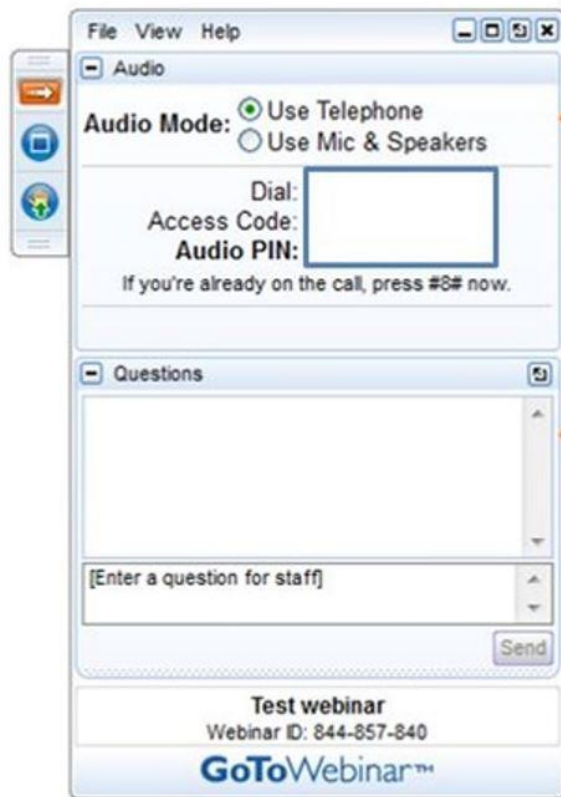


# Advice for States on Providing Solar Information to Consumers

November 17, 2016



# Housekeeping



All participants are in “Listen-Only” mode. Select “Use Mic & Speakers” to avoid toll charges and use your computer’s VOIP capabilities. Or select “Use Telephone” and enter your PIN onto your phone key pad.

Submit your questions at any time by typing in the Question Box and hitting Send.

**This webinar is being recorded.**

You will find a recording of this webinar, as well as all previous CESA webcasts, archived on the CESA website at

[www.cesa.org/webinars](http://www.cesa.org/webinars)

# About CESA



# Sustainable Solar Education Project

- Provides information and educational resources to state and municipal officials on strategies to ensure distributed solar electricity remains consumer friendly and benefits low- and moderate-income households.
- The project is managed by the CESA and is funded through the U.S. Department of Energy SunShot Initiative's Solar Training and Education for Professionals program.
- Sign up for the Sustainable Solar mailing list to receive our free monthly newsletter and announcements of upcoming events:

[www.cesa.org/projects/sustainable-solar/newsletter/](http://www.cesa.org/projects/sustainable-solar/newsletter/)



# Presenter

Warren Leon, Executive Director  
Clean Energy States Alliance



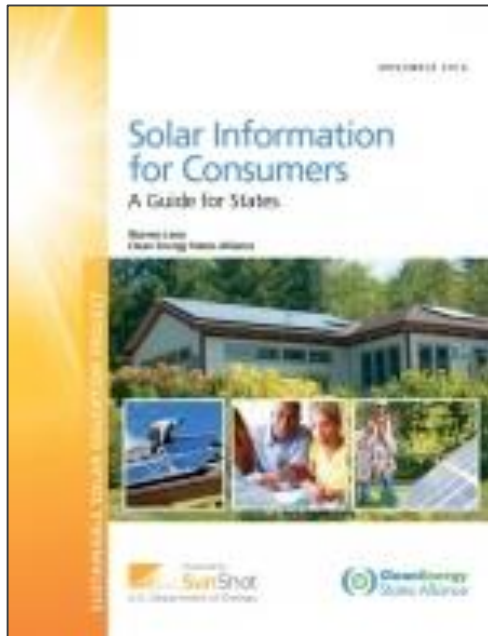
# Advice for States on Providing Solar Information for Consumers

Warren Leon

Clean Energy States Alliance

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# About CESA's New Guide for States



1. Why states should focus on consumer protection
2. Six recommendations for producing effective consumer information on solar
3. Topics for solar consumer information
4. Models to consider
5. Other resources

