

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

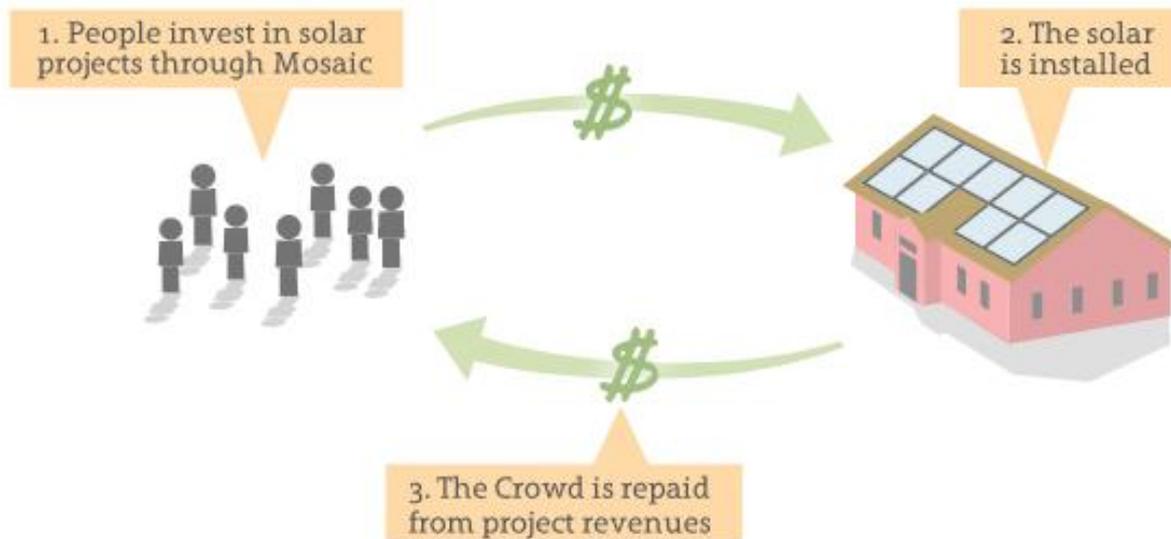
# A Guide to Community Solar:

## Utility, Private, and Non-profit Project Development

Created with support from  
**SOLAR AMERICA  
COMMUNITIES**

Published November, 2010

# What is Community Solar ?



Community Solar would allow for Michigan residents, organizations and businesses to share in cost and benefits of renewable energy production at optimally located facilities.

# Why Community Solar ?

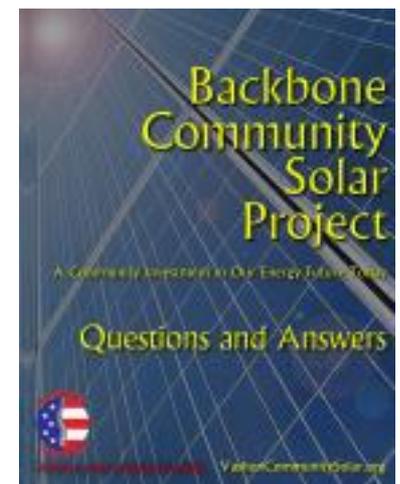
There are a number of groups who cannot purchase renewable energy systems for practical reasons. Most homeowners and businesses do not have good sites (there are trees in the way, the building faces the wrong direction or is shaded by other buildings). Renters do not own their buildings. For many the initial investment for a renewable energy system is too costly. The ability to invest in a portion of a system, along with the benefits of the economy of scale in building larger systems, makes renewable energy investment more affordable.

Many current solar promotion programs simply solicit extra investment from utility customers who pay a premium to support future solar development by the utility. It is simply a donation to encourage solar development. Community solar allows utilities, developers and non-profits to “group fund” renewable energy systems where the “group” receives direct benefits from the system in reduced energy bills or periodic payments based on the output of the system. Some contracts have been structured so that the investment serves as a hedge against future energy cost increases.

