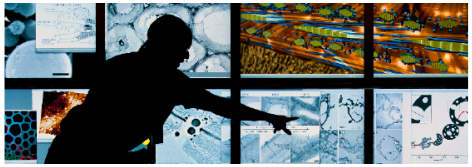
STAT Community Solar Working Group



Meeting #1

January 26, 2015

Joyce McLaren

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

Agenda

- Introductions
- Clarifying our positions and needs
- Topics to cover in the WG meetings
- Clarifying terminology
- Intro to CS business models
- Intro to the CS Scenario Tool

Community Solar Working Group Participants

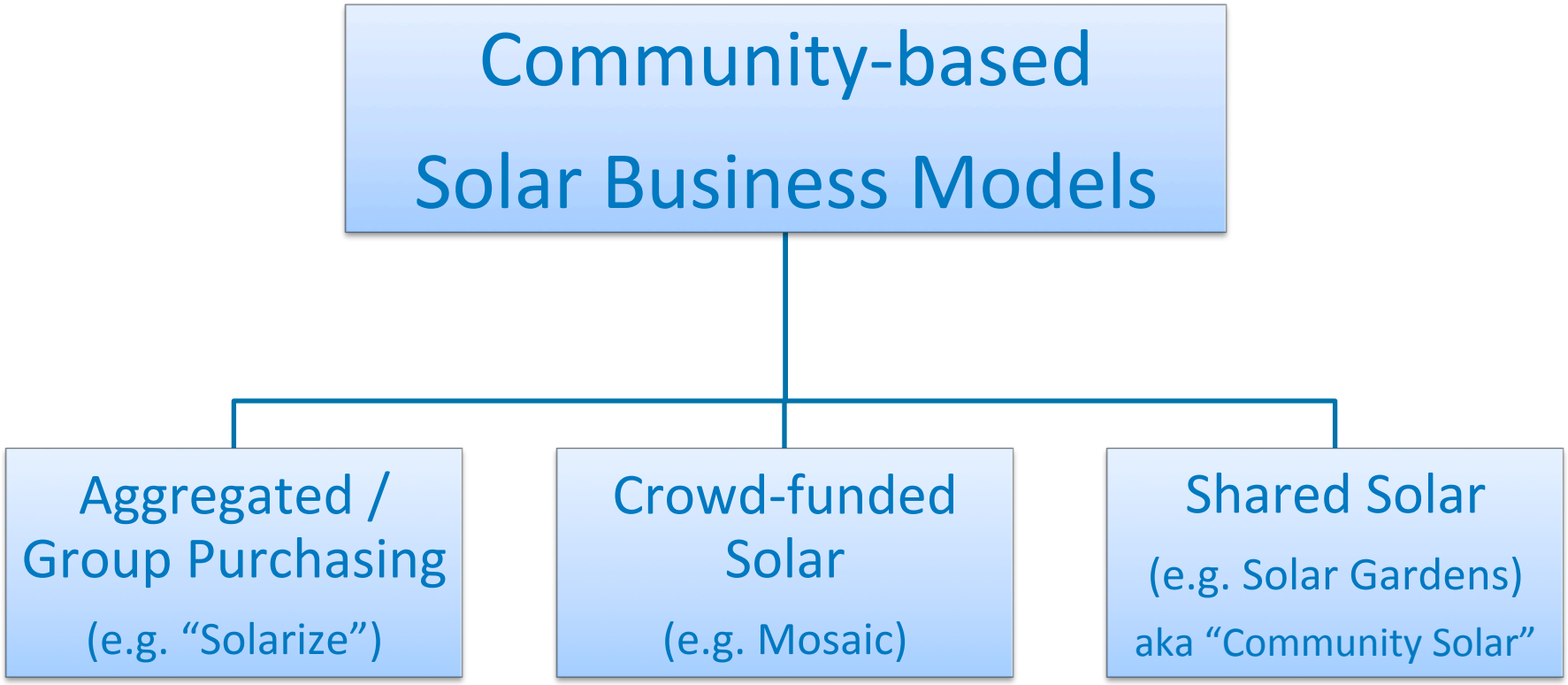
Location	Organization	Individuals
City of Jackson Grand Teton County, WY	Energy Conservation Works	Phillip Cameron
City of Ketchum, Idaho	Ketchum Energy Advisory Committee	Rebecca Bundy Dean Holter Amiee Christensen
Guam	Guam Power Authority	Francis Iriarte John Cruz
Massachusetts	DOER; CT Energy Finance Authority	Emma Krause Isabell Hazlewood
Minnesota	MN Dept. of Commerce	Lise Trudeau Stacy Miller Holly Lahd
New York State	NYSERDA	Max Joel Matthias Seel
North Carolina	Clean Economy Solutions	Andre Pettigrew

