

Cooperatively Owned Solar in New Hampshire

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NH Energy Efficiency and Sustainable Energy Board
Public Utility Commission, Hearing Room A

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Vermont Law School Energy Clinic



Who We Are & What We Do

Vermont Law School - Institute for Energy and the Environment

Christa Shute - Energy Fellow for Climate Justice, LLM

- **Dave R.** - 2nd year JD & Masters of Energy Regulation and Law
- **Charlotte C.** - 1st year Masters of Energy Regulation and Law
- **Cal B.** - 1st year Masters of Energy Regulation and Law
- **Julie D.** - LLM Exchange Student - France

Energy Clinic Services

- Community Solar Outreach and Education
 - Step-by-Step Guidance through all stages of Community Solar
 - Model Contract Development
- Policy Research and Development
 - [Solar Ownership in VT: Overcoming Barriers to Equitable Access](#)

Acknowledgements

- CE-NH (NHSEA)
- ROC-NH / NH Community Loan Fund
- Eli Emerson
- Revision Energy / Revision Fund
- PUC Sustainable Energy Staff
- VLS Energy Clinic Students

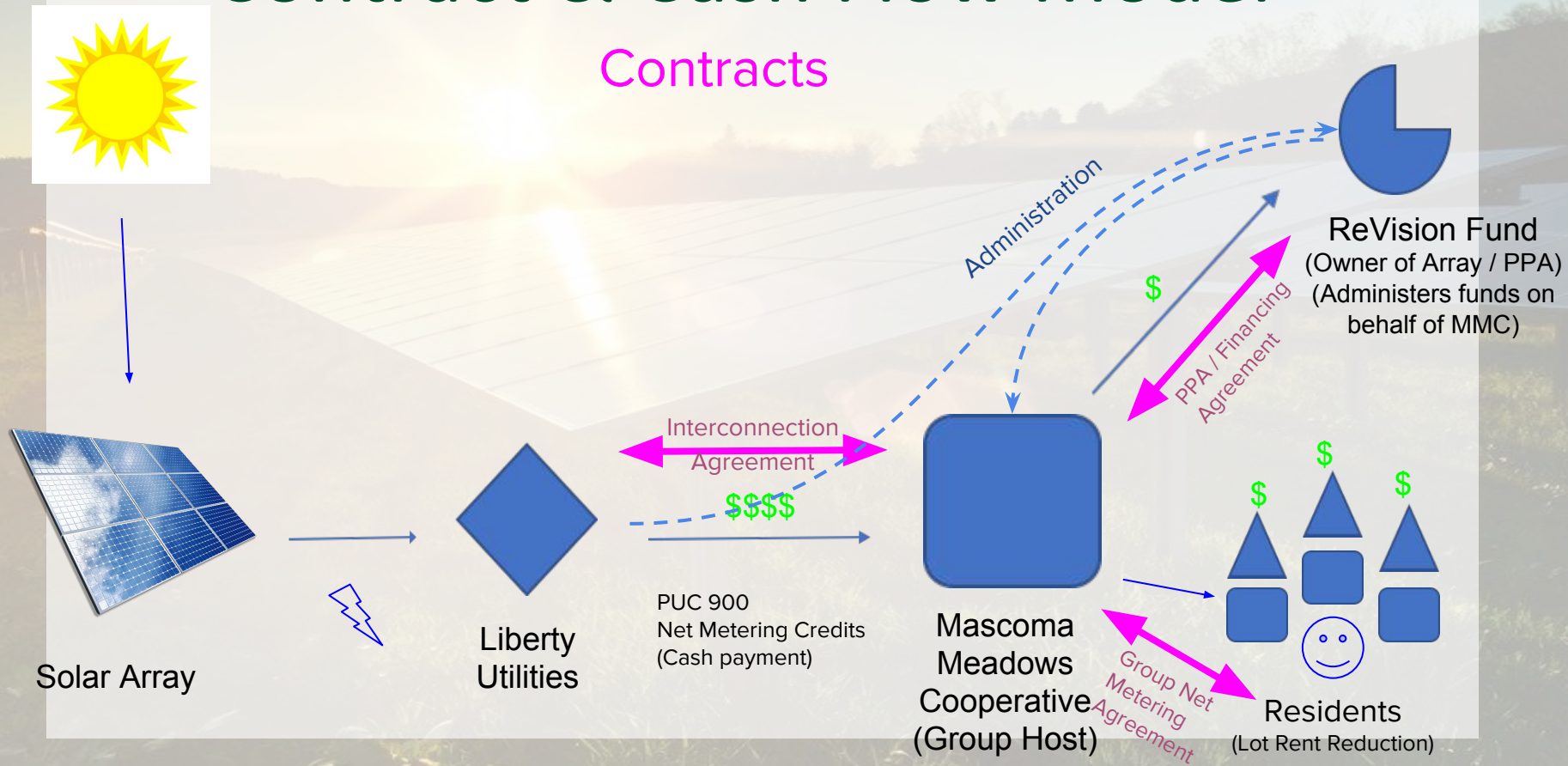
What is Cooperative Solar?