[bit.ly/Solar-Guide-for-States](http://bit.ly/Solar-Guide-for-States)

# Why States Should Focus on Consumer Protection

- Consumers need sound information to make appropriate decisions
- Good information helps ensure the success of state solar programs
- Can ultimately save state agencies time and effort
- Helps ensure continued public support for solar





# Topics for Solar Information

## **WHAT IS A SOLAR PV SYSTEM?**

- How the technology works
- Components of a typical system
- Different types of PV systems
- Solar+storage
- The advantages and disadvantages of different modules, inverters, mounting, and battery systems
- How/if the PV system will function during a grid power outage
- Safety issues, including fire safety
- System maintenance

## **IS SOLAR RIGHT FOR YOU?**

- Reasons why people go solar
- Deciding whether to invest in a PV system, including reasons why it may not make sense to proceed with solar
- The relationship between energy efficiency and solar
- Whether a building is right for solar
- Information and tools for estimating appropriate PV system size
- Information and tools for quantifying the potential environmental and financial benefits of a PV system
- Community solar

## **FINANCING A PV SYSTEM**

- The differences between solar leases, loans, and PPAs
- Questions to ask before entering into a solar financing agreement

## **THE SOLAR MARKET IN THE STATE AND MARKET TRENDS**

- Statistics and other information on solar capacity and specific solar installations
- Solarize and other solar purchase aggregation programs
- Materials on specific market segments, such as condominium owners, renters, low-income households

## **SOLAR INCENTIVES AND REGULATIONS**

- Federal investment tax credit and how to determine eligibility
- State tax credits, rebate programs, and other solar incentives
- State and federal laws that impact solar installations

## **SOLAR RIGHTS AND ZONING REGULATIONS**

- Permitting and interconnection
- Renewable energy certificates (RECs) and who owns the environmental attributes from a PV system
- Net metering and how solar PV impacts a consumer's utility bill


## **HOW TO CHOOSE A SOLAR CONTRACTOR**

- A list of solar installation companies in the state
- Reviews/ratings of installation companies
- What to look for in a solar installation contract
- Warranties and insurance
- A PV project checklist

## **KNOW YOUR RIGHTS**

- State and federal consumer protection measures
- How to report problematic solar marketing or problems with an installation

## **OTHER USEFUL RESOURCES**

A decorative graphic at the top of the slide features a bright sunburst or lens flare effect in shades of orange and yellow, set against a white background.

# Six Recommendations for Producing Effective Consumer Information on Solar

# 1. Present Solar in an Even-Handed Manner

- Don't only present the virtues of installing solar
- Explain why solar might not be a sound choice in some cases
- Help consumers understand the need for caution and the range of questions to ask before making a final decision



## 2. Make Information Easy to Understand, Visually Appealing, and Easy to Use



- Emulate the best commercial websites
- Separate the information for consumers on its own web page. Don't mix it in with technical specifications for installers, program descriptions for grant applicants, etc.
- Speak directly to consumers in a clear, direct manner that assumes no prior knowledge
- Help readers focus on the most important information by including short lists of key points
- Divide the material into short topics with links to each section
- Also, compile the information into a single, well-organized document

### 3. Emphasize Dissemination as Much as Materials Development



- A stand-alone website can help
- Do media outreach
- Encourage others to link to and promote the state's information
  - Utilities, municipalities, solar installers, solar advocates, energy organizations, consumer groups
- Implement search engine optimization
- Link to the information from other solar-related documents and from the agency home page

## 4. Describe the State's Direct Involvement in Solar

- Put all information in one location, including any relevant state laws, tax credits, incentives, and programs
- Include cross-references between agencies
- Cover permitting, interconnection, and federal tax credits

# 5. Give High Priority to Solar Financing

- Can be a confusing area for consumers; it is easy to make decisions that are later regretted
- Provide information about the types of finance options available (leases, loans, and power purchases agreements)
  - The advantages and disadvantages of each
  - Which are best in which circumstances
- Suggest questions to ask lenders and installers