Topics/presentations for future meetings

- Business Models – NREL
- Rates/Credits – John Nangle (NREL)/U of Oregon(?)
- Financing – Mike Mendelsohn
- CS Project Risk Assessment - Emily Artale
- Policy and Regulatory Considerations
  - Securities - David Feldman (NREL)
  - RECs – Jenny Heeter/Lori Bird (NREL)/Massachusetts?
  - Tax implications to subscribers
- Solar Outreach Partnership (SolarOPs) - ICLEI/Optony
- Consumer Protection issues
- Marketing to subscribers – Clean Energy Collective/SolarOPs
- Legislative process – SolarConnecticut; MA (Emma); MN

	Stage	Needs
ID	Two sites selected for development; additional commercial and non-profit sites foreseeable	Best practices for quick development of utility scale projects How to encourage CS given low elec rates
MN	Considering applying the approved VOS rate to utility CS projects, but developers say rate is too low.	What is appropriate subscriber rate credit? Marketing to subscribers (taxes & financing) Proformas Project structures/models
NY	Shared solar/virtual net metering stakeholder regulatory process open (through April?)	Best practices for virtual net metering Straw proposals (?) Project structures esp. for low-mid income Business models
MA	CS is incorporated into state S-REC program	Benefits of CS to local economy; benefits of different models
NC		
WY	MOU and funding to develop local project	Business models; tax implications; ensuring supportive state/local policies are in place

What is community shared solar?



Common Community Solar Project Structures

PV System

→

Solar Developer

→

Utility

① Developer builds and owns the PV project

② Developer sells electricity to Utility under a PPA

③ Utility structures a community solar program around the purchased output from the PV system

④ Community Solar Participants/Subscribers enroll in program.

Photos and graphics from NREL and Microsoft

Common Community Solar Project Structures

PV System

Solar Developer

Utility

② Developer builds and owns project

③ Developer delivers electricity to Utility

① Developer collects subscriptions from Community Solar Participants/Subscribers (escrowed until project completion)

④ Utility credits subscriber accounts (electricity and possibly SRECS)

Photos and graphics from NREL and Microsoft

Community Solar Scenario Tool (CSST)

Provides a first-cut analysis of the economics and program design options for a potential shared solar project.

Inputs

- System size
- Location
- LCOE or PPA price
- O&M costs
- Number of blocks/shares
- Administration costs
- Electricity rates
- Federal or state incentives
- Bill credits or rebates to participant

Outputs

- Project economics from host and participant perspectives
- Capacity-based vs. generation-based
- Total program costs
- Average monthly production
- Upfront payment options
- Monthly payment options
- Predicted point of grid parity

Community Solar Scenario Tool (CSST), National Renewable Energy Laboratory, Version 1, May 2014, http://www.nrel.gov/tech_deployment/tools_community_solar.html

