

2017 CEED Fund Proposal: HEAT Squad®: Expanding the Benefits of Comprehensive Energy Efficiency for Low-to-Moderate Households

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Overview of the Proposal and Required Investment

Proposal summary

NeighborWorks of Western Vermont HEAT Squad is pleased to present this proposal for a \$399,000 investment from Green Mountain Power to take the HEAT Squad program to the next logical level of impact. We, at HEAT Squad, are ready to change the standard of what a typical energy retrofit among low to moderate income households looks like. Rather than stand by and allow inertia to maintain a status quo where lower income Vermonters achieve roughly half of the energy savings achieved by their higher income peers (15% reduction in costs compared with over 30% for the average customer, and close to 50% among households with the means for deep retrofits), and as a consequence, a fraction of the incentive funding from Efficiency Vermont, we are seeking an investment to provide education and outreach services along with additional incentive money tied to income level in order to help these households afford comprehensive projects in the former CVPS legacy territory. This investment will support 150 completed comprehensive energy efficiency retrofits, along with weatherization 30 completed domestic hot water heat pumps (DHW HP), and 30 completed cold climate heat pumps (CCHP) delivering both thermal and electric efficiency savings by December 31, 2017.

Beginning: HEAT Squad was started in 2010 when NeighborWorks of Western Vermont, a nonprofit housing and lending agency, received a \$4.5million grant from the US Department of Energy to “change the marketplace” in Rutland County – to dramatically increase demand for energy efficiency in residential buildings. We implemented a program based on the same quality customer service model we have been employing since 1986; education, objective advice, construction management, and affordable loans all in one ‘stop’ with NeighborWorks of Western Vermont.

Achievements: to date we have completed over 3,500 energy audits, 1,400 deep retrofits and also created 62 new jobs for southern and central Vermonters, and saved our participants about \$1million a YEAR, every year! on fuel costs. Sixty percent of our customers are low or moderate households where savings are most important.

Additions: HEAT Squad has gone through many changes since 2010.

- We now serve customers in five southern and central counties.
- Without any compromise of quality service or beneficiaries to the program, we have converted the HEAT Squad business model to a fee based program that will be self-sustaining when we reach a certain volume of business statewide.
- We have ‘planted’ a HEAT Squad in Hazard KY, in partnership with another NeighborWorks affiliate; with plans underway to expand the HEAT Squad throughout five Appalachian states
- Because efficiency measures have been proven to provide significant health benefits to residents, particularly patients with asthma and COPD, we have entered into a new partnership with the Rutland Regional Medical Center to pilot a program using hospital funds contributed to NWWVT to make improvements in patients’ homes where the physical conditions are deemed to contribute to their chronic medical issues or where patients are at risk of trips and falls that might put them into the hospital. This pilot project is intended to provide data based evidence not only of potential savings to overall medical costs but also of improved health outcomes in patients with stubborn but non genetically caused conditions, also called the social determinants of health.
- We have recently completed another study providing data based evidence that a one-time installation of a Cold Climate Heat Pump to replace dependence on oil burners saves the average homeowner approximately \$800 a year or, in the homes included in the study, a little MORE than the average LIHEAP subsidy those homes received every year.
- NWWVT HEAT Squad is currently engaged in building a community solar project for Low and Moderate income households to become the owners, with all the benefits of ownership that have heretofore been useful only to affluent households who can take advantage of the 30% federal tax credit for solar projects.
- NeighborWorks, CDFI-certified by the US Treasury to lend in underserved communities, has been the beneficiary of several important institutions such as Vermont State Treasury and Bank of America’s investment of capital in our Revolving Loan Fund to make loans to HEAT Squad residents in Vermont for energy related projects. More investment is under consideration with the potential to provide more than \$10million in available capital to NWWVT.

Currently, HEAT Squad is serving low-to-moderate income Vermonters, with 60% of our customers at or below 120% of Area Median Income (AMI) and 10% of those are at or below 80% AMI. In 2013, we expanded our program to serve five counties of the state (Addison, Bennington, Rutland, Windham, and Windsor) where we had previously only served Rutland County. With a proven track record of success and a rapid pace of change, we are proposing to revolutionize our model once again by increasing truly *comprehensive* efficiency projects among the working families and seniors on fixed incomes who comprise the majority of our customers, but who are also much less likely to complete projects that would reap maximum energy savings. We will accomplish this by making the installation of such measures more affordable by offering our own incentive payments in addition or in place of those offered by Efficiency Vermont. Simultaneously, we seek to expand our service territory to include Chittenden, Orange, and Washington counties while continuing to serve Addison, Bennington, Rutland, Windham, and Windsor.

