Solar Powering Your Community Addressing Local Government Zoning







U.S. Department of Energy

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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









One to One Assistance





Helping Policymakers
Understand Best Practices:

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

www.solaroutreach.org



One to One Assistance

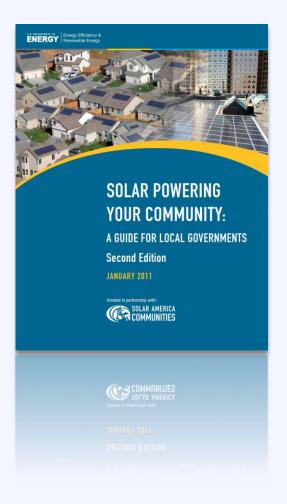


Resource

Solar Powering Your Community Guide

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

www.energy.gov





Resource

Planning for Solar Energy

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

www.planning.org



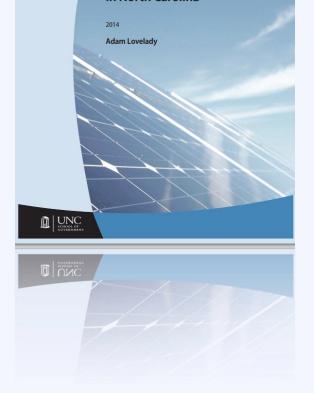


Resource

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



Planning and Zoning for Solar

in North Carolina



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





Template Solar Energy Development Ordinance for North Carolina

Executive Summary

North Carolina is rapidly becoming a leader in solar energy development not only in the southeast, but also in the US. Before the template, there was statewide discussion about how to regulate and permit solar energy systems, and no clear guide to creating one that does not overly burden industry or irresponsibly manage land use. Most local governments in NC, both at the municipal and county levels, provide some regulation on land use within their jurisdiction, yet most have yet to institute regulation for solar development. This template ordinance provides consensus input on a best practice model for how solar development can be regulated.

Template Solar Ordinance Meets a Growing Need

The rapid growth in solar development in NC makes this a very opportune time for development of the template ordinance, particularly because there is significant experience across the state with solar projects of all sizes, yet the industry is still at the early stages of its ongoing growth.

Template Approach Affords Flexibility

It is important to understand that the solar ordinance is a template rather than an enforceable rule or one-size-fits-all law. It is designed to be adapted and then adopted by jurisdictions across the state and to serve as the basis for local development ordinances in their respective communities. In this way the template solar ordinance provides valuable guidance while still allowing flexibility that local governments may want to help them best address local interests.

Broad Stakeholder Working Group Enhances Template's Value

The North Carolina Solar Center (NCSC) and the North Carolina Sustainable Energy Association (NCSEA) managed the development of the template ordinance and the organization of the draftling working group. The working group consisted of representatives of the solar industry, local NC planners, State Farm Bureau, NC Department of Agriculture, NC Department of Environment and Natural Resources (DENR), NC Association of County Commissioners, NC League of Municipalities, military, University of North Carolina School of Government, NC Conservation Network, Duke Energy Progress, North Carolina State University Forestry, Federal Aviation Administration (FAA), and many others. The initial draft was developed by NCSC and NCSEA in May 2013 based on a study of current NC solar ordinances and available state model ordinances. Throughout the summer and fall the working group, often in the form of smaller topic-specific focus groups, worked to improve and update the existing drafts. Additionally NCSC and NCSEA hosted five public formus across the state on the development of the template ordinance. At these forums NCSC and NCSEA convened a group of experts to inform interested stakeholders in the area about solar development and its regulation. The final three forums walked through the draft template and received valuable public feedback to assist with its development.

Version 1.0: 12/18/2013

Version 1.0: 12/18/2013

with its development.

National Resources (IDSR) NC Association of Computer Memorians and Computer of Engine of Vision (white challes).

National Resources (IDSR) NC Association of Computer Memorians and Computer of Compu



Quickly get up to speed on key solar policy issues:

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











Develop an implementation strategy for smart solar policy











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

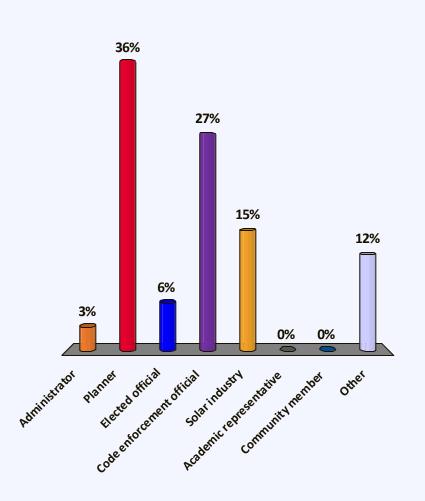


We want to get to know you better



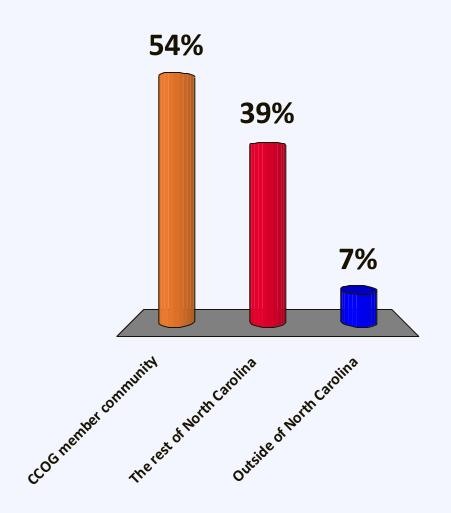
Who are you?

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



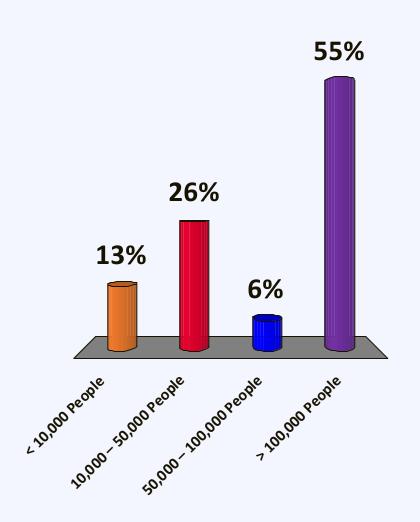
Where are you coming from?

