SUSTAINABLE SOLAR EDUCATION PROJECT

Bringing the Benefits of Solar to Low-Income Customers

May 18, 2017

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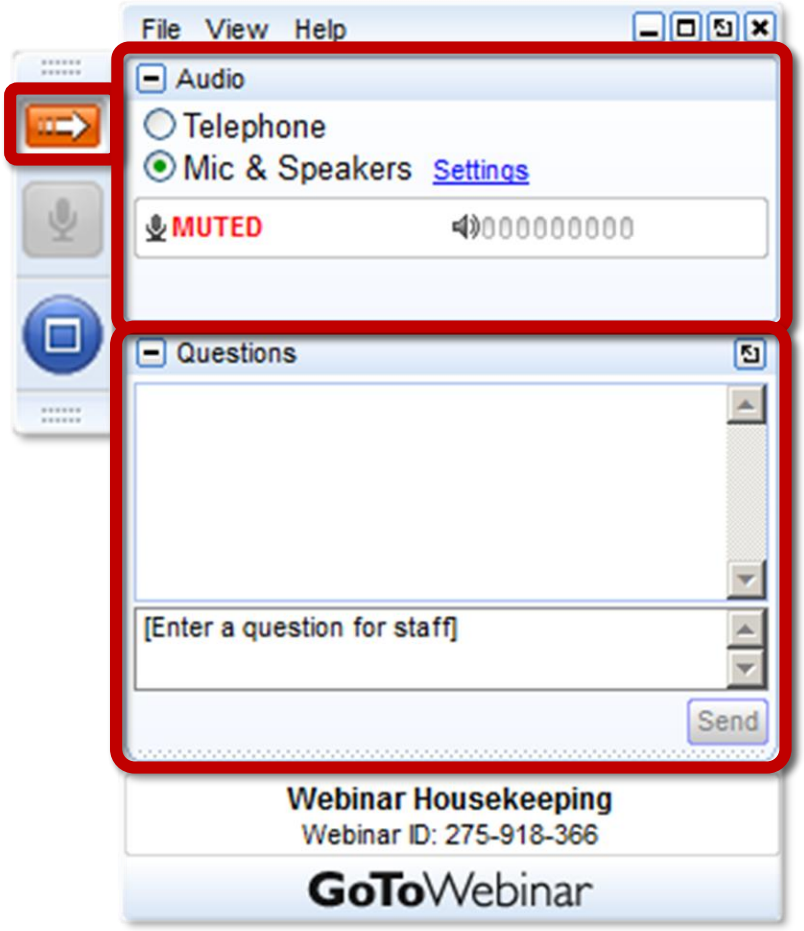
CleanEnergy States Alliance

Housekeeping



Use the red arrow to open and close your control panel

Join audio:

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Submit questions and comments via the Questions panel

This webinar is being recorded. We will email you a webinar recording within 48 hours. CESA's webinars are archived at www.cesa.org/webinars

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CONNECTICUT GREEN BANK

DEPARTMENT OF ENERGY & ENVIRONMENT

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Xcel Energy
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Wisconsin Office of Energy Innovation

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Innovation is in our nature.

MassDEP

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OREGON DEPARTMENT OF ENERGY

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Commerce RI

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Sustainable Solar Education Project

- Provides information to state and municipal officials on strategies to ensure distributed solar electricity
    1) Remains consumer friendly
    2) 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.

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Sustainable Solar Education Project Resources

The Sustainable Solar Education Project is developing a variety of educational resources solar equitability and consumer protection:

- **Guides**
- **Webinars**
- **Online course material**
- **In-person training**

The project publishes a free **monthly e-newsletter** highlighting solar equitability and consumer protection news and from across the country.

www.cesa.org/projects/sustainable-solar

CleanEnergy States Alliance

SUSTAINABLE SOLAR EDUCATION PROJECT

NEWSLETTER

Sustainable Solar Education Project Webinars

Bringing the Benefits of Solar to Low-Income Customers

Thursday, May 18th, 1-2 pm ET

CESA will conduct a webinar on low-income solar program and policy design. The webinar will be based on a recently released CESA guide authored by Bentham Paulos titled Bringing the Benefits of Solar to Low-Income Consumers. The guide identifies successful and promising approaches, offers factors policymakers should consider, and provides policy and program design recommendations for bringing the benefits of solar to low-income consumers. Register here.