- Group Net Metered Solar Power that utilizes the Resident-Owned Cooperative (ROC) model
- Provides savings to community while also maintaining ownership of RECS to reduce community's carbon footprint
- Community Members receive benefits via reduced living costs
- Funded through grants from NH PUC Renewable Energy Fund



Contract & Cash Flow Model

Contracts



How the Cooperative Solar Model is Unique

- Leverages Impact Investors to take advantage of the Federal ITC & Depreciation, which would be otherwise inaccessible to LMI participants
- Grant from PUC LMI Program is used to pay down the principal
- No financial risk to LMI participants (Power Purchase Agreement takes a percentage of generation revenue)
- Members (off-takers) receive their benefits via Lot-Rent Reduction
- Host Community has opportunity for the community to purchase the array from Investors starting in year 5 (after ITC has been fully capitalized)
- Education opportunities: Brings community together & enhances understanding of energy use and renewable power

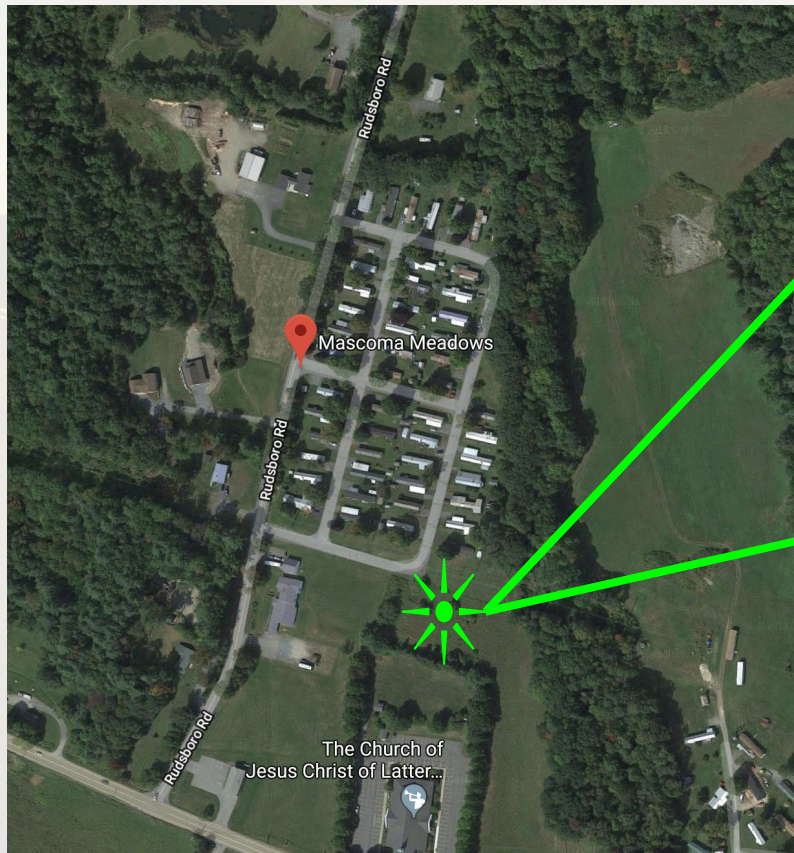
Welcome to



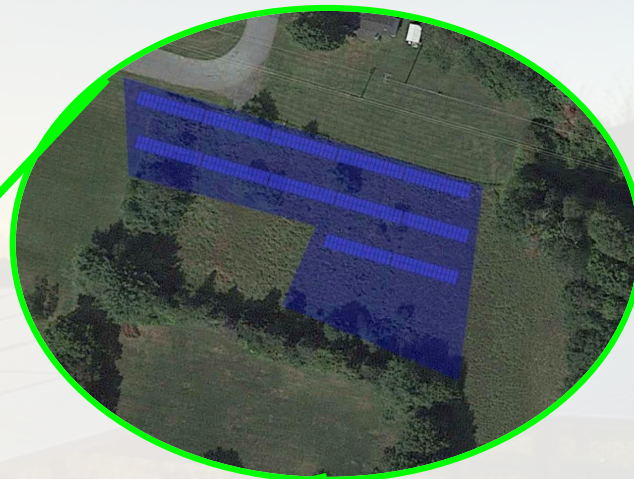
Lebanon, NH
48-unit resident-owned cooperative



Mascoma Meadows



Solar Panel Site



\$168,000 grant

Funded by NH Renewable Energy Fund
(Public Utility Commission)

- 0.5 acres
- 374 panels
- 100kw Solar Panel Array
- \$20-\$25 Lot rent reduction/month
- 45 participants / 50 lots

Every Project Starts with the Board

- Meeting with the Mascoma Board of Directors starting in January 2018