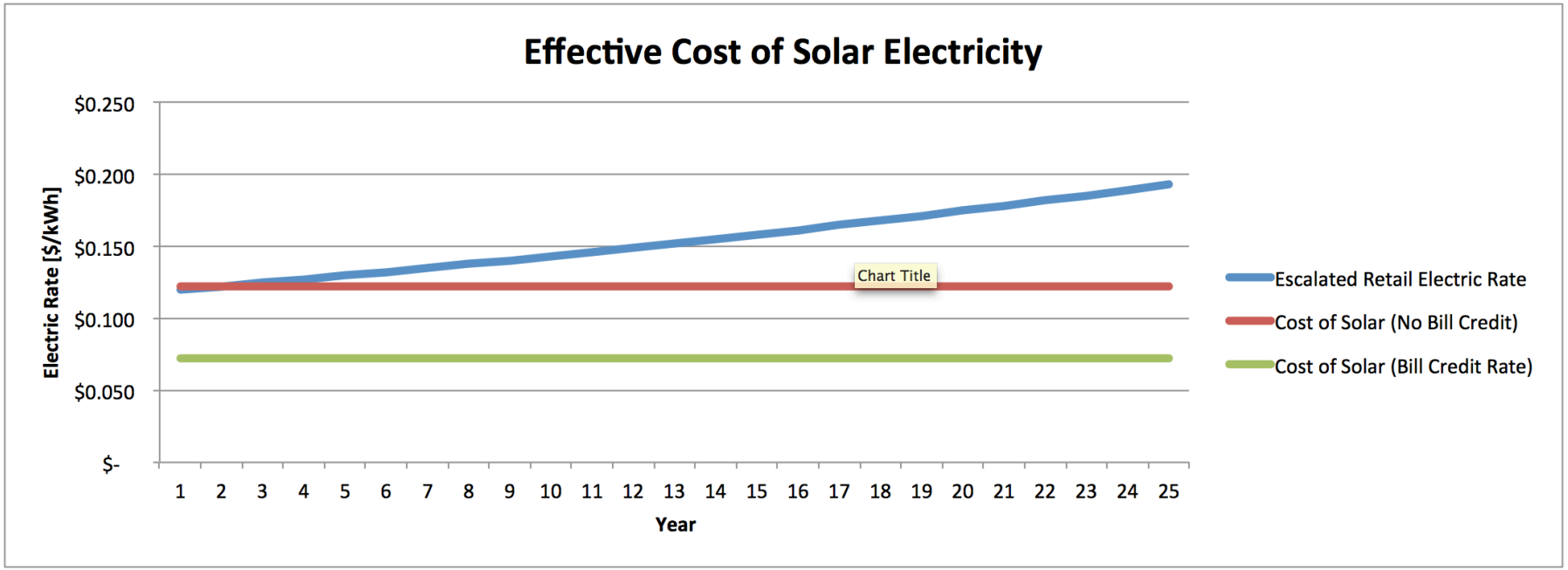
Community Solar Scenario Tool (CSST)

Subscriber Perspective							
	Average Monthly Charge/Share	Average Monthly Bill Credit	Net Average Monthly Cost	Average Monthly kWh per Share	Effective Average Cost per kWh	Average Yearly Bill Credit	Total Project Lifetime Bill Credits
No Bill Credits [$]	0.00	$ -	$ 13.59	111	$ 0.12	$ -	$ -
Bill Credit Rate [$]		$ 5.56	$ 8.04		$ 0.07	$ 67	$ 1,667
Energy Credit [kWh]		111				1,333	33,331

Utility Perspective							
	Average Annual Cost of Production	Total Cost of Production [$/kWh]	Monthly Cost to Utility per Share	Monthly Charge to Subscriber per Share	Net Monthly Cost of Production per Share	Net Average Cost of Community Solar [$/kWh]	Average Annual Cost to the Utility to offer Program
Program Costs [$]	$ 65,238	$ 0.122	$ 13.59	$ 13.59			
No Bill Credits [$]							
Bill Credit Rate [$]				$ 8.04	$ 5.56	$ 0.05	$ 26,665

Quantitative project economics from the participant and host perspectives.

Community Solar Scenario Tool (CSST)



The cost of electricity to subscriber over project lifetime, given inputs.