Crowd Financing Solar for Nonprofits Serving Low-Income Communities

Thursday, May 25, 1-2 pm ET

Nonprofit community service providers that serve low-income communities have faced challenges in financing solar for their own facilities. One answer that has emerged is crowdfunding, in which many individuals each provide a small amount of money for a project. Crowdfunding can involve donations, or it can involve investments, in which the individuals who participate expect a financial return. In this webinar, Andreas Karelas, Executive Director of RE-volv, and Todd Bluechel, Vice President of Marketing and Sales at CollectiveSun, will present two models that rely on crowdfunding to enable nonprofits to adopt solar. Register here.

Community Solar for Low- and Moderate-Income Consumers

Thursday, June 1, 1-2 pm ET

Because community solar can be made accessible to renters and can include flexible terms, it holds promise for spreading the benefits of solar to low- and moderate-income (LMI) consumers. In this webinar, Kelly Roache, Senior Program Manager at Solstice, and David Miller, Senior Vice President at Alpine Bank,

MAY 2017

The **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 Clean Energy States Alliance (CESA) and is funded through the U.S. Department of Energy SunShot Initiative's Solar Training and Education for Professionals program.

The **Sustainable Solar Education Project Newsletter** reports on issues related to solar equitability and consumer protection.

For more information about the Sustainable Solar Education Project, please visit our website.

cesa.org/projects/sustainable-solar

CleanEnergy States Alliance

Other Sustainable Solar Education Project Guides

- *Solar Information for Consumers*
- *Publicly Supported Solar Loan Programs*
- *Standards and Regulations for Solar Equipment, Installation, and Licensing & Certification*
- *Solar+Storage for Low- and Moderate-Income Communities*

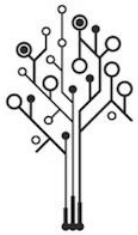
Forthcoming:

- *Consumer Protections for Community Solar*

Panelists

Bentham Paulos, Principal, PaulosAnalysis

Nate Hausman, Project Director, Clean Energy States Alliance (Moderator)



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Bringing the Benefits of Solar Power to Low-Income Consumers

A guide for state policy makers

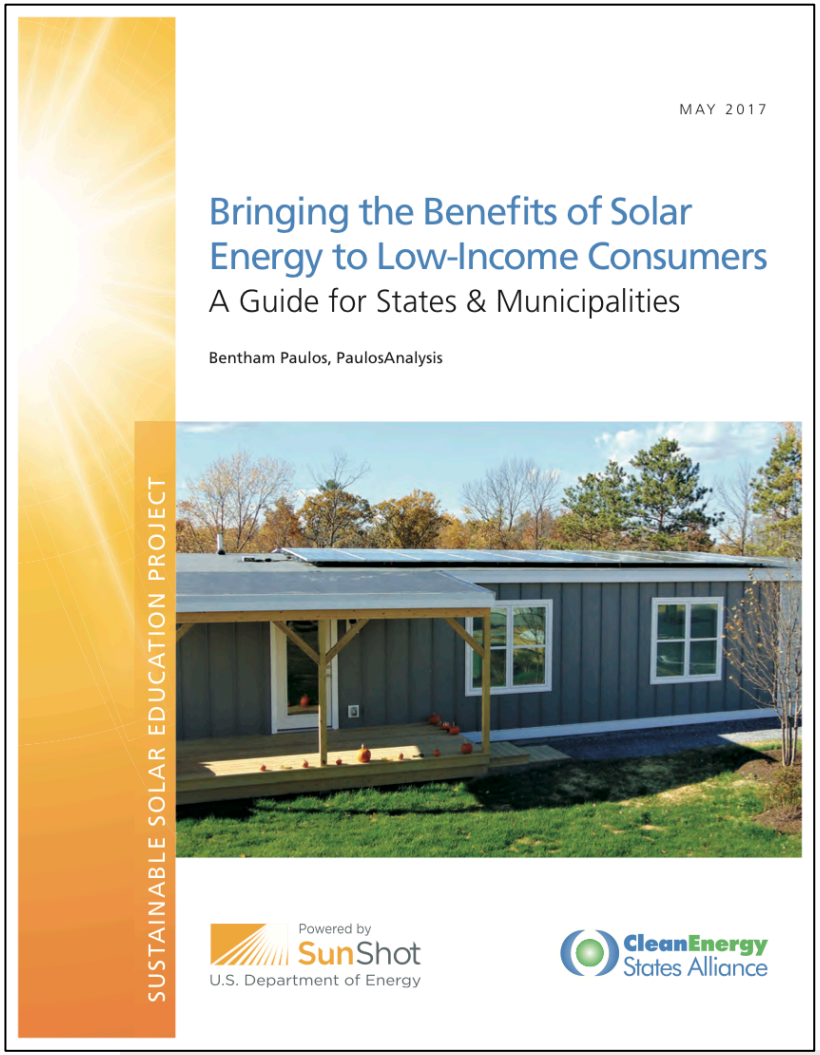
Clean Energy States Alliance (CESA) Webinar

