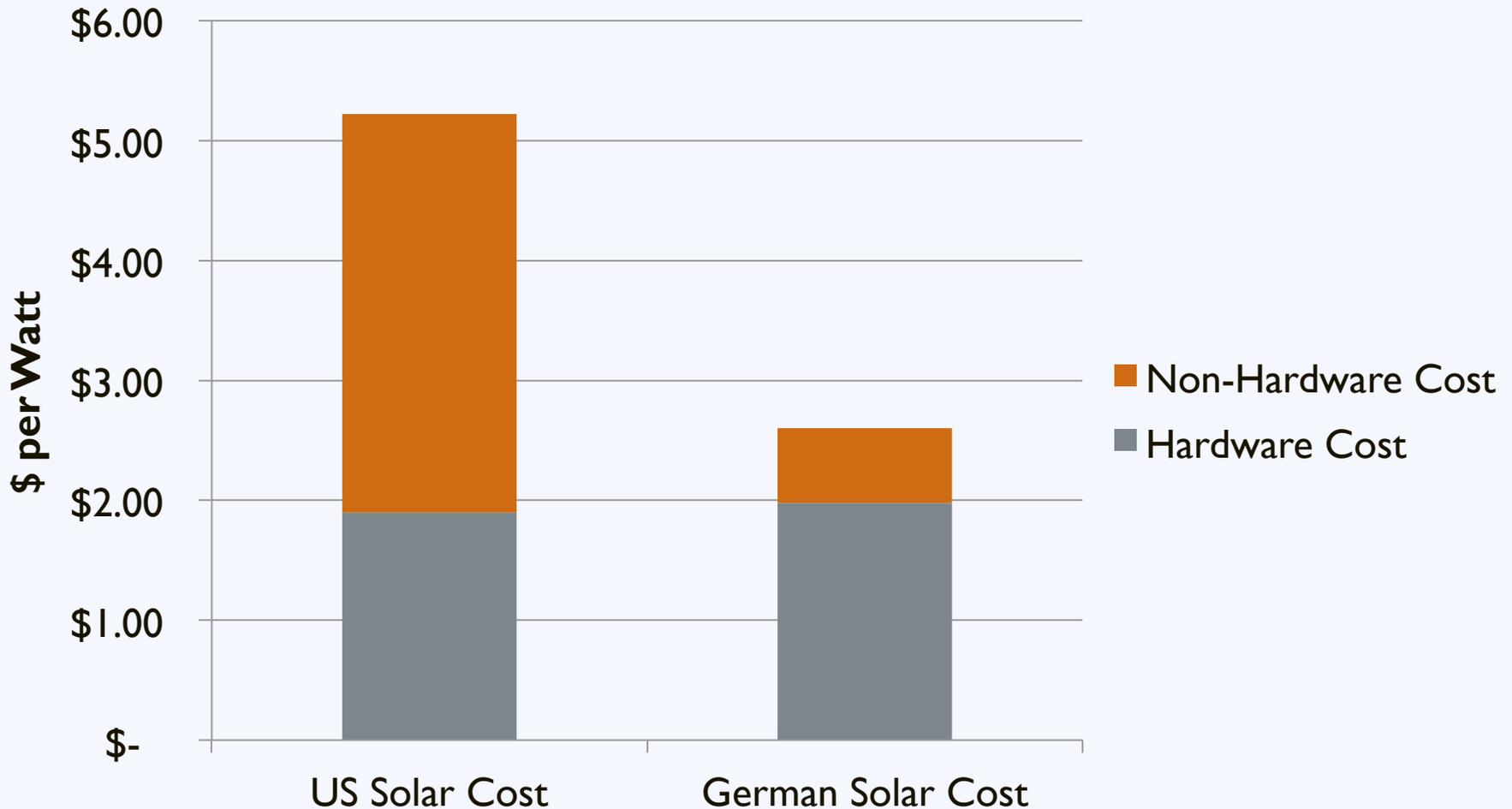
The Cost of Solar in the US

Comparison of US and German Solar Costs



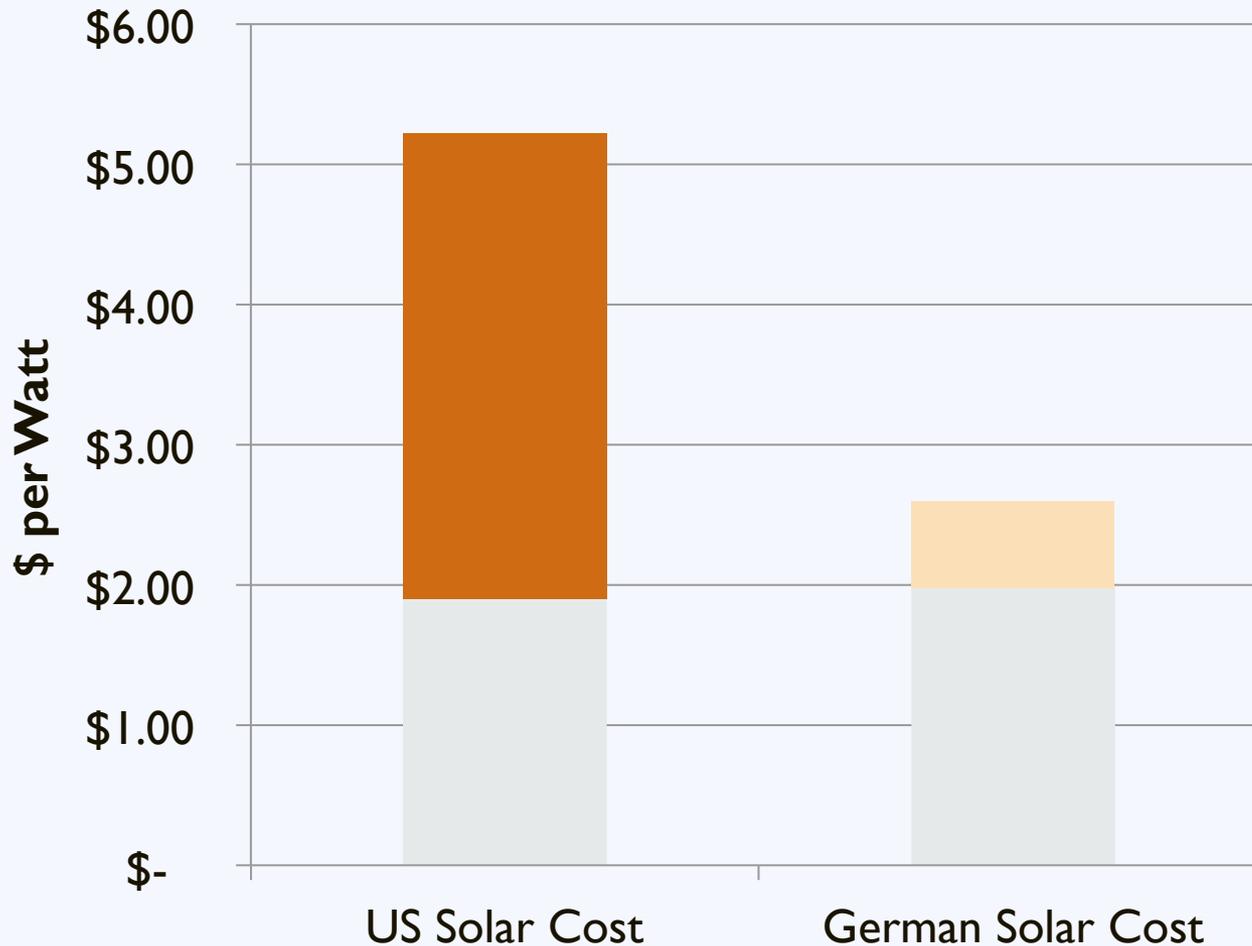