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



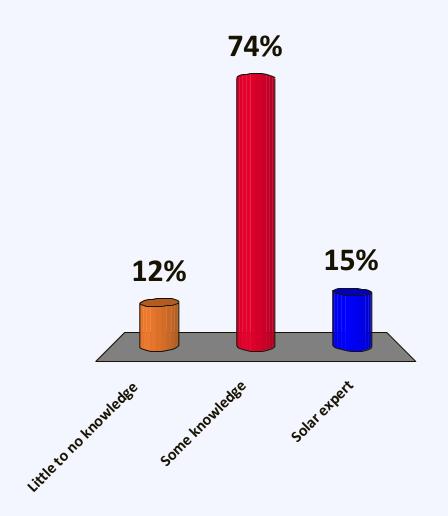
What size is your community?

- 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?

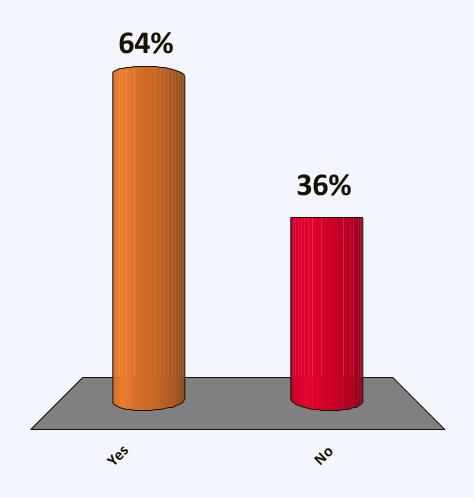
- A. Little to no knowledge
- B. Some knowledge
- C. Solar expert



Are there completed solar projects in your community?

A. Yes

B. No

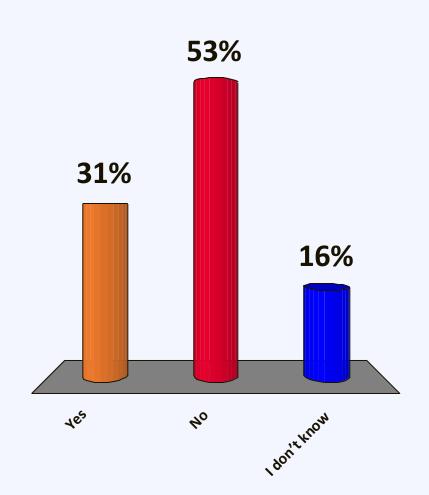


Does your local government have solar on public properties?

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)

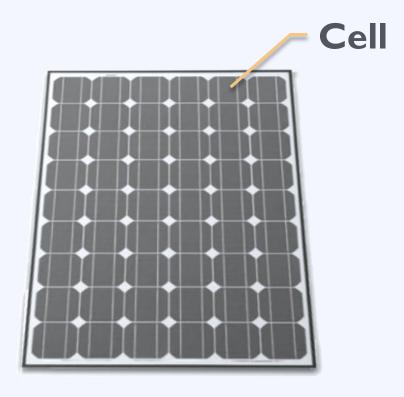


Solar Hot Water



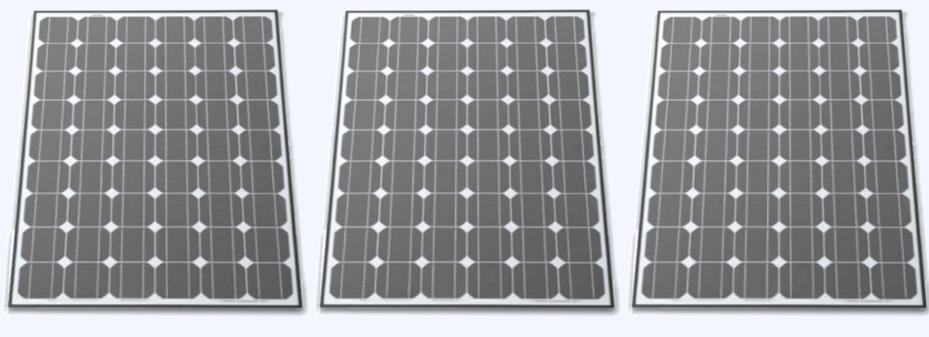
Concentrated Solar Power





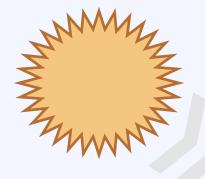
Panel / Module





Array







Capacity / Power kilowatt (kW)

Production

Kilowatt-hour (kWh)