- Board Decisions to Engage VLS and Eli Emerson of PPEC
- Board Motivates Community Participation



Nothing Happens Without the Community



Competitive Project Bidding



What Community Really Means

- When the *community* decided to invest \$25,000 to purchase the land ...
- The church donated the land.



Permitting

- Zoning Board
- Conservation Commission
- Planning Board



NH Energy Fund: Grant Funding

- SB129 legislation made these projects possible
- Our grant request included a formula to accommodate available funds
- Thus the \$168,000 award amount

Energy Efficiency Education and Measures



- Two Energy Efficiency Education Sessions per year (must do one)
- Lighting and water-flow
- Home Energy Audits
- Saving Energy makes the solar go farther
- Their investment for the lot-rent reduction

About Mascoma Meadows

- Started process in late 2017 / early 2018
- Community Members participated in planning & approving the project
- Project Funding provided through NH PUC Grant Program
- Members receive benefits via a Lot-Rent Reduction
- Also included education on Energy Efficiency practices & benefits



Mascoma Meadows Progression



Solar site prior to clearing
(Sept. 15, 2018)



After clearing
(Sept. 28, 2018)



Building the Array
(Oct. 29, 2018)

Mascoma Meadows Today



Solar Panels Installed (Nov. 7, 2018)
Interconnected (December 21, 2018)

Ribbon-Cutting Ceremony



November 27, 2018

<https://www.youtube.com/watch?v=Ve-wwkkyAvI>

What is Next for Mascoma...

