

Opportunities for Community Scale Solar Projects in Vermont

Vermont Community Energy & Climate Action Conference
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Rethink. Restore. Renew.

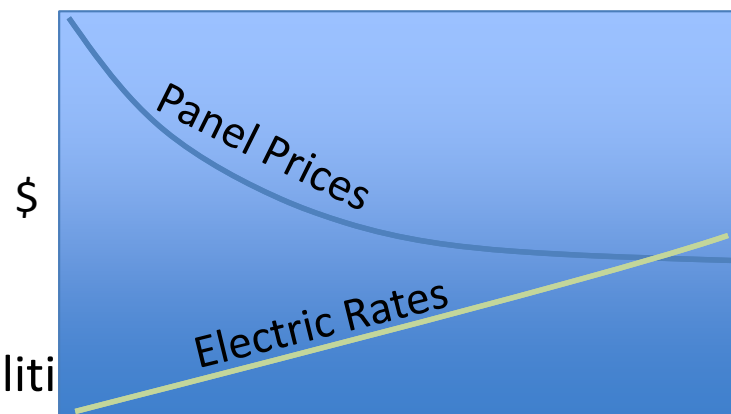
About Encore Redevelopment

- Burlington, Vermont-based developer of community scale, community-benefit renewable energy projects.
- Active in community scale RE development in Vermont since 2010, using creative financing and ownership models to harness clean energy resources.
- Experience includes:
 - Largest solar arrays in Burlington
 - Vermont's first group-net-metering project benefiting a municipality
 - Vermont's first cooperatively owned solar project
 - Community scale wind turbines



