

Solar Powering Your Community

Addressing Local Government Zoning



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About the SunShot Solar Outreach Partnership



The **SunShot Solar Outreach Partnership (SolarOPs)** is a U.S. Department of Energy (DOE) program designed to increase the use and integration of solar energy in communities across the US.

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**

Complimentary Services



Technical
Resources



Regional
Workshops



One to One
Assistance



Strategy
Session

Complimentary Services



Technical Resources

Helping Policymakers Understand Best Practices:

- Case Studies
- Fact Sheets
- How-to Guides
- Toolkits

www.solaroutreach.org



One to One Assistance

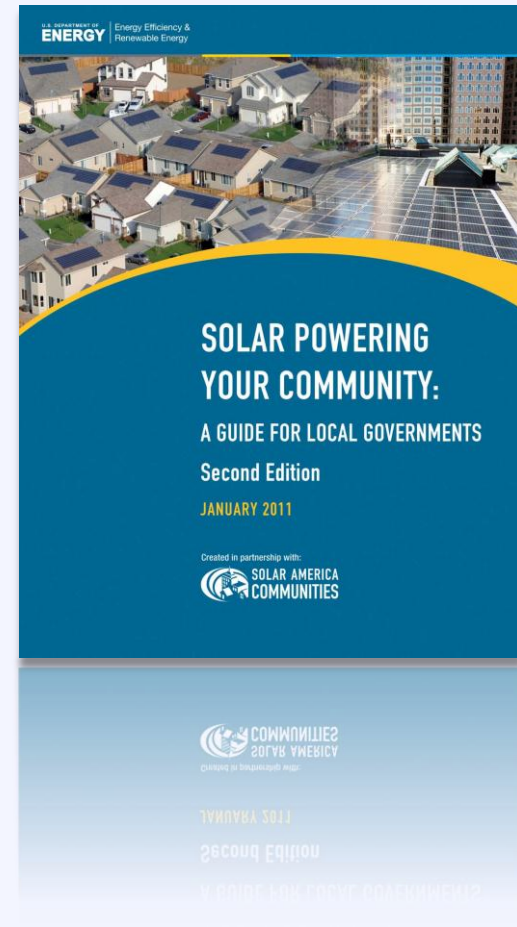
Technical Resources

Resource

Solar Powering Your Community Guide

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

www.energy.gov



Technical Resources

Resource

Planning for Solar Energy

A guide for planners on determining and implementing local solar goals, objectives, policies, and actions

www.planning.org



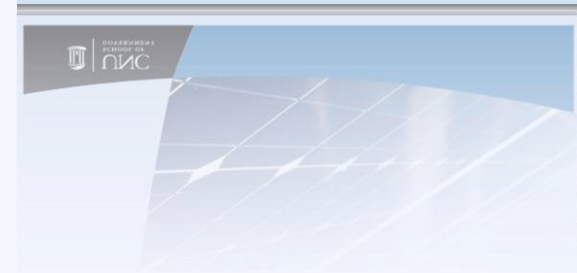
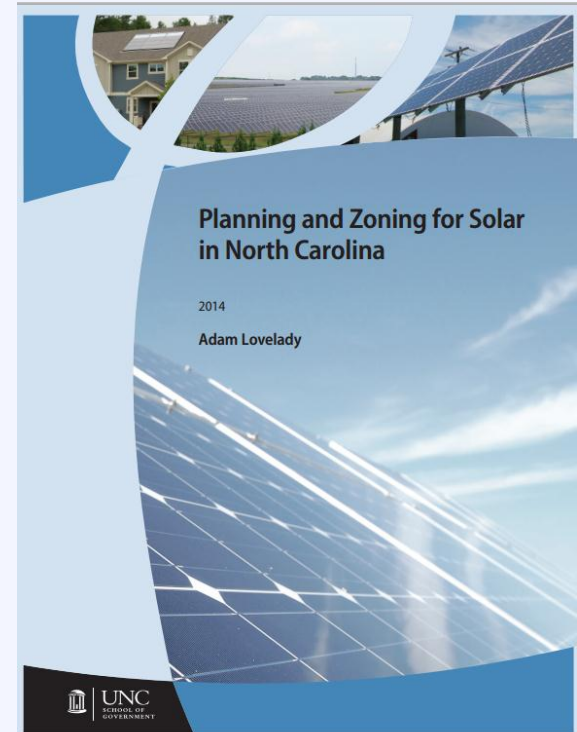
Technical Resources

Resource

Planning and Zoning for Solar in NC

A comprehensive review of the local government planning process related to zoning of solar energy systems

www.sog.unc.edu



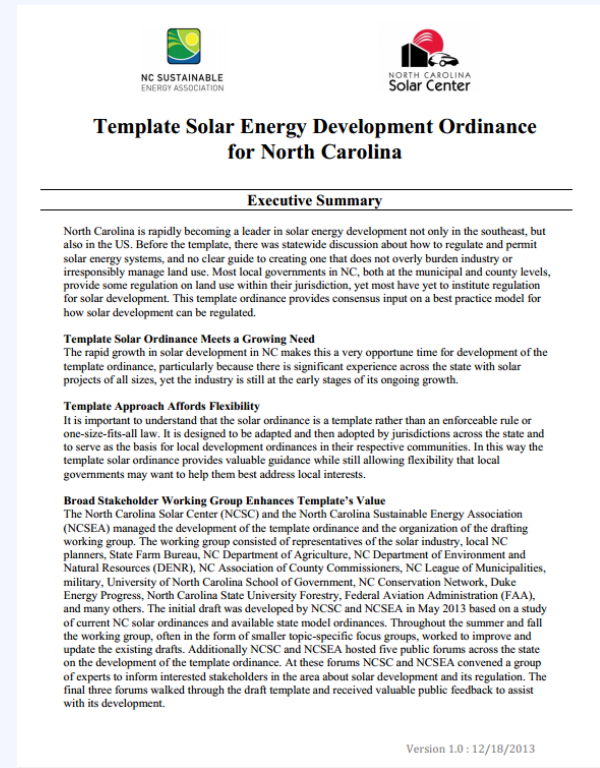
Technical Resources

Resource

Template Ordinance for Solar Energy Development in North Carolina

Model solar ordinance designed to be adapted and then adopted by local governments

nccleantech.ncsu.edu



Complimentary Services

Quickly get up to speed on key solar policy issues:

- Solar 101
- Planning for Solar
- Implementing an Ordinance
- Streamlining Solar Permits
- Growing your Market



Regional Workshops



Strategy Session

Complimentary Services



Technical
Resources



Regional
Workshops

Develop an
implementation
strategy for smart
solar policy



Strategy
Session

Complimentary Services



Technical
Resources



Regional
Workshops



One to One
Assistance

Receive customized
technical support on
implementation of
smart solar policy

After This Session

Talk to Us!

Sign up for a consultation to learn more about our **free** services.

See **Riana Ackley** to sign up.

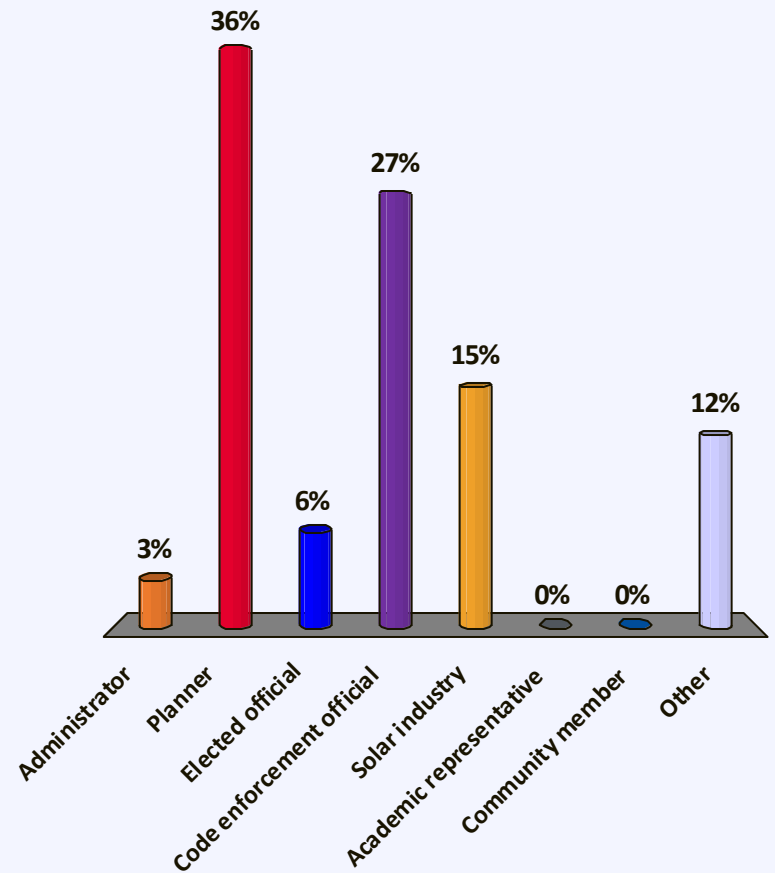
Workshop Goal

Enable local governments to replicate successful practices and adopt new measures to **reduce solar soft costs** and **expand local adoption of solar energy**

We want to get to know you better

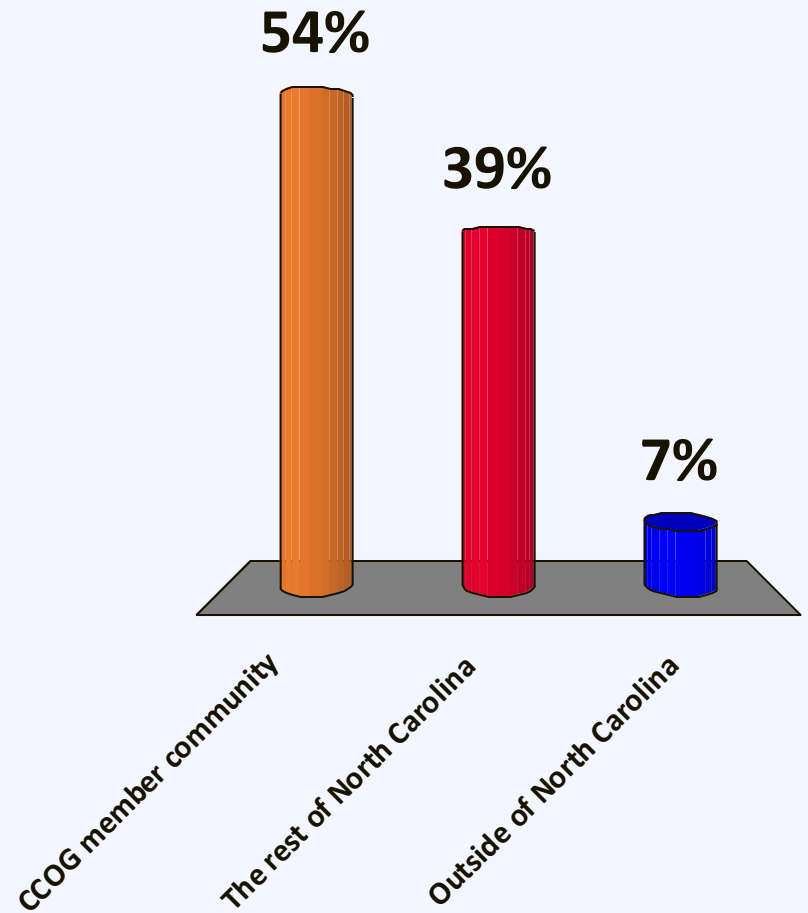
Who are you?

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



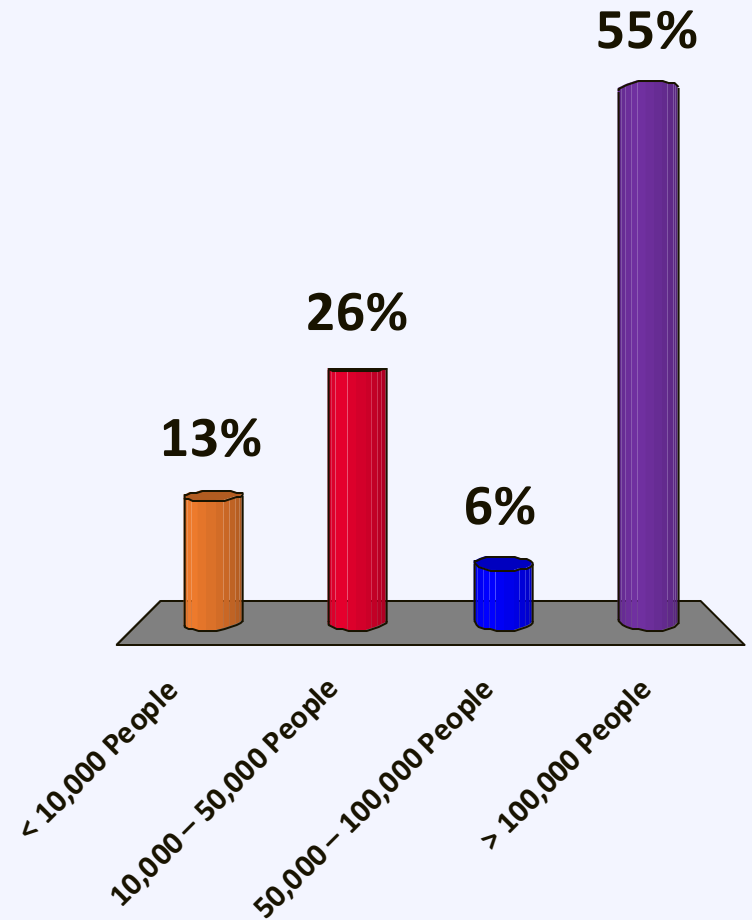
Where are you coming from?

- A. CCOG member community
- B. The rest of North Carolina
- C. Outside of North Carolina



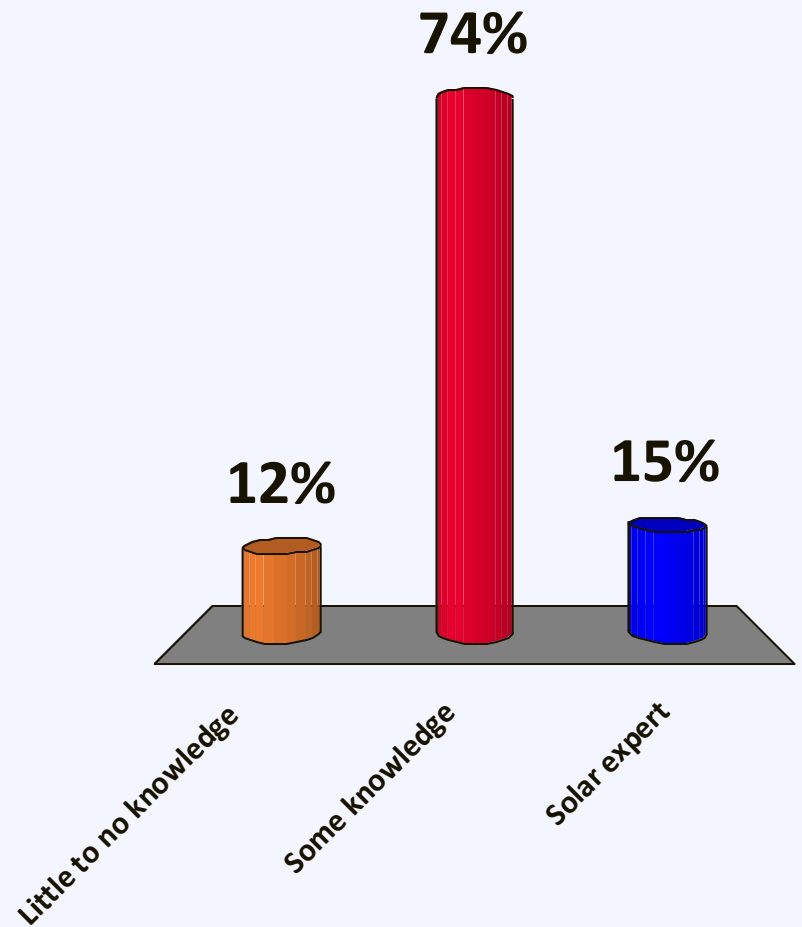
What size is your community?