Implementation Steps

Since we are proposing an expansion of an existing program, upon notification of the award, we will move forward with implementation rapidly. Key steps in the process will be to:

- Update outreach materials and our web presence to reflect program changes and to develop new online tools to reach an expanded pool of customers.
- Make updates to existing software and intake protocol to accommodate the new incentive structure and expansion into additional counties.
- Hire an additional energy auditor to work in our expanded service territory to the north.
- Hire an outreach specialist who will be responsible for events and education, and developing key local partnerships in our new service area as well as making certain existing allies and partners understand and know how to support our expansion.

Staffing Plan

- We will hire a dedicated HEAT Squad outreach director, to be based within the new expanded territory.
- To increase capacity to perform energy audits, we will hire an additional Building Performance certified energy auditor to be based in a central location within the new service territory. The auditor will join our current 2-person team of energy auditors: Corey Trimmer and John Birch, both BPI-certified as Building Analysts and Envelope Professionals and highly experienced in the energy efficiency sector.
- We will maintain our HEAT Squad Program Manager, Melanie Paskevich, based out of the NWWVT office in West Rutland, who has developed the program from its inception and overseen its expansion to five counties of Vermont as well as well as the creation of a satellite program in Hazard, Kentucky. Melanie worked in the architectural field for several years with substantial experience in energy efficient building and in managing contractors.
- We will maintain the position of our scheduling and intake coordinator, Lori Thompson, based at our NWWVT office in West Rutland, VT, who will be able to process additional client intakes from our new service territory in Chittenden, Orange, and Washington counties.
- We will continue to host a full-time HEAT Squad AmeriCorps member who will increase capacity by processing customer intakes and assisting with outreach efforts.
- Our NWWVT Communications director will continue to support outreach and press for the program in collaboration with our marketing team, Breezy Hill, independent contractors based in Richmond, VT.

Advantages and Growth of the HEAT Squad

HEAT Squad is uniquely positioned to lead efforts to spur high-impact efficiency retrofits among low to middle income households. To date, we have completed 3,500 energy audits and 1,400 energy retrofits, representing a 40% conversion rate. As a program housed within a homeownership center, we primarily serve Vermonters of low to moderate income and we benefit greatly from our ability to cross-market our services. Clients taking our homebuyer education courses, working with our realtor, making needed

repairs through the Home Repair program, and seeking loans all receive information about HEAT Squad. Furthermore, the Home Repair program currently insists upon energy audits for all participants.

We have a track record of removing barriers for energy efficiency retrofits by providing energy audits at reduced cost. Furthermore, the NeighborWorks of Western Vermont Energy loan, unsecured, with the option of on-bill repayment through GMP, has helped over 300 Vermonters, or about 20% of our HEAT Squad customers, finance upgrades with an interest rate buy down made possible through the Vermont State Treasurer. The loan is particularly versatile in that it may be used to also finance building shell improvements such as leaky roofing, damaged siding, wet and crumbling basements which may be necessitated as part of an energy retrofit project. Loan customers may borrow up to \$40,000 with terms between five and 15 years and interest rates between 0% and 4.99% depending on income level and loan term. Our loan is already available for homeowners state-wide and, therefore, will continue to be an asset in serving our customers as the program expands its geographic territory. Whenever possible, loans are structured to be cash-flow positive for the borrower, ensuring that his or her energy savings over the course of a year are greater than the debt service payments on the loan.

HEAT Squad was born in 2010 out of a strong conviction that a program offering high-level customer service would be the catalyst needed to grow the energy efficiency industry in Vermont and drastically increase the number of retrofits. Our energy audits are comprehensive, evaluating the home for potential electrical savings as well as thermal efficiency improvements, in addition to identifying health and safety concerns, such as gas and CO leaks, moisture problems, and mold growth. As a one-stop-shop, we developed a service whereby an “energy advisor” provides concierge-level service to homeowners, answering questions not simply about energy-saving measures, but about all home-related concerns, whether they be electrical issues, plumbing concerns, etc. We refer our clients to trusted outside providers accordingly. We connect homeowners with local, certified contractors to perform recommended energy upgrades, advocate for our clients by assuring that contractors respond promptly to their concerns, relay technical information in a way that is comprehensible for homeowners, and provide a “test out” or second blower door test (at no additional charge) to quantify reduced air leakage in order that homeowners receive incentives from Efficiency Vermont, as well as to provide quality assurance. We are proud to report that an early survey of the HEAT Squad participants showed that 98% were either “satisfied” or “very satisfied” with their experience.

We have continued to refine our service to better the experience for our customers. Hiring our own in-house independent BPI-certified auditors in 2014 has meant that we have greater control of the customer experience and we are able to be more responsive by removing the need to liaise between multiple outside parties. By allowing us to maintain a clearer delineation between our service and the contractors with whom we partner, having objective independent auditors on staff also allowed us to build a reputation as an unbiased source for energy advice without a financial stake in any particular energy-saving measure. Crucially, rather than having to wait, sometimes for weeks, for an energy audit report from an independent contractor, our auditors, using our own customized CAKE energy modeling software, produce a standardized, visually clear and digestible report right on-site at the audit. In this way, auditors can refer to this report in real time as they explain their recommendations to clients in their homes. In recent months, we have been able to integrate the CAKE software we use with the HERO

software that Efficiency Vermont uses to calculate incentives through the Home Performance with ENERGY STAR (HPwES) program, saving our auditors valuable time and further streamlining our process.

Even more recently, we redesigned program protocol such that our energy auditors perform slightly fewer energy audits per week, enabling them to take on the role of sole advisor to clients and to work directly with contractors to provide competitive pricing and assure timeliness of bids and completed projects. With this change, we find that customers are no longer in doubt about whom to contact or how to proceed. Our response time has greatly improved. We also anticipate increased conversion rates from energy audit to retrofit projects with this new enhanced customer service approach.

Proposal Questionnaire

Program and Customer Information

1-4. What type of project is being proposed? Which customer segment is being targeted? How many customers will participate? Which geographic areas of the legacy CVPS service territory will be served?

HEAT Squad is proposing a geographic and programmatic expansion of its program in order to increase high impact efficiency projects among the low to moderate income population. We will achieve this through the following means: geographically, our service territory will now include the CVPS legacy territories of Chittenden, Orange, and Washington Counties and more significantly, we will grow the number of comprehensive energy efficiency projects completed by low to moderate income households by offering additional incentive funds for low to moderate income households based on their income level. The lower a participant's income, the greater the funding they will receive.

We will also begin tracking data on the health benefits of energy efficiency measures completed by our clients in order to advocate for increased funding for these projects as a cost-saving measure for the healthcare industry. HEAT Squad has already begun cultivating partnerships with area hospitals that will be able to help us measure these health outcomes. We intend to increase such partnerships with other such stakeholders in the near future.

While HEAT Squad intends to further incentivize *all* ratepayers in the CVPS legacy territory to make comprehensive, high-impact energy retrofits, lower income households- a demographic that continues to struggle to complete the most impactful projects- will be heavily targeted in our outreach campaigns. They will receive greater sums as incentive payments, and will comprise a greater share of the projects we complete. Of the 150 retrofits we will complete (30 of which will include the installation of domestic heat pump hot water heaters and 30 of which will include the addition of cold climate heat pumps), 20 will have incomes up to 80% AMI receiving an incentive of \$1,000 (who are either not eligible for the services of the weatherization assistance program or choose not to seek such assistance because of the very long wait time), 80 will have incomes ranging between 81-120% AMI receiving an incentive of \$750, and 50 will have incomes 121% or greater AMI receiving an incentive of \$500.

Each income level will receive \$1000, \$750, and \$500, respectively, for the addition of a CCHP system as well as \$700, \$600 or \$500 for the installation of a DHW HP. HEAT Squad will deliver these incentives in lieu of more modest rebates currently offered from Efficiency Vermont.

The “sweet spot” we are aiming for in our incentive structure is to have an incentive-to-cost ratio of 30%. With the average HEAT Squad customer spending \$14,000 on a comprehensive retrofit, including installation of both a DHW HP and a CCHP, the maximum total incentives due this participant would be \$4,100, including the \$1,400 average incentive check from Efficiency Vermont, \$1,000 for weatherization upgrades, \$1,000 for a CCHP, and \$700 for the DHW HP (30%). Moreover, with the increased demand we expect to drive via this new program, and the influx of interested customers we almost certainly will find as a result of expanding into more populous and high need territories, there is no reason not to expect reduced costs for various efficiency measures with the improved economies of scale, and, thus, an even more favorable incentive-to-cost ratio.

Furthermore, HEAT Squad will implement a tiered fee schedule that will lower the cost burden of the energy audit further for the lowest income homeowners. Those with incomes up to 80% AMI will pay just \$50, those with incomes between 81-120% AMI will pay \$100, and households with incomes above 120% AMI will be charged only \$150.

We will require all participants to furnish a copy of their tax returns from the previous year at the time of the “test out” or second blower door test in order to receive the appropriate incentive monies due them. NWWVT will issue a check directly to customers.

As is currently our practice, we will screen all potential clients for eligibility for the Weatherization Assistance Programs (WAP) first. If a client is eligible for this assistance, but decides to forgo assistance through the WAP in favor of participating in our program, said participant will be required to sign an affidavit certifying that they understand that they qualify for free weatherization services, but are declining the assistance. HEAT Squad remains committed to helping eligible Vermonters receive free weatherization whenever possible and considers the WAP agencies valued partners.

Investment and Benefits Information

5. What is the investment schedule being proposed?

The 150 efficiency projects with 30 CCHP and 30 DHW HP that we will produce in this project will be finalized before December 31, 2017. Our experience running the HEAT Squad program, expanding its reach, and applying it to other markets, means that we will be able to hit the ground running in implementing most of the expansion of our program with existing staff. Customer intakes, for example, will continue to be processed at our office in West Rutland. We will apply our time-tested strategies for increasing interest and buy-in by speaking to local community-based organizations, churches, schools, and large employers. It will be crucial, however, to hire two new staff members: one additional energy auditor and one outreach person to expand our geographic range and to recruit new allies. We anticipate acquiring the additional personnel within the first two months of receiving the award. A minimum of five retrofits will also be completed within the first two months of our efforts.

6. When are customer benefits first achieved?

Once program participants' complete energy efficiency retrofits on their home, which we expect will be in the first few months of the program, customer benefits will be immediately achieved. With an incentive-to-project cost "sweet spot" ratio of 30% (explained in greater detail above) in addition to affordable financing options, we will be able to structure monthly payments such that most if not all of our customers are cash positive, in other words, immediately saving money on energy costs.

7. What are the Net Societal Benefits (NSB) that will be achieved per dollar invested?

The Net Societal Benefits (NSB) of the HEAT Squad comprehensive energy efficiency program for low-to-moderate income proposal per dollar invested is 2.3.

8. How will the NSB be calculated?

Our proposal NSB was calculated using two different sources, one being the savings from the established and vetted Efficiency Vermont software which is data that we have accumulated over several hundred completed Home Performance with ENERGY STAR (HPwES) projects. The other source that was used in the calculation of our NSB was the 2015 Efficiency Vermont Technical Reference User Manual (TRM).

9. What % of NSB will the program achieve in electric benefits?

Per our methods and data used to calculate our NSB (as mentioned above) the percentage of NSB that our proposal will achieve for electric benefits is 6.7%

10. What are the other non-electric benefits?

Households making energy efficiency retrofits to their home will reap significant savings on heating costs, will find increased comfort, and will benefit from improved indoor air quality. Numerous studies looking at the social determinants of our basic overall health provide data based evidence that the measures applied in homes to achieve efficiency also provide dramatic health benefits to the residents. For example, children with asthma whose homes are improved with air sealing and insulation to improve indoor air quality and prevent mold, moisture and pest invasions, have seen emergency room visits and hospitalizations drop significantly, in many cases cease to happen. Low income households saving an average \$800 to \$1,000 a year will use the precious funds for their basic household needs, food and shelter. This sum of money added to their budget could easily make the difference between security and foreclosure.

Start-Up Information

11. Is this a new or established program?

HEAT Squad is an established program that has been in existence since 2010, helping more than 3,500 Vermonters to understand energy efficiency and guide households to save on their energy bills, increase their comfort and health, while reducing their carbon impact.

12. How does this program meet the “But/For” test?

“But for” this CEED funding, we will continue to see low to moderate income Vermonters woefully underrepresented among those who complete the most comprehensive energy projects- that is, those projects which offer the maximum savings. With this funding, we want to bring in those Vermonters who stand to gain the most from reduced energy costs. With CEED funding, we can share