



Community Solar for Low-Income Benefits and Barriers

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Who is CCSA?

CCSA members include 40+ community solar providers, business service professionals and customers



What is community solar?

Community solar refers to local solar facilities shared by individual community members, who receive credits on their electricity bills for their portion of the power produced.



How is a community solar program is born?

Legislatively enabled

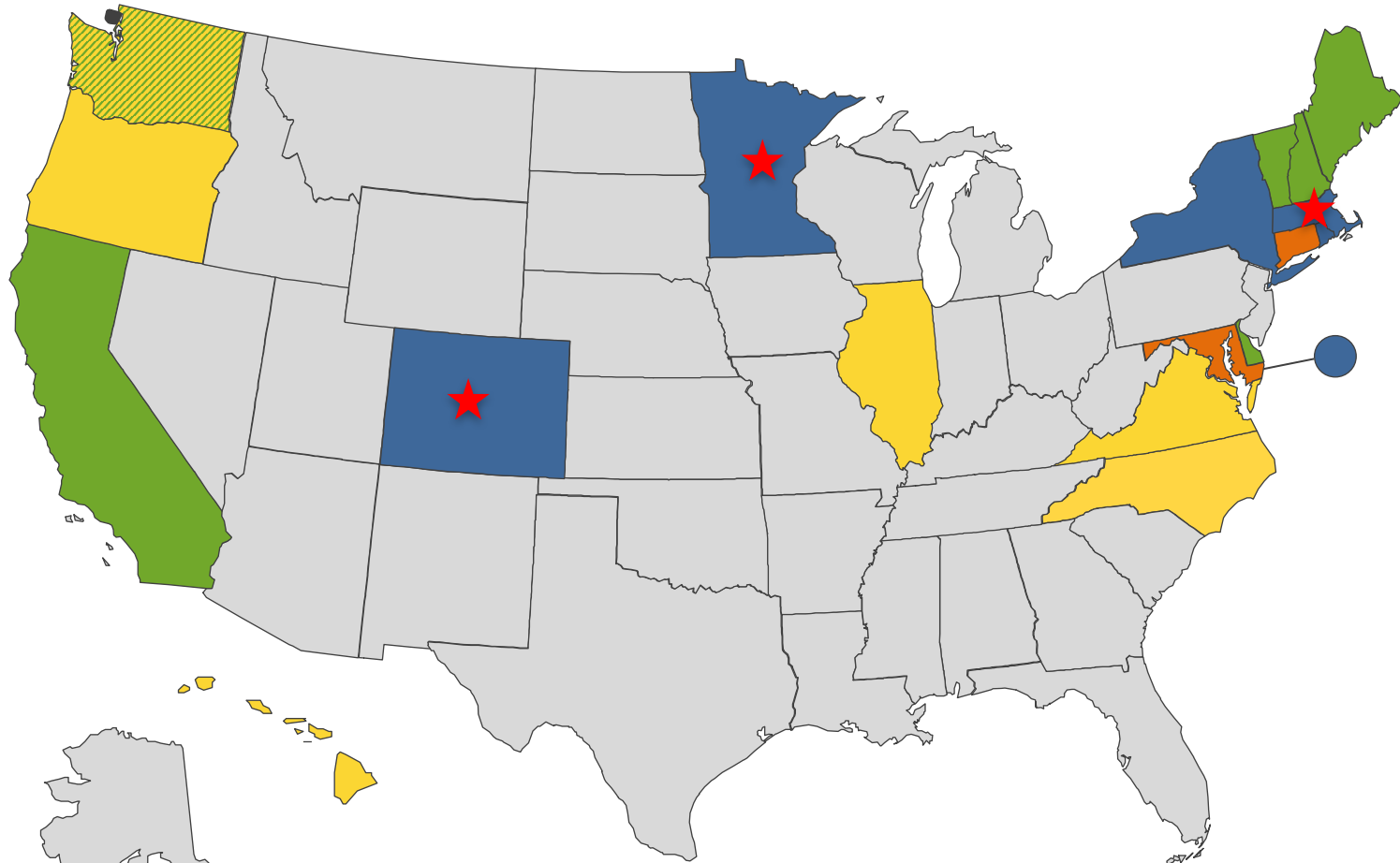
- Net metering expansion
- Community Solar Legislation
 - Pilot Program
 - Capped Program
 - Uncapped Program

Voluntary Program

- Voluntary, utility-initiated projects
 - Responding to customer interest
 - Meeting DG goals



Where is community solar?