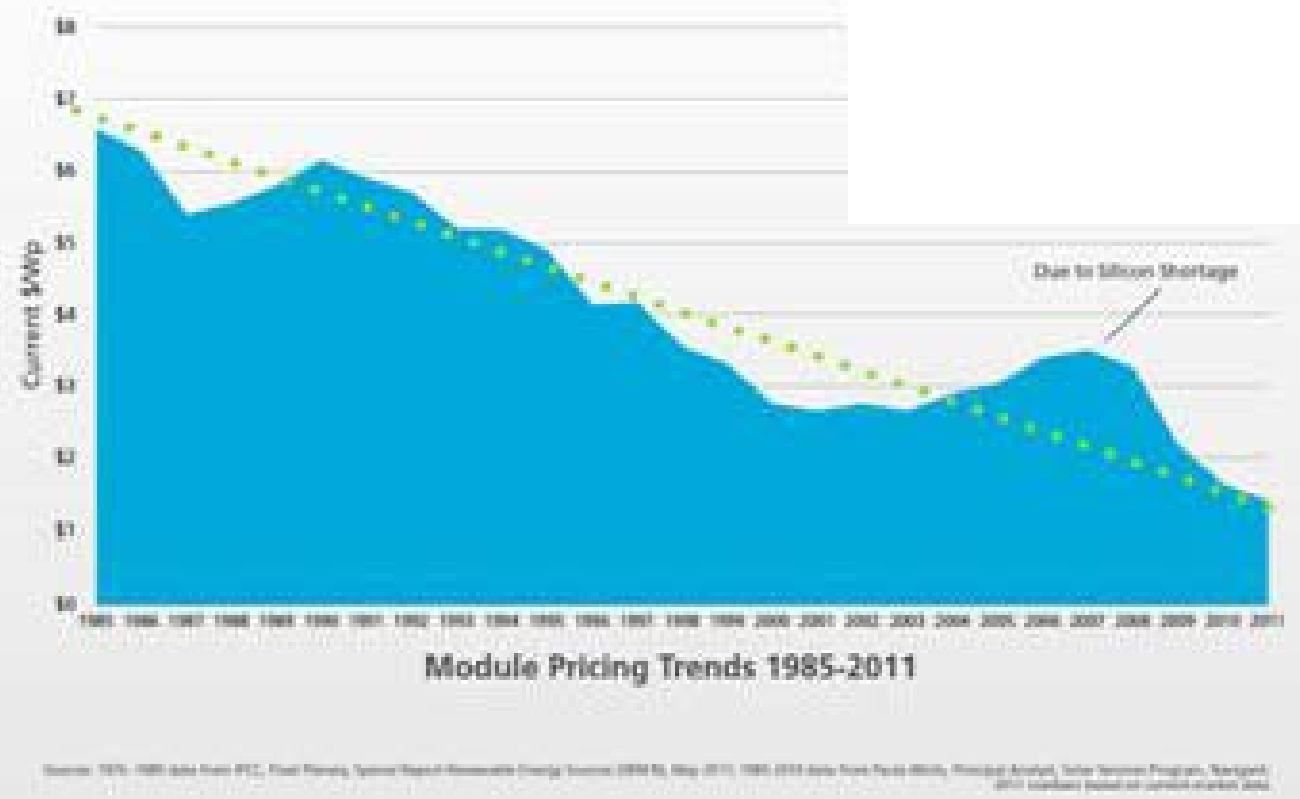
Executive Summary

- Market Drivers
 - Decreased Panel Pricing
 - Increased Electric Rates
 - Improved Net Metering Legislation
 - Increased Value of Solar Energy by Utiliti
- VT group and virtual net metering programs allow communities and anchor institutions to benefit from solar PV
- Some immediate community ownership models available
- Third party ownership options allow tax-exempt entities to harness the benefits of solar, with no money out of pocket
 - Additional benefits of electrical cost savings, lease payments and options for system purchase