Residence 5 kW



Factory
I MW



Office 50 – 500 kW

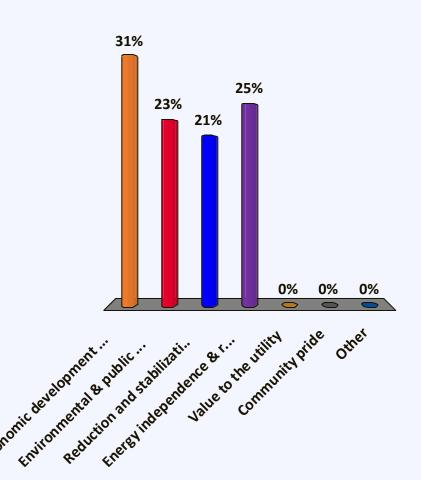


Utility
I MW+

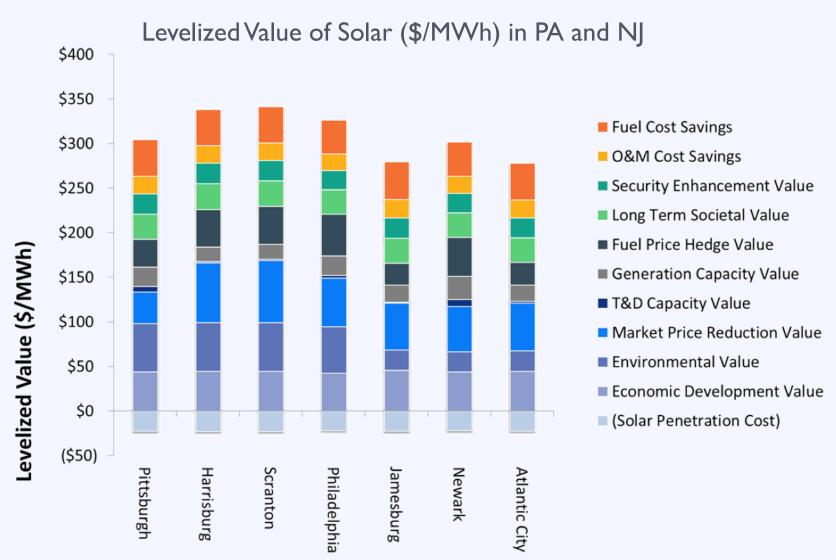


What is the top benefit solar can bring to your community?