Pilot Program in place



Established program



Rules in place but limited market

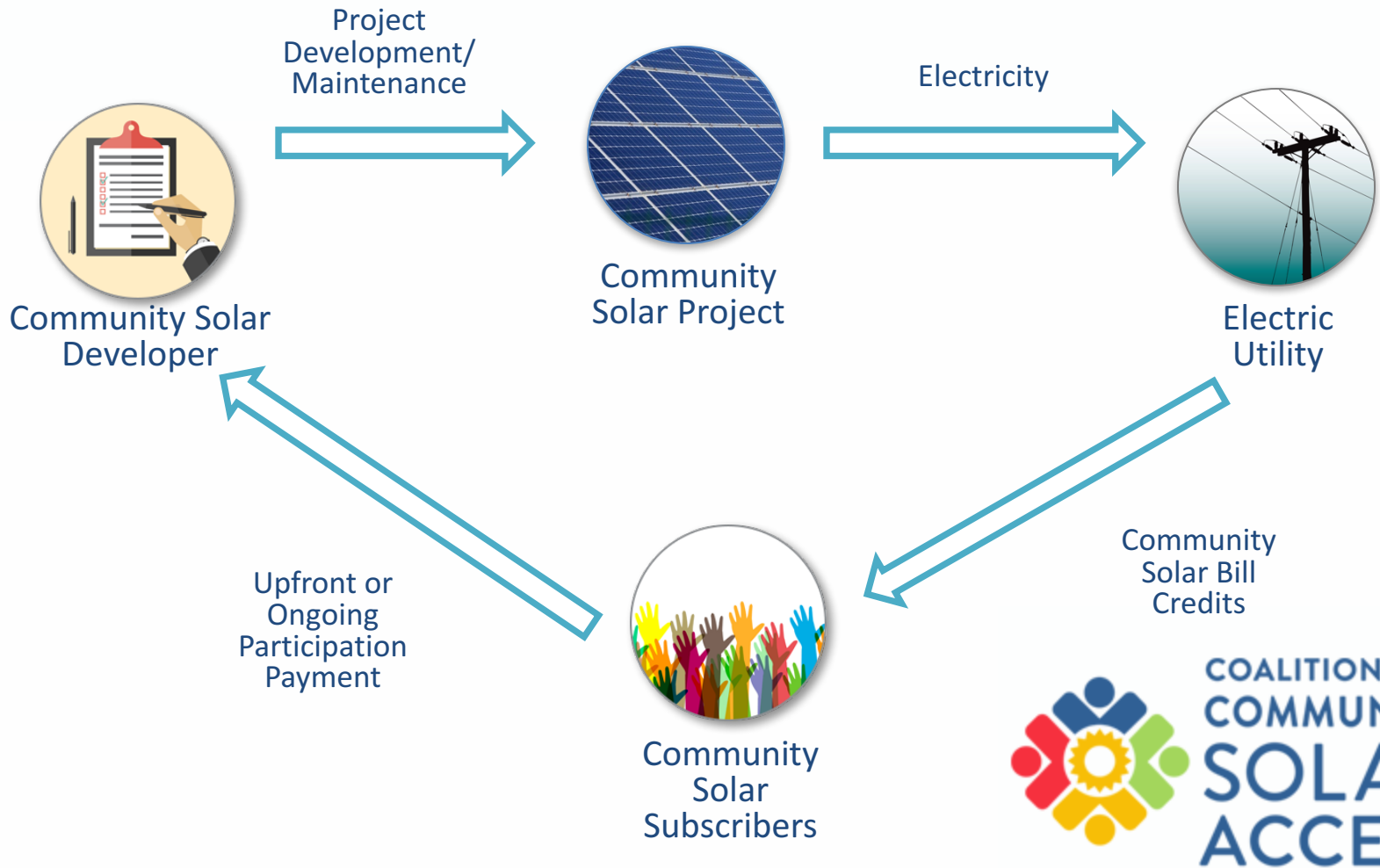


Legislation in place, regulations pending

Roles



What does a 3rd party led program look like?