- 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?

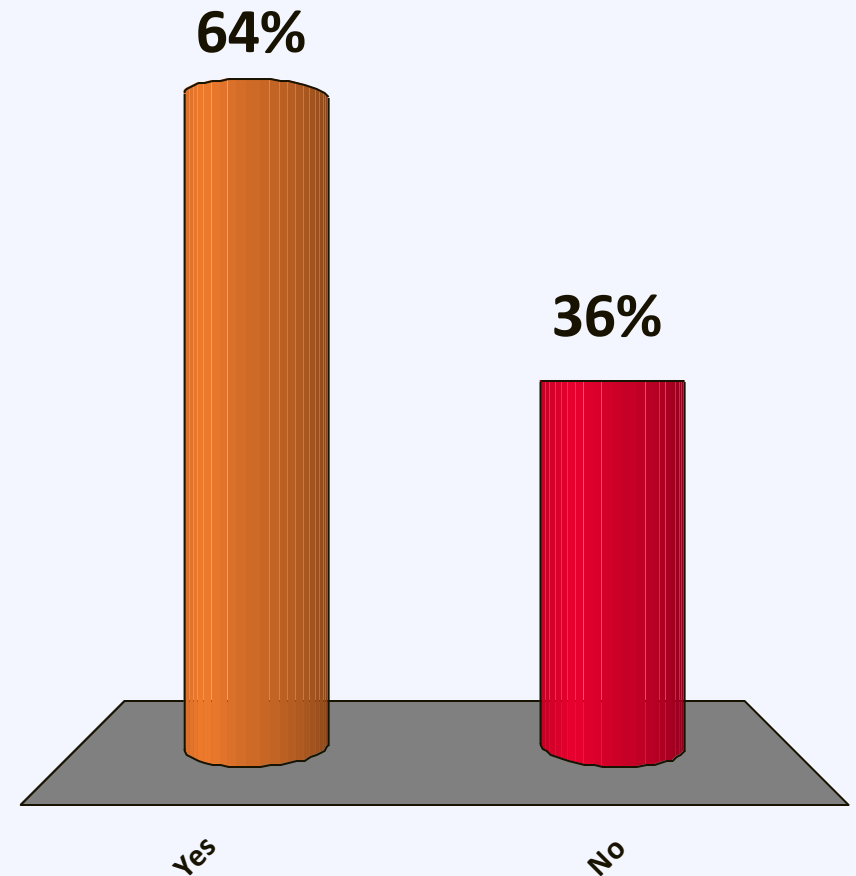
- A. Little to no knowledge
- B. Some knowledge
- C. Solar expert



Are there completed solar projects in your community?

A. Yes

B. No

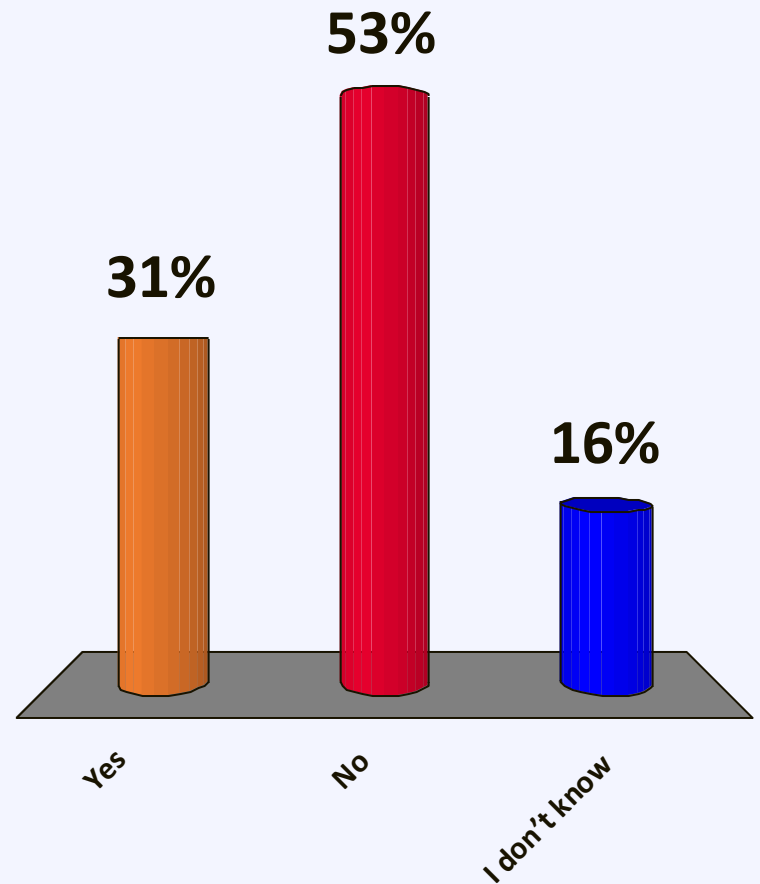


Does your local government have solar on public properties?

A. Yes

B. No

C. I don't know



Solar Technologies



Solar Photovoltaic (PV)



Solar Hot Water



Concentrated Solar Power

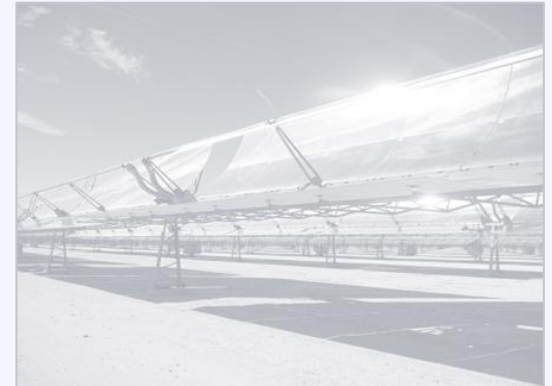
Solar Technologies



Solar Photovoltaic (PV)

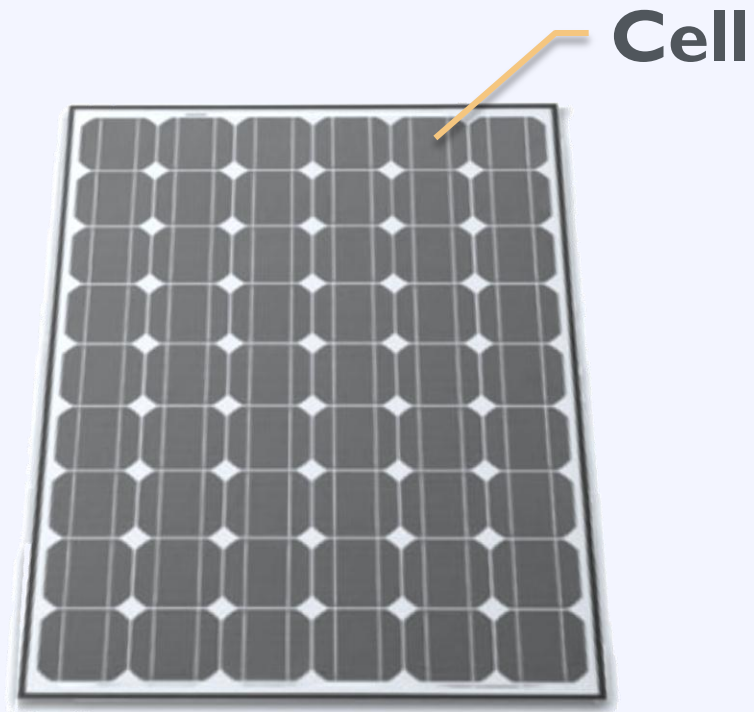


Solar Hot Water



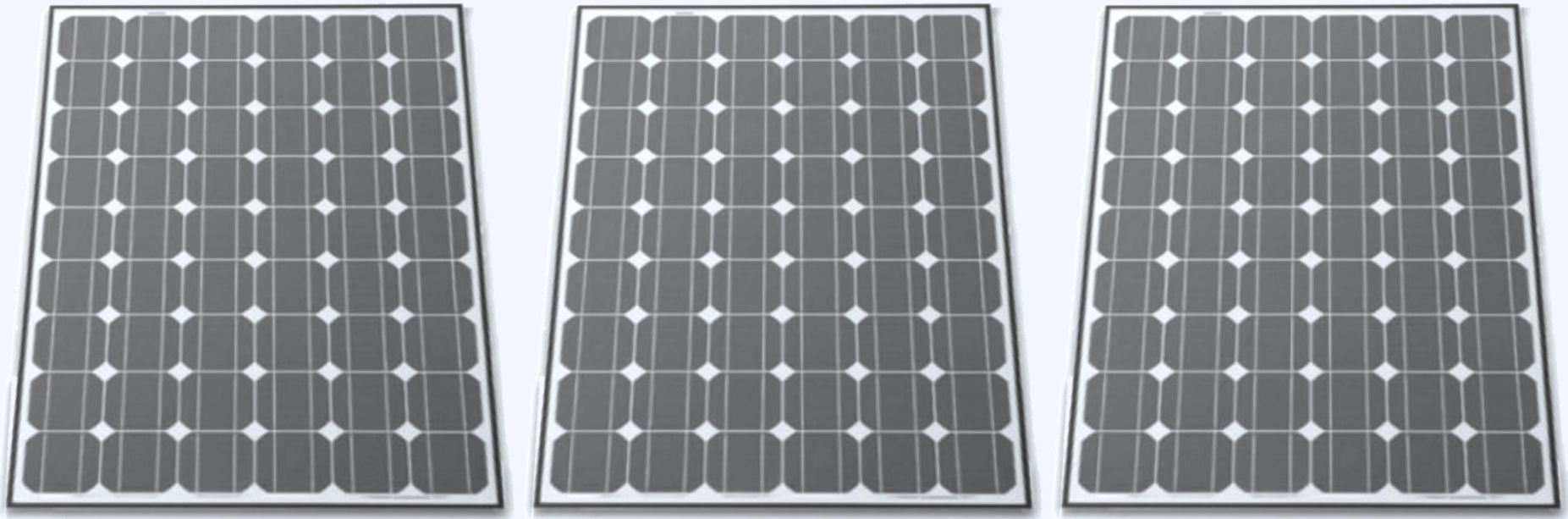
Concentrated Solar Power

Some Basic Terminology



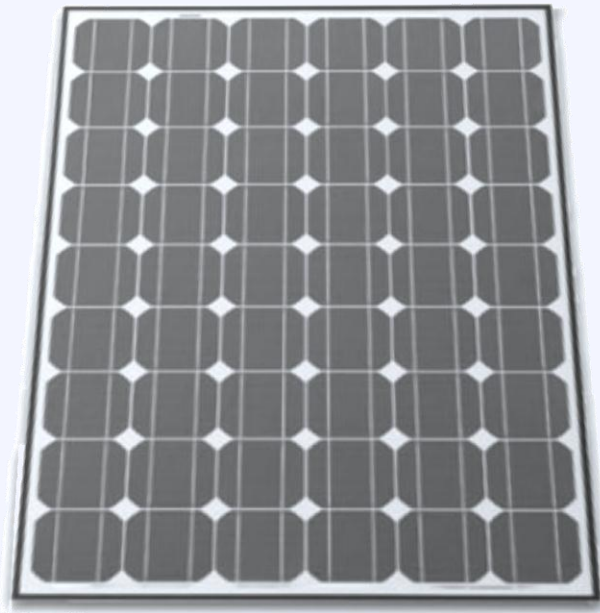
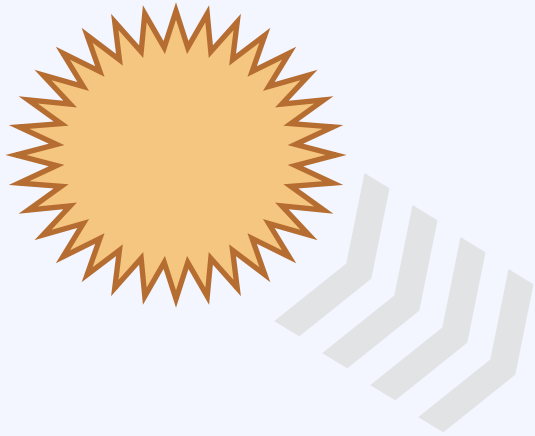
Panel / Module

Some Basic Terminology



Array

Some Basic Terminology



Production
Kilowatt-hour (kWh)

Capacity / Power
kilowatt (kW)