May 18, 2017

Bentham Paulos, Principal

PaulosAnalysis.com

Project overview

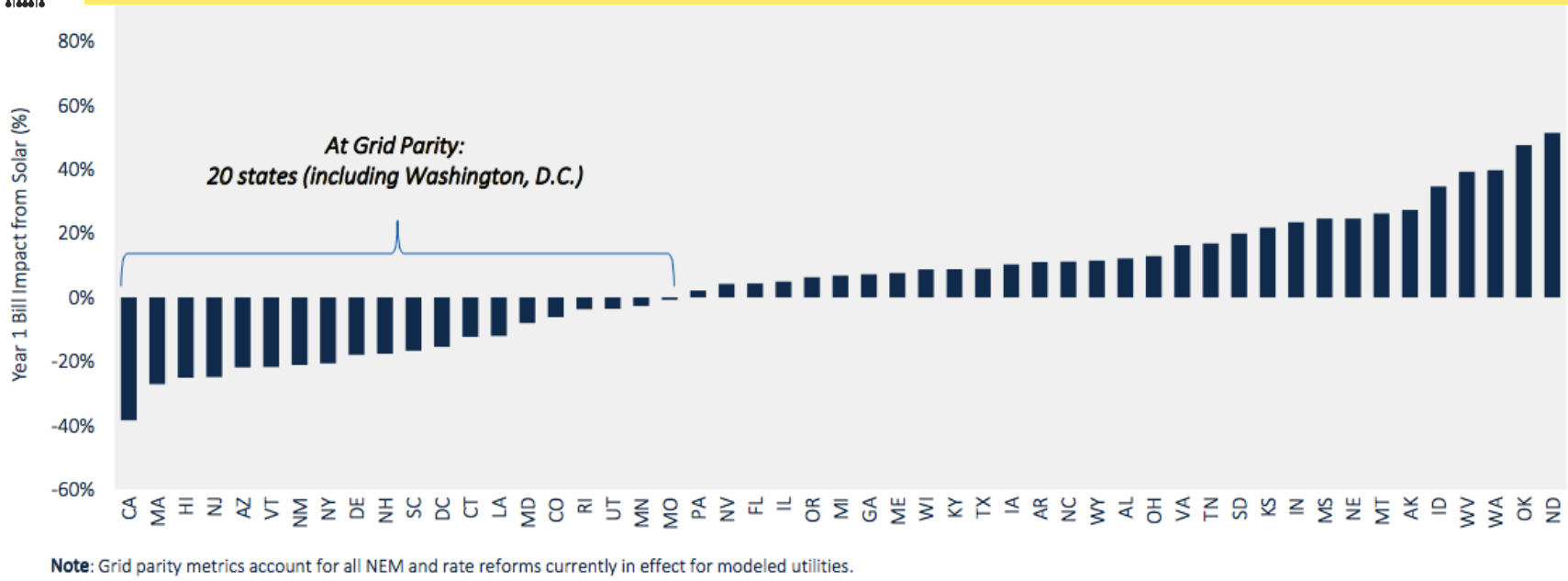


- Clean Energy States Alliance (CESA.org)
  - State agencies and allied organizations
  - 17 members and 12 affiliates
- DOE funding, in support of six state collaborative (MN, NM, RI, CT, DC, OR)

What is low-income solar?

- On homes and apartment buildings of low-income residents
- Community solar that delivers benefits to low-income people
- On institutions that benefit low-income people
- Job training and placement programs for unemployed and underemployed workers

Solar is reaching grid parity



Note: Grid parity metrics account for all NEM and rate reforms currently in effect for modeled utilities.