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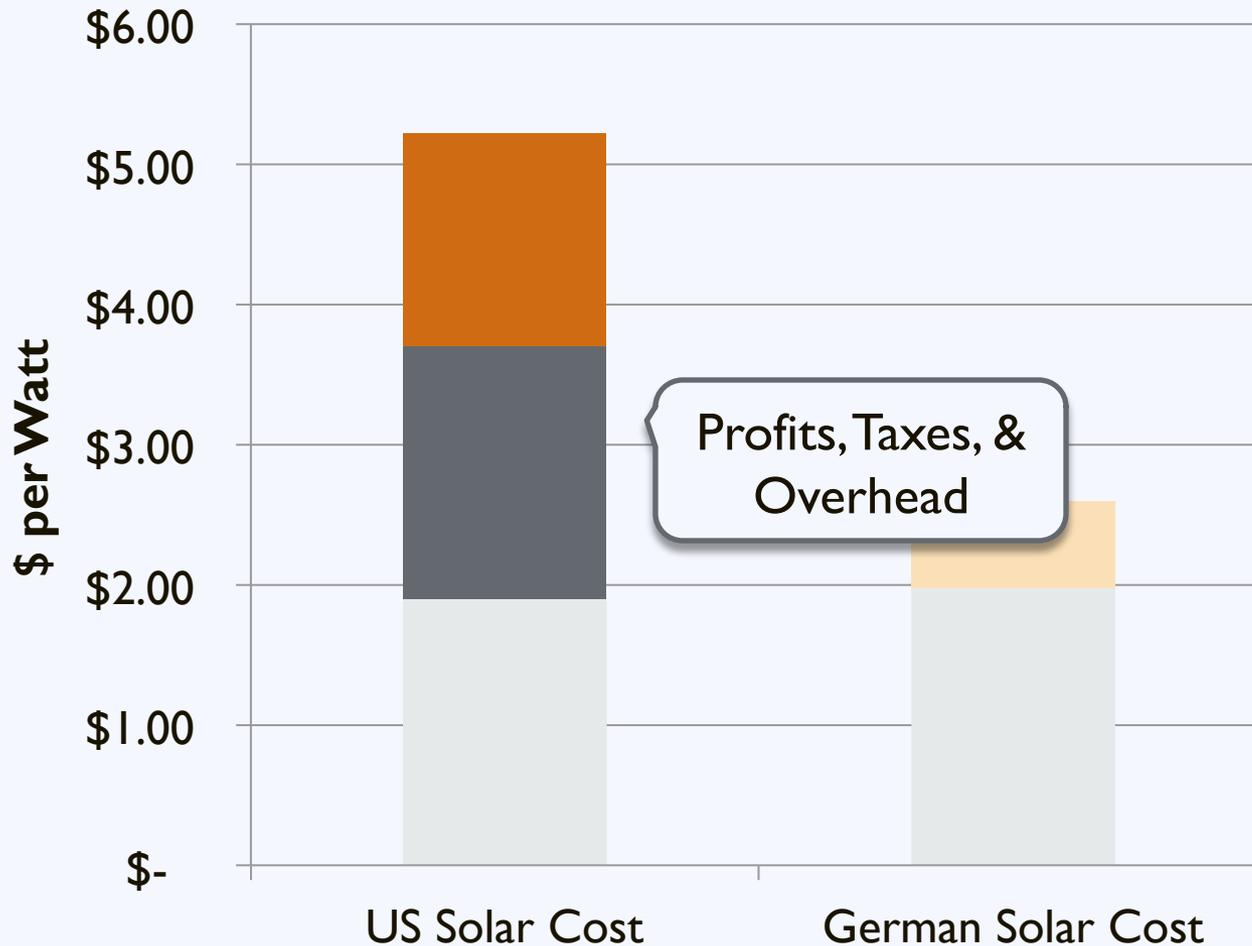
The Cost of Solar in the US