Some Basic Terminology



Residence
5 kW



Factory
1 MW



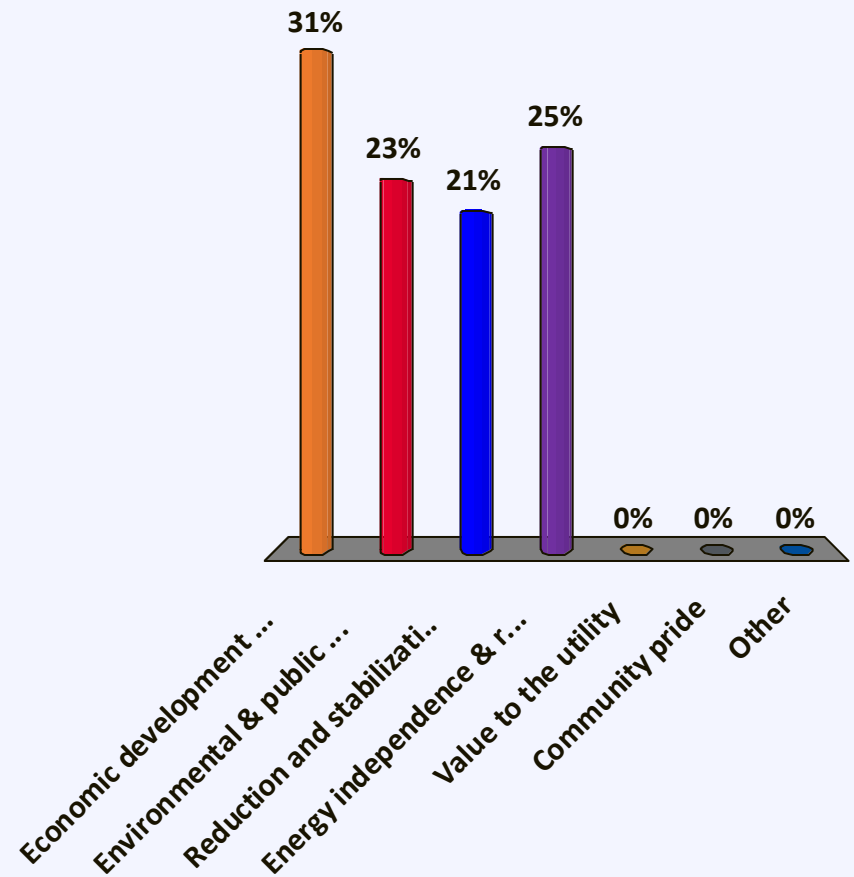
Office
50 – 500 kW



Utility
1 MW+

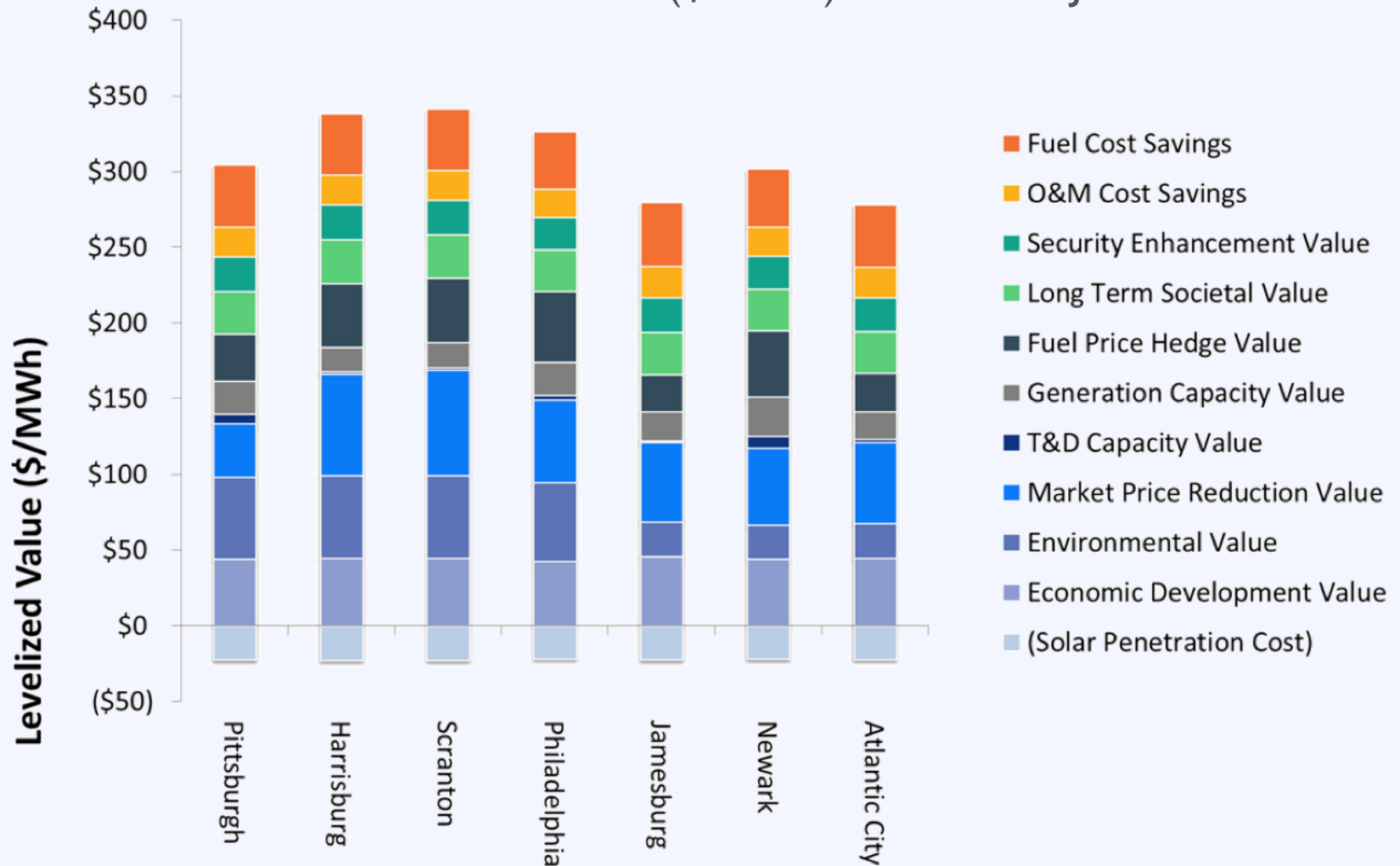
What is the top benefit solar can bring to your community?