- Solar is competitive with retail power rates in 20 states. Will be in 42 states by 2020 under business-as-usual assumptions.

Source: GTM Research

Cheap solar is an **opportunity**

- Solar can now save consumers money, and no one needs to save money more than low-income consumers
- Solar can be integrated into housing and poverty programs, reducing expenditures
- Existing solar policies can be adapted to better serve low-income consumers

Yiddish proverb

A refinement

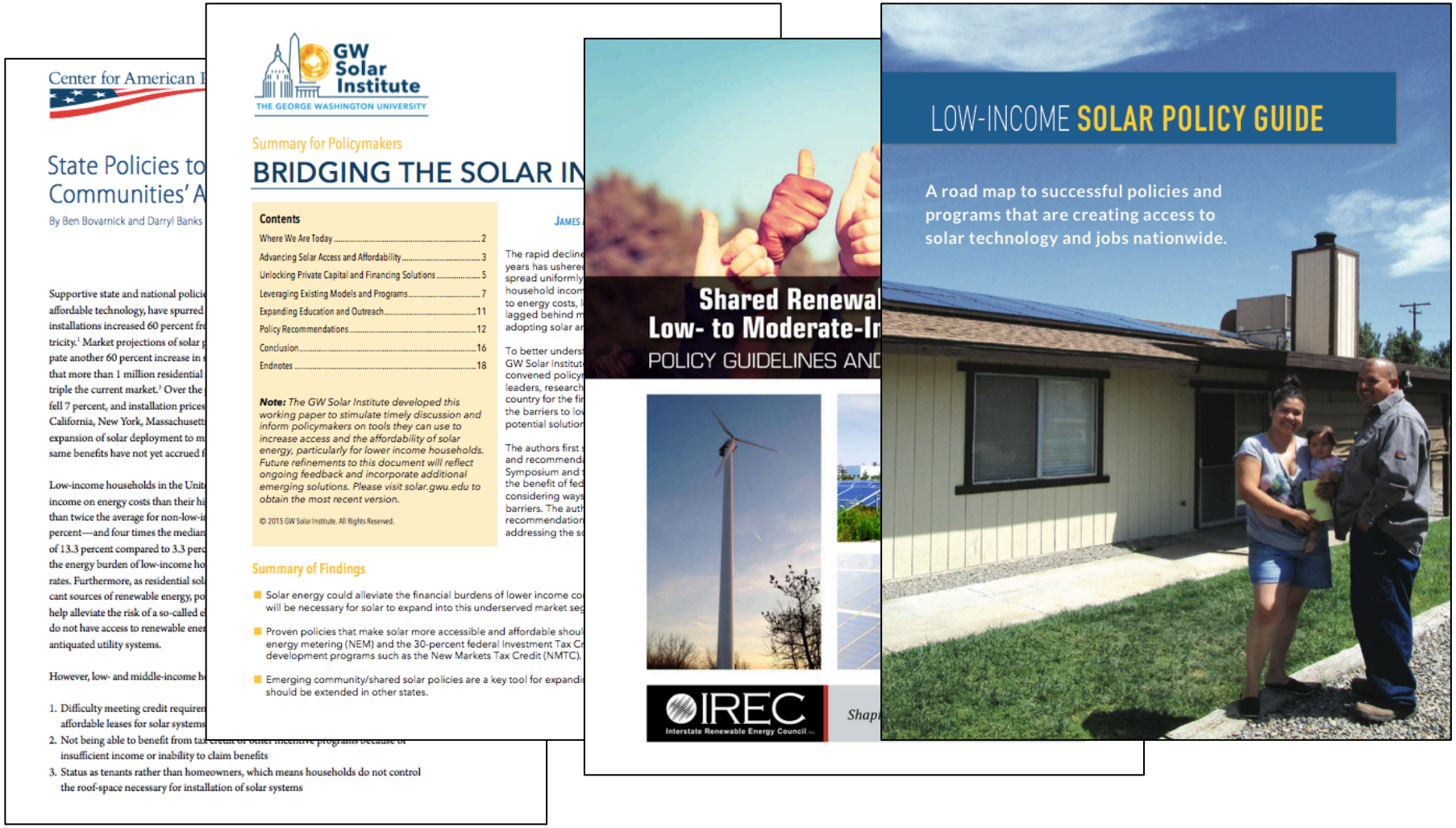
"The sun shines on the rich and the poor alike. But when it comes to rain, the rich have better umbrellas."