Comparison of US and German Solar Costs



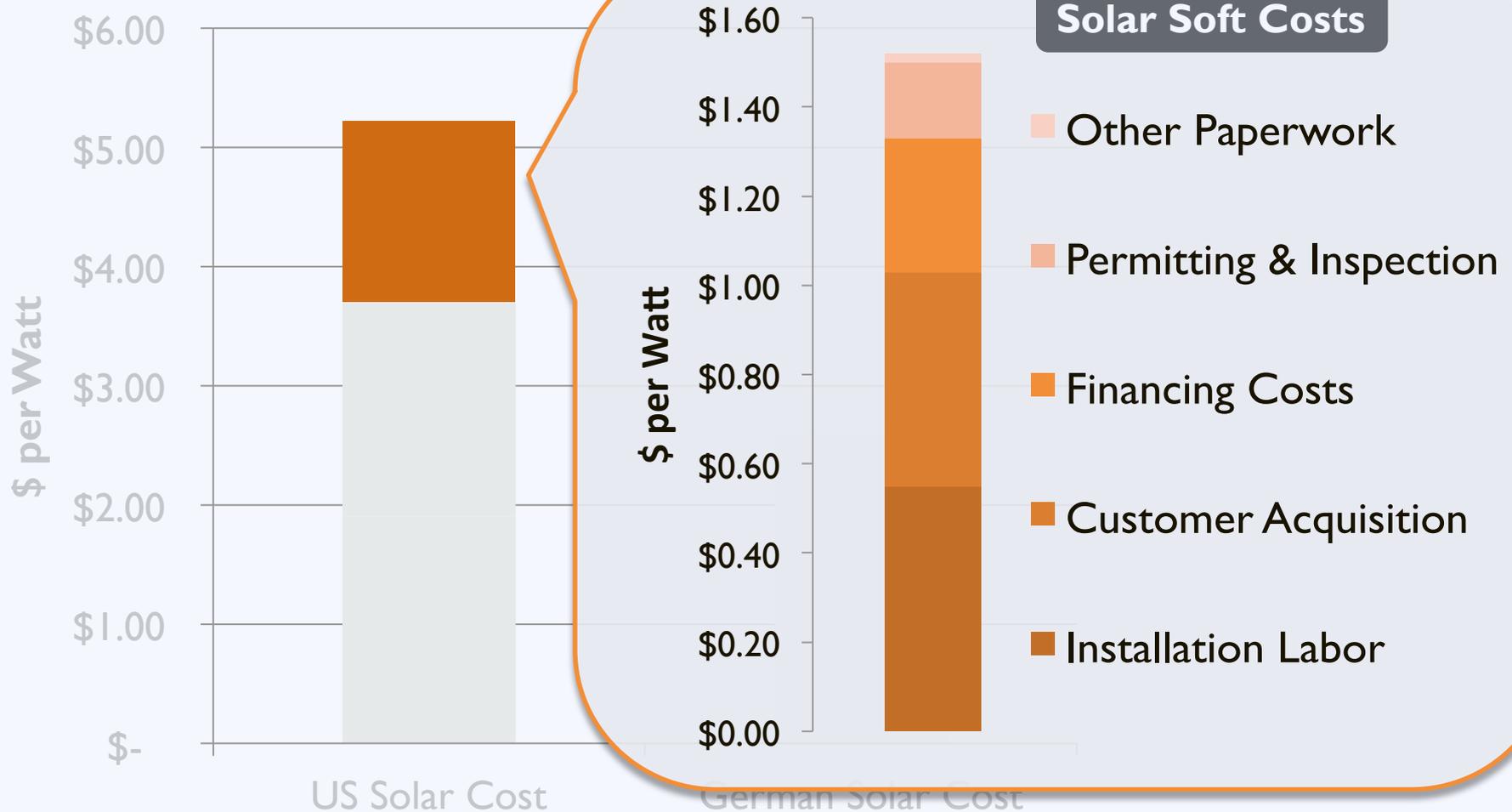
The Cost of Solar in the US

Comparison of US and German Solar Costs



The Cost of Solar in the US

Comparison of US and German Solar Costs



Challenge: Installation Time



**New York City's
Goal**

100 days

from inception to completion



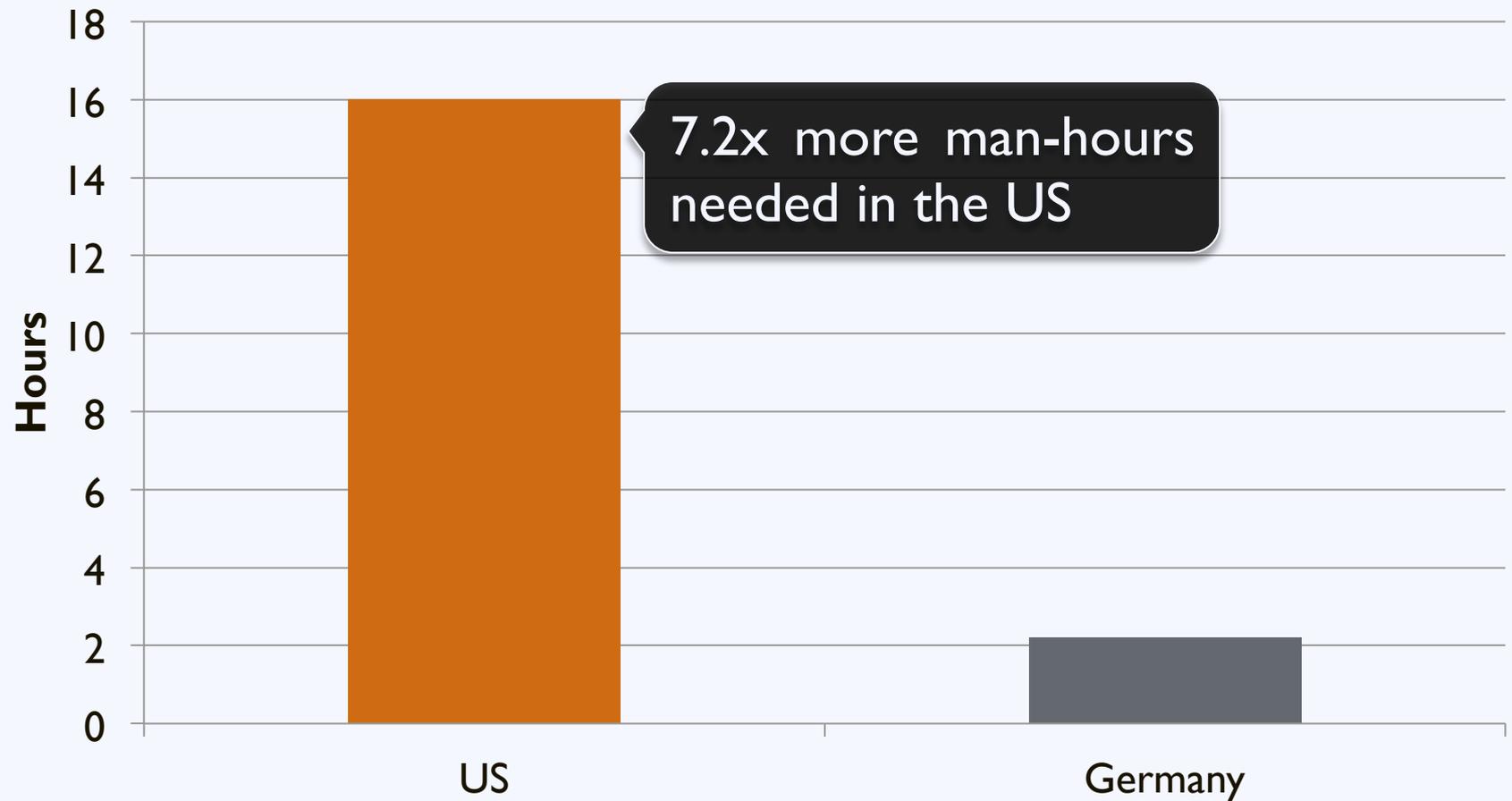
**Germany
Today**

8 days

from inception to completion

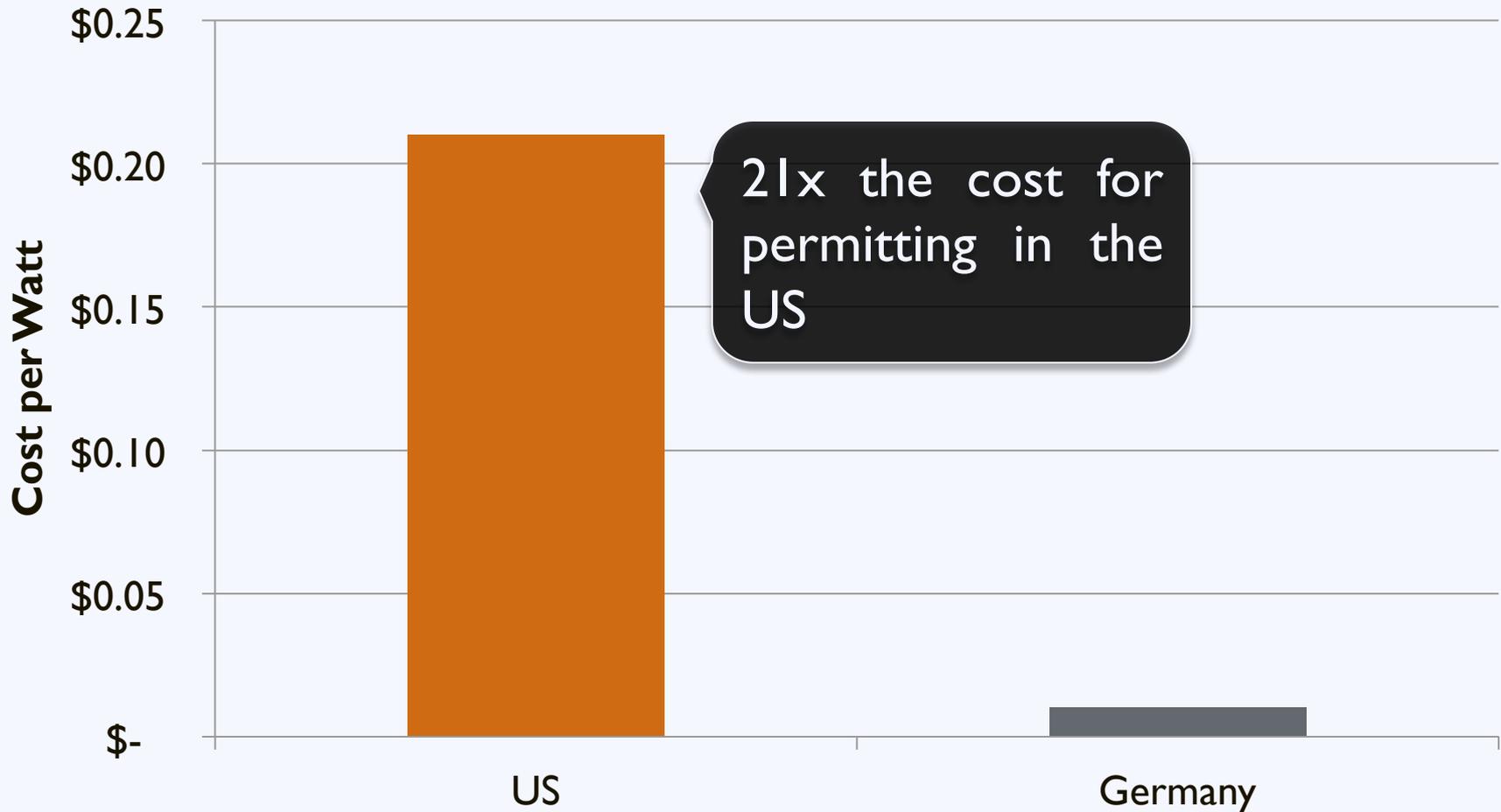