- 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

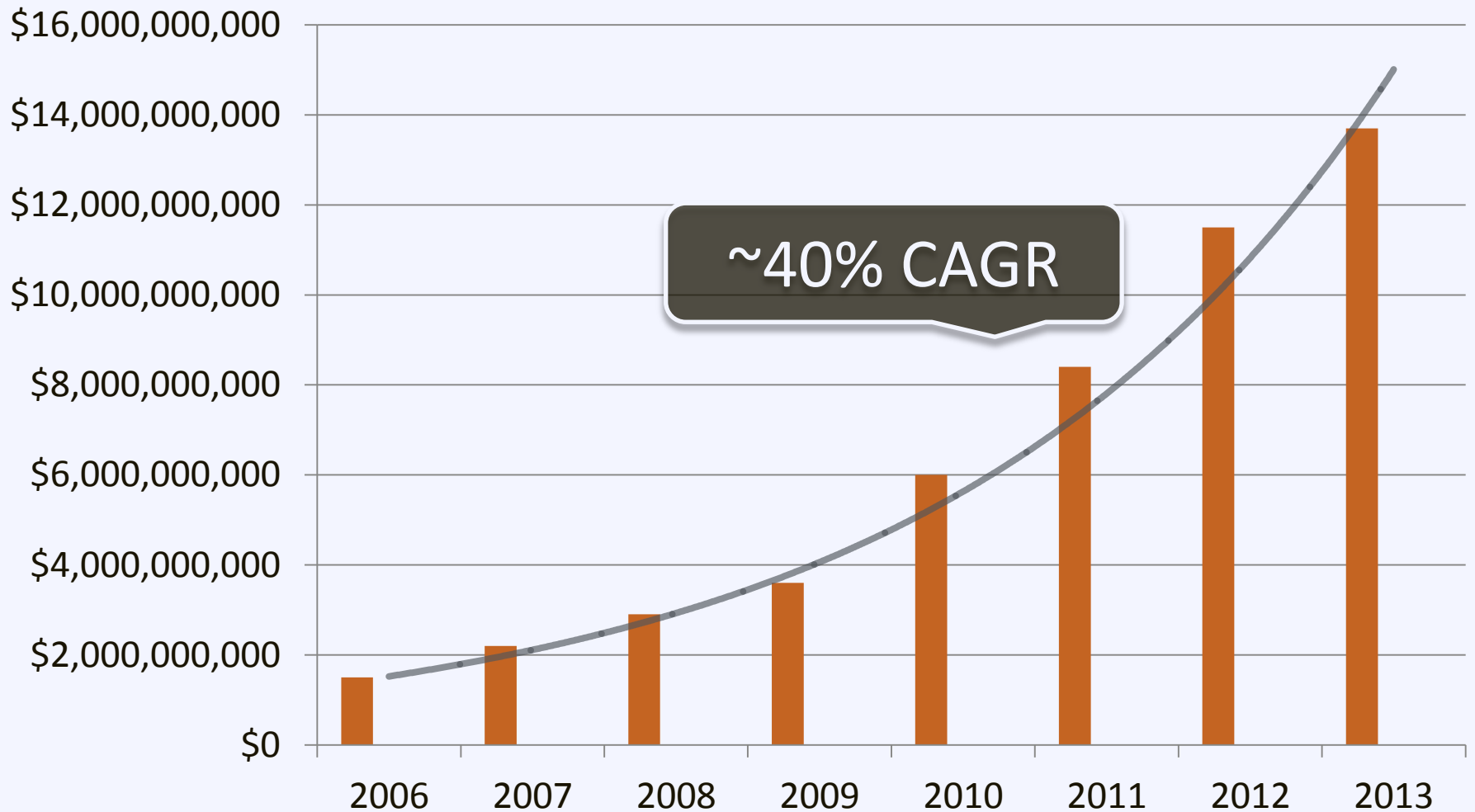


Value to Community & Utility

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

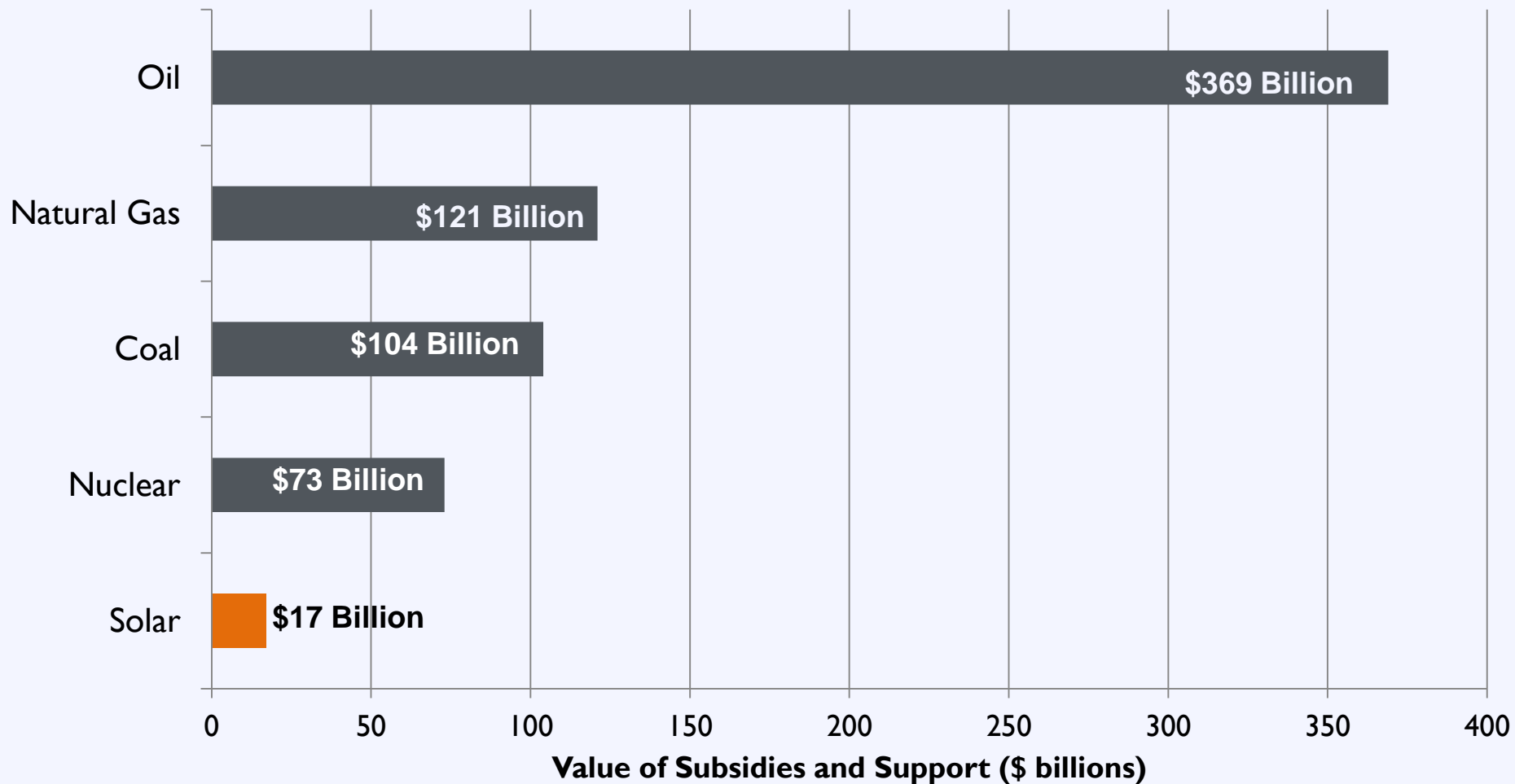


Benefits: Solar Economic Growth

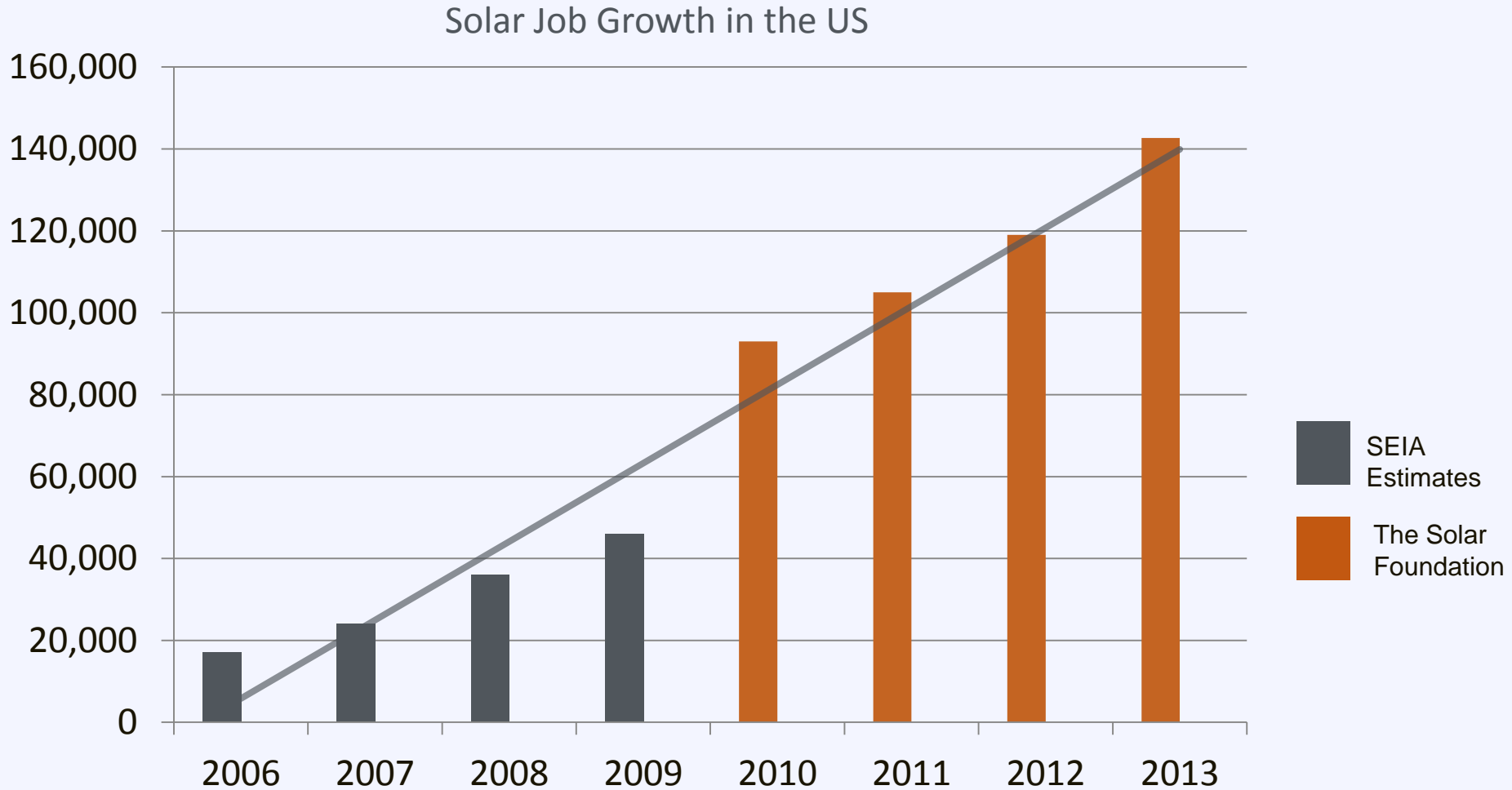


Subsidies and Support

Subsidies for Conventional and Solar Energy, 1950-2010

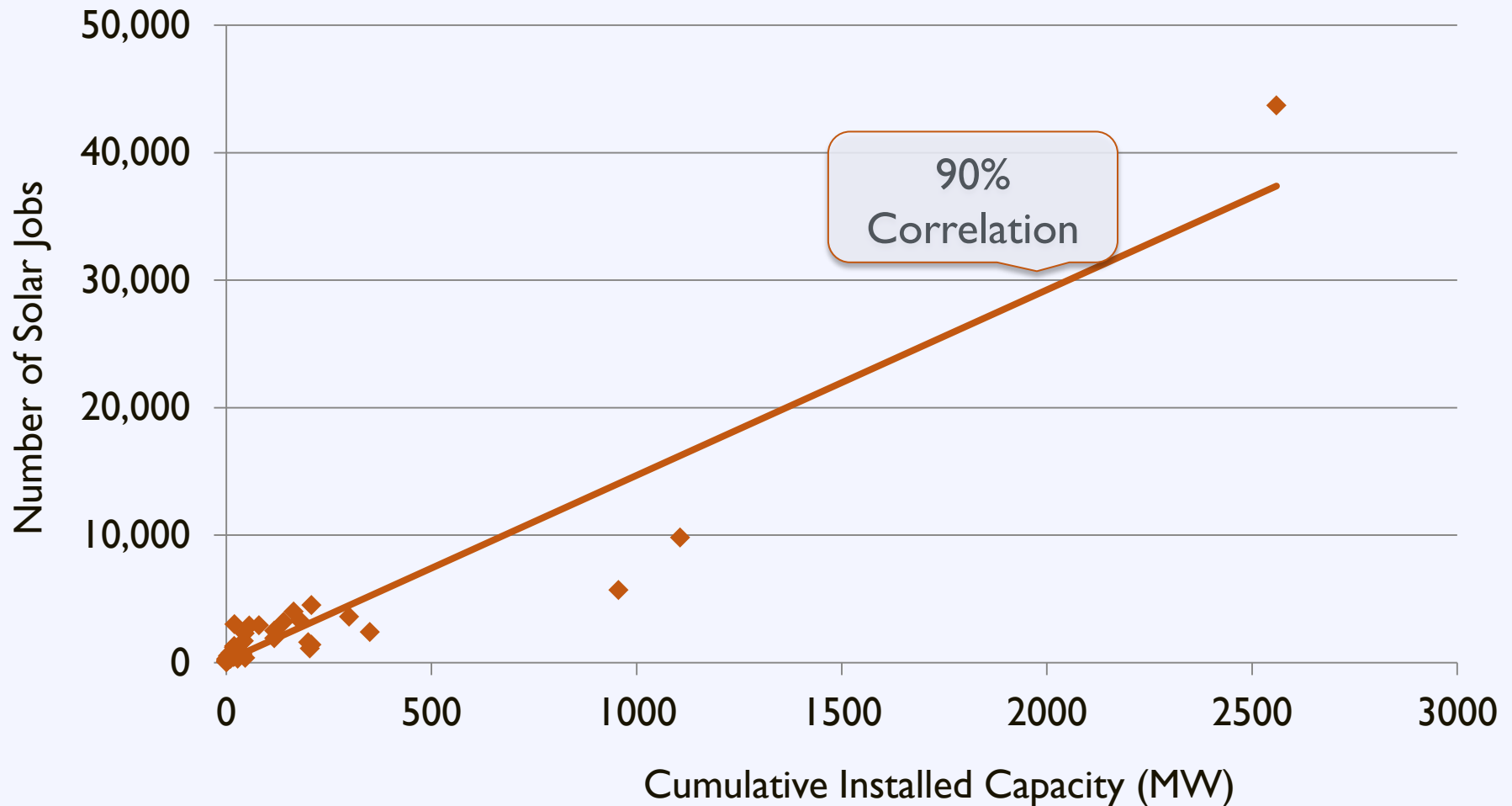


Benefits: Solar Job Growth



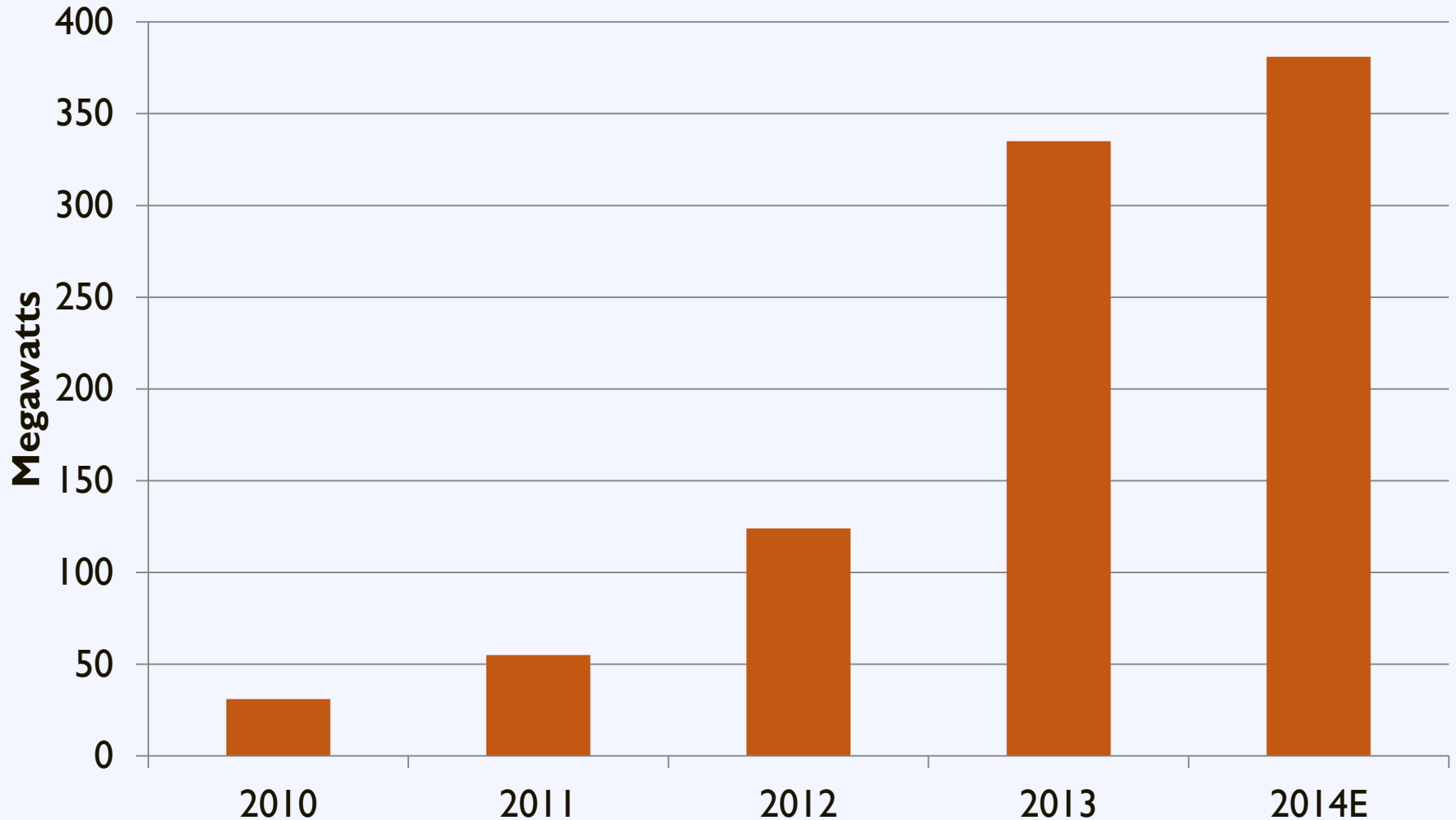
Benefits: Job Creation

Correlation of Market Size & Jobs in Each State



NC Solar Market