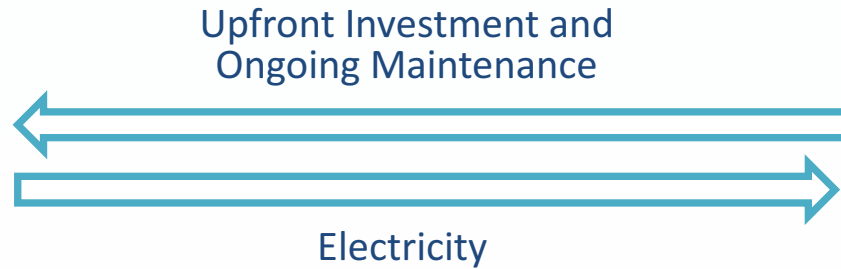
Who does what?

Third Party	Utility	Customer
Project Siting/Permitting/Finance	Developer Coordination	Self-educate
Interconnection Application/Upgrades	Customer Bill Crediting	Carefully Weigh Options
Technology/EPC Selection	Interconnection Processing	Select Developer and Sign Contract
Customer Acquisition/Marketing	Ongoing customer engagement	Pay Participation Fee
Customer Contracts/Payments		Monitor System Performance/Credits
Tax/Legal Compliance		
Ongoing Customer Engagement		
Utility Coordination/System Monitoring		
O&M		

What does a utility-led program look like?

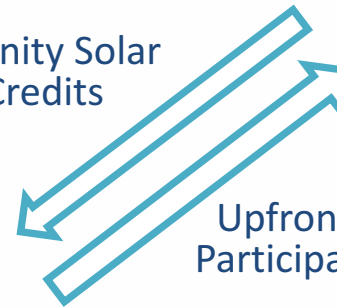


Community Solar Project



Electric Utility

Community Solar Bill Credits



Community Solar Subscribers



Who does what?

Utility	Third Party	Customer
Issue RFP/Select Project Development Partner	Project Siting/Permitting/Finance	Self-educate
Sign PPA/Purchase Agreement	Interconnection Application/Upgrades	Carefully Weigh Options
Design Program (fees, credits, rules, etc.)	Technology/EPC Selection	Sign Contract
Determine Program/Project Size	O&M	Pay Participation Fee
Seek/obtain regulatory approval	Tax equity (co-op, munis)	Monitor System Performance/Credits
Tax/Legal Compliance		
Customer Acquisition/Marketing	May contract out to Third Party	
Customer Contracts		
Billing Integration		
Develop Website/Ongoing Customer Engagement Tools		
System Monitoring		

Why do utilities embrace community solar?

- **Solar is the fastest growing and most popular energy source on the planet.**
 - ✓ Sub \$1/Watt installed and continuing to decline
- **Customers want solar and most don't have access.**
 - ✓ Vast and growing majority across country want solar and 85% do not have access
 - ✓ Programs that customers want, with little risk, even at scale
- **Offers utilities opportunity to keep customers and make money**
 - ✓ Community solar mitigates against customers moving to rooftop solar + storage solutions.
- **Better and more secure relationships with customers**
 - ✓ Well designed community solar pre-empts political battles around mandates through adversarial legislation, ballot initiatives, etc
- **Distribution system assets with opportunities for strategic siting**
 - ✓ From mitigating line losses, to reducing the need for T&D upgrades, to greater control in grid planning and opportunity for grid services, community solar offers myriad grid benefits
- **Distributed solar with economies of scale**
 - ✓ Community solar offers the distribution benefits of rooftop/onsite, with much of the cost-savings of utility-scale systems.
- **New channels for RPS compliance**
 - ✓ Offers utilities additional tools to reach RPS compliance, and customers a direct hand in meeting goals
- **Window to new product opportunities for customers**
 - ✓ Community solar can be bundled with additional products, offering a sales channel to realizing many new customer desires



Program Considerations



What are some of the barriers to low- to moderate-income (LMI) participation?