Time to Installation

Average Time to Permit a Solar Installation



Permitting Costs

Average Cost of Permitting in the US and Germany



Germany's Success

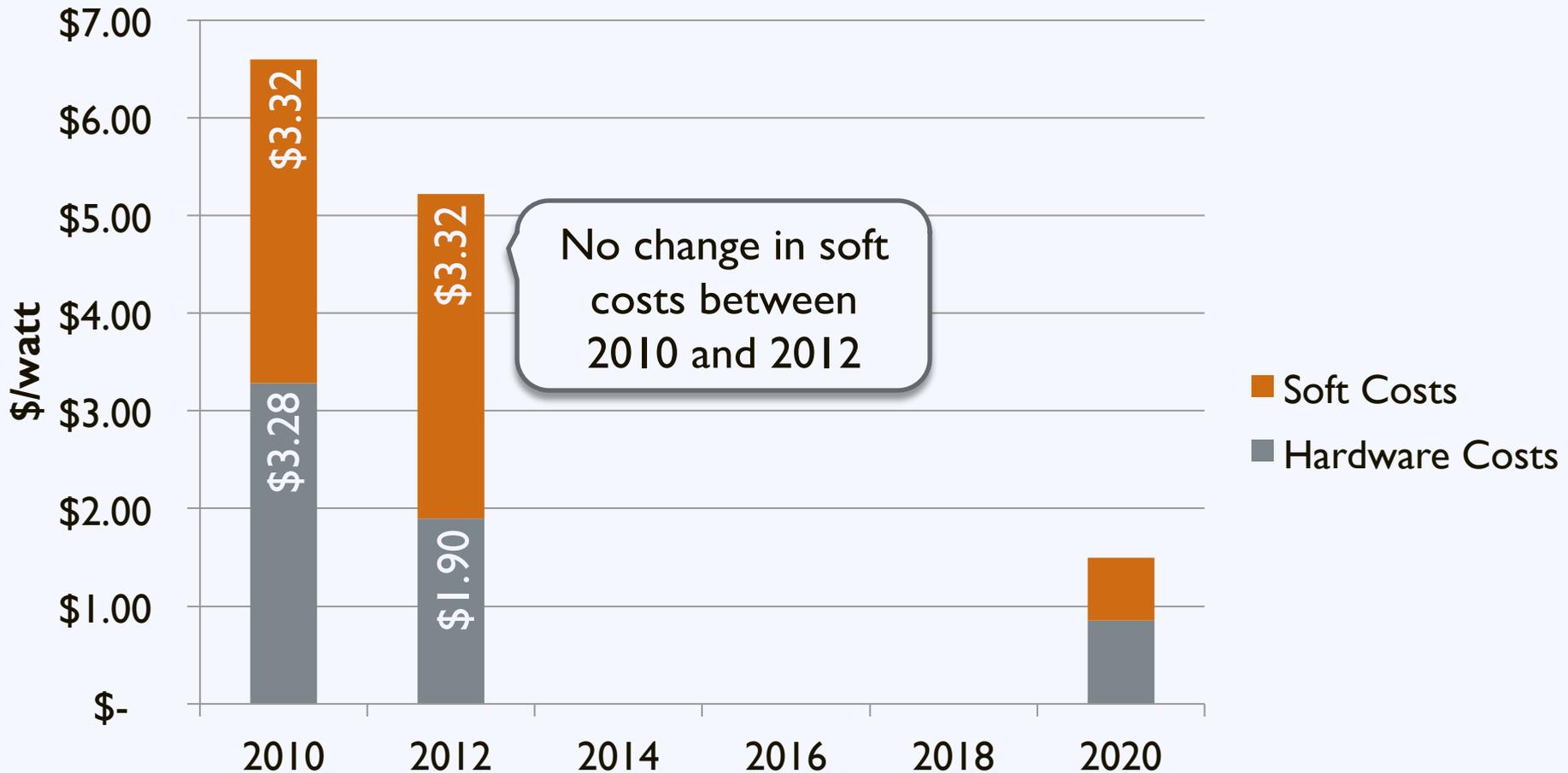
Consistency and Transparency

through

Standardized Processes

The Cost of Solar in the US

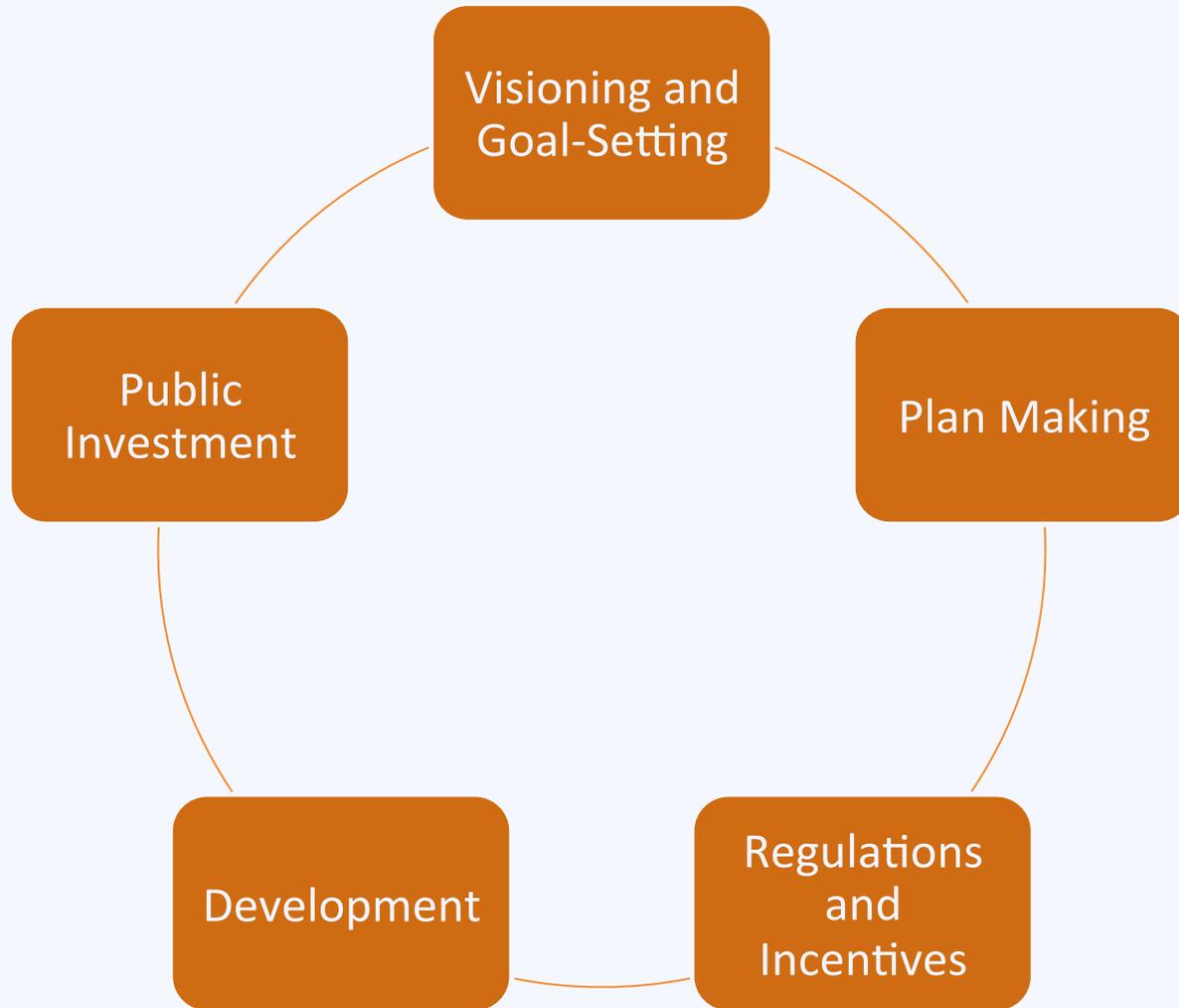
Change in Soft Costs and Hardware Costs Over Time



Workshop Goal

Enable local governments to understand and replicate successful solar practices planning and zoning practices to **expand local adoption of solar energy**

Solar in Community Planning



Agenda

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- Solar Technologies
- Solar and Local Governments

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- Group Activity and Discussion

Plan Making

- Overview and Case Examples

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Private and Public Development