- 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

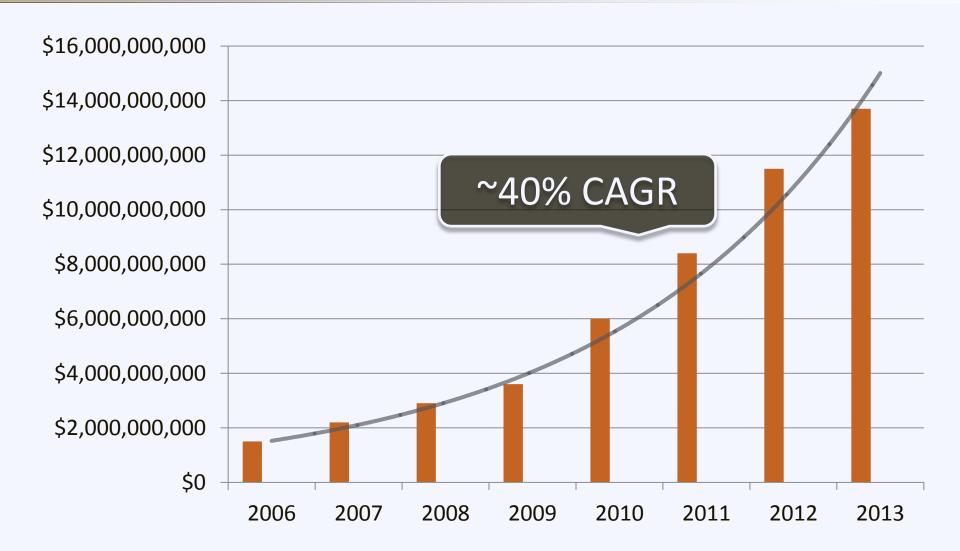


Value to Community & Utility





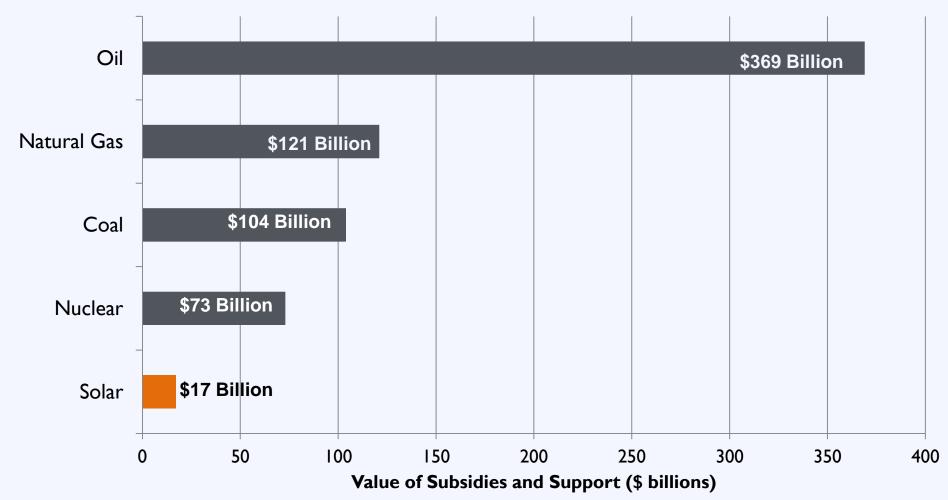
Benefits: Solar Economic Growth





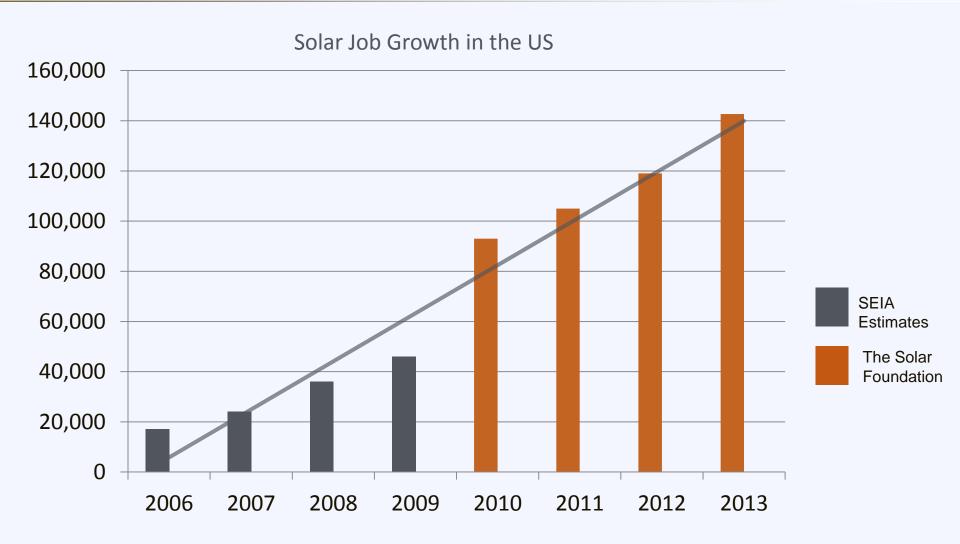
Subsidies and Support

Subsidies for Conventional and Solar Energy, 1950-2010



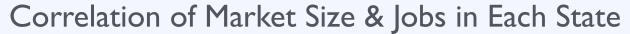


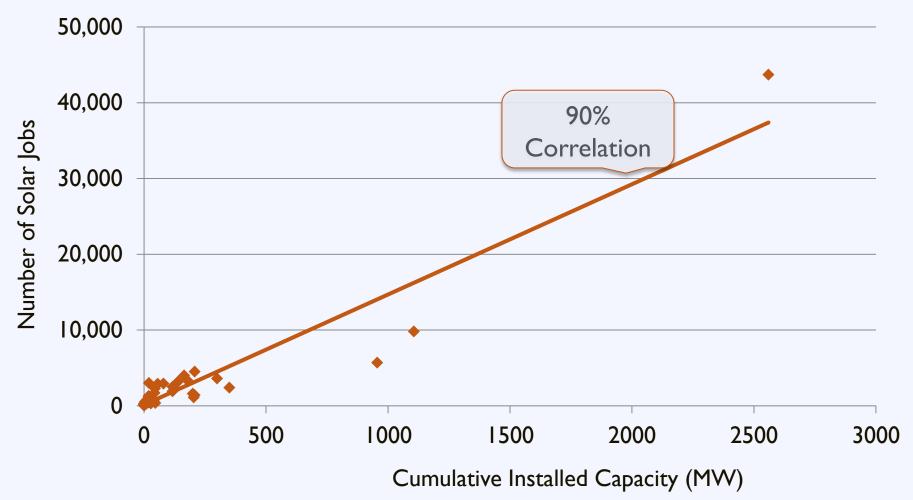
Benefits: Solar Job Growth





Benefits: Job Creation

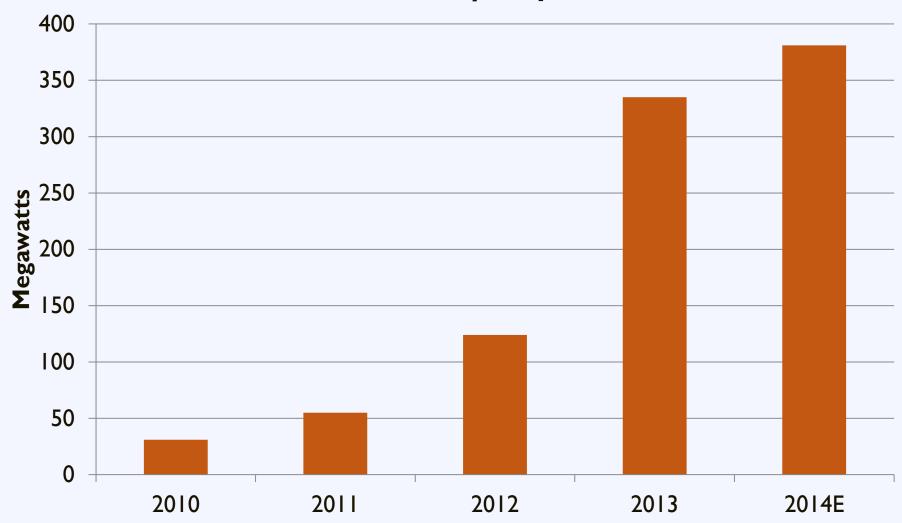






NC Solar Market

Cumulative Installed PV Capacity in North Carolina





Source: SEIA/GTM "Solar Market Insight"