Cumulative Installed PV Capacity in North Carolina



Economic Development in NC

In 2013 the industry invested

\$787 million

in solar development in North Carolina

Economic Development in NC

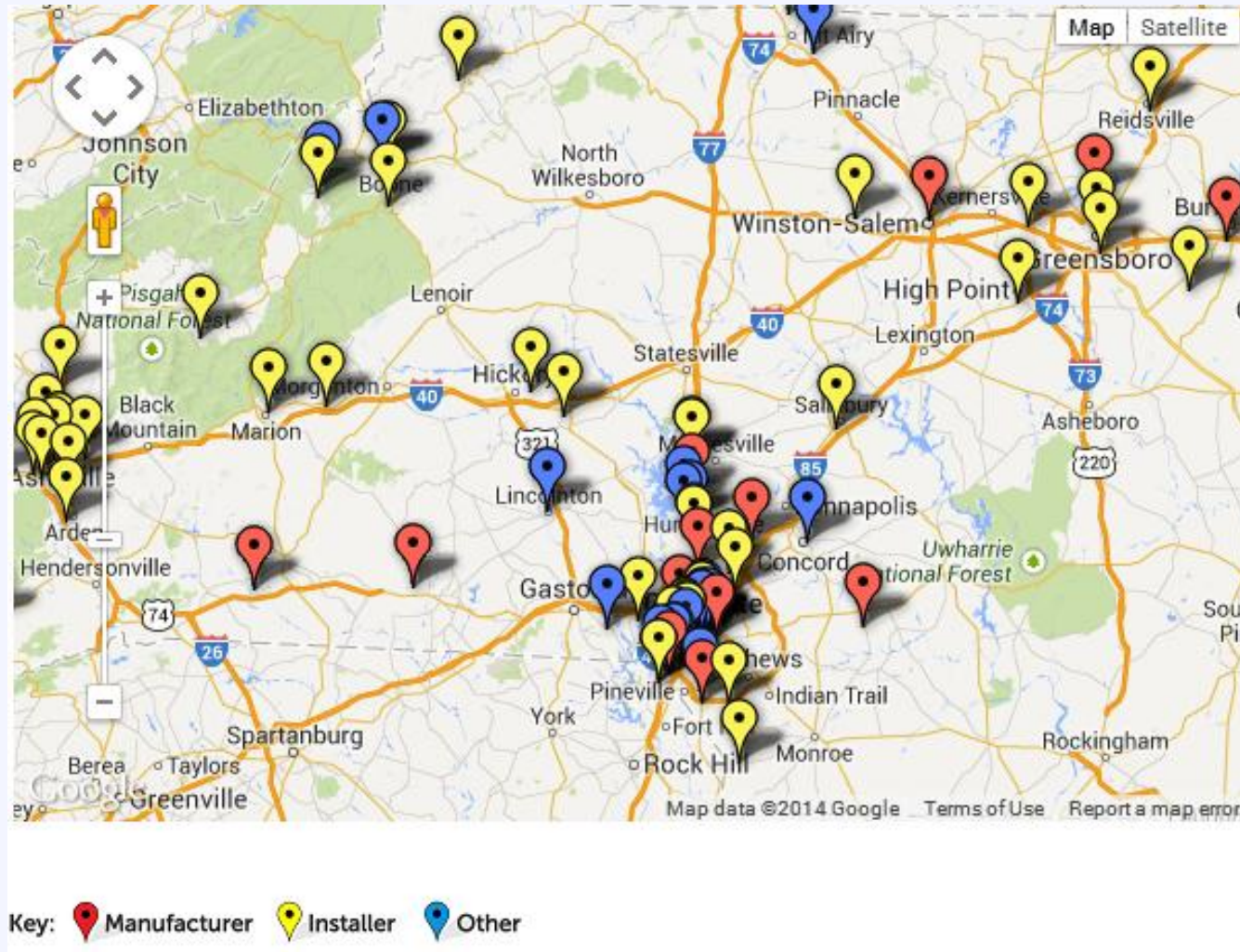
As of November 2013, there are

137 solar companies

that employ

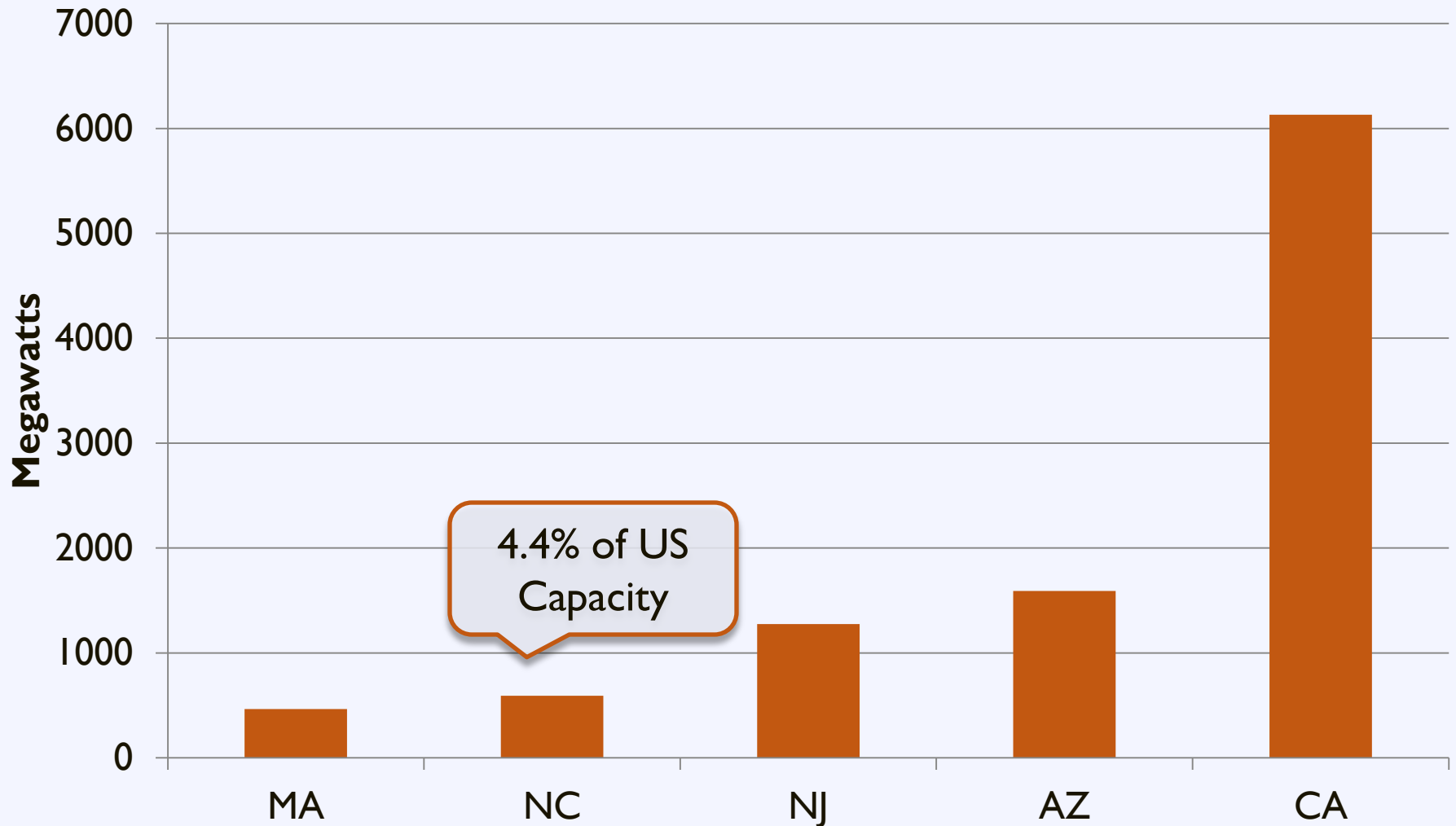
3,100 people

Economic Development in NC



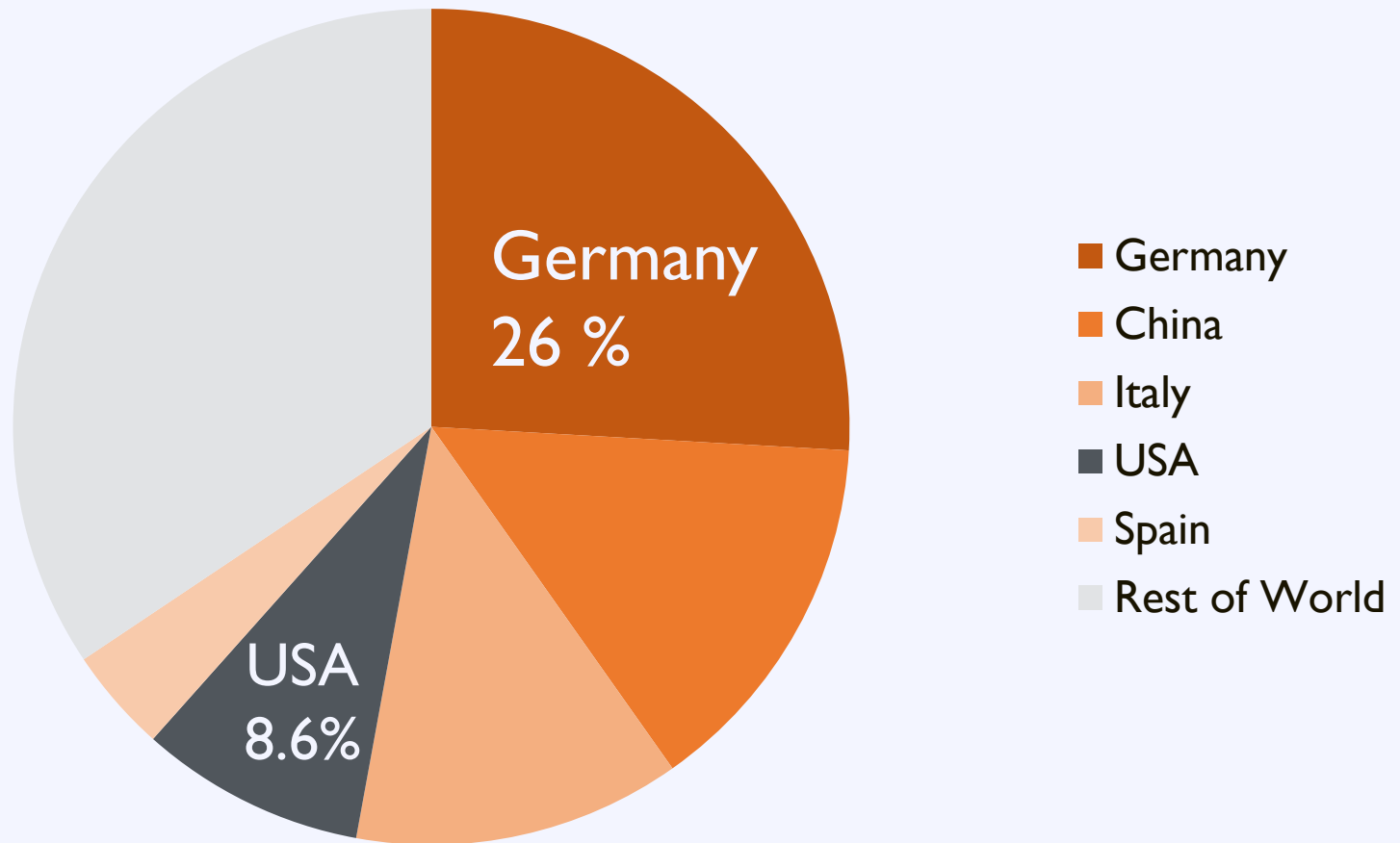
US Solar Market

Cumulative Installed PV Capacity in Top 5 US States

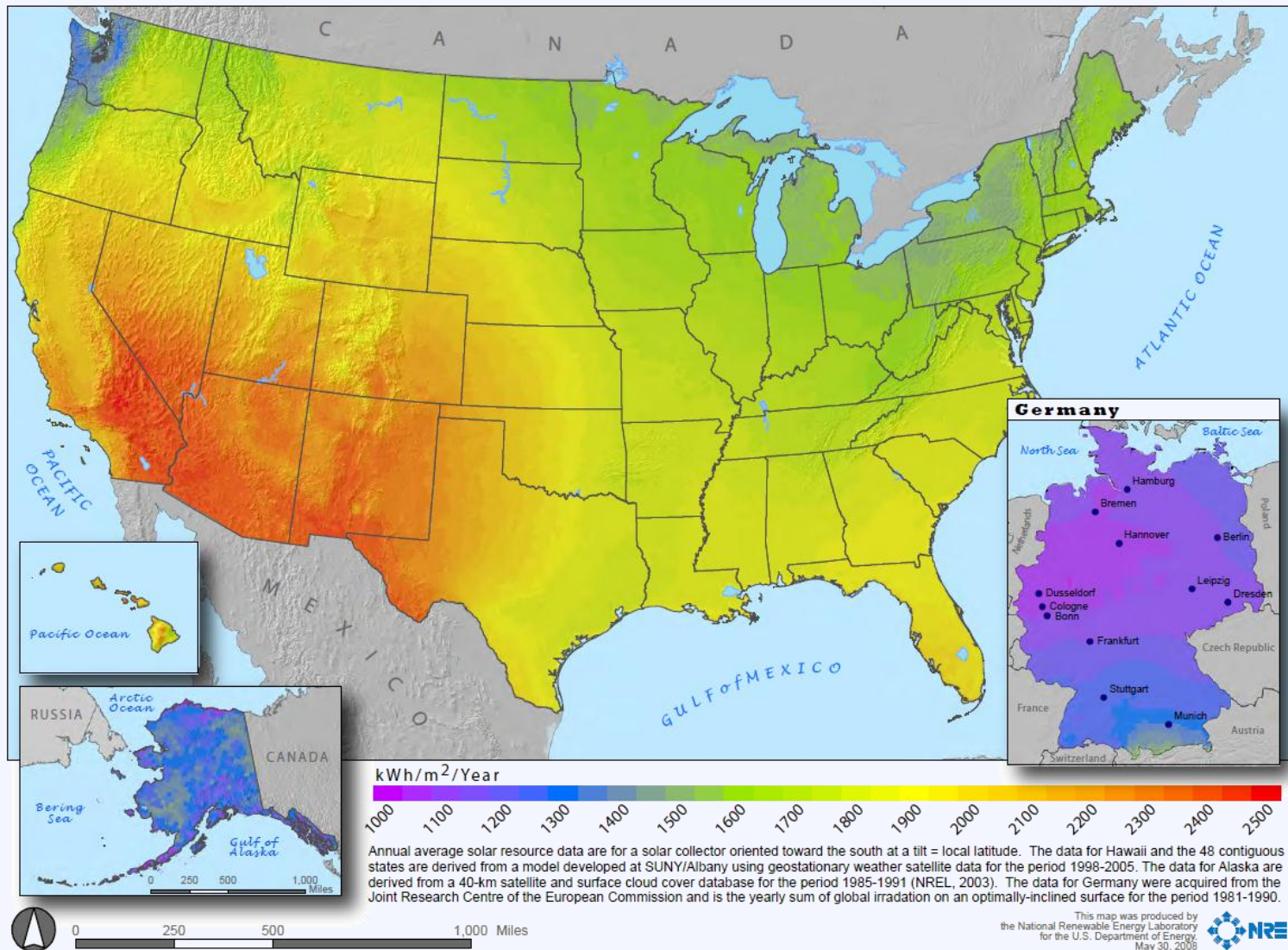


World Solar Market

Top 5 Countries Solar Operating Capacity (2013)