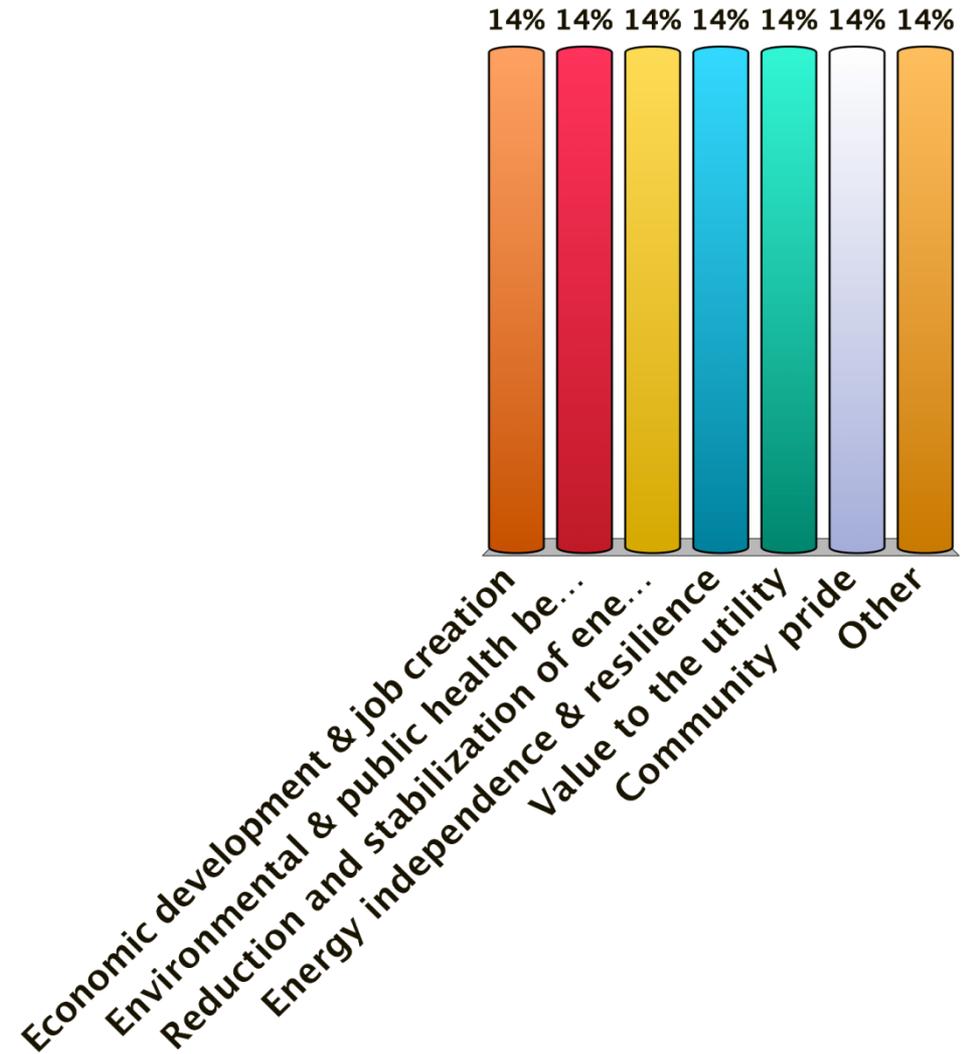
Group Discussion and Wrap-up

- Planning Policy Audit

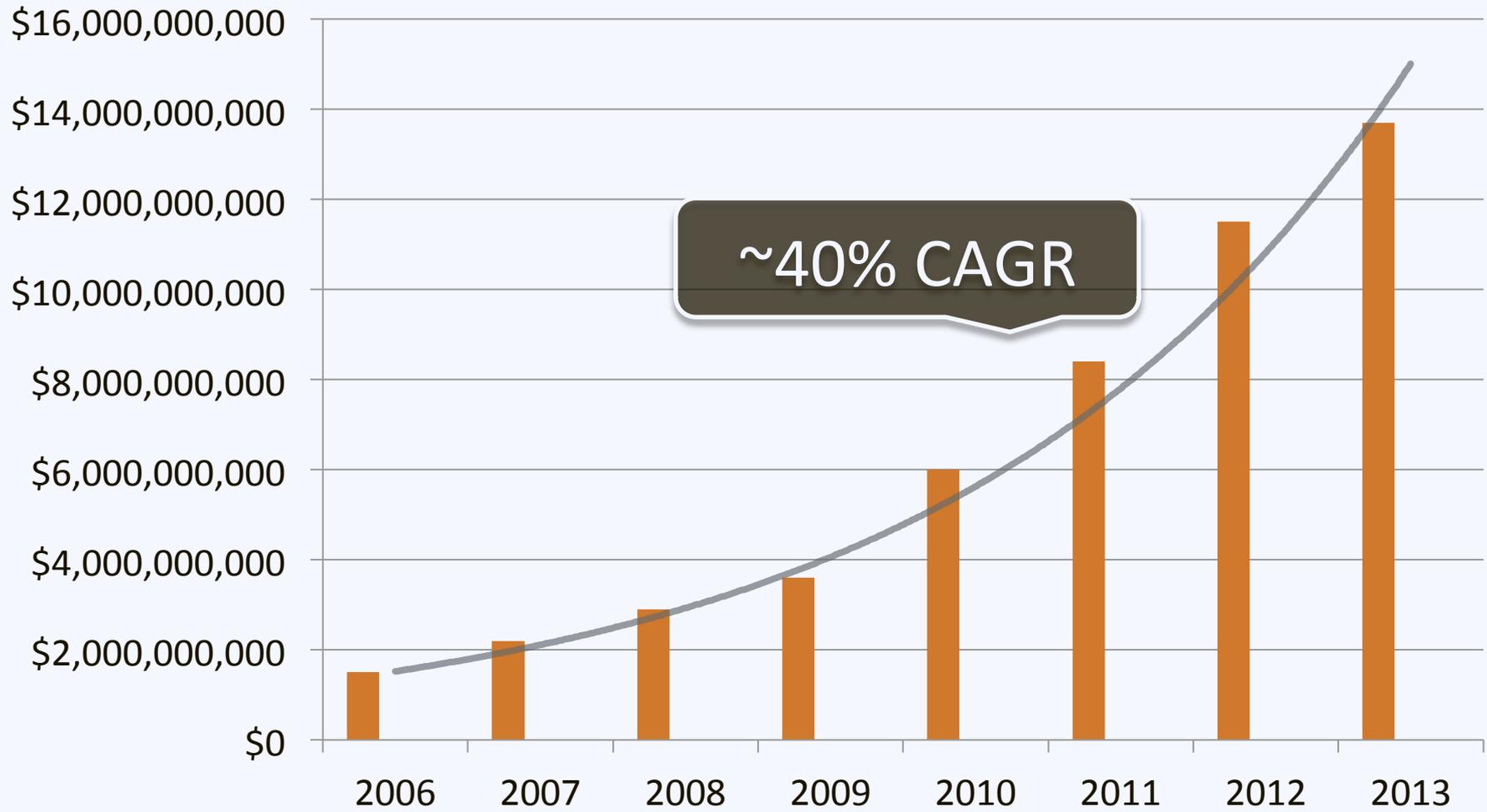
Questions and Feedback

What are the top 3 benefits solar can bring to your community?

- A. Economic development & job creation
- B. Environmental & public health benefits
- C. Reduction and stabilization of energy costs
- D. Energy independence & resilience
- E. Value to the utility
- F. Community pride
- G. Other

