

Harvard Community Solar Garden

Background

- Energy Advisory Committee, first appointed 2008
 - Efficiency of school and town buildings
- STM Voted to be Green Community, Nov. 2010
- Solarize Mass application March 30, 2011
- Selected by MassCEC one of 4 MA towns April 20
- Integrator RFP responses May 13
- Solar 101 MassCEC May 31
- New England Breeze selected June 9
- Solar 201 June 23, MassCEC and NEB, attendees set goal of 300 kW
- Outreach, Site assessments, proposals until Sept. 23
- Sept. 30, tier 4, \$4/watt, 307 kW!!!!!!
 - Before Solarize, 18 Harvard installations
 - With Solarize, 60 new contracts, 78 total installed or contracted

Harvard Community Solar Garden

Solar for the rest of us

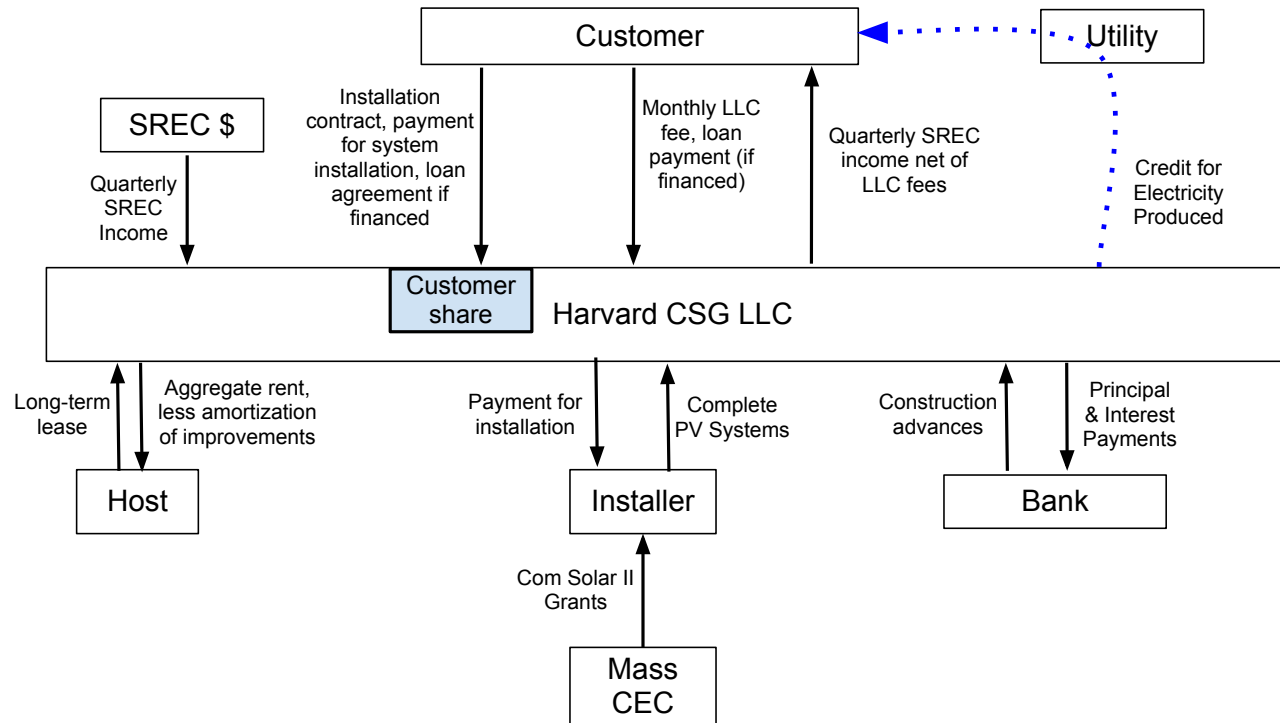
- 50% (or more) sites unsuitable
 - Orientation
 - Shade
 - Structure
 - Conservation, Historical
- Harvard CSG
 - First phase, 200 kW
 - Pricing similar to Solarize Tier 4
 - Serving 40-50 additional residents
 - Begin construction 2011, utilize ARRA Section 1603 grant
 - Expandable to multiple sites
 - Possibility to extend to support municipal needs
 - Possibility to extend to support non-profits
 - Provide participants maximum benefit of available grants and tax credits

System Financials – All Tiers

Total Watts Installed	Tier 1 1 - 100 kW	Tier 2 >100 - 200 kW	Tier 3 >200 - 300 kW	Tier 4 > 300 kW
Sample Cost 5kW System	\$27,500	\$25,000	\$22,500	\$20,000
Out of Pocket Cost	\$23,250	\$20,750	\$18,250	\$15,750
Tax credits	\$7,975	\$7,225	\$6,475	\$5,725
Net System Cost	\$15,275	\$13,525	\$11,775	\$10,025
Break-Even (Years)	5.3	4.6	4.0	3.3
20 Year IRR	11.9%	13.9%	16.2%	19.2%

Community Solar Garden Model

Community Solar Garden Value Flows



Key Model Elements:

- Customer contracts for capacity in the CSG
- Customer pays for (or finances) system, takes available tax credits
- Customers retain ownership of the solar assets via CSG membership
- Customer must have a non-viable home/business site to participate
- Harvard residents and businesses only
- Use neighborhood net metering provisions of GCA

Community Solar Garden

Financial, Legal, Tax Considerations

- Ownership
 - LLC (taxed as corporation or partnership)
 - Registered security?
- Grants and Tax Credits
 - Kept in LLC
 - Passed to owners
- SREC income
 - Taxable?
 - Taxed to LLC, or passed to owners
- Depreciation?

Issues and Risks

- Net metering capped at 1% of a utility's historical peak load.
 - Including current applications, all MA utilities are at or above the limit.
 - Pending legislation to raise the limits.
- Interconnection studies can take a year or more to be completed.
 - Even with available “expedited” procedures, this can greatly delay getting from ready to built.
- Neighborhood Net Metering doesn't provide full retail credit (distribution missing)
 - Class II Net Metering Facility (>60 kW <1 MW) provides full retail credit, including distribution

Non-Issues

- Local zoning may seem to be a barrier, but MGL 40A has a very helpful provision:
 - “No zoning ordinance or by-law shall prohibit or unreasonably regulate the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, except where necessary to protect the public health, safety or welfare”
- Comm Solar grants only available for on-site installs
 - MassCEC has agreed to provide base grant and MA content grant to Harvard CSG participants

Community Solar Garden Resources

- MassCEC.com/solarizemass
- HarvardPress.net/Solar/
 - [HarvardSolar201Combined.pdf](#)
 - [NREL_DOE_Community_Solar_Guide.pdf](#)
 - [CSG_LLC_Proposal_Rev1.pdf](#)
 - [Net_Metering_Tariff.pdf](#)
 - [SREC_Futures.pdf](#)
 - [CSG_Fact_Sheet.pdf](#)
 - [CSGSurveySummary.pdf](#)
 - [CSG_Application.pdf](#)