- Financing (lack of access to capital, lower credit scores, less tax appetite)
- Inappropriate (or no) marketing to LMI sector
- Less time to research options
- Move more often
- Distorted price signals



Why we should focus on LMI

- LMI residents stand the most to gain from participation
 - Spend a disproportionate share of income on energy costs (~10x greater)
- Fossil fuel generation is more likely to be sited in low-income areas



What is the Value Proposition?

- Bill credit that provides meaningful and immediate savings
- On-bill financing should be offered for low-income customers, to reduce barriers to participation



Who should be eligible?

Area Median Income (AMI) (ex. HUD LMI definition of 80% AMI)

- AMI is used across many federal programs, especially HUD, to determine low-income and affordable housing eligibility.
- AMI is more sensitive to the variation of income levels from county to county, as opposed to Federal Poverty Level (FPL) which is set uniformly to national averages.



What mechanisms can further support LMI participation?

- Backstops or loan loss reserves to help attract low-cost financing and tax equity investment to low-income projects
- Pass-through offtakers for low-income customers
- Revised underwriting criteria (utility bill repayment)



Why is consumer protection important?

LMI customer segment is much more frequently the target of scams and fraudulent business practices.

Customer information should include:

- Minimum savings targets based on reasonable assumptions
- Individual contract summary pages or standard disclosure forms
- Materials in other languages



Image: NRG, Spencer St. community solar farm. Spencer, MA.

Program Examples



New York

NYSERDA Low-income plan

- NYSERDA offers subscriptions at no cost to LMI participants
- Issue RFP for projects that commit a % of their capacity to LMI subscriptions
- NYSERDA manages customer enrollment and allocates subscriptions
- Aims to include 10,000 participants



Colorado

- Colorado Community Solar Statute C.R.S.§ 40-2-127(5)(e) ‘utility may give preference to community solar gardens that have low-income subscribers’
- Low-income Community Solar Demonstration Project subscribed community solar through the state's’ weatherization program
- IOU 5% PUC Rule Requirement Aggregation (4 MW) – Approx. 1,300 customers
- 100% LI Community Solar Garden RFP (4 MW Annually) – Approx. 3,900 customers



Massachusetts

- Massachusetts SB 1979 ‘promotes energy justice and equitable access to the benefits of solar energy, including support of community-shared solar projects
- SREC II and new SMART Program
 - Credit adders for low-income participants



Illinois

Future Energy Jobs Act of 2016:

- Incentives for on-site DG PV benefiting low-income households.
- 100% low-income subscriber owned community solar, located in EJ communities
- Non-profits and public facilities located in EJ communities
- Pilot community solar program



What else is out there?

- Low-Income Solar Policy Guide
 - <http://www.lowincomesolar.org/>
- Shared Renewable Energy for Low- to Moderate-Income Consumers: Policy Guidelines and Model Provisions
 - <http://www.irecusa.org/publications/shared-renewable-energy-for-low-to-moderate-income-consumers-policy-guidelines-and-model-provisions/>
- Solar Plus Storage Companion Measures for High-Value Community Solar: A Guide for Utility Program Planners
 - http://www.communitysolarvalueproject.com/uploads/2/7/0/3/27034867/2017_09_30_final_6_solar_storage_guide.pdf



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ACCESS**

What else is out there?

- NYSERDA's Low-Income Forum on Energy (LIFE)
 - December 19th, on "Best Practices for Low- to Moderate-Income Community Solar," led by NREL. <https://www.nyserda.ny.gov/All-Programs/Programs/Low-Income-Forum-on-Energy/LIFE-Webinar-Series>
- Illinois Solar for All Working Group White Paper
 - http://www.lowincomesolar.org/wp-content/uploads/2017/07/20170711-ILSfA-Working-Group-White-Paper_Final_wAppendices.pdf



Thanks!

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