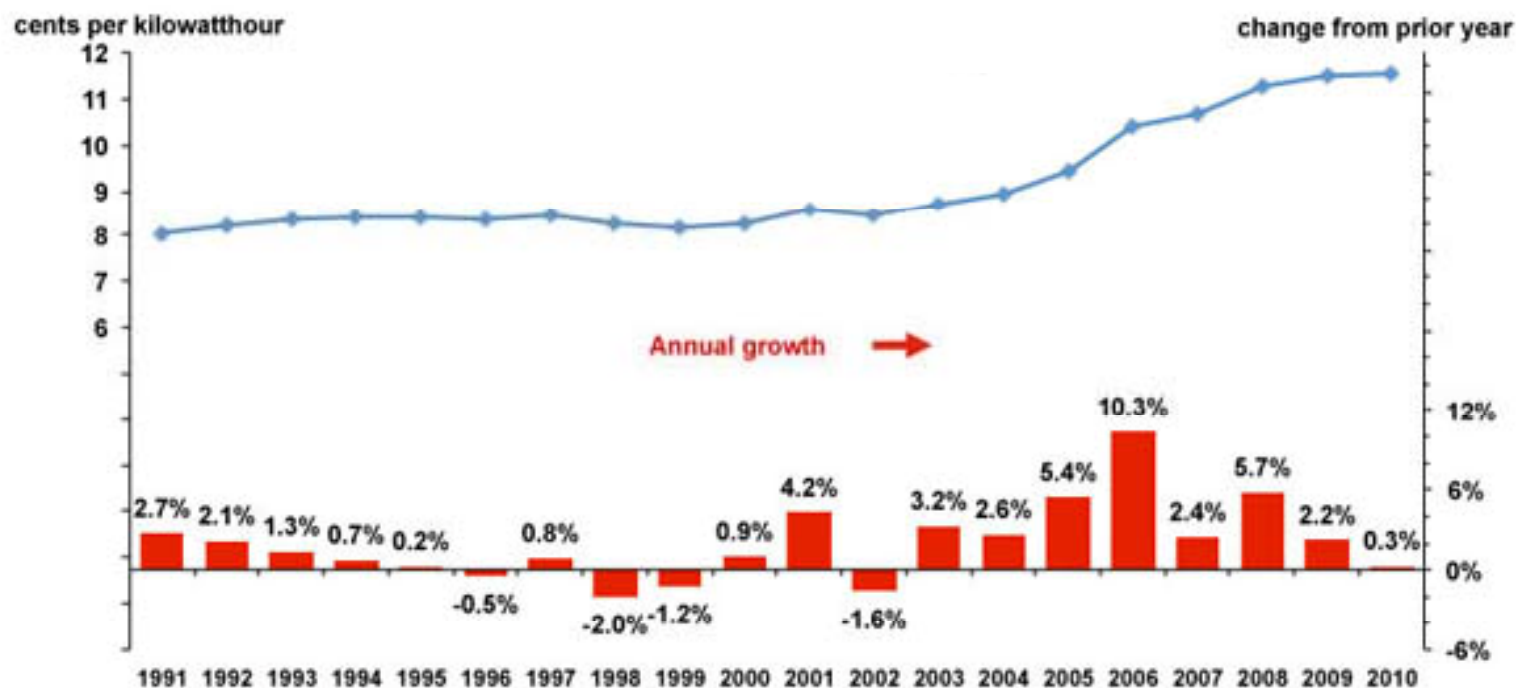


Declining Price in Solar Modules