Economic Development in NC

In 2013 the industry invested

\$787 million

in solar development in North Carolina



Source: SEIA/

Economic Development in NC

As of November 2013, there are

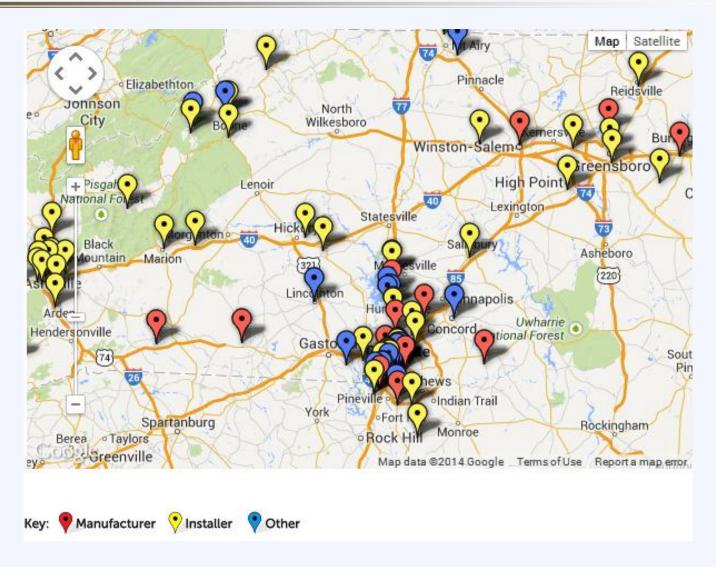
137 solar companies

that employ

3,100 people



Economic Development in NC

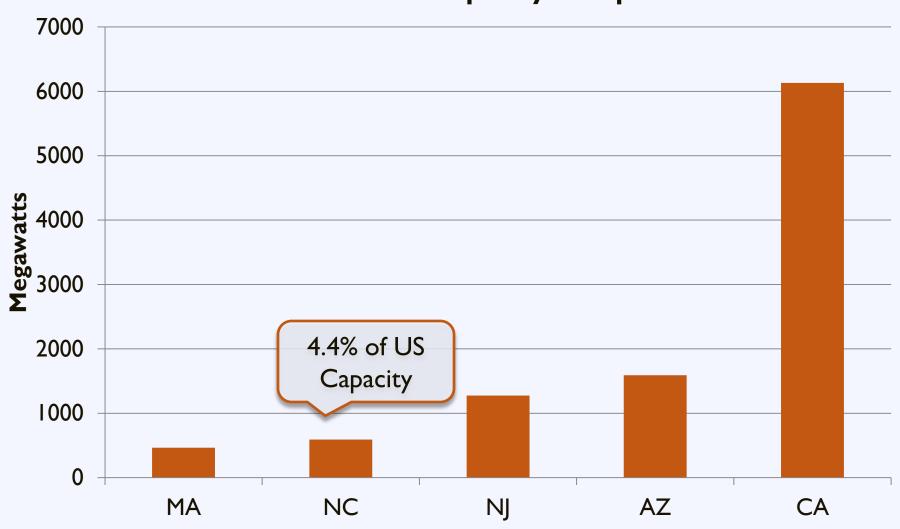




Source: SEIA

US Solar Market

Cumulative Installed PV Capacity in Top 5 US States

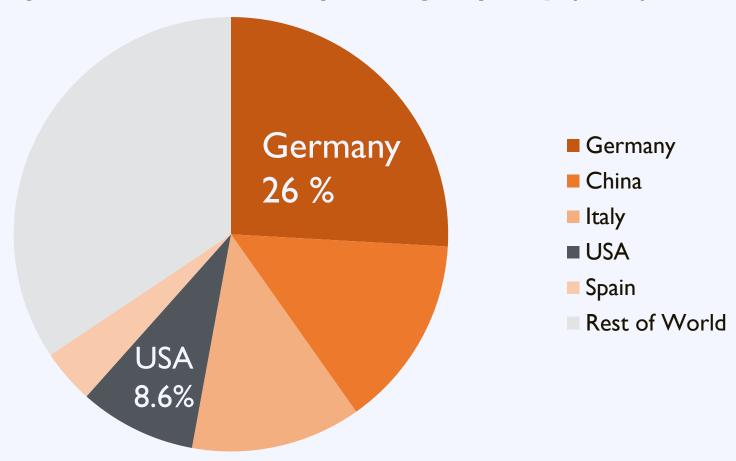


Powered by SunShot U.S. Department of Energy

Source: SEIA/GTM "Solar Market Insight"

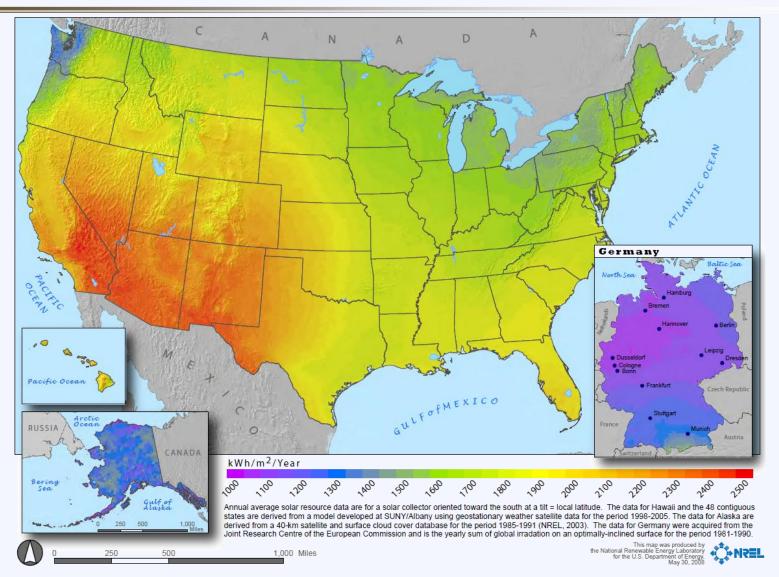
World Solar Market

Top 5 Countries Solar Operating Capacity (2013)



Source: REN 21

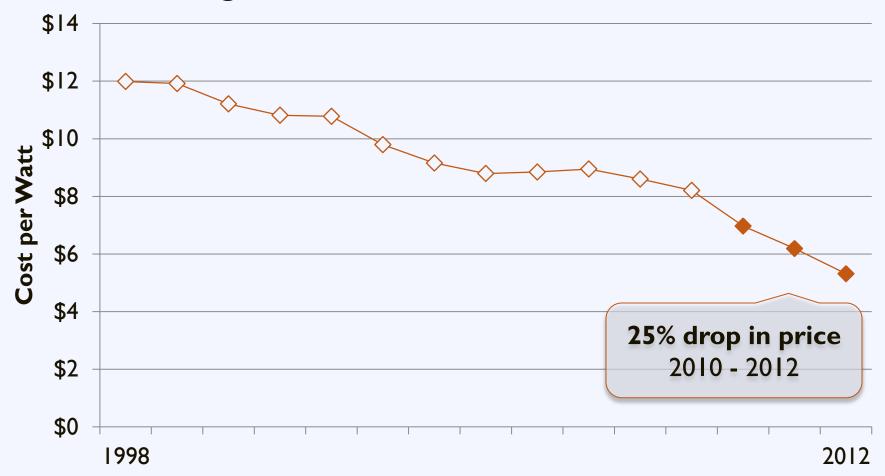
US Solar Resource



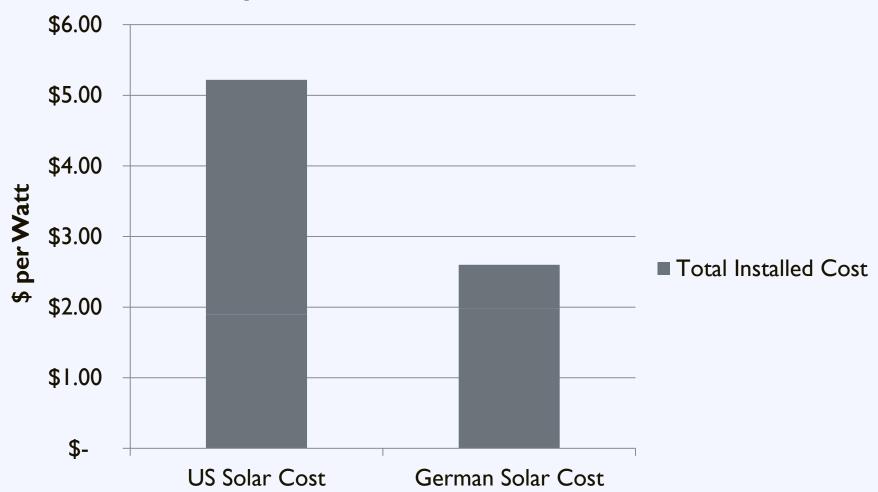


The Cost of Solar PV

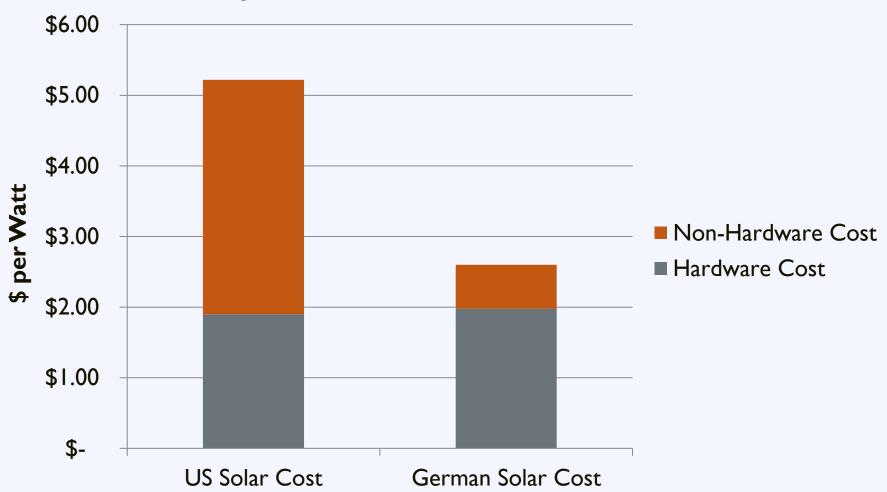
US Average Installed Cost for Behind-the-Meter PV



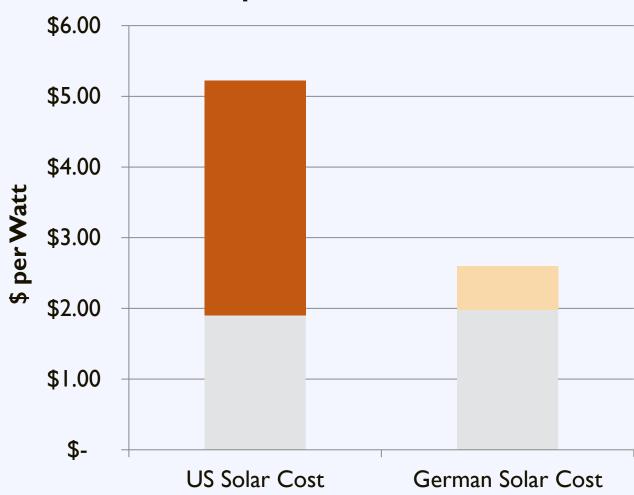




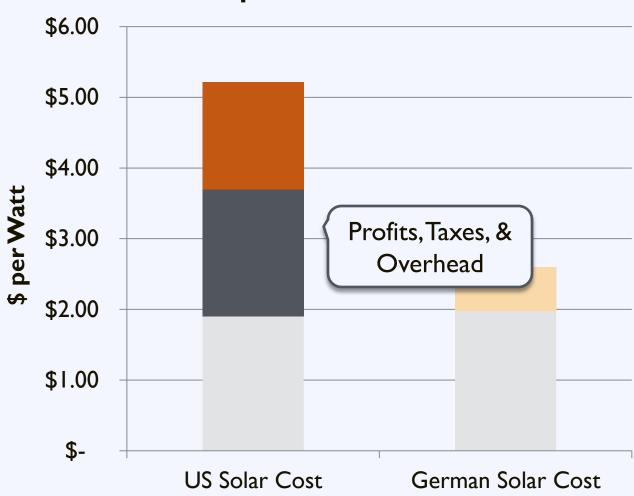




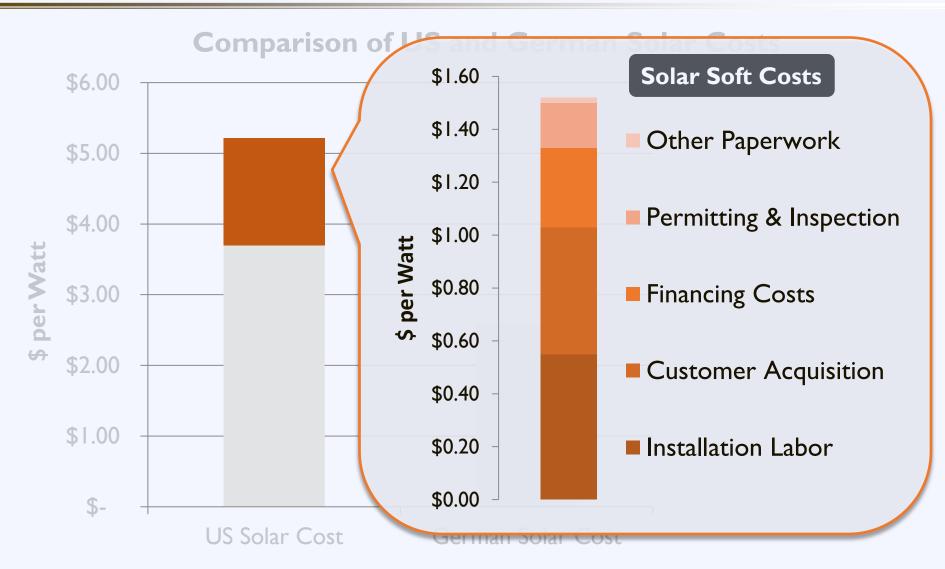














Challenge: Installation Time







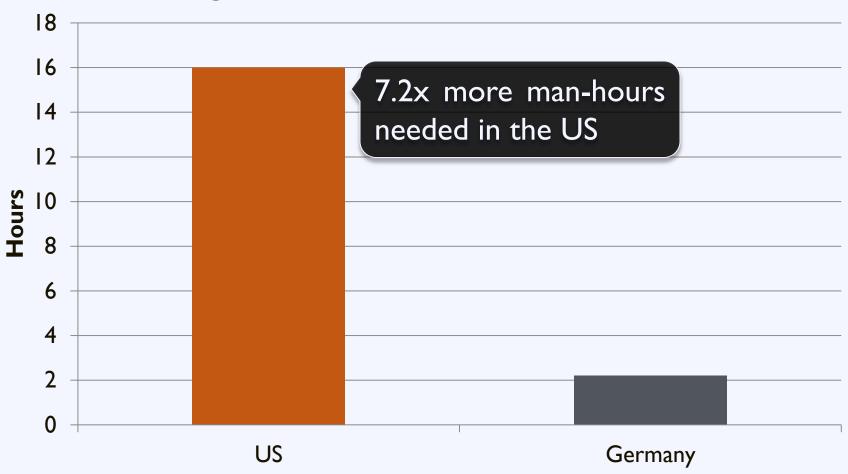
Germany Today

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



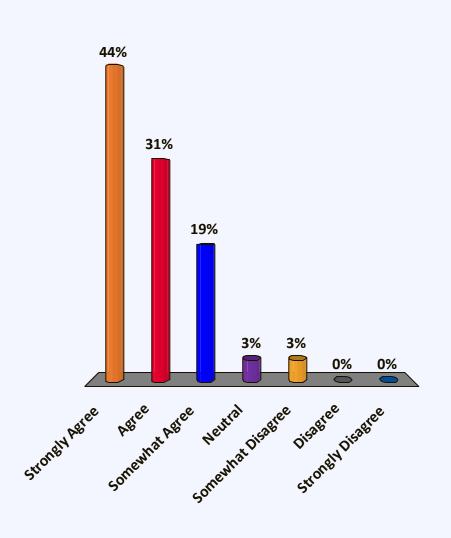
Zoning Standards

Section	Topics to Address	
Definitions	Define technologies & terms	
Applicability	Primary vs. accessory use	
Dimensional Standards	HeightSize	SetbacksLot coverage
Design Standards	SignageDisconnect	ScreeningFencing



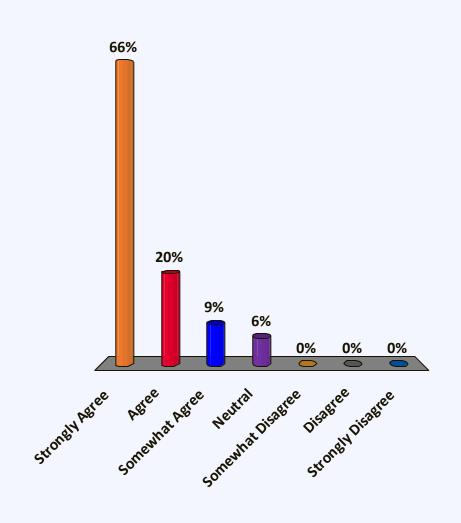
Solar advances your community's economic development goals

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



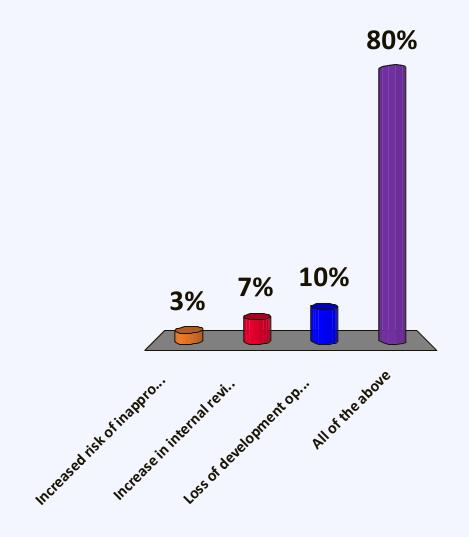
Solar advances your community's environmental & health goals

- 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?





U.S. Department of Energy

Tommy Cleveland

NC Clean Energy Technology Center Renewable Energy Project Coordinator

Break Ten Minutes



Poll

Is solar on residential rooftops appropriate for your community?



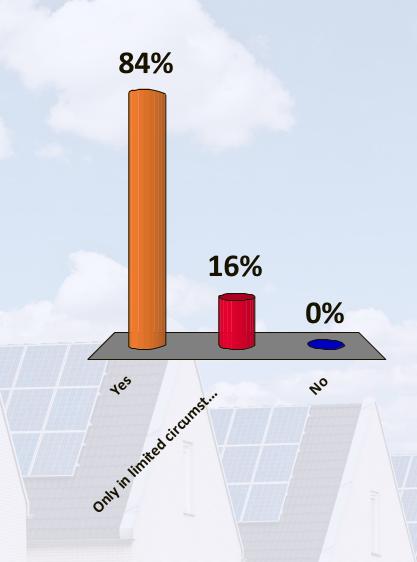
Poll

Is solar on residential rooftops appropriate for your community?

A. Yes

B. Only in limited circumstances

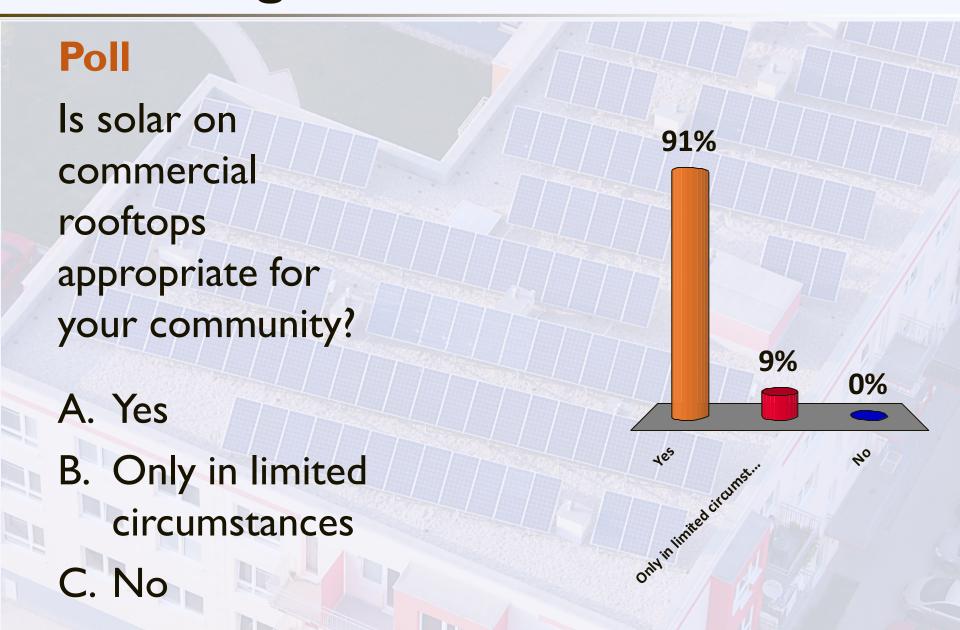
C. No



Poll

Is solar on commercial rooftops appropriate for your community?





Poll

Is solar on historic structures appropriate for your community?



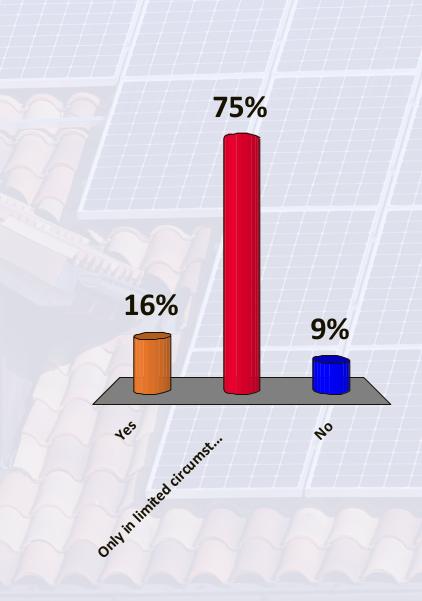
Poll

Is solar on historic structures appropriate for your community?

A. Yes

B. Only in limited circumstances

C. No



Poll

Is solar on brownfields appropriate for your community?



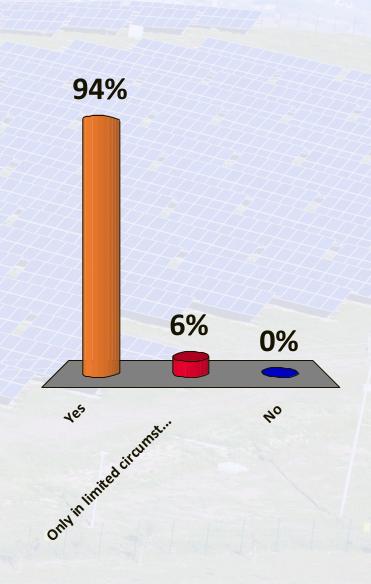
Poll

Is solar on brownfields appropriate for your community?

A. Yes

B. Only in limited circumstances

C. No



Poll

Is solar on greenfields appropriate for your community?



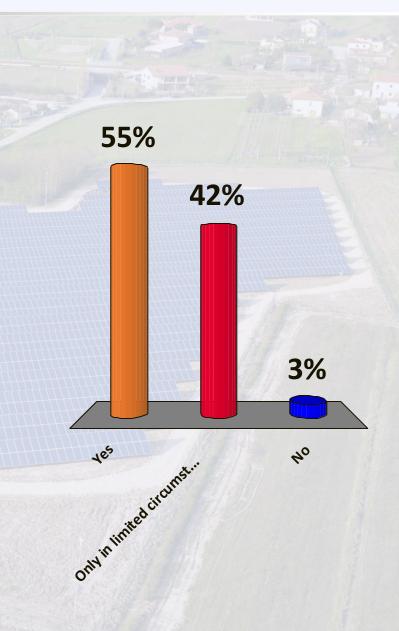
Poll

Is solar on greenfields appropriate for your community?

A. Yes

B. Only in limited circumstances

C. No



Poll

Is solar on parking lots appropriate for your community?

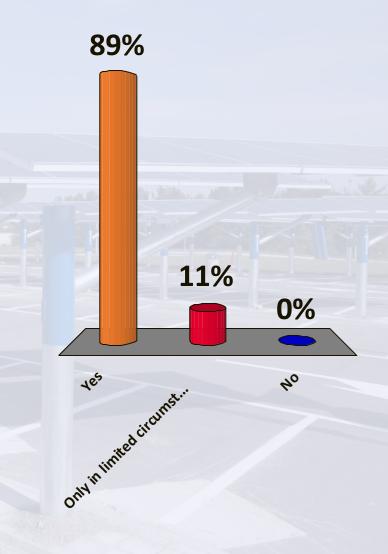


Poll

Is solar on parking lots appropriate for your community?



- B. Only in limited circumstances
- C. No



Poll

Is buildingintegrated solar appropriate for your community?

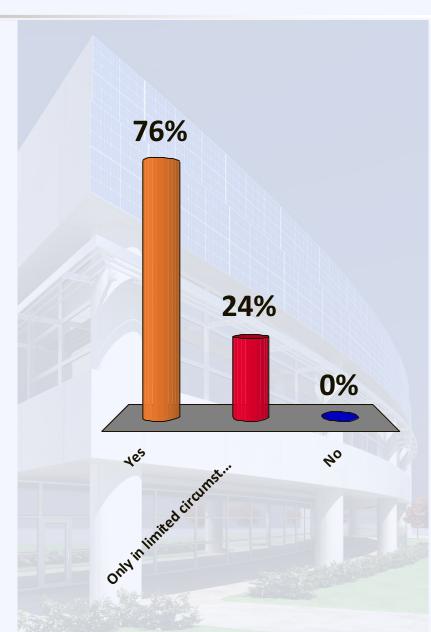




Poll

Is buildingintegrated 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?





U.S. Department of Energy

Jacky Eubanks

Catawba County

Director of Parks & Planning



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 ordinanze?

- I. Very easy
- 2. Somewhat easy
- 3. Moderate
- 4. Somewhat difficult
- 5. Very difficult

0%

Activity: Next Steps

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





U.S. Department of Energy

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