GRID Alternatives Colorado – Community Solar Overview for the
October 2, 2015 *Collaborative Meeting Concerning Community Distributed Generation for Low-Income Customers* for NY Case 15-E-0082

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GRID Alternatives is the nation's largest nonprofit solar installer, exclusively serving low-income families and affordable housing owners through residential, multi-family, and community solar installations. Using a "barn raising" installation model, GRID Alternatives trains and leads teams of job trainees and other volunteers to install solar electric systems, in partnership with a national network of affordable housing developers, energy efficiency providers, local government agencies, workforce development programs, and solar industry partners.

GRID Alternatives Colorado Community Solar Overview:

1. Community Solar Models Currently Operating/Implementing
    1. Utility Owned - GRID Alternatives Colorado's Project with Grand Valley Power
    2. Nonprofit/For Profit Partnerships (GRID Alternatives Colorado and Clean Energy Collective and SunShare)
2. Community Solar Models Currently Exploring
    1. Colorado Energy Office (CEO) Low-income Community Shared Solar Demonstration Project
3. Key Components of Successful Low-Income Community Solar Programs

1.1 Grand Valley Power (GVP) – GRID Alternatives Project

In May 2015, GRID Alternatives Colorado completed the installation of a utility-owned 29 kW DC community solar garden developed in partnership with Grand Valley Power, based in Grand Junction, Colorado. Eight low-income families are subscribed to the 29 kW array, which was financed on the front-end between GRID and GVP, leveraging a combination of cash and in-kind investment.

GVP-GRID Project Structure		
GRID	Grand Valley Power	Client
• Turn-key installation in a 'barn-raising' community development model • Leveraged national equipment partnerships, local in-kind support, as well as corporate sponsors to buy down the up-front cost of the	• Provided the site, front-of-meter infrastructure (in-kind), some up-front cash investment • On-bill retail rate crediting • Collects client payment • Investment in necessary bill	• Contributed 16 hours of sweat equity up-front • Receive solar generation credit on-bill as a program service offered by GRID and GVP – they do not own the panels

array to GVP • Client outreach and ongoing acquisition • Community Solarthon Event • Communication (public relations, community engagement) • Operation and maintenance	programming • Site upkeep and maintenance • Communications support	• Credited at retail rate for monthly generation from allocated capacity • Contributes $.02/kWh on-bill for that generation • Subscribed up to 90% of past 12 months electricity consumption • Re-qualified on a 4-year subscription period • Must be 80% area median income to qualify (e.g. $48,850 for a family of four in Mesa County, Colorado)

GRID aims to achieve at least a 50% average electric bill savings with each subscriber to the project. There is currently a ten person waiting list for the project and GVP and GRID are in negotiations for expanding the installed low-income solar garden capacity to 100 kW DC total (an additional 71 kW DC).

Please contact GRID Alternatives for more information about this project. More information can also be accessed in this SEPA article:

https://www.solarelectricpower.org/media/387496/sepa-grand-valley-power-case-study.pdf

1.2 For Profit/Nonprofit Partnership

GRID Alternatives provides low-income customer acquisition support for Clean Energy Collective and SunShare under this partnership model to help them meet Colorado's 5% low-income capacity target for their community solar projects. In this model, Sunshare and CEC have been able to donate subscriptions, which are then subsidized by the remaining subscribers to their arrays. The now negative Renewable Energy Credit (REC) environment in Colorado is putting stress on the sustainability of this model. While a great opportunity to expand our impact, GRID has also thus far been unable to attract a funding source to support our staff time for customer acquisition. Sources we are exploring are off-taker financing (client or affordable housing partner contribution), Community Development Block Grants, and other philanthropic resources (private grants, etc.).

2.1 Colorado Energy Office (CEO) Low-income Community Shared Solar Demonstration Project

GRID Alternatives Colorado was recently selected by the CEO to implement a statewide $1.2 million Low-income Community Shared Solar Demonstration Project in partnership with Colorado utilities. The purpose of this project is to demonstrate the viability of Community Shared Solar Systems for low-income households at varying scales and develop an innovative Community Shared Solar System model (or models) that can be scaled and replicated by REAs, MUs, or IOUs and is attractive to a variety of funding partners beyond CEO.

A high-level objective of the project is to complement the CEO's existing weatherization program to provide comprehensive reduction of low-income energy burden in Colorado – a complement to Colorado's statewide and utility low-income weatherization programs which predominantly impact the gas side of the meter. The CEO project lends priority to single-family homes that have already received weatherization services. A minimum of 300 low-income virtual shareholders (subscribers) will be tied to Community Shared Solar Systems; one virtual share will equate to a minimum of 3 kW installed solar power.