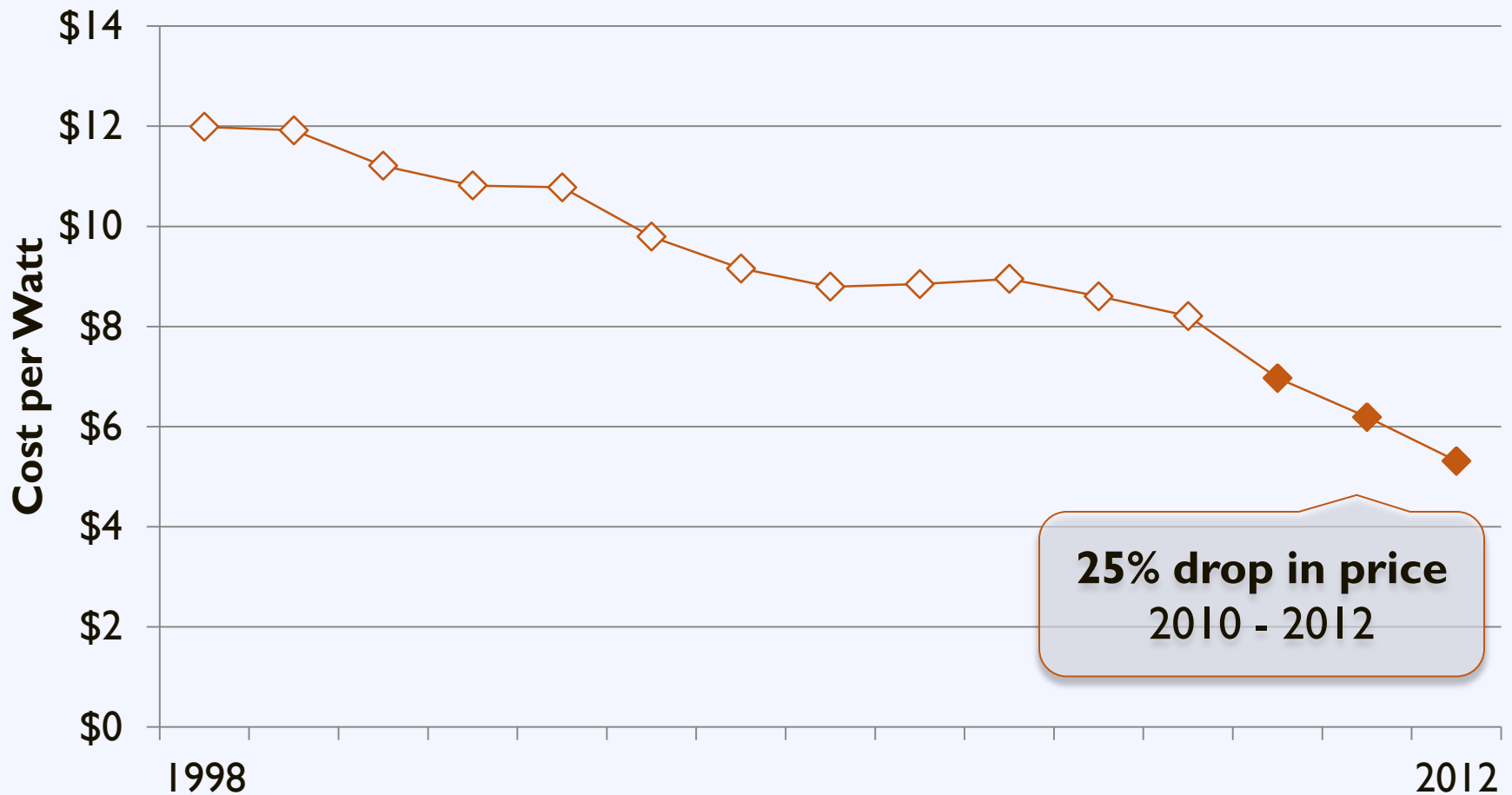


US Solar Resource



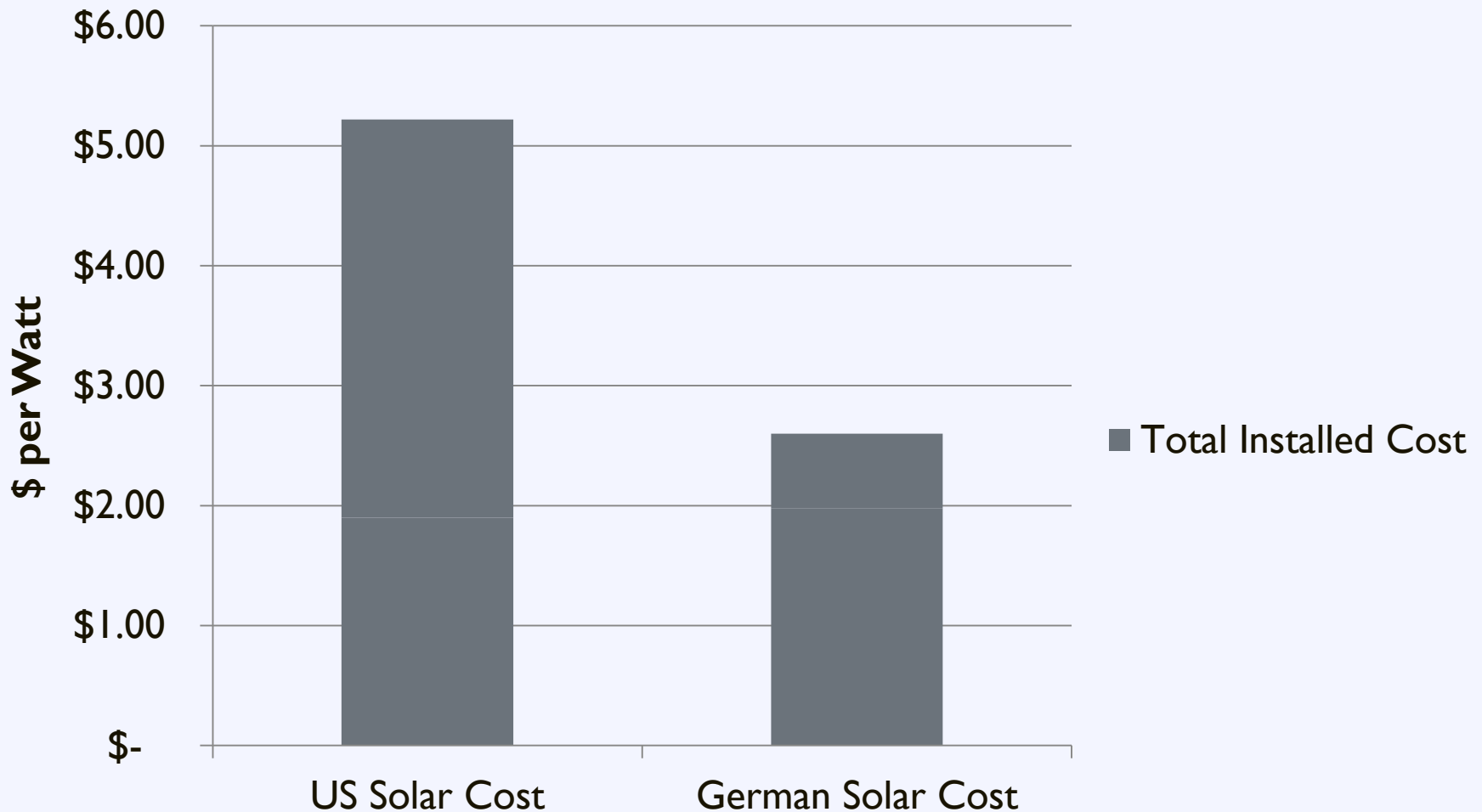
The Cost of Solar PV

US Average Installed Cost for Behind-the-Meter PV



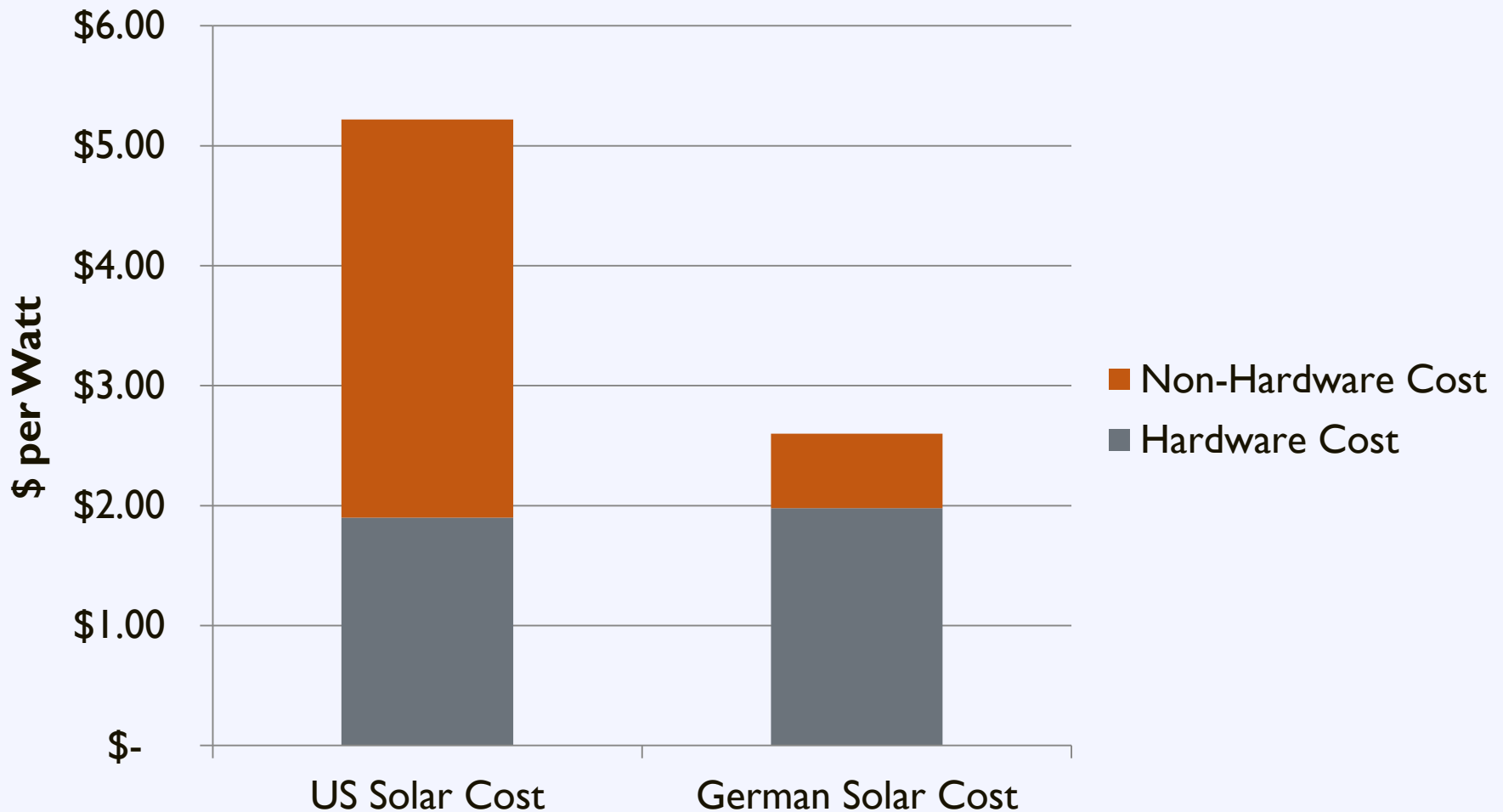
The Cost of Solar in the US

Comparison of US and German Solar Costs



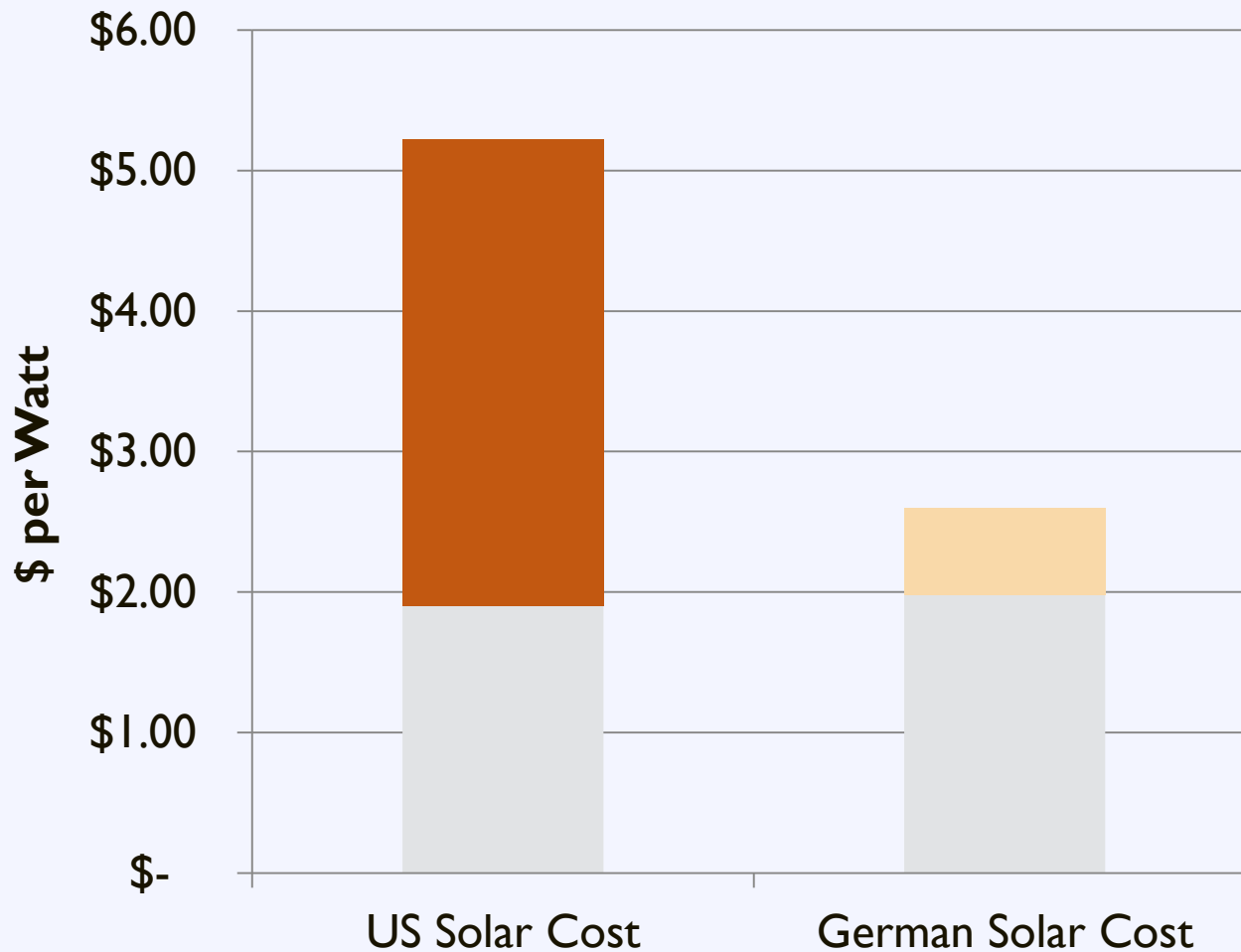
The Cost of Solar in the US

Comparison of US and German Solar Costs



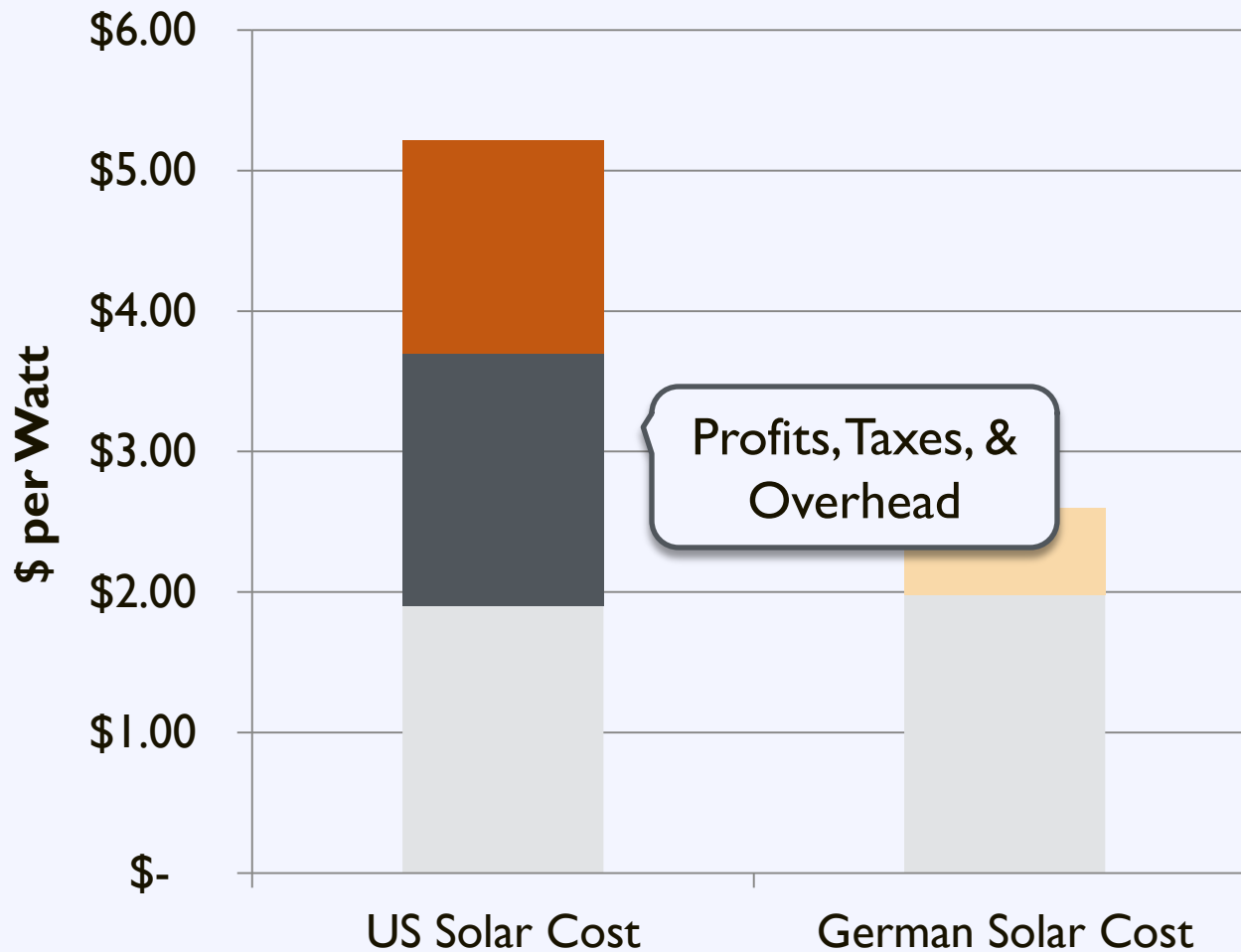
The Cost of Solar in the US

Comparison of US and German Solar Costs



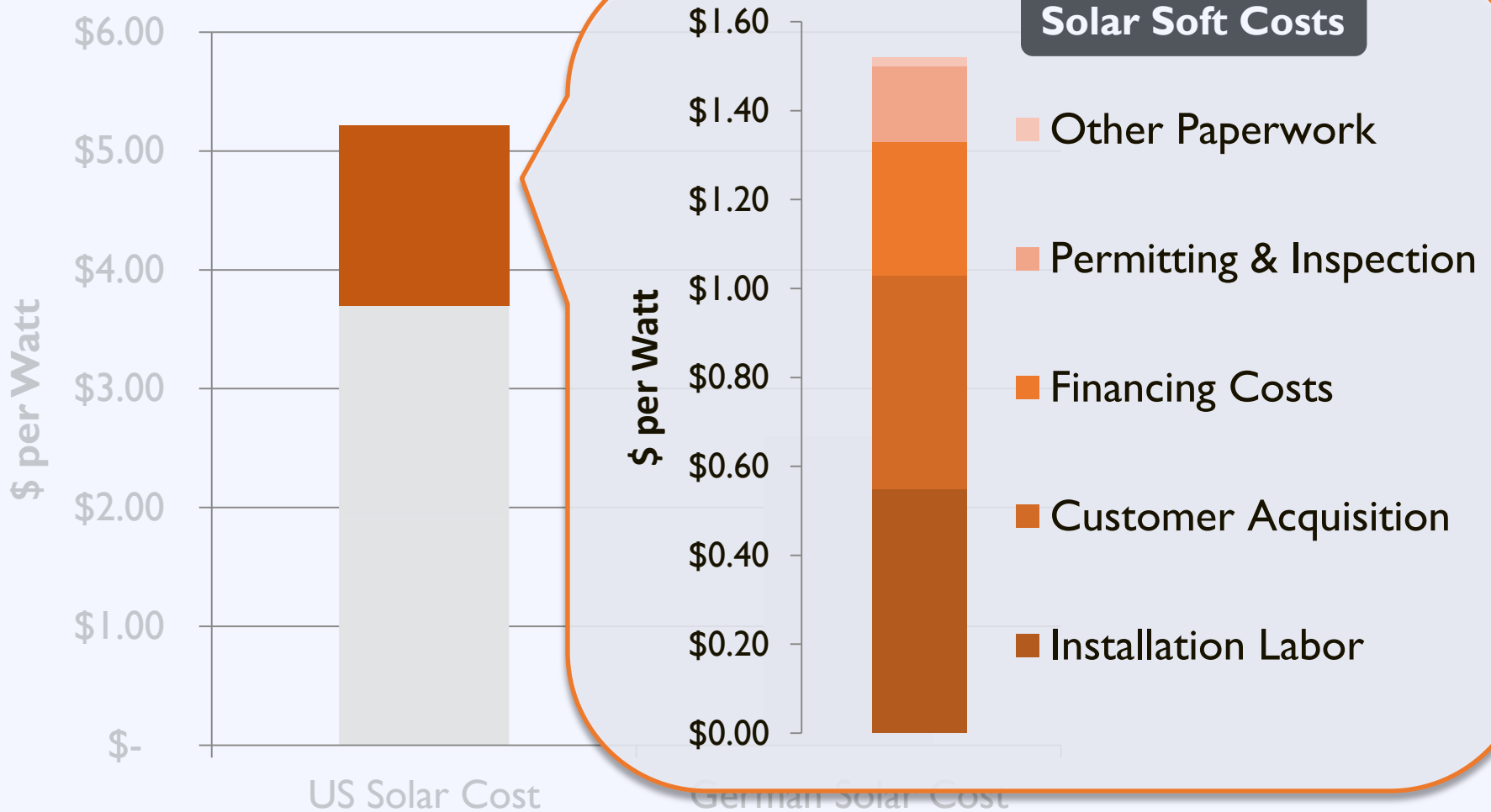
The Cost of Solar in the US

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



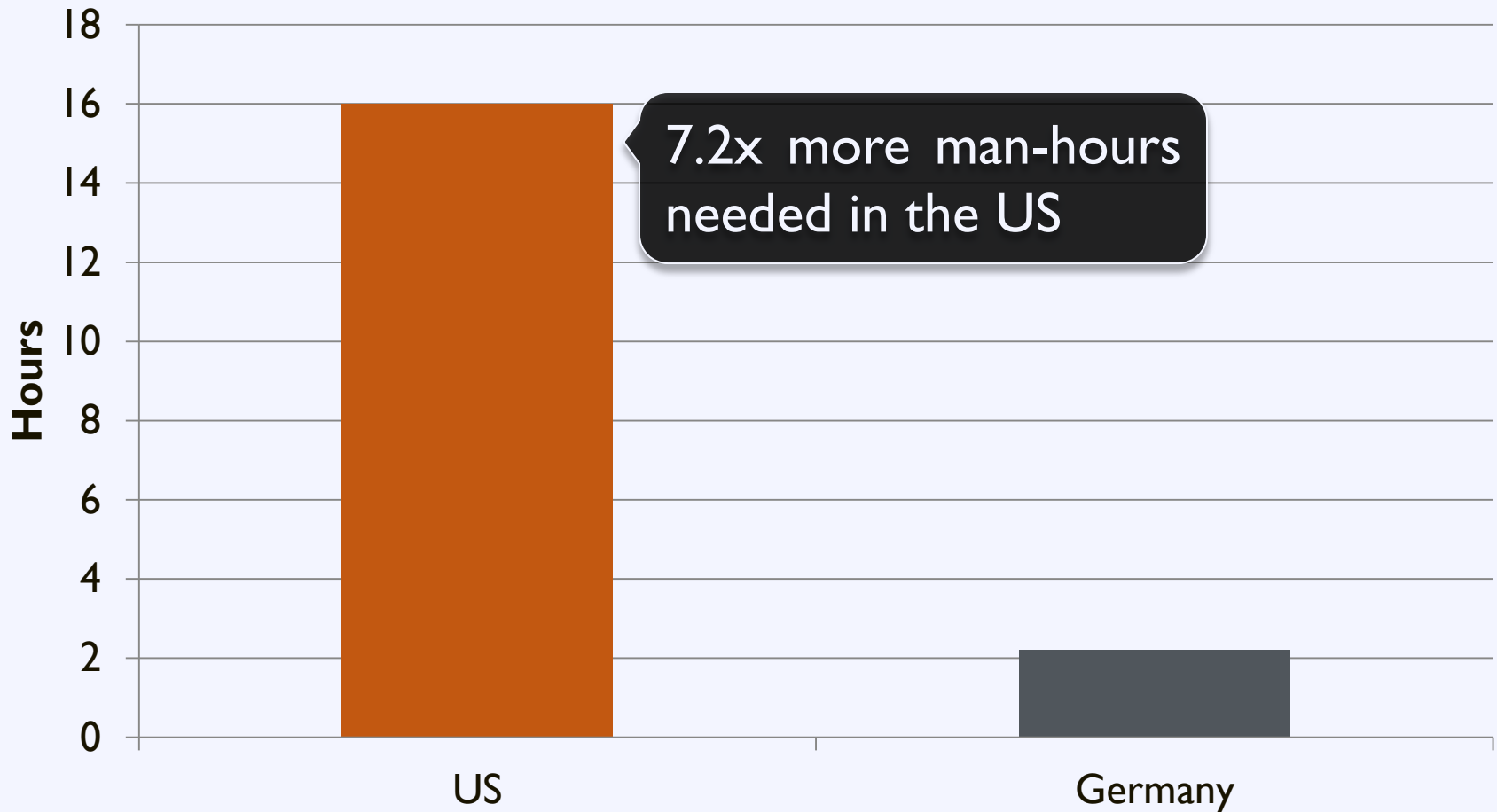
**Germany
Today**

8 days

from inception to completion

Time to Installation

Average Time to Permit a Solar Installation



Germany's Success

Consistency and Transparency

through

Standardized Processes

(PM Session)

Planning for Solar Development

Communitywide Comprehensive Plan

Neighborhood
Plans

Corridor Plans

Special District
Plans

Green
Infrastructure
Plans

Energy Plan

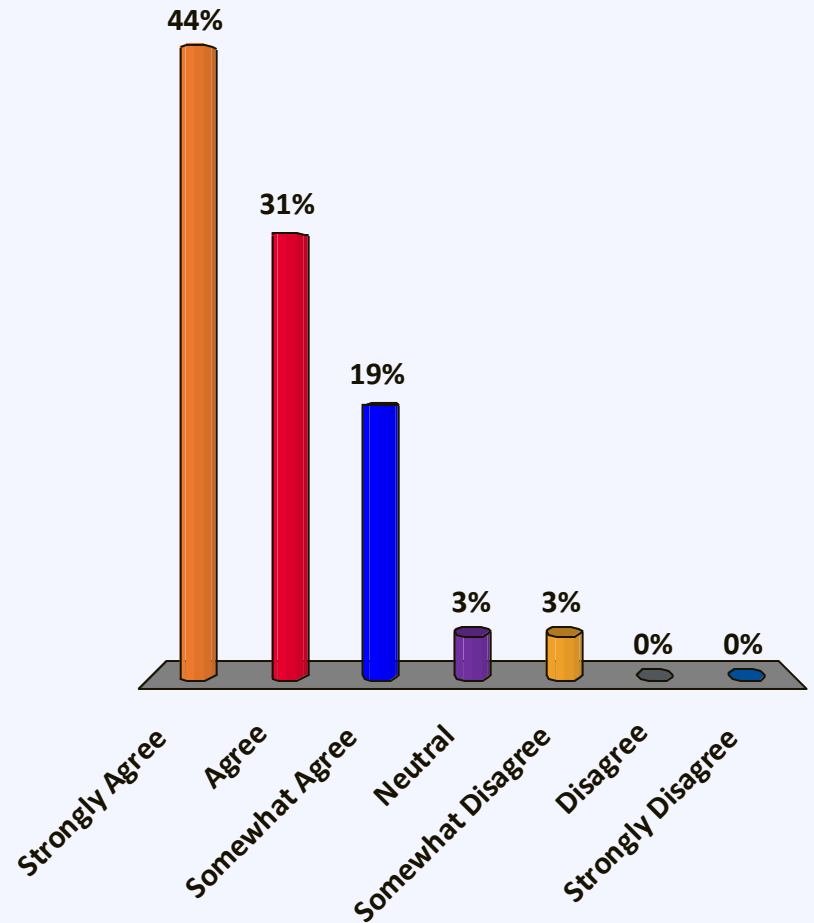
Climate Action
Plan

Zoning Standards

Section	Topics to Address
Definitions	Define technologies & terms
Applicability	Primary vs. accessory use
Dimensional Standards	<ul style="list-style-type: none">• Height• Size• Setbacks• Lot coverage
Design Standards	<ul style="list-style-type: none">• Signage• Disconnect• Screening• Fencing

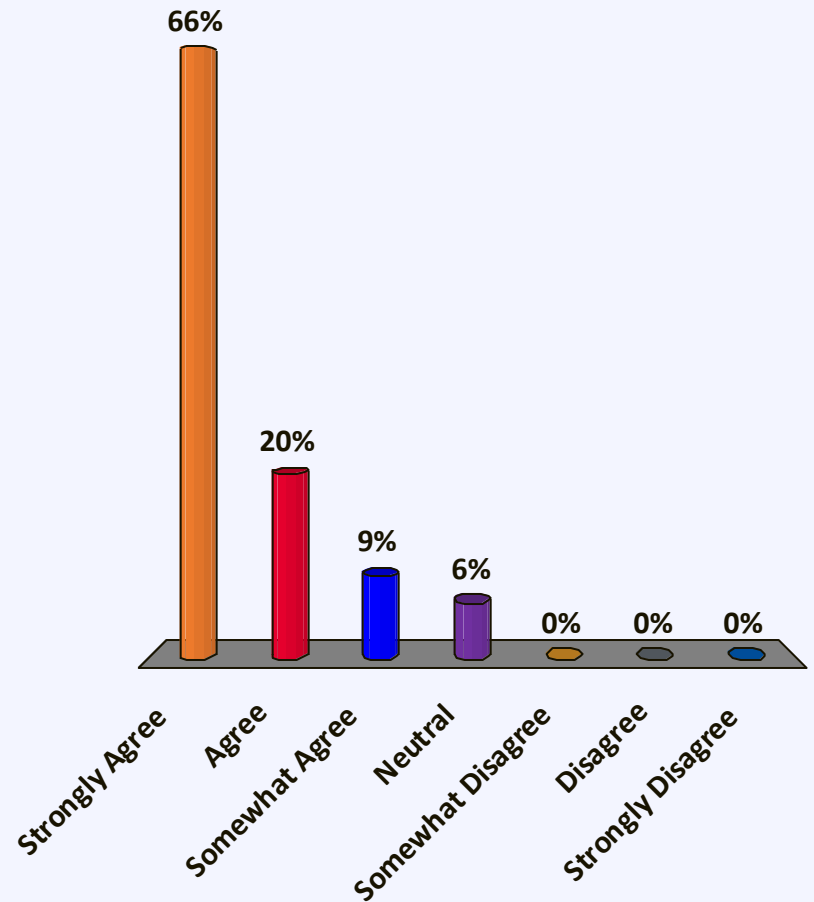
Solar advances your community's economic development goals

- A. Strongly Agree
- B. Agree
- C. Somewhat Agree
- D. Neutral
- E. Somewhat Disagree
- F. Disagree
- G. Strongly Disagree



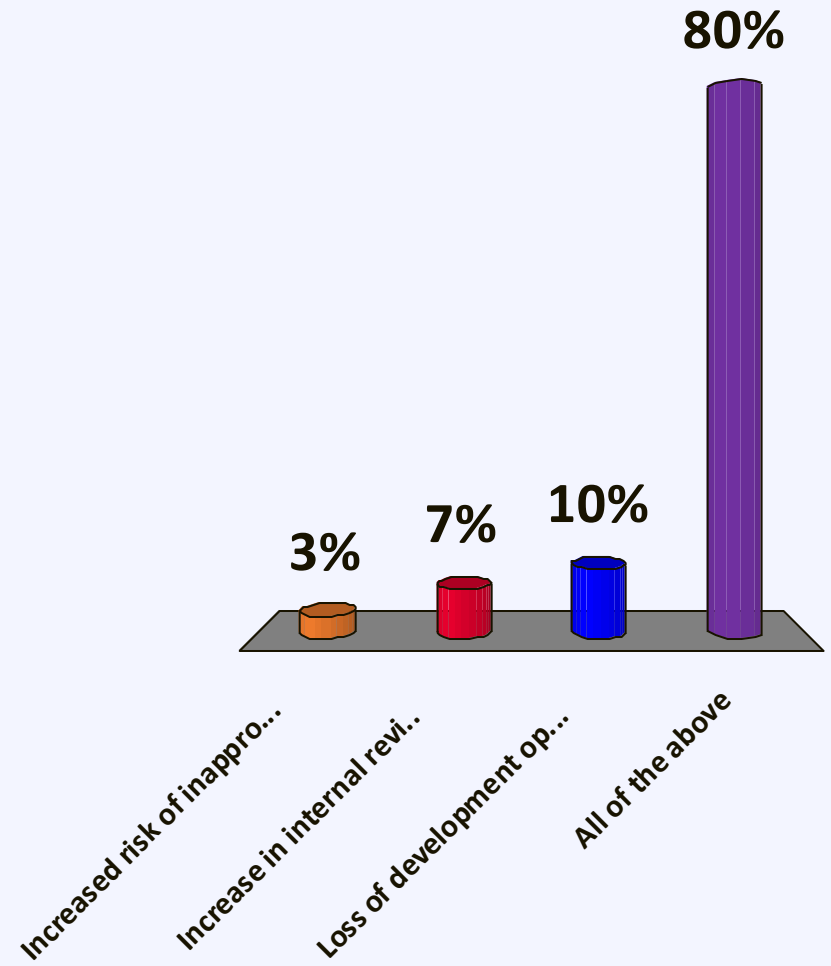
Solar advances your community's environmental & health goals

- A. Strongly Agree
- B. Agree
- C. Somewhat Agree
- D. Neutral
- E. Somewhat Disagree
- F. Disagree
- G. Strongly Disagree



What is the cost of convoluted regulations or “regulatory silence”?

- A. Increased risk of inappropriate development
- B. Increase in internal review costs
- C. Loss of development opportunities
- D. All of the above



Discussion

What is your community's chief concern with solar development and its potential impacts?



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Tommy Cleveland

NC Clean Energy Technology Center
Renewable Energy Project Coordinator

Break

Ten Minutes

Visioning: Scales & Contexts

Poll

Is solar on residential rooftops appropriate for your community?

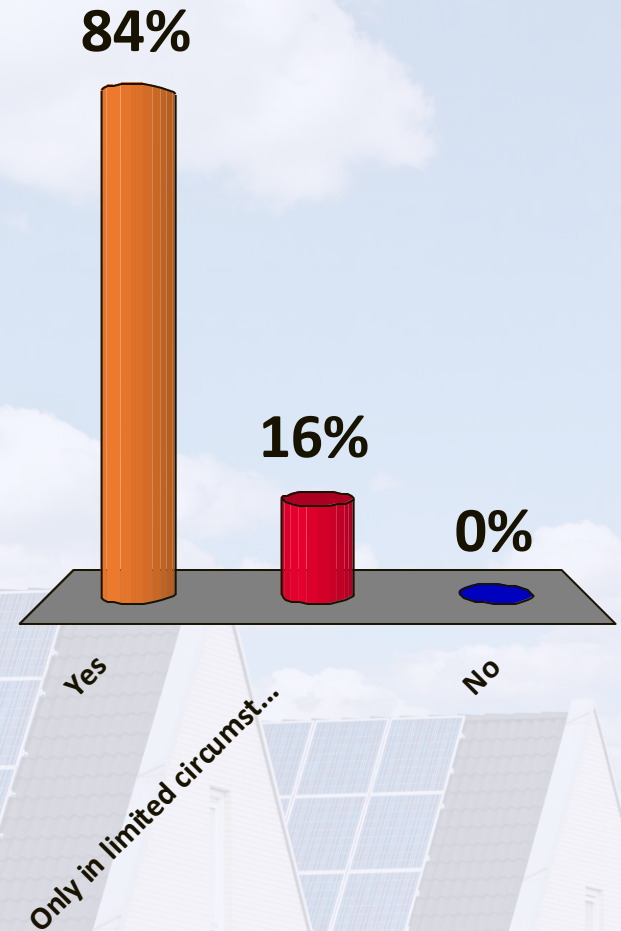


Visioning: Scales & Contexts

Poll

Is solar on residential rooftops appropriate for your community?

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



Visioning: Scales & Contexts

Poll

Is solar on
commercial
rooftops
appropriate for
your community?