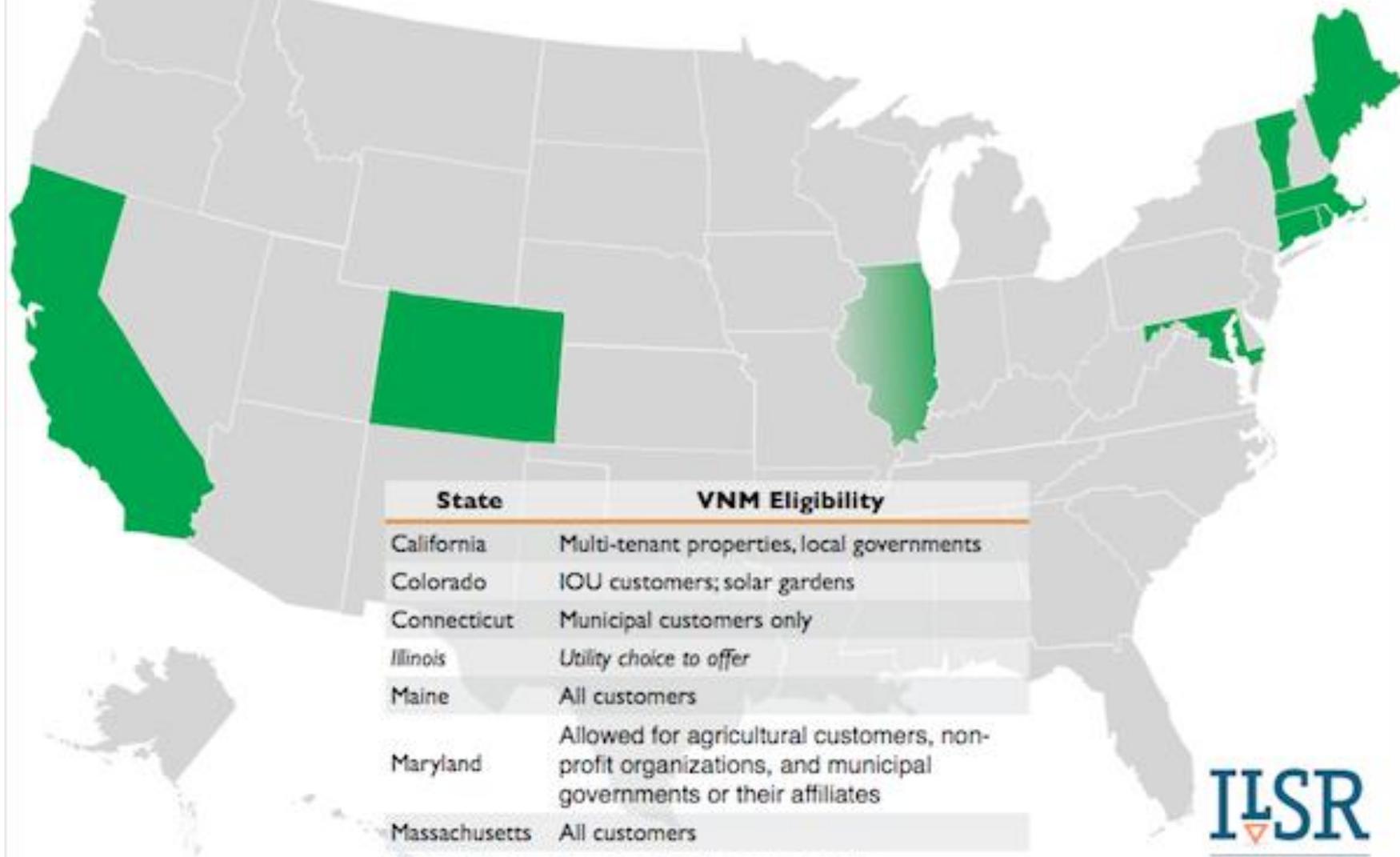


Vashon, WA

Investors will directly fund a grid-tied solar photovoltaic array that provides power for a local public facility, the Vashon Recycling and Transfer Station. The installed system will be rated at approximately 50 kW to 66 kW, depending on the amount of investment raised. Investors will be able to take advantage of Cost Recovery Incentives provided by Washington State. Investors may purchase units of the CSP at \$1,000 per unit up to a maximum investment of \$30,000.