Under the CEO demonstration project, GRID Alternatives Colorado will develop at least five community solar systems, ranging in size from 50 to 500 kilowatts, throughout the state, collectively providing over 1 MW of installed solar capacity. It is up to the GRID to determine the size and the appropriate amount of CEO funding required for each project. Each system will be developed in coordination with utilities focused predominantly in rural areas. The CEO intends that the five projects serve as "case studies" that demonstrate the implementation of shared solar projects of varying sizes that incorporate innovative rate structures and/or client delivery approaches specifically for low-income households.

CEO investment must be leveraged with utility investment for each project, at a ratio of $2 leveraged for each $1 of CEO grant funding invested. In-kind contributions are also eligible to be included in the leveraged ratio. The community solar installations will also provide an estimated 2,000 hours of hands-on solar job training to local workers during the installation process.

GRID is in various stages of conversation with 10 different utility partners, and expects to announce the first projects developed under the CEO demonstration project soon. GRID and utility partners are setting up projects in a variety of business models and financing structures, including, but not limited to:

1. Utility-owned
2. Utility-owned after tax equity-swap
3. GRID-owned, through a PPA model and loan through a local finance partner
4. Third-party owned, through a PPA model

Please contact Adrienne Dorsey with the Colorado Energy Office for further questions about this project (adrienne.dorsey@state.co.us).

3. Key Components of Successful Low-Income Community Solar Programs

Recognizing there are lots of great minds focusing low-income community solar across the country, GRID Alternatives Colorado is collaborating on the CEO demonstration project with various organizations and partners, and welcomes opportunities to discuss ideas for structuring and financing these projects to achieve the goal of identifying sustainable model(s) through the CEO demonstration project. Regardless of the model used for each system constructed as part of the CEO demonstration project, the main takeaways from creating a successful low-income community solar program can be summarized in the following points.

1) **Financial Commitment:** An effective low-income solar program offers a dedicated long-term budget for low-income applicants, with a differential incentive/rebate from the general market.

Low-income access shouldn't be an afterthought, it should be an upfront commitment – especially when low-income ratepayes/taxpayers are contributing to finance or incentive pools.

2) **Dedicated Partners and Community Engagement:** Working with mission-aligned partners and community members is essential to successful program development. These partners can access low-income communities and provide the necessary customer education and outreach.
3) **Comprehensive Program:** Integrating synergistic programs, such as low-income energy efficiency and workforce development programs allows for larger community engagement.
4) **Long-term Vision:** A successful low-income solar program must have a long-term vision that contemplates the infrastructure required to continue serving the unique low-income market segment.
5) **Barrier Reduction:** Reducing barriers to entry for low-income participation through upfront incentives and maximizing energy savings (on-bill, co-branding with utility, etc.).
6) **Consumer Protection:** Ensuring consumer protection measures and disclosures are at the forefront of the program.

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ENERGY USAGE INFORMATION

MONTH	DAYS	USAGE	AVG/DAY	DEMAND
AUG-14	027	1051	39	0.00
JUL-14	029	1206	42	0.00
JUN-14	032	1163	36	0.00
MAY-14	031	1061	34	0.00
APR-14	032	996	31	0.00
MAR-14	031	751	24	0.00
FEB-14	032	1034	32	0.00
JAN-14	029	1199	41	0.00
DEC-13	034	1299	38	0.00
NOV-13	029	698	24	0.00
OCT-13	030	749	25	0.00
SEP-13	029	966	33	0.00
AUG-13	033	1364	41	0.00

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Regular

Account Number	Cycle	Service Location	Rate Description	Billing Date	Due by Date
	01		Farm and Home Service (F)	09/08/2014	09/18/2014

Meter #	Reading Dates Prev	Reading Dates Pres	Meter Readings Prev	Meter Readings Pres	Multiplier	kwh Used	Demand	Rate
	07/30/2014	08/26/2014	89823	90874	1	1051	0.000	10

CURRENT ELECTRIC CHARGES	CALCULATIONS	AMOUNT
Facilities		
Grid Access Charge		30.00
Distribution		
Energy Delivery Charge	1051 KWH x .031529	33.14
Wholesale Generation & Transmission		
Power Cost Pass Through	1051 KWH x .074057	77.83
Total Electric Charges		**140.97**
Programs		
GRID CO / GVP Solar Credit	856 KWH x 0.105586	-90.38
GRID CO / GVP Solar Payment	856 KWH x 0.0200	17.12
Total Current Charges		**67.71**

STATEMENT OF ACCOUNT	AMOUNT
Total Current Charges	**67.71**
Prior Balance	154.68
Payment(s)	-154.68
Total Balance Due	**67.71**

Please detach and return bottom portion with payment.

Please do NOT fold or staple checks or stubs.

Your tax-deductible donation to Energy Outreach Colorado helps income-limited Coloradoans pay their home energy bills. To donate, please indicate the MONTHLY amount below. To discontinue your donations, please call 242-0040.

$5.00 ____ $10.00 ____ $20.00 ____ Other ____

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Account Number	
Amount Due	76.97
Due Date	09/18/2014
Credit Card Charged On	09/18/2014

Your Payment and any returned checks may be processed electronically.