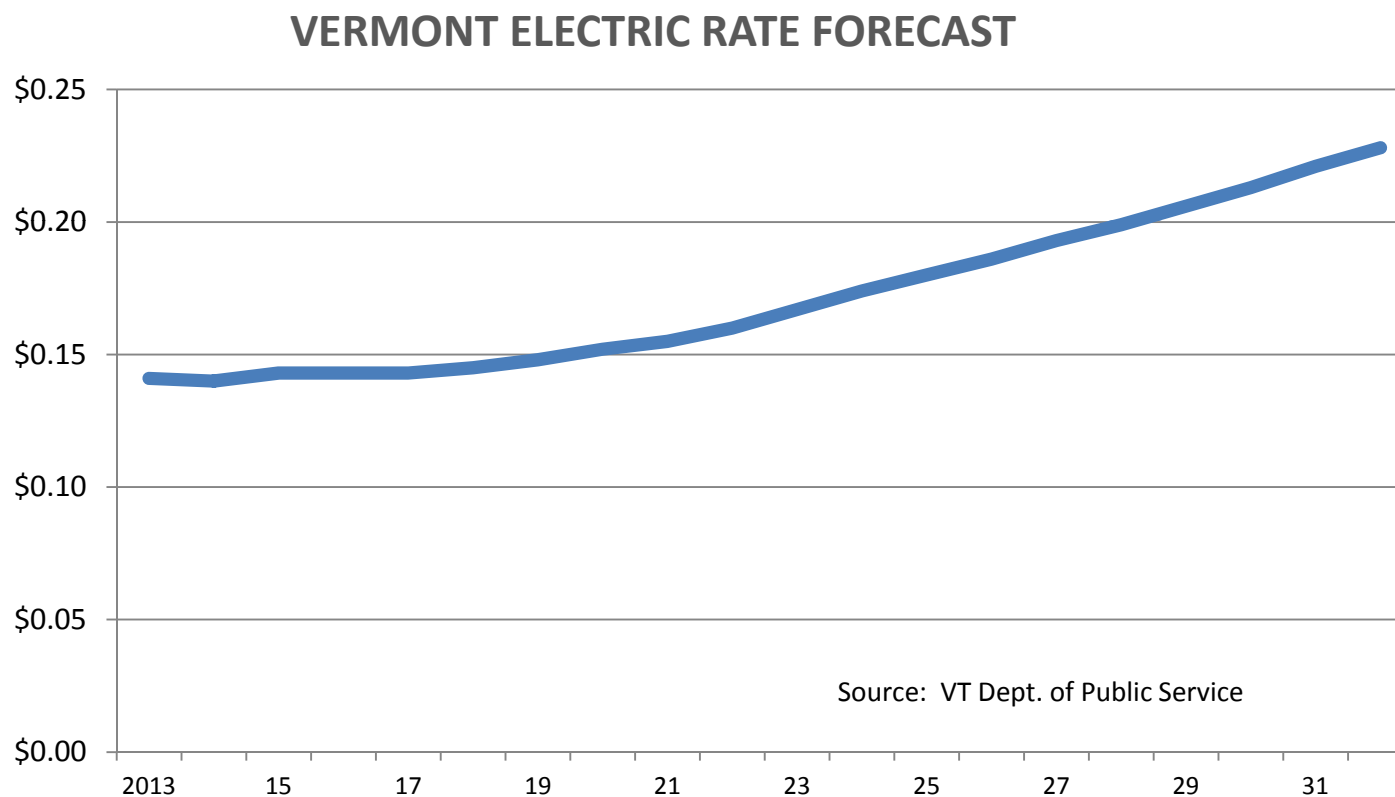
Solar Industry Growth has Produced Steadily Falling Prices