## States With Virtual Net Metering Policies (2012)



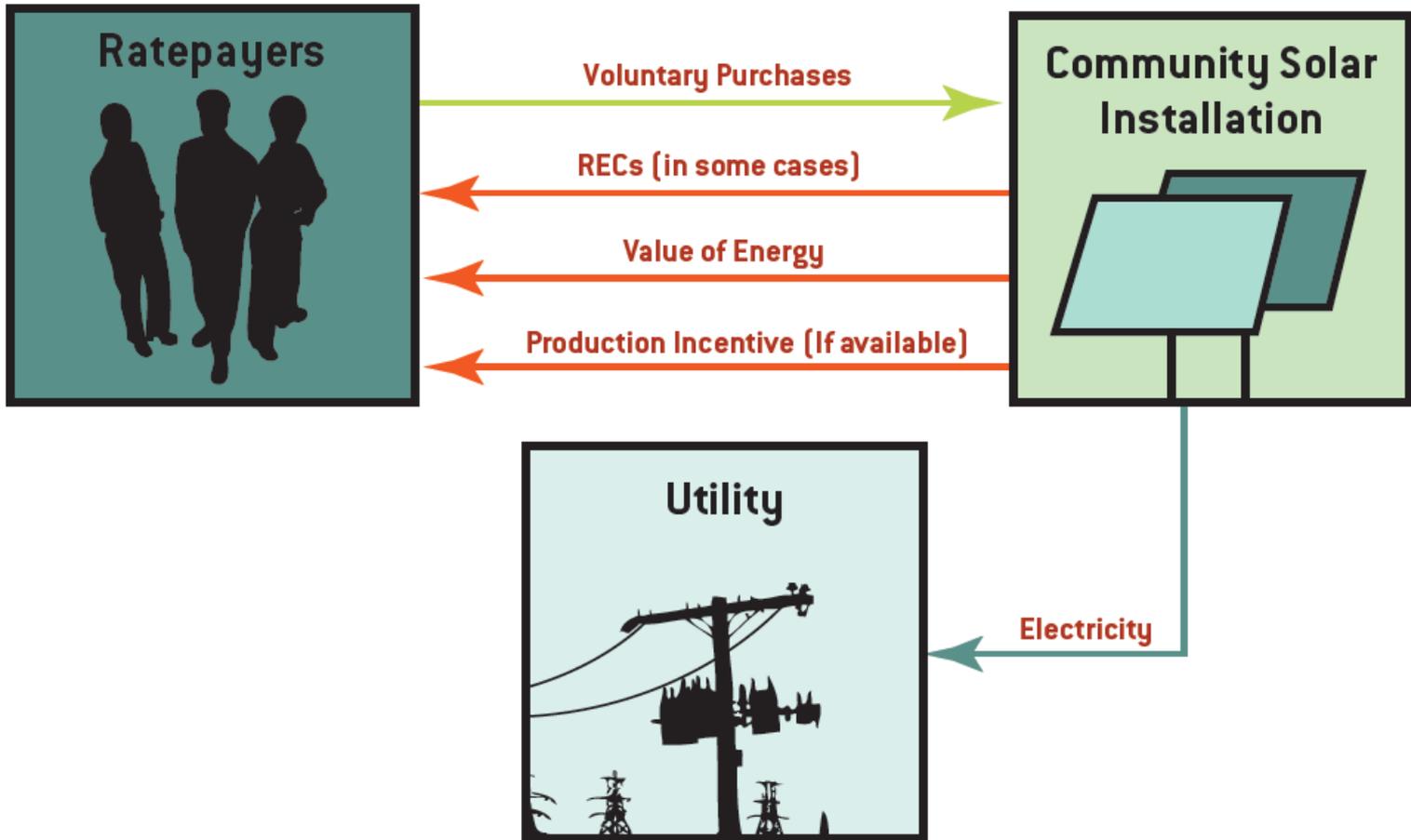
State	VNM Eligibility
California	Multi-tenant properties, local governments
Colorado	IOU customers; solar gardens
Connecticut	Municipal customers only
Illinois	Utility choice to offer
Maine	All customers
Maryland	Allowed for agricultural customers, non-profit organizations, and municipal governments or their affiliates
Massachusetts	All customers
Rhode Island	Local and state governments
Vermont	All customers