- Dushan Wegner, author

Problems to solve

- Low income people need help tapping the benefits of solar
- Structural barriers: rental housing, lack of familiarity or priority, low credit scores,
- Low leverage means limited public budgets don't go far

Recent studies



Overview

- Some myths
- The range of ideas
- Strategies for policymakers
- Discussion

Myth: Solar is only for the rich

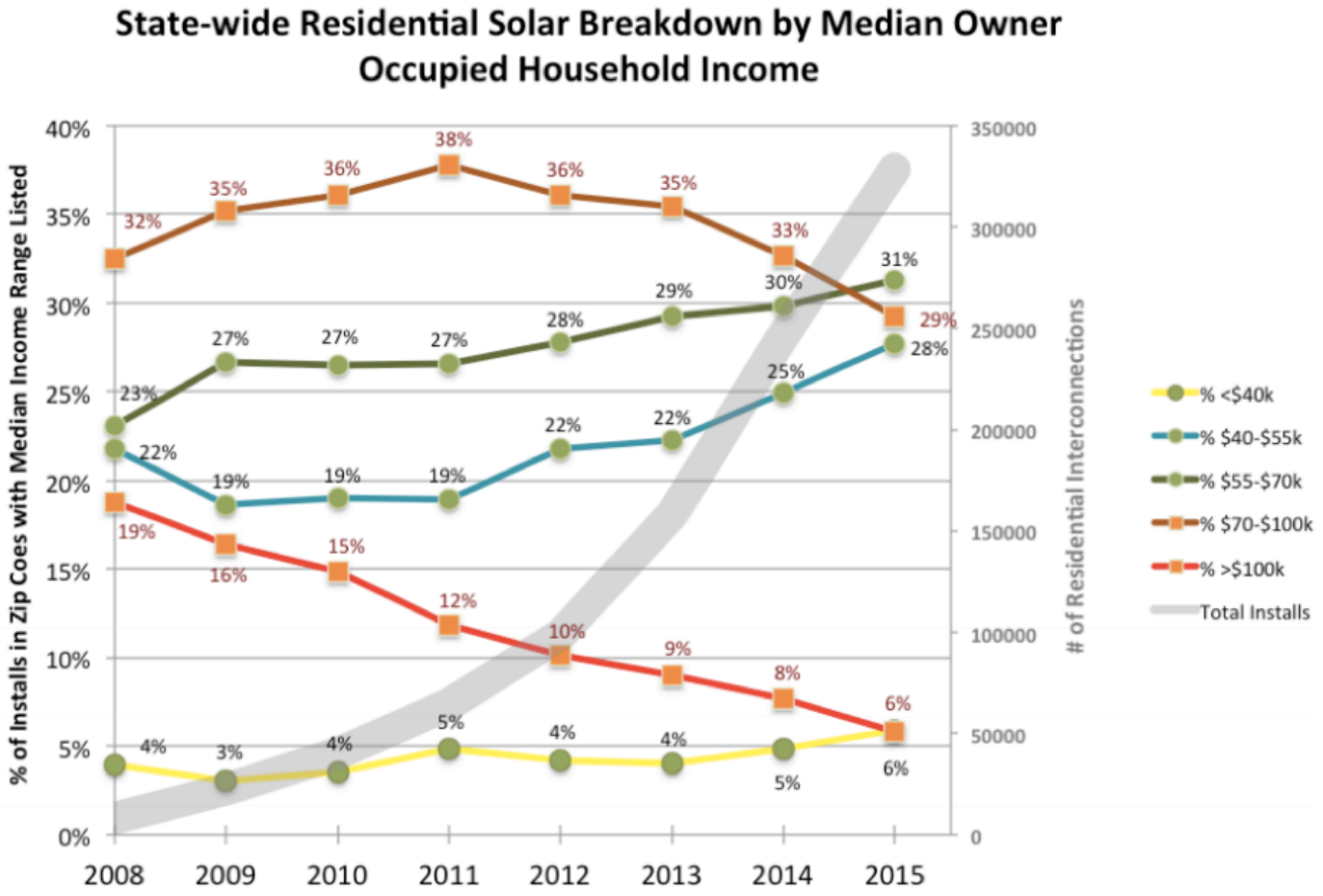


Figure 1 - Household income and solar adoption 2008-2015, California

Myth: Marketing is the same

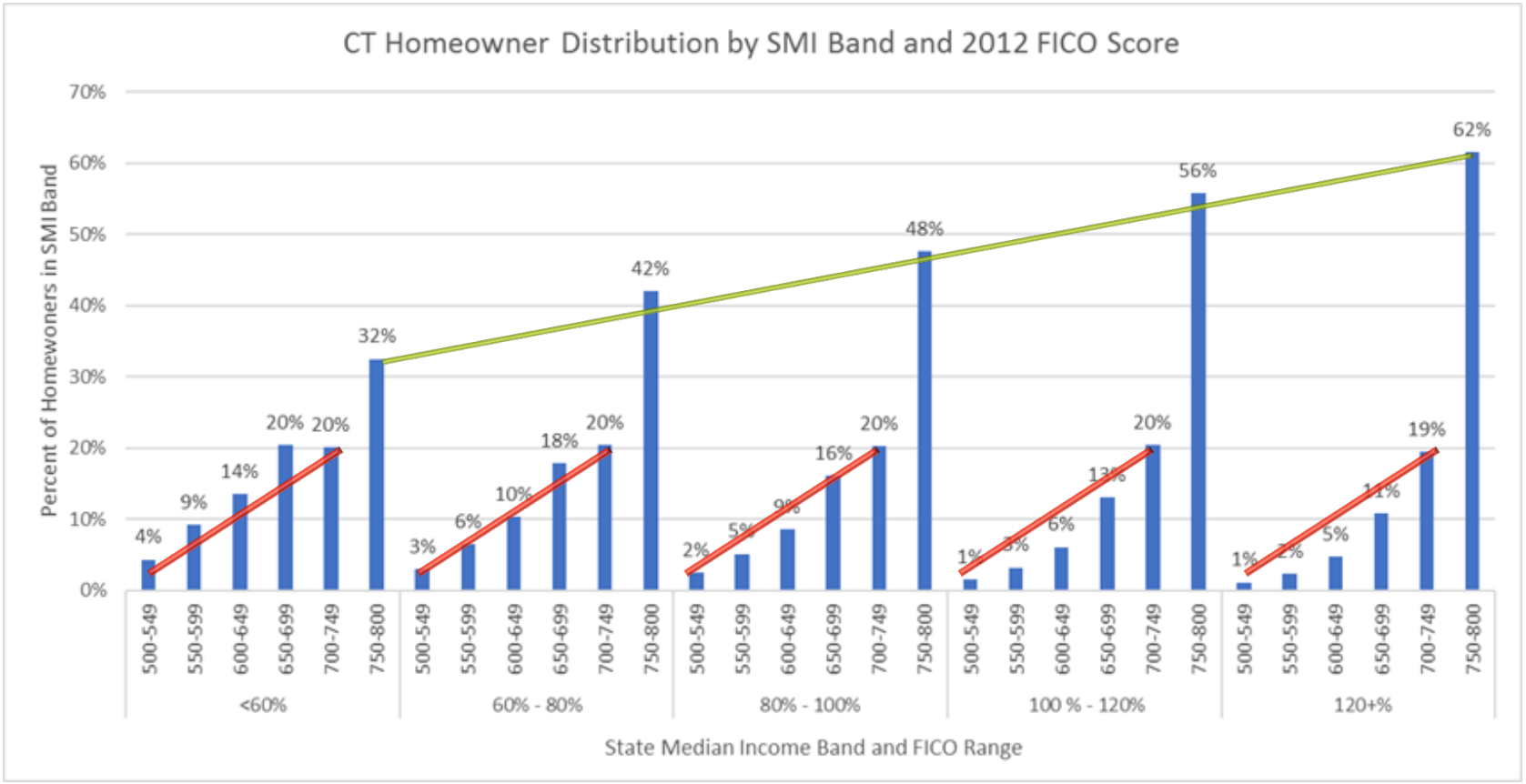
Regular process

- Learn about solar from neighbor
- Get a loan
- Take the tax credit

Low-income

- Not as common in low-income neighborhoods
- May have low or no credit score
- May not pay enough taxes to take credit