Historic Escalation of Electric Rates



Escalation of Electric Rates (cont.)



Vermont is a Leader in Solar

In the last 2 to 3 years Vermont has become a prime market for solar energy investment.

- Demonstrated commitment to RE
 - First in the nation Standard Offer program
 - Virtual and group net metering
- Recent Legislative support
 - Statewide solar adder - 2011
 - Increase in max NM project size to 500 kW - 2011 – key for investor interest
 - Removal of “demand charge penalty” – 2012 - key for munis (WWTPs, schools, larger muni buildings)
- Utility engagement and leadership



Private Sector Owner Self Financed Projects

1. Less than 5 year simple payback (free electricity after 5 years);
2. ~12% after-tax unlevered IRR (assumes full access to tax credits);
3. Opportunity for upside (RECs; dynamic pricing for production(?))
4. Competitive with traditional forms of electricity

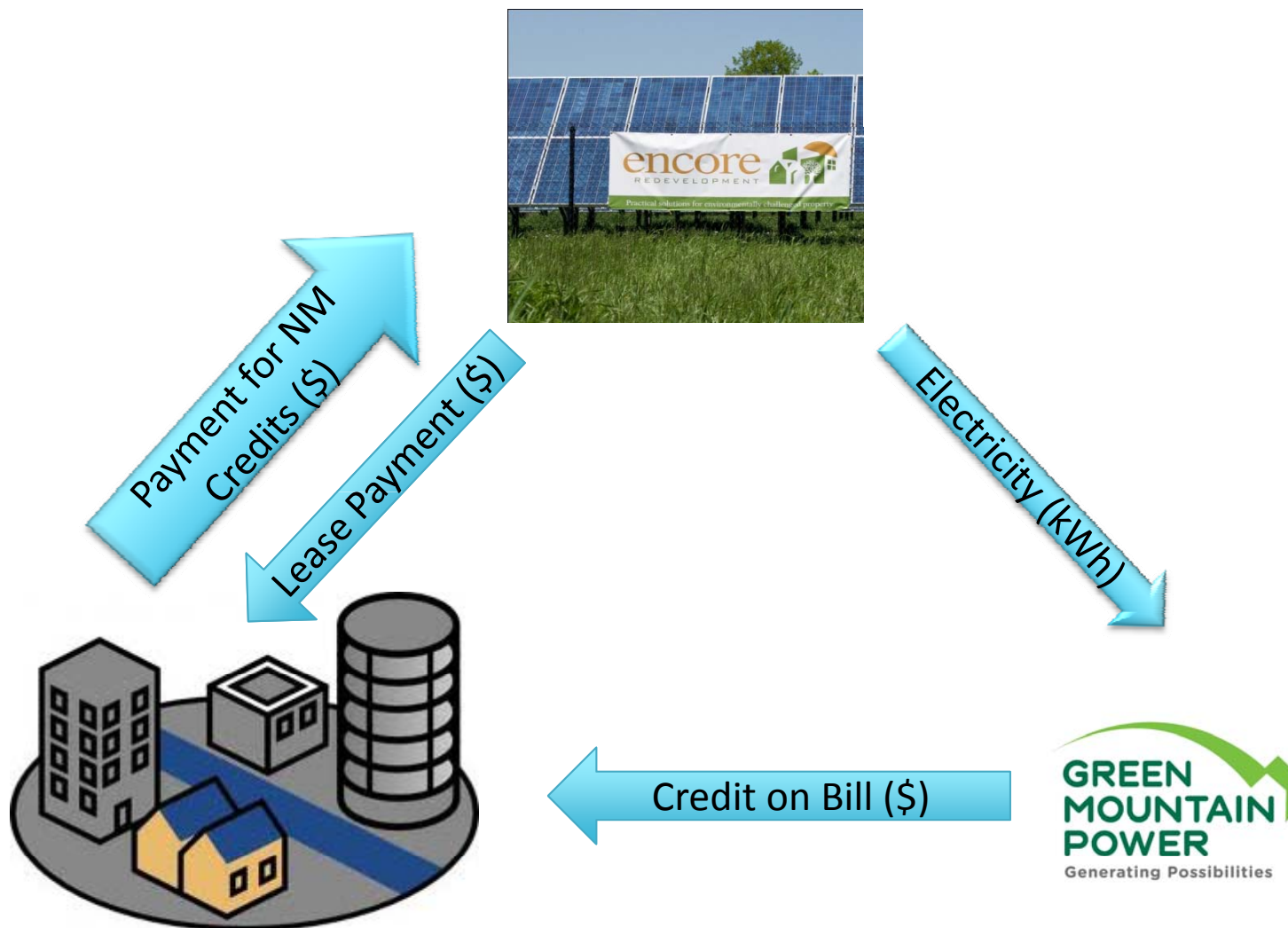


Community Scale Solar Project Opportunities

- Community owned projects
 - Simple ownership – long payback (no ITCs, depr. benefits)
 - Grant funded projects (e.g. CEDF special entity), in conjunction with low interest muni debt package – much better
- Third party finance models
 - NMA with owner / investor
 - Royalty model
 - Fixed price model
 - Lease payment
 - Option to purchase
 - RECs / env. attributes?



How does Third Party Financed Net Metering Work?



Benefits to Community – 3rd Party Finance Models

- Example 1: NMA for 500kW solar array, fixed price model
 - Substantial long term savings, more than \$500,000 on electricity over the next 20 years¹
 - Annual lease payment (\$10K) as fixed revenue for the life of the project
 - Limited risk- if the array does not produce, you don't pay
 - A chance to purchase the array in year 10
 - Utilization of a clean, renewable resource for electricity needs