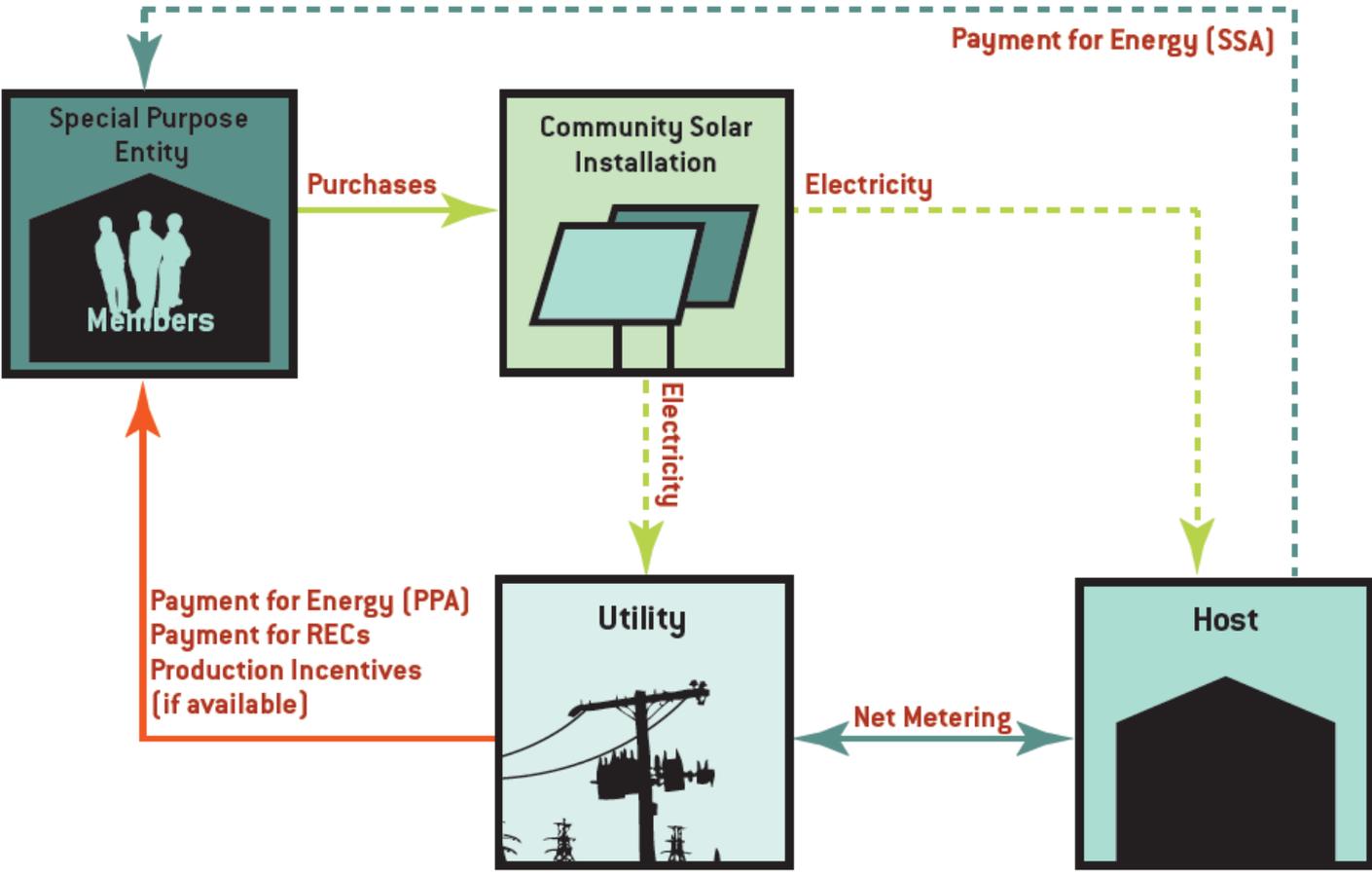
[www.solargardens.org/](http://www.solargardens.org/)