Myth: Low-income = bad credit



The range of ideas

- Compensation mechanisms
- Incentives
- Finance ideas

Compensation mechanisms

- Net metering
- Virtual net metering
- Community Solar

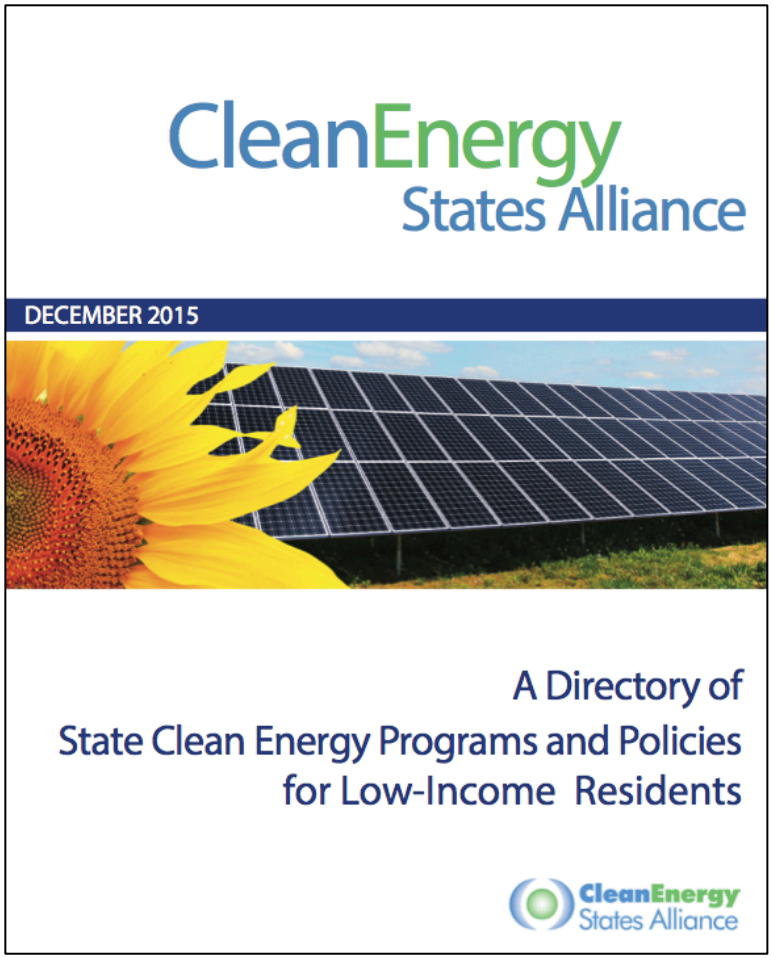
Incentives

- Tax credits
- Rebates
- Renewable energy certificates (RECs) and solar RECs (SRECs)

Finance ideas

- On-Bill Repayment (OBR)
- Property-assessed clean energy (PACE)
- Pay as you Save (PAYS)
- Compensating for Low/No Credit Scores
- Third-Party Ownership Models
- Group Purchase Programs (Solarize)
- Crowd-funding
- Federal economic development programs
- Green Banks
- Place-based investments

Examples



Catalogs
32 programs in
11 states
plus DC

cesa.org

Tips for state & local officials

1. Leverage state energy policies
2. Adapt housing and anti-poverty programs
3. Focus on institutions, not just individuals
4. Increase the value, lower the cost
5. Promote volunteerism
6. Set up a financial vehicle
7. Partner with trusted low-income allies
8. Provide tangible benefits to low-income consumers

1. Leverage state energy policy

1. Leverage state energy policy

- State RPS, financial incentives, community solar, and net metering policies can all be adapted to support low-income solar.
- Maryland and Colorado have included low-income in community solar programs
- Washington, D.C. and Massachusetts usetheir RPS programs to provide financial incentives for low-income solar.

2. Adapt policies & programs for solar

2. Adapt policies & programs for solar

- Solar can be cost-effective for energy assistance programs, like LIHEAP and WAP.
- Many other public housing programs, economic development incentives, and job training and placement initiatives.
- HUD has been turning to solar to reduce the $5 billion a year it spends on utility bills in public housing.

3. Solar for the support network

3. Solar for the support network

- Institutions that support low-income populations can be easier to reach than individuals
- Public housing, shelters, clinics, etc.
- Main issue: make it easy for institutions to participate, enable finance that doesn't interfere with main mission
- Ex: Wheatley YWCA women's shelter in DC

4. Lower cost, higher value

4. Increase value, reduce cost

- Increase the value of solar, and lower the cost of installations
  - ⇧ Net metering, virtual NEM, extra RECs
  - ⬇ Volunteer labor, bulk procurement, soft costs
- Regulatory changes needed in some places
- Ex.: Solarize campaigns

5. Promote volunteerism

5. Promote volunteerism

- Volunteer labor can drive down the cost of installations while providing job training and community service opportunities.
- It is attractive to the public, because it simultaneously helps solve social and environmental problems.
- Habitat for Humanity and Grid Alternatives
- Supportive policies can help, including financial and promotional support, preferential permitting, and public recognition.

6. Set up a financial vehicle

6. Set up a financial vehicle

- Finance can be complicated. Establish a lead agency with specialized skills in finance.
- The Connecticut Green Bank is not a single "policy," but a multifaceted vehicle that develops, tests, and deploys innovative financial strategies, and provides leadership to other stakeholders and agencies.
- Requires enabling legislation, transparency, and strict oversight

7. Partner with trusted allies

7. Partner with trusted allies

- Government officials and program managers may not be best situated to promote programs in low-income communities.
- Trusted allies, such as low-income outreach and advocacy groups, community action agencies, and other service institutions, can reinforce mutual trust and improve outreach and marketing.

8. Make sure low-income consumers benefit

8. Make sure low-income consumers benefit

- Bottom line: Are you delivering benefits to low-income people?
- Solar on a low-income, multifamily apartment building needs to deliver benefits to the tenants.
- Example: Housing assistance is capped at 30% of income for rent + utilities

Discussion

Thanks!

Bentham Paulos

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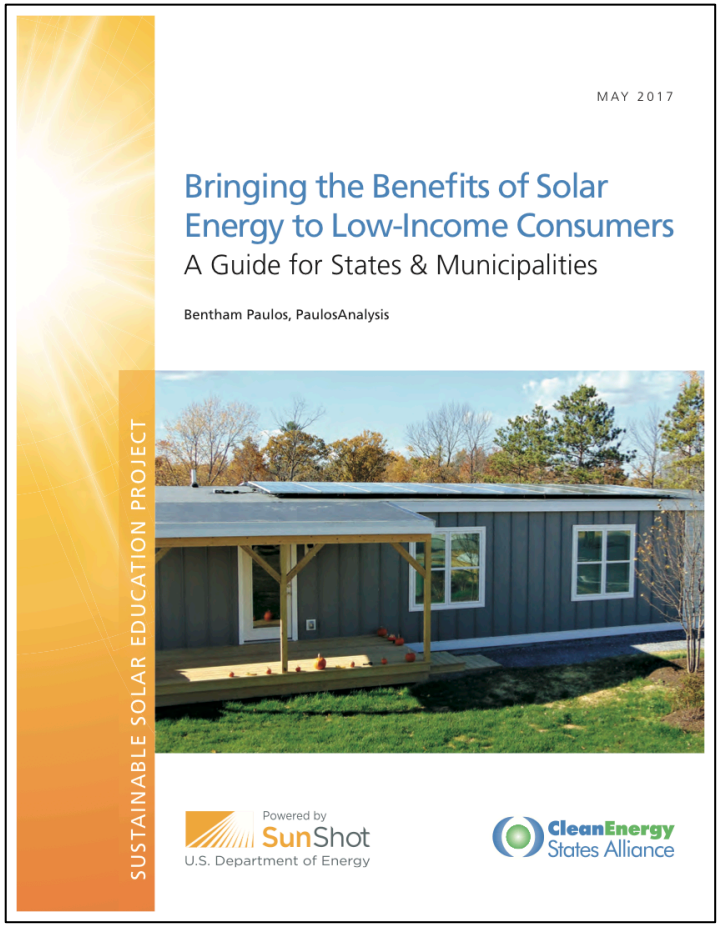

Contact Information

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Visit our website to learn more about the Sustainable Solar Education Project and to sign up for our e-newsletter:
www.cesa.org/projects/sustainable-solar

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Upcoming Webinars

- **Crowd-Financing Solar for Nonprofits Serving Low-Income Communities**
  Thursday, May 25, 1-2pm ET

- **Community Solar for Low- and Moderate-Income Consumers**
  Thursday, June 1, 1-2pm ET

- **Utility-Driven Solar Projects for Low-Income Customers**
  Thursday, June 8, 1-2pm ET

www.cesa.org/webinars

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