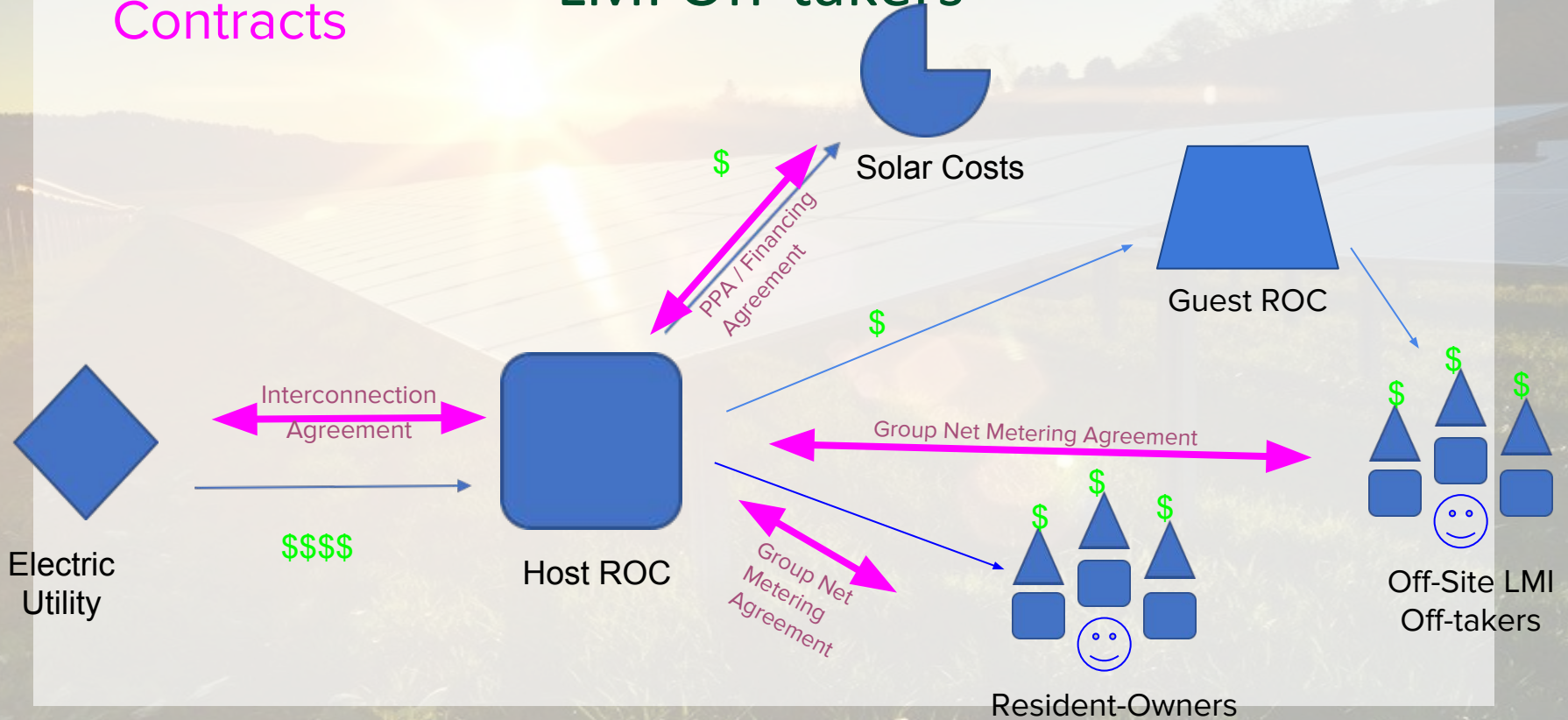
- Mascoma
 - Earning Money
 - Process for distribution of \$\$\$
 - Cost Benefit Analysis for end of Year 5
- Lessons Learned
 - Interconnection Costs
 - Residential vs Retail Rates (Class G)
 - Property Tax Rates vs Exemptions

What is Next

- Helping LMI on ROCs without land
- ROCs working Cooperatively...
- Host Cooperatives sharing extra solar with a Guest Cooperative


Theoretical Project Model with Additional LMI Off-takers

Contracts



In Conclusion ...

- SB129 Legislation truly provides an opportunity for solar ownership to LMI
- Long term impacts of ownership and education: environmental and economic



Thank you!

Q & A

What else would you like to know about cooperative solar?

Contact Information

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