NREL contacts

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Community Solar Scenario Tool

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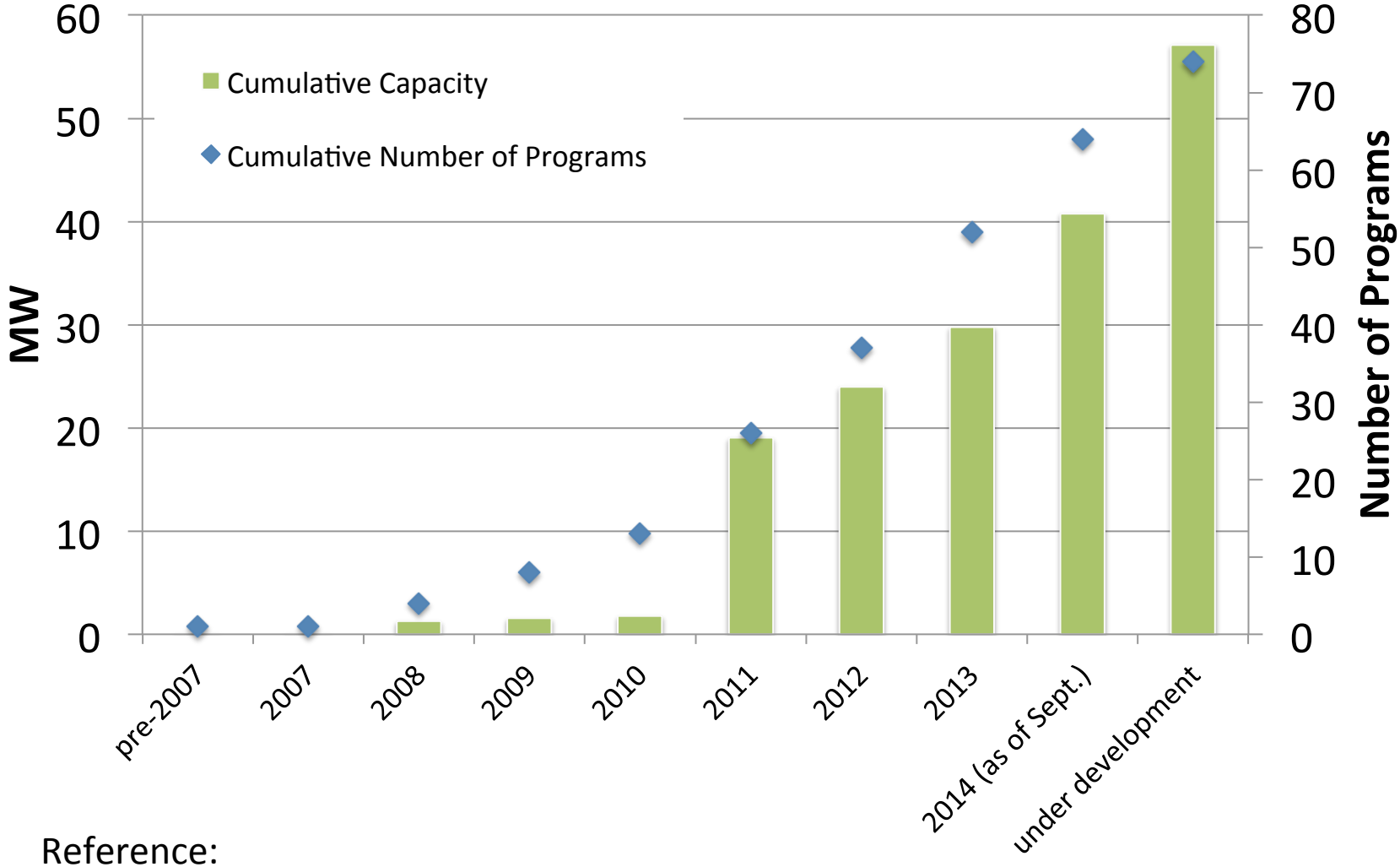
STAT program lead

Growth in Community Solar



Reference: