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## Project Summary

In June of 2017, the Plymouth Area Renewable Energy Initiative (PAREI) rolled out a new

program called NH Solar Shares in partnership with the NH Electric Cooperative (NHEC) and several local businesses and non-profit organizations, with the goal of bringing solar PV energy to low-income families in the community. Solar Shares would be a long-term program where charitable funds would be raised to build small community solar PV arrays on donated space from local businesses. To date the new program has received an inspiring level of enthusiasm and broad financial support from small to large individual donors, business sponsors and federal, state and local grants.

The program set the goal to build three PV arrays in the Plymouth region totaling 125kW by October, 2018. Over time, however, it became clear that the long-term success of Solar Shares would benefit more from committing more time to careful consideration for program start-up, family recruitment and implementation methodology, process and messaging. Solar Shares was gaining attention quickly from the NH renewable energy community, local and statewide media, funders and social service and environmental organizations-- so much that it became obvious we needed to change our immediate goal from installing three arrays to developing the program thoroughly and start by installing one array that will forever serve as NH Solar Shares' inaugural and model project. Because the donated location for the first array was very visible and open to the public, it was decided to make the first installation a Solar Picnic Area, with "solar fun facts" signage and a nature trail that will include features like a compass on a tree stump and a human sundial. Once the model was established and the first array completed, our second goal would be to install a similar solar array in Warren, NH.

By July, 2018, NH Solar Shares had raised over \$200,000 (not including technical assistance provided by DOE Community Solar Challenge) and by October 29, 2018, NH Solar Shares commissioned their first community solar PV array totaling 28.8kW. The solar power produced is being purchased by the NH Electric Cooperative through a PPA and is credited to the electric bills of 10 LMI families--aka shareholders--who will change every two years.

The inaugural installation site was challenging: it needed a new electrical service and designated transformer, the land had a steep gully that had to be avoided and a wide railroad set-back that required state D.O.T. approval for tree removal. We added to our challenge by deciding to make two of the array's ground-mount structures timber-framed picnic pavilions. These pavilions house roughly 50% of the solar panels and provide space for 4 – 6 picnic tables. The pavilions add an esthetic

appeal to the installation--a significant consideration, given popular pushback in parts of New England to the visual impact of commercial solar arrays.

Despite the site's challenges, this location was ultimately chosen due to its high visibility from a major road and located next to a popular ice cream stand, restaurant and inn. The site is attractive and lends itself well to observation, discussion and education. In the years ahead, it will be a great showpiece to demonstrate the value of the Solar Shares program, help raise awareness for solar energy and fundraising for the next phase of the program as well as provide an excellent showcase for all solar advocates and the project's solar equipment installer, Revision Energy.

## The Solar Shares Model

The Solar Shares model is the first of its' kind in New Hampshire – a community solar PV installation with 100% of the power going to 10 LMI families who receive a credit marked “Solar Shares” on their electric bill – not a reduction in rent or paid to them by check that could alter their income. Our model is novel because our LMI individuals/families (shareholders) are participants for only two years so our reach can be wider. In addition to getting the solar credit, they will participate in an energy education program (energy club) with the goal of reducing their utility bills further through energy saving tips.

Shareholders have the opportunity to pay their solar share forward at the end of their two years to another income verified family/individual. When this aspect of the program was described during our recruitment outreach to a woman referred from Voices Against Violence, she exclaimed, “This is the best thing I have heard that the world has done in a very long time”. We believe the fun, positive, club-like energy education program, the pay it forward aspect, a close partnership with our utility and installing the solar array in a location open to the public is part of the Solar Shares model that excited funders, volunteers and LMI participants/shareholders.



## Inaugural Array: Solar Energy Production and Installation Facts

The 28.8kW solar picnic area in Plymouth, NH located beside the Common Man Inn's Frosty Scoops Ice Cream Stand has generated over 5MWh since October 29, 2018. The array was built using Hanwha 320w solar PV panels and Enphase micro-inverters. Up to date production can be viewed on the Solar Shares website. The construction cost totaled \$128,807 which included three ground mounted solar arrays, two timber

framed picnic solar pavilions, architectural services, permitting, tree removal, a new electrical service and transformer, site prep, concrete pads and a 10 year maintenance plan.