November, 2012

# UTILITY-SPONSORED PROJECT



# SPECIAL PURPOSE ENTITY



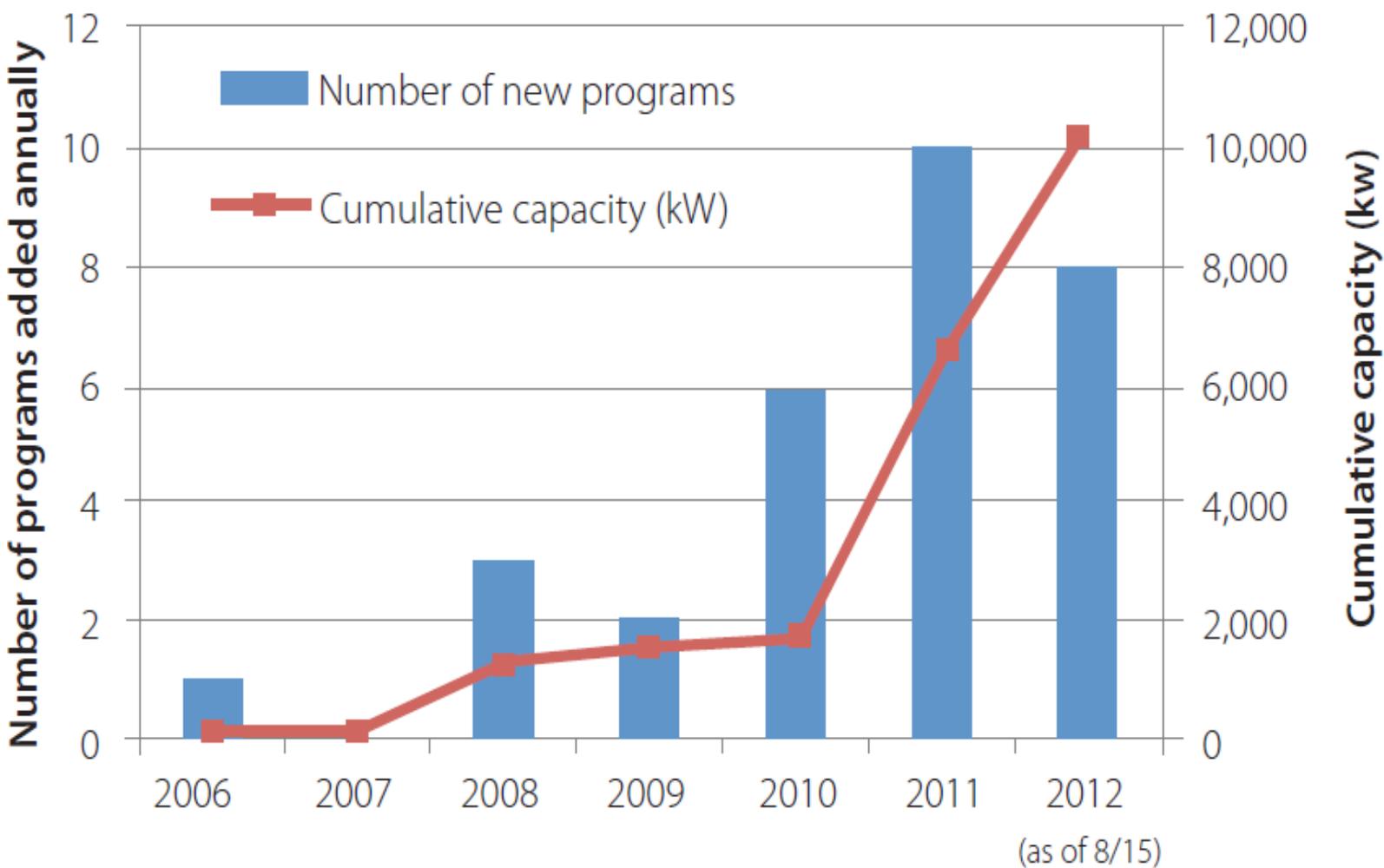
# COMPARISON OF MODELS

Administered by	Utility	Special Purpose Entity
Owned by	Utility or 3rd party	SPE members
Financed by	Utility, grants, ratepayer subscriptions	Member investments, grants, incentives
Hosted by	Utility or 3rd party	3rd party
Subscriber Profile	Electric rate payers of the utility	Community investors
Subscriber Motive	Offset personal electricity use	Return on investment; Offset personal electricity use
Long-term Strategy of Sponsor	Offer solar options  Add solar generation (possibly for Renewable Portfolio Standard)	Sell system to host  Retain for electricity production for life of system
Examples	Sacramento Municipal Utility District – Solar-Shares Program  United Power Sol Partners	University Park Community Solar, LLC  Clean Energy Collective, LLC

# Who Gets What ?

	Utility	Special Purpose Entity	Non-profit
<b>Electricity from Solar System</b>	<ul style="list-style-type: none"> <li>Participant receives an estimated or actual kWh credit for their portion of project (virtual net metering)</li> <li>Participant receives a monetary credit for the value of production for their portion of the project</li> </ul>	<ul style="list-style-type: none"> <li>SPE sells the electricity to the utility (PPA)</li> <li>SPE sells the electricity to the system host (SSA)</li> <li>SPE assigns kWh to utility accounts per agreement with utility (virtual net metering)</li> <li>Electricity from the system is netted against SPE members' group bill</li> </ul>	<ul style="list-style-type: none"> <li>Non-profit owner uses on-site and net-meters</li> <li>Non-profit owner assigns to utility accounts per agreement with utility (virtual net metering)</li> <li>Electricity from the system is netted against a group bill</li> </ul>
<b>Renewable Energy Credits</b>	<ul style="list-style-type: none"> <li>Assigned to participants</li> <li>Retired on participants' behalf</li> <li>Retained by the utility</li> </ul>	<ul style="list-style-type: none"> <li>Rights to RECs sold up-front</li> <li>RECs sold on an on-going basis</li> <li>Retained for participants</li> </ul>	<ul style="list-style-type: none"> <li>Rights to RECs sold up-front</li> <li>RECs sold on an on-going basis</li> <li>Retained for non-profit</li> </ul>
<b>Federal Tax Credits and Deductions</b>	<ul style="list-style-type: none"> <li>Neither the commercial ITC nor the residential renewable energy tax credit is available to participants</li> <li>If the utility has a tax appetite, it may use the commercial ITC</li> <li>Normalization accounting rules will impact the value of the ITC for regulated utilities</li> </ul>	<ul style="list-style-type: none"> <li>SPE can pass benefits of Commercial ITC through to participants</li> <li>Only of use if participants have a tax appetite for passive income offsets</li> </ul>	<ul style="list-style-type: none"> <li>Project donors can deduct the donation on their taxes</li> <li>Non-profits are not eligible for federal tax credits</li> </ul>
<b>Accelerated Depreciation (MACRS)</b>	<ul style="list-style-type: none"> <li>Not available to participants</li> <li>An investor-owned utility may be able to use MACRS, provided they own the system</li> <li>To qualify for MACRS, regulated utilities must use normalization accounting</li> </ul>	<ul style="list-style-type: none"> <li>SPE passes depreciation benefits through to the participants, subject to passive activity rules</li> </ul>	<ul style="list-style-type: none"> <li>Not useful to non-profits</li> </ul>
<b>State and Utility Rebates and Incentives</b>	<ul style="list-style-type: none"> <li>Utility may qualify and use rebates/incentives to buy down the project costs, benefits are indirectly passed on to participants</li> </ul>	<ul style="list-style-type: none"> <li>SPE may qualify and use rebates/incentives to buy down the project costs or pass through to participants</li> </ul>	<ul style="list-style-type: none"> <li>Nonprofit may qualify and use rebates/incentives to buy down the project costs</li> </ul>