# 6. Draw on Pre-existing Resources

- Other states
- US Department of Energy
- National Renewable Energy Laboratory
- Utilities
- Solar Energy Industries Association
- Universities
- Nonprofit organizations
- Commercial websites
- Link to them
- Adapt or modify their materials (with permission)







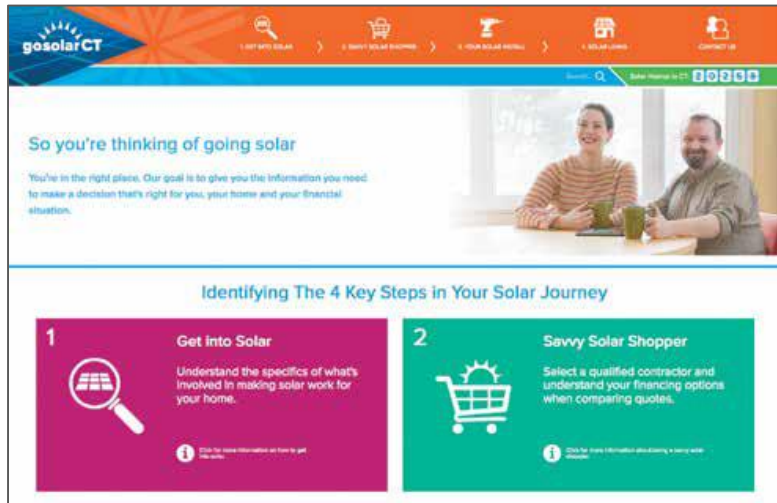
# Models to Consider

# 1. A Dedicated Solar Consumer Information Website

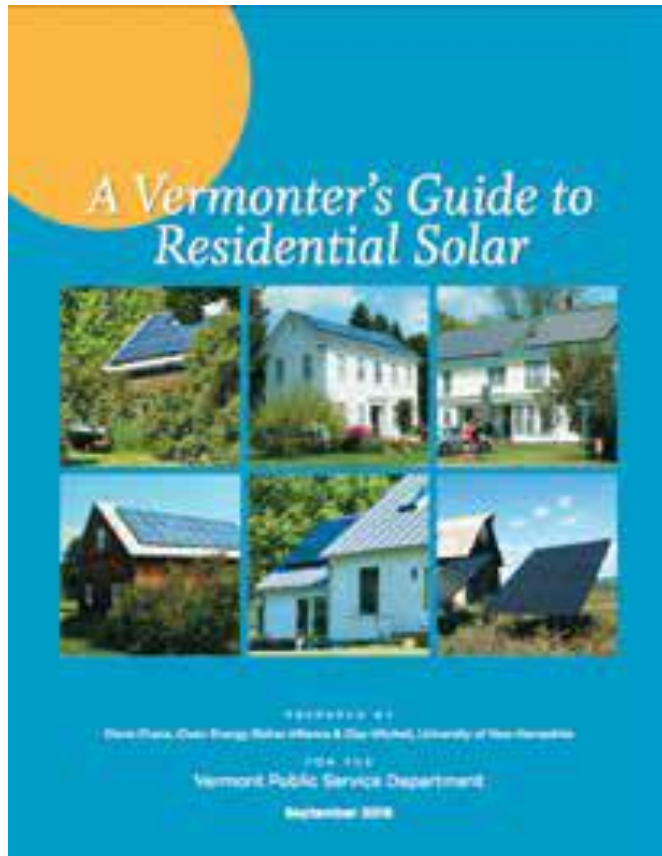
- GoSolarCT

- Produced by CT Green Bank with EnergySage
- Current version launched in July 2016

- Ideal approach, but requires considerable resources plus ability to have a distinct website address
- Can look for partners
- Connecticut site is well organized, inviting, and non-intimidating



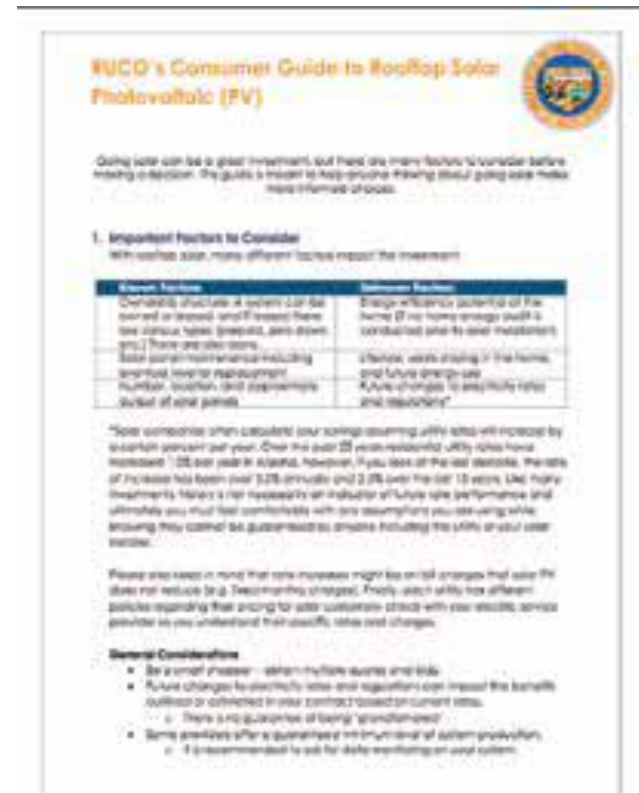
## 2. A Comprehensive Guide



- Published by the Vermont Public Service Department
- All information in one place
- Effort to be even-handed
- Better if the same information is also on the website in bite-sized pieces
- CESA can work with states that want to create a version tailored to their state

# 3. A Brief, Low-Budget Guide

- Short documents can be useful and don't need to be fancy
- A 3-page document from the Arizona Residential Utility Consumer Office
- Topics:
  - Factors to consider before purchasing a system
  - How having a system affects a homeowner's relationship to the electricity grid
  - Guidance on choosing an installer
  - Bulleted lists of key points to consider
- Don't skimp on marketing



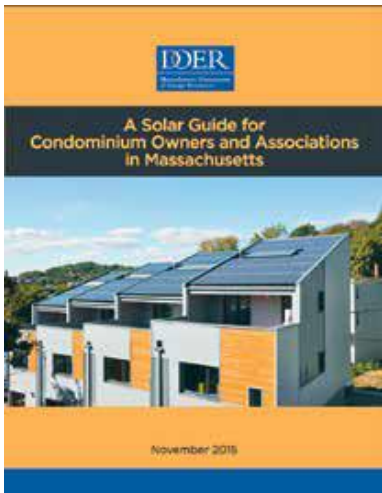
# 4. A Focus on Solar Financing

- Guide published by the New Mexico Energy, Minerals and Natural Resources Department in 2015
- Defines common terms, explains each financing option, and identifies advantages and disadvantages of each
- A confusing area for consumers; raises consumer protection concerns
- State-specific version of a CESA generic guide



# 5. Materials on Special Topics

## Condominium Owners and Associations



- Massachusetts Department of Energy Resources
- Legal & financial issues of projects at condominiums

## Community Solar

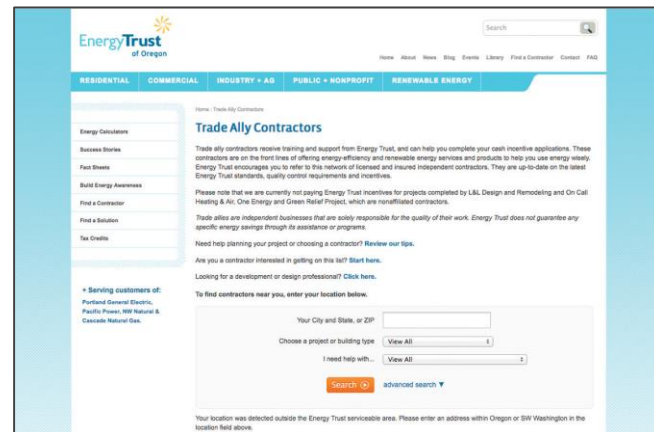
- An emerging area with distinctive issues for consumers
- Useful tips by Minnesota Department of Commerce
- Links to more information by the Clean Energy Resource Teams, a statewide partnership



# 6. List of Solar Installers

- Consumers can find this useful and saves them time
- Need to be clear about the nature of the list
  - Consumers may assume the state is endorsing and recommending the companies on the list

- Energy Trust of Oregon's Trade Industry Allies
- Participating contractors
  - Take webinar training
  - Meet minimum insurance requirements
  - Oregon Construction Contractors Board license
  - No unresolved complaints from Energy Trust customers



# 7. Solar Resource Maps & Calculators

- Help consumers estimate the electricity generating potential of their rooftop and compare it to other buildings
- DC Solar Map
  - Used Mapdwell Solar, the most advanced, commercially available solar mapping system
  - In effect, a sophisticated solar calculator
  - Not a substitute for an onsite analysis
  - More suitable for a city or other small area than a large state



- An alternative: link to a pre-existing map (e.g., Google Project Sunroof) or a solar calculator (e.g., NREL's PV Watts)
  - Caution: Different calculators produce different results. Choose one that reveals assumptions about future electricity rates, installation costs, and discount rate



# 8. Solar Statistics

**GO solar CALIFORNIA**

SunShot Energy GRID Public Use and System Database EDISON

About | Consumers | Professionals | Equipment | Resources | Solar Basics | News & Media | Contacts

California Solar Statistics

Attention Users: Please see [www.californiasolarstats.ca.gov](http://www.californiasolarstats.ca.gov) for the latest CA solar data and statistics.

In the coming months, [www.californiasolarstats.ca.gov](http://www.californiasolarstats.ca.gov) will become the main public reporting site for the California Solar Initiative (CSI), net energy metering (NEM) and other programs.

**Welcome to California Solar Statistics**

California Solar Statistics (CSS) is the official public reporting site of the California Solar Initiative (CSI), presented jointly by the CSI, California Communities and the California Public Utilities Commission. Here you will find actual program data summaries for the CSI General Market, residential affordable solar leasing (RASL), and single-family affordable solar leases (SASL) programs as well as solar PV Net Interconnection data. Data is provided in several forms and tables, and can also be downloaded for analysis.

**California Leads the Nation**

100,000	solar panels
4,226	megawatts installed
\$5.24	per watt
\$4.23	per watt

**Net Energy Metering (NEM) Interconnection Data Now Available**

Interconnection data on California Solar Statistics fully captures solar PV net energy metering (NEM) participation in SOU territories (PG&E, SCE and SDG&E). NEM interconnection data sets undergo data integrity tests to ensure data quality and are currently refreshed monthly. Due to the very large number of data entries, and because the data have been collected by different departments using different protocols, there are some revealing differences between the CSI and the NEM data – please see the “Read Me” file with each data set for more information. At present, the graphs and tables on this website represent only the CSI Interconnection Data. New NEM interconnection data will be incorporated into the graphs and tables in the coming months. [Download solar interconnection and CSI data.](#)

**How to Use California Solar Statistics**

View Solar Statistics

From the average cost per watt of a solar system, to the city with the most roof-top solar, to the total number of PVs installed, the View Solar Statistics menu provides the most up-to-date information on the California Solar Initiative. The dynamic filters on each figure allow you to slice and dice the program data to suit your research and evaluation needs. Explore the View Solar Statistics menu at the top of the left navigation to get started.

- Informs residents of the solar capacity in their state
  - Can also include information on locations of systems, costs, system sizes, installers
- California Solar Statistics
  - Megawatts installed by utility, county, and month
  - Average cost per watt
  - All projects approved for interconnection since mid-2015 by location, size, cost per watt, contractor

# Other Resources

- Consumer Reports
- Database of State Incentives for Renewables & Efficiency (DSIRE)
- EnergySage
- Google Project Sunroof
- Let's Go Solar
- Louisiana State University Ag Center Solar Guide
- NREL's Open PV Project
- NREL's PVWatts
- SolarReviews
- SEIA Residential Consumer Guide
- SEIA State Solar Policy Pages
- US DOE Homeowner's Guide to Going Solar

# Contact Information

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