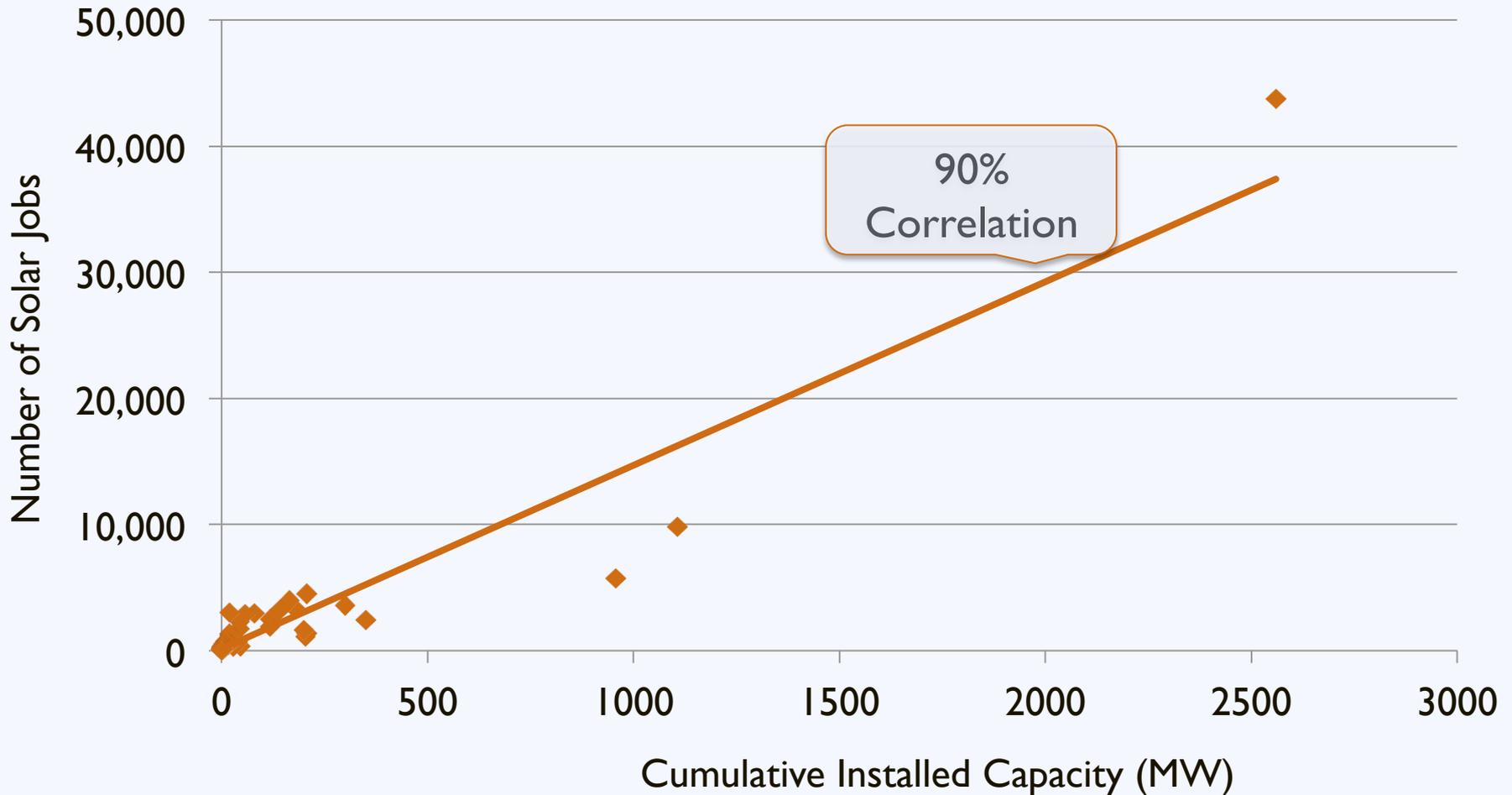


Solar Economic Growth

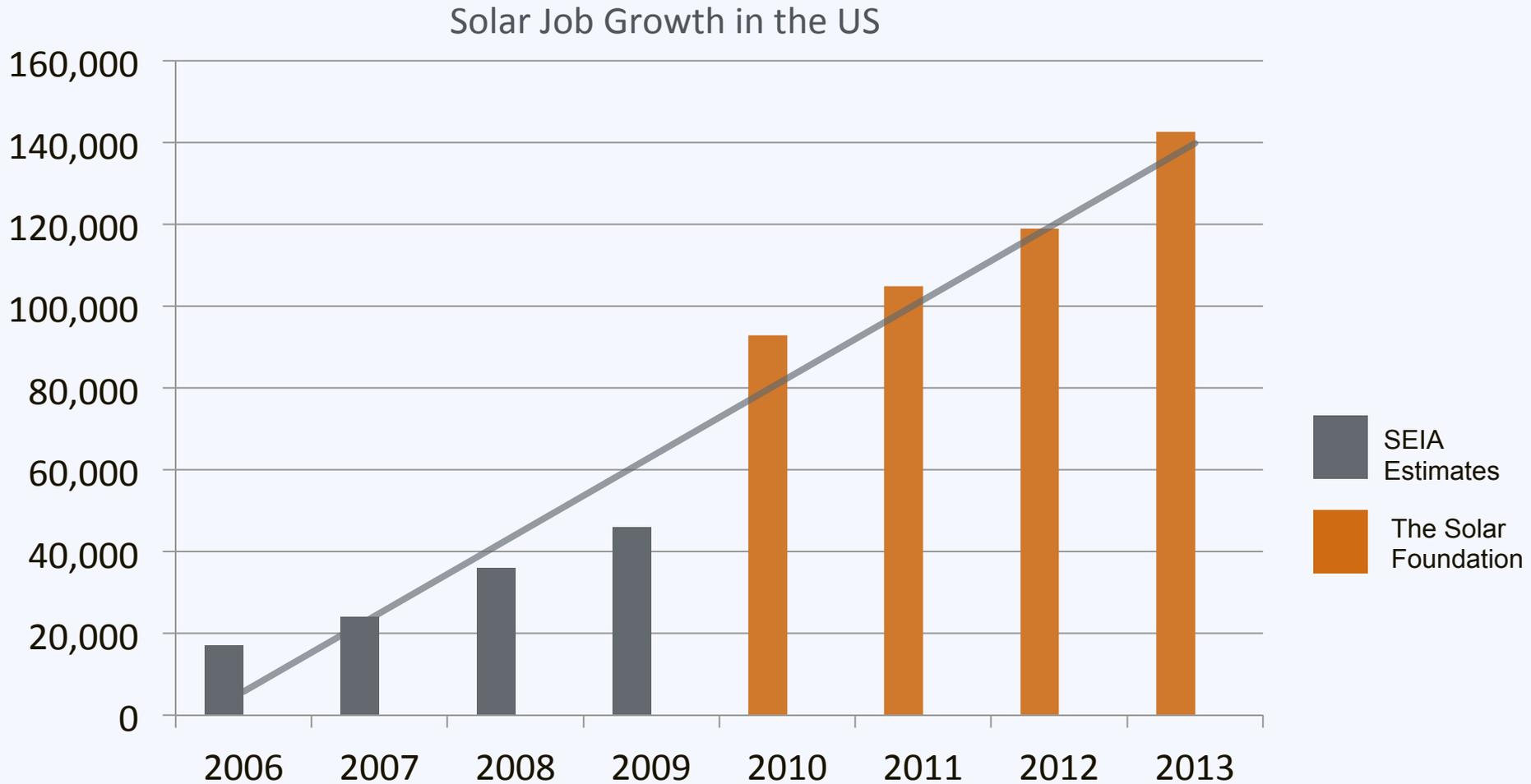


Job Creation

Correlation of Market Size & Jobs in Each State



Solar Job Growth



Economic Development in IN

There are currently

50 solar companies

that employ

1,500 people

Economic Development in IN

Between 2012 and 2013, solar jobs grew

178%

In Indiana

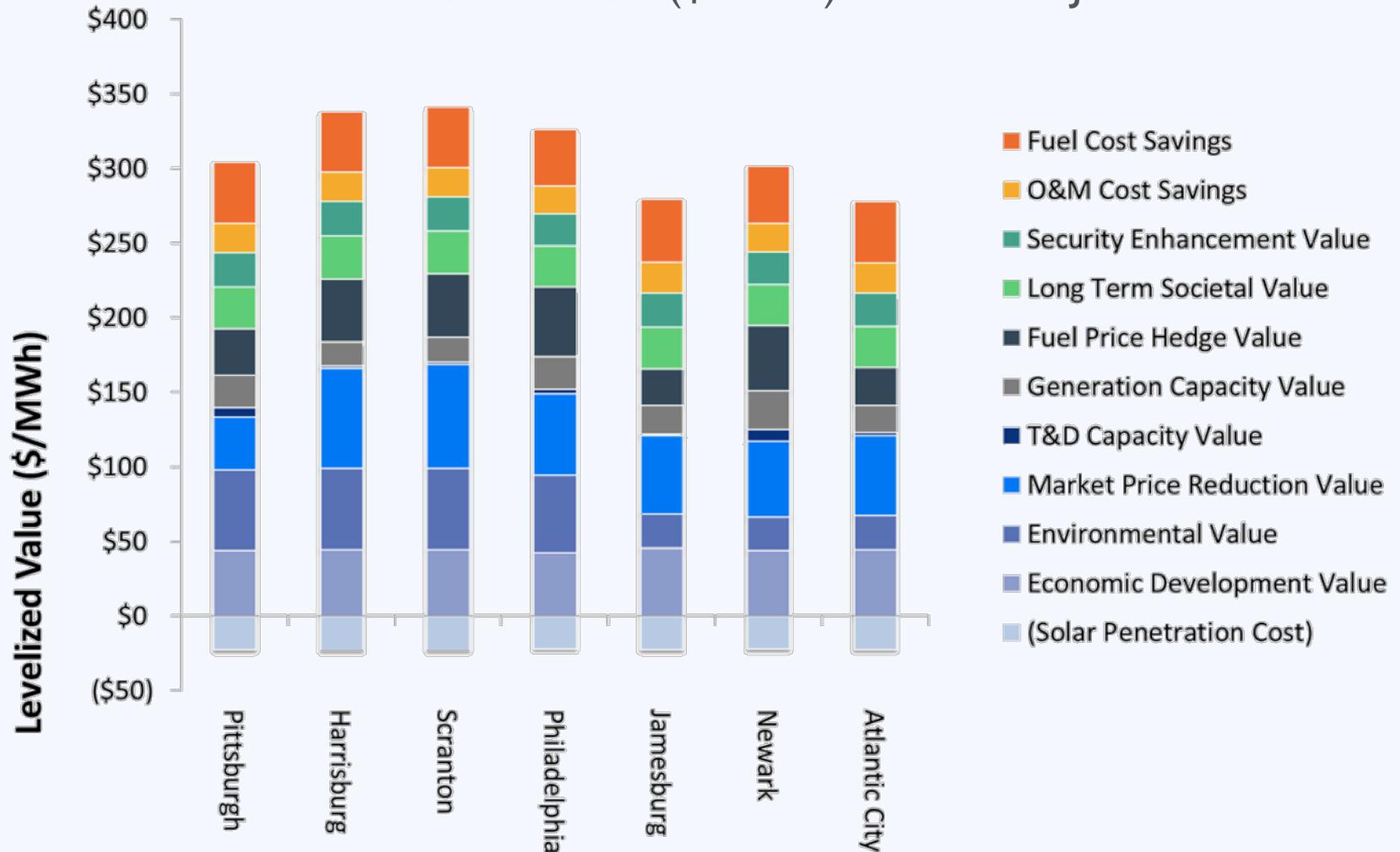
Benefit: Stabilize Energy Prices

Boston Area Average Wholesale Price



Value to Community & Utility

Levelized Value of Solar (\$/MWh) in PA and NJ



Visioning: Goal Setting