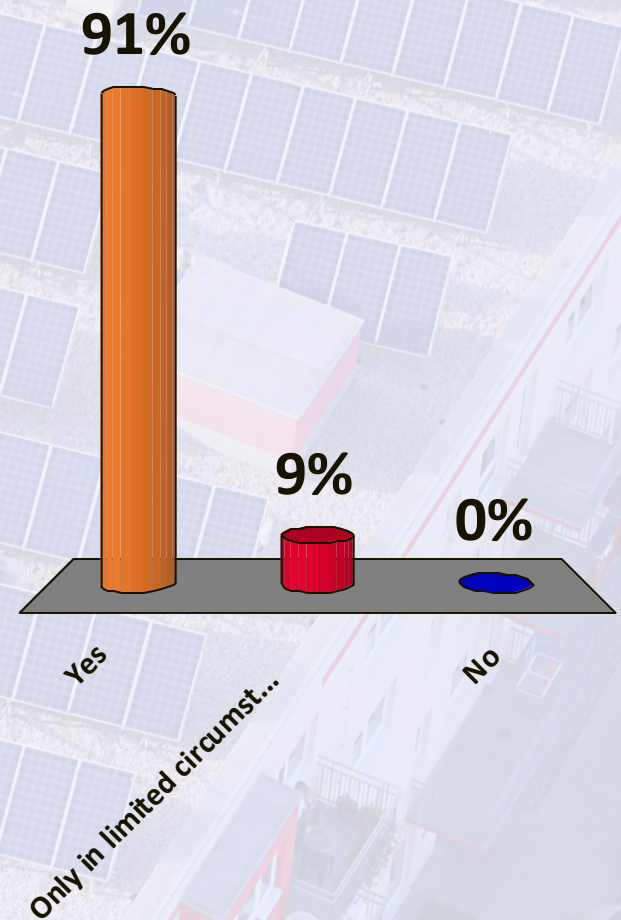


Visioning: Scales & Contexts

Poll

Is solar on
commercial
rooftops
appropriate for
your community?

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



Visioning: Scales & Contexts

Poll

Is solar on historic structures appropriate for your community?

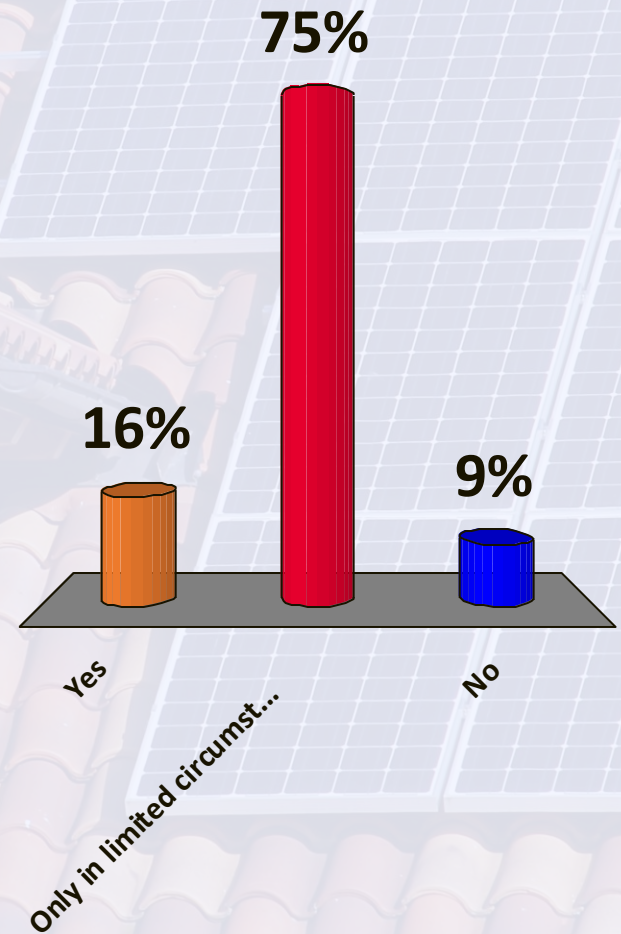


Visioning: Scales & Contexts

Poll

Is solar on historic structures appropriate for your community?

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



Visioning: Scales & Contexts

Poll

Is solar on
brownfields
appropriate for
your community?

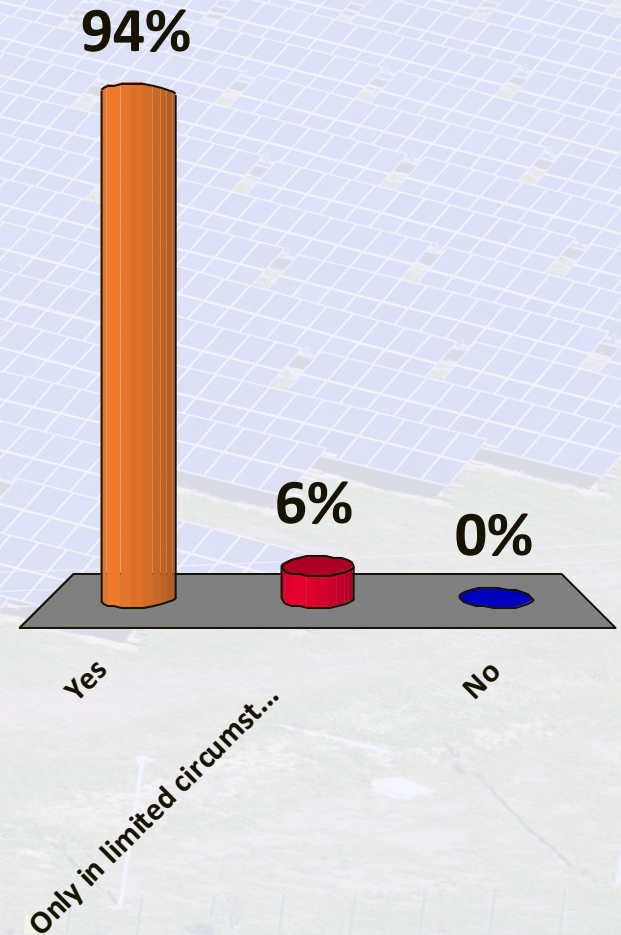


Visioning: Scales & Contexts

Poll

Is solar on brownfields appropriate for your community?

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



Visioning: Scales & Contexts

Poll

Is solar on
greenfields
appropriate for
your community?

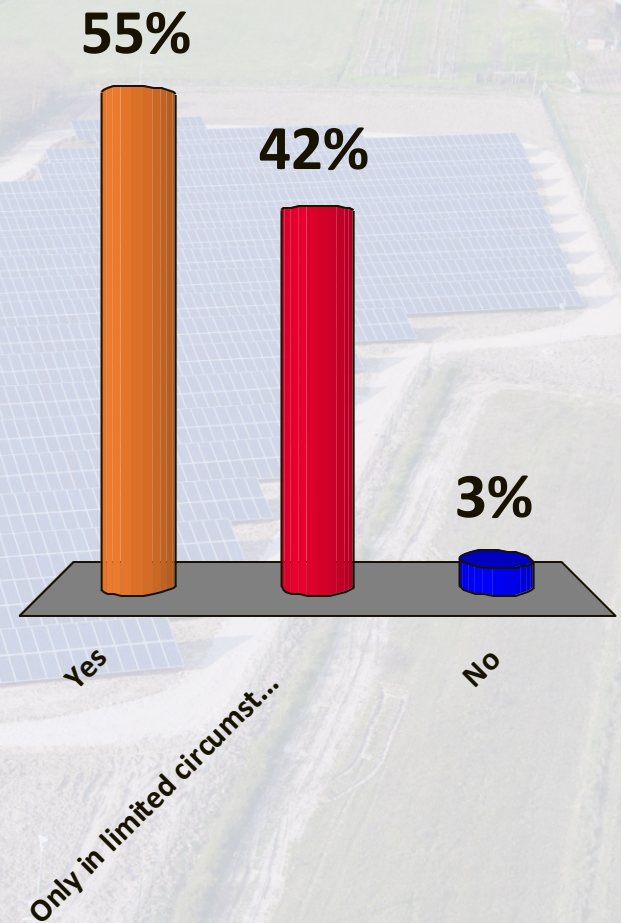


Visioning: Scales & Contexts

Poll

Is solar on greenfields appropriate for your community?

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



Visioning: Scales & Contexts

Poll

Is solar on parking lots appropriate for your community?

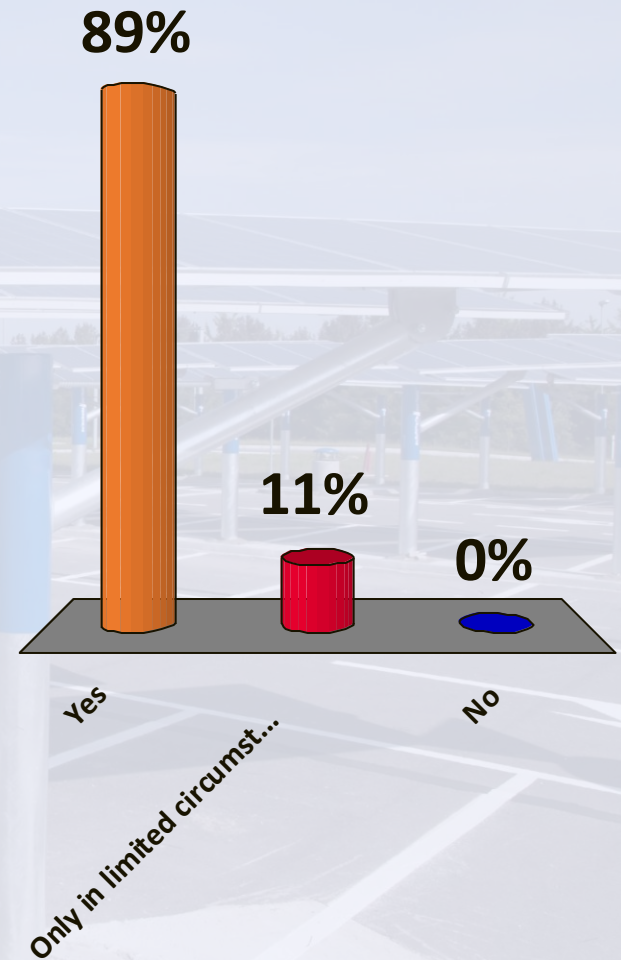


Visioning: Scales & Contexts

Poll

Is solar on parking lots appropriate for your community?

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



Visioning: Scales & Contexts

Poll

Is building-integrated solar appropriate for your community?

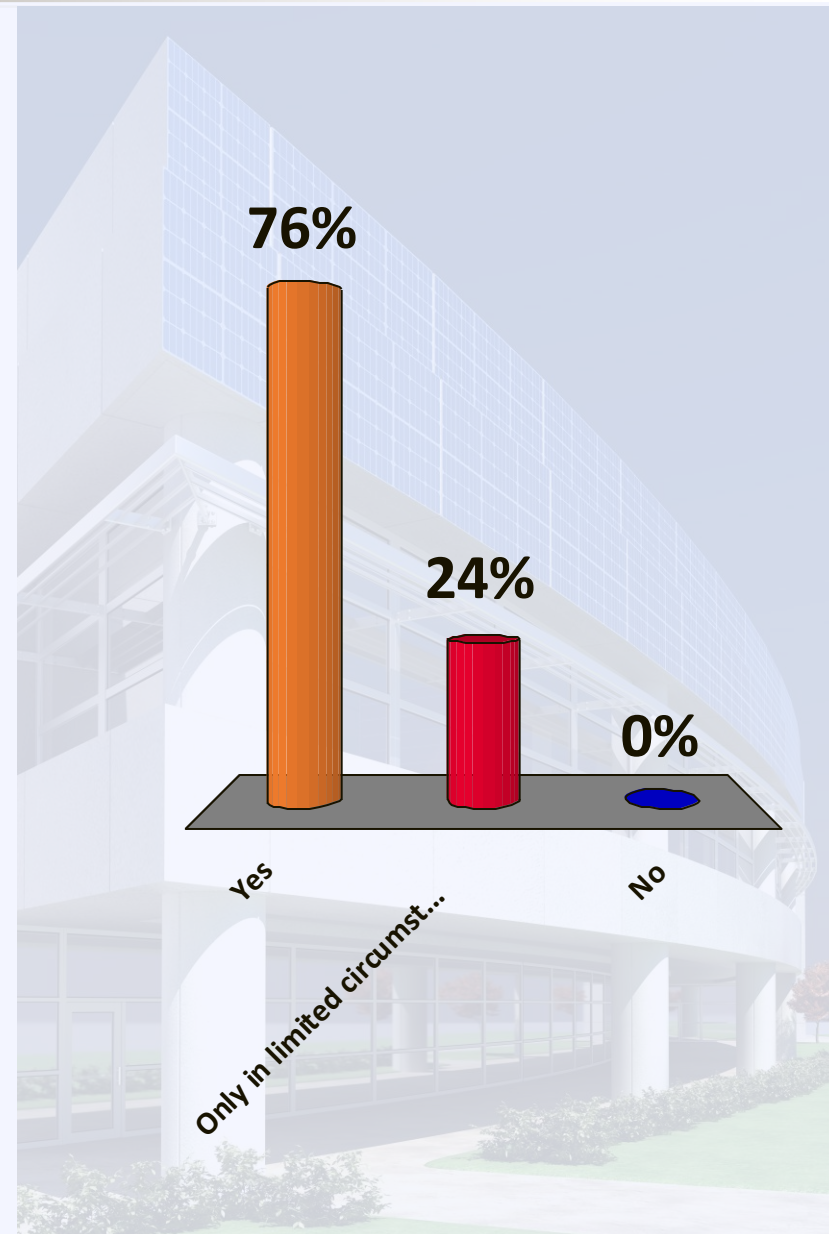


Visioning: Scales & Contexts

Poll

Is building-integrated solar appropriate for your community?

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

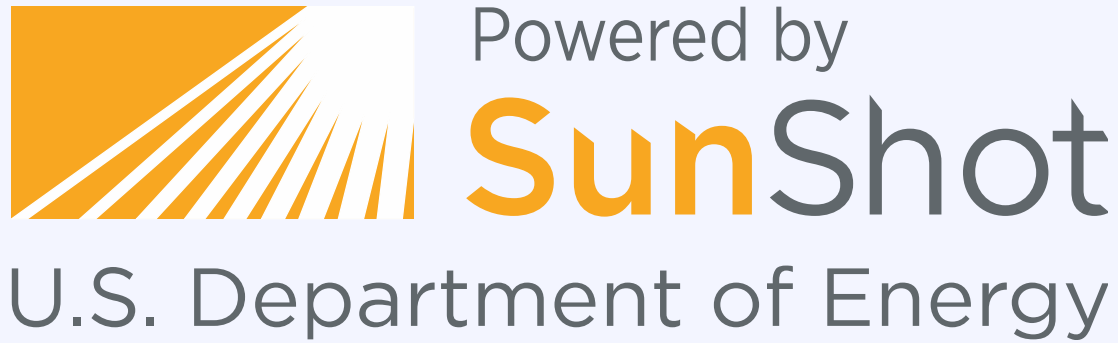


Discussion

What obstacles stand in the way of implementation?

Discussion

What are possible strategies to overcome those obstacles?



Jacky Eubanks

Catawba County

Director of Parks & Planning



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U.S. Department of Energy

John Morrison

Strata Solar

Sr.VP for Public Affairs and Asset Management

Q & A

How difficult will it be to adopt a new/updated solar ordinance?

1. Very easy
2. Somewhat easy 0%
3. Moderate
4. Somewhat difficult
5. Very difficult

Very easy	Somewhat easy	Moderate
Somewhat difficult	Very difficult	

Activity: Next Steps

What do you pledge to do when you leave today's workshop?



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