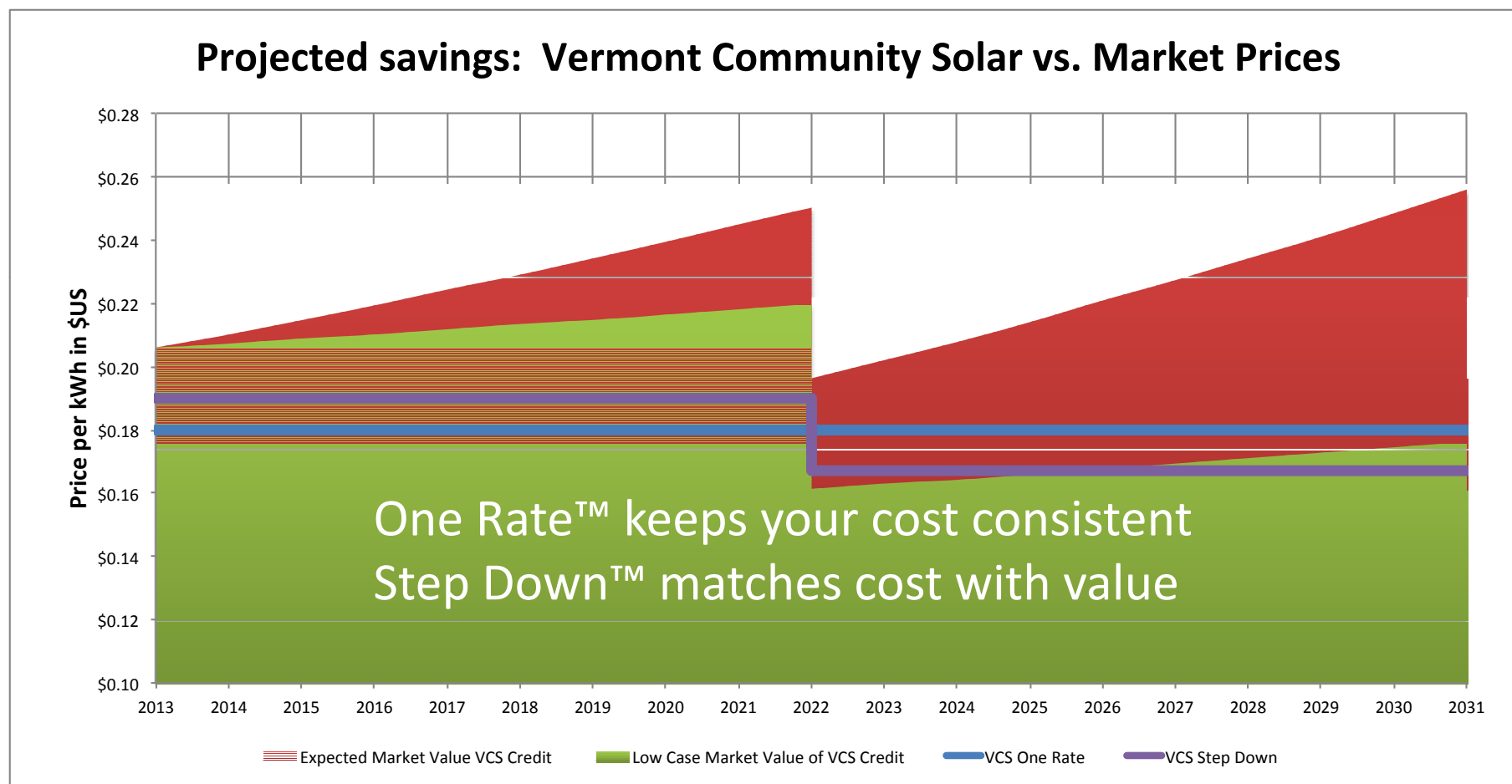
¹Assumes an annual 3% escalation in electricity rates and purchase of 650,000kwh annual electrical production.

Benefits to Community – 3rd Party Finance Models

- Example 1: NMA for 500kW solar array, royalty, or discount, model
 - 5 to 10% discount for net metering credits
 - \$6,500 to \$13,000 per year savings on electrical bills¹
 - No risk- if the array does not produce, you don't pay AND you always pay for NM credits below their value
 - A chance to purchase the array in year 10
 - Utilization of a clean, renewable resource for electricity needs

¹Assumes 650,000kwh annual electrical production.

Financial Benefits to Community – Third Party Finance Model



Example Projects – Direct Ownership Model

- City of South Burlington – in development
 - 60kW solar array at Dorset Park
 - CEDF special entity grant (~46% TPC)
 - Low interest muni debt for balance of TPC, 10 yr term
 - Value of NM credits exceeds debt service
 - Free electricity after 10 years
 - More than \$250K total value to City over 25 yr period
 - Educational / demonstration project for community

Example Projects – Third Party Ownership Models

- Farm at South Village – South Burlington, VT - completed
 - 150kW solar array; NM credits sold to City at 5% discount; powers all city traffic lights
- Former Wastewater Treatment Plant – Middlebury, VT - completed
 - 150kW solar array; NM credits sold to Town, Cooperative Insurance and members of Acorn Energy Cooperative
- Town of Bennington – in development
 - 500kW solar array at town landfill; NMA with Town (for WWTP); lease payment
- Town of Hartford – in development
 - 500kW solar array at town landfill; NMA with Town; lease payment
- Numerous others in earlier development

Conclusions

- Some direct, community ownership models available
- Many third-party financed models available
 - Public-Private partnerships are key
 - Investors are interested in doing projects with communities
 - Mutual benefit – mutual need
 - Municipality = financeable off-taker
 - Tax equity investor = pathway to projects
- Timing is now
 - Capital costs down
 - Legislation is here
 - Investors are out there

Questions?

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