Poll

Where does solar energy fit into your current community goals?

Does Solar Advance...?

A. Economic
Development Goals

B. Energy goals

C. Environmental and
Health Goals

0%



Visioning: Scales & Contexts

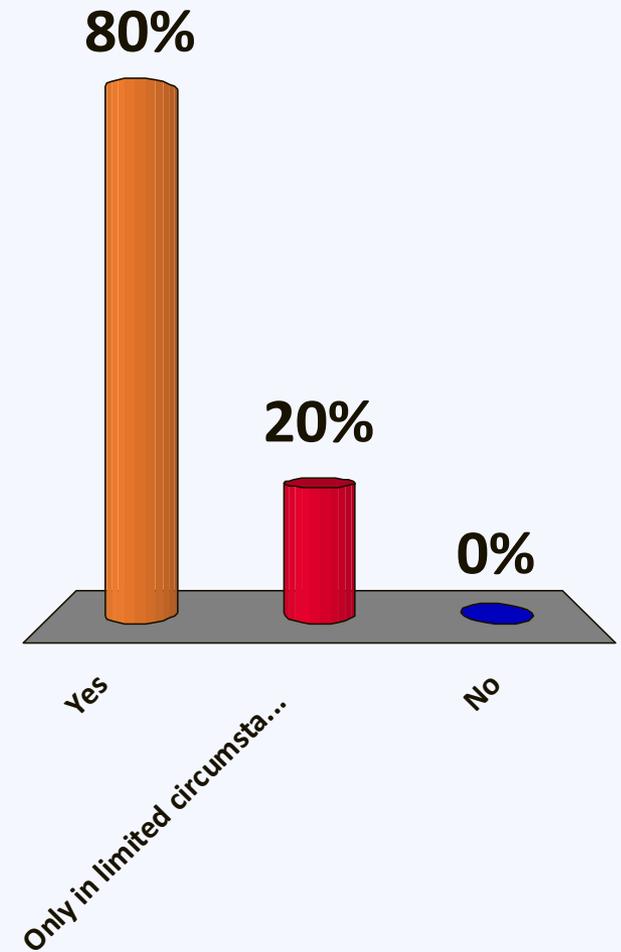
Poll

Is solar on residential rooftops appropriate for your community?



Residential rooftop solar?

- A. Yes
- B. Only in limited circumstances
- C. No



Visioning: Scales & Contexts

Poll

Is solar on
commercial
rooftops
appropriate for
your community?



Commercial rooftop solar?

- A. Yes
- B. Only in limited circumstances
- C. No