## **Ownership of PV system**

NH Solar Shares is the owner of the solar PV picnic pavilions, solar equipment and the ground mounted structures. The space was leased from Alex Ray from the Common Man Family of Restaurants for \$0.00 per year. The PV system, electrical system and the ground mount structures are insured by NH Solar Shares.

## **LMI Participants and Direct Benefits received through NH Solar Shares**

There are currently 10 participants for the NH Solar Shares' Plymouth array. All 10 participants are low income and fall within 60% of the state's median income. The participants are known as shareholders. They each receive a share (1/10) of the solar value every month for two years. There is no cost to participate other than a commitment to the individualized energy education program.

For 2019, the net direct benefit received by each shareholder is a \$25 monthly credit on their electric bill. The bill credit began on their January NH Electric Cooperative electricity bill. At the end of each year (in November) the dollar amount for each share for the following year will be determined using the preceding 12 months' actual solar production. Shareholders will receive 100% of the value of the solar production but the model allows for this to be reduced to 85% if necessary.

The other direct benefit to shareholders is the energy education program. This fun program is designed to educate and motivate shareholders to look for new ways to reduce their energy use. Shareholders will receive a quarterly newsletter with energy saving tips and will be invited to participate in Shareholder meetings (work days etc.) as well as other events put on by PAREI.

At our first meeting, Shareholders learned how to figure out their annual electricity usage and shared personal energy saving tips and tricks with one another. Everyone in attendance committed to three energy saving goals to undertake and report back to one another at the next meeting such as putting insulating foam behind electrical outlets, doing laundry in cold water and checking to see if refrigerator temperatures are set too high using a candy thermometer.

NH Solar Shares hired a part-time program coordinator who communicates regularly with each shareholder. She shares with them community resources to help address their barriers to participating fully in NH Solar Shares. The program coordinator and fellow shareholders serve as a new community network for one another. For example, at our shareholder meeting in January one shareholder offered her phone number to an older shareholder who was expressing how difficult it was to remove snow from her driveway. She said "I have two teenage boys with a lot of energy and we'd be happy to help you, just give me a call". Now that's a direct program benefit!!

## **Shareholder (participants) Income verification**

As part of the model, Solar Shares from the beginning made the choice NOT to conduct the income verification for participants but instead require verification of acceptance into other income verified

programs. Solar Shares chose to use the 2018 NH Fuel Assistance and Electrical Assistance (EAP) Income Guideline which is 60% of the state's median income. This is above the 200% federal poverty income guideline and below 300%. This means a family of four can make \$63,386 annually. Solar Shares also accepted proof of income from Habitat for Humanity and Multi-Unit Low Income Housing.

Currently NH Solar Shares and NHEC requires that the shareholders at the beginning of each quarter be in good standing on their electric bill. If not, Solar Shares works with the shareholder and a local Church – who has offered to partner with Solar Shares - to resolve the outstanding bill.

## **FUNDING**

Early on NH Solar Shares was awarded a capacity building grant from NH CDFA Business Tax Credit Grant Program and the New England Grassroots Environmental Fund – both of which played an important role in building the model and PAREI's organizational capacity to take on the new program. Funding was also received from the NH Charitable Foundation, NHPUC's Renewable Energy Fund, and local business sponsors including Northway Bank, Common Man, Dunkin Donuts, EVP Marketing and Media, Mauchly Electric, M.E. Latulippe Construction Inc., Pemi Tree Works, Rands Hardware and Revision Energy.

Solar Shares decided not to incorporate the federal (ITC) tax credit in to our financing model because it's future appears uncertain and we wanted the model to be something any non-profit organization could replicate with a "can-do" spirit, knowledge of solar PV and volunteer support. Solar Shares/PAREI is taking the lead to build the first three installations and after that hopes that organizations throughout NH will decide to coordinate and fundraise to build a Solar Shares project in their town. Solar Shares/PAREI would still assist with fundraising planning, shareholder recruitment and conduct the utility communications concerning PPA's and bill credits.

## **Volunteers**

NH Solar Shares was successful in part due to a strong contingent of community members interested in solar's environmental benefits, increasing the amount of solar energy on the local grid and



combining those interests with providing low income families access to solar energy and the savings it provides. NH Solar Shares' volunteers assisted with developing the model, fundraising, prepping the site, building the pavilions and recruiting business sponsors.

**NH Solar Shares  
Ribbon Cutting  
November 9, 2018**