Figure 3. Capacity and number of community solar programs



Source: NREL (2012)

# GLREA Resolution to Promote Community Solar in Michigan

Whereas, Community Solar is a concept that allows persons or groups to invest in an offsite renewable energy system and receive payments on their investment based on the energy production of the shared renewable energy system;

Whereas, Community Solar allows for people and groups that do not have access to a quality renewable energy installation site due to shading or other obstructions, or because they are renters to still invest in a renewable energy system; and

Whereas, Community Solar is a new developing concept that is just beginning to spread across the US and has the potential to greatly increase the growth of renewable energy systems creating additional income for installers and manufacturers of renewable energy products;

Resolved, that the GLREA take the lead on organizing an effort to bring true "Community Solar" to Michigan as a two part effort:

- To educate policy makers, solar suppliers and installers and the general public on the concept and implementation of Community Solar for Michigan, and
- To assist Michigan municipal utilities to initiate a community solar program in their territory.

*Approved Nov 28, 2012*

# Community Solar ?



NCRC, Ann Arbor, MI

What if this newly installed, utility owned system in Ann Arbor could become a Community Solar project? It could create a new way for utilities and their customers to partner to develop renewable energy in their communities.



# GLREA

GREAT LAKES RENEWABLE ENERGY ASSOCIATION

Contact Info: [www.glrea.org/](http://www.glrea.org/)  
Dave Konkle, [konkle@toast.net](mailto:konkle@toast.net)



## Michigan Renewable Energy Fair – 2013

June 7-8

June 7<sup>th</sup> (Professional - Technical Day)

*Pure Ludington*





<b>SITE DEVELOPMENT COSTS</b>	
Design	\$
Permits	\$
Electrical/Meter Upgrades	\$
Fencing/Security	\$
Educational Kiosk	\$
<b>PROJECT DEVELOPMENT COSTS</b>	
Consulting	\$
Legal	\$
RFP	\$
<b>SYSTEM COSTS</b>	
PV Panels	\$
Inverters	\$
Ground Mount/Racking System	\$
Balance of System Costs	\$
	<i>TOTAL INSTALLED COST</i> \$
<b>MINUS GRANTS AND REBATES</b>	
1603 Treasury Grant	\$
Commercial ITC	\$
Other Grants and Rebates	\$
	<i>NET INSTALLED COST</i> \$
<b>ANNUAL OPERATING EXPENSES</b>	
Bookkeeping	\$
Accounting	\$
Legal	\$
System Monitoring	\$
Insurance	\$
Lease	\$
Sinking Fund: Inverter Replacement	\$
Taxes	\$
	<i>TOTAL ANNUAL OPERATING EXPENSES</i> \$
<b>ANNUAL INCOME</b>	
Sale of Electricity	\$
Sale of RECs	\$
Production incentive, if available	\$

<b>FEASIBILITY ANALYSIS</b>	
Assess site for solar access	
Secure control of property and/or site	
Evaluate the solar resource	
Understand participant motivation	
Conduct market research/focus groups/surveys	
Investigate interconnection options	
Research financing mechanisms	
Gauge community receptivity and support	
<b>PROJECT DEVELOPMENT</b>	
Prepare a financial plan	
Determine ownership structure	
Develop operating agreement between host and project owner (if different)	
Develop participant agreement	
Obtain legal and tax consultation for contracts	
Define system and other technical specifications	
Execute agreement for the sale of power	
Complete permitting and environmental compliance requirements	
Execute interconnection agreement	
Conduct an RFP for design/build	
<b>CONSTRUCTION</b>	
Prepare the site for construction: grading, road improvements, other	
Dig trenches, lay cables, install transformer(s)	
Install fencing and site security features	
Complete inspections and commissioning	
Restore site/surrounding vegetation	
Complete paperwork for incentives	
<b>OPERATIONS &amp; MAINTENANCE</b>	
Schedule and perform panel cleaning	
Save for inverter replacement	
Monitor system output	
Distribute benefits to participants (incentives, tax credits, etc.)	
File tax returns, state production incentive paperwork	
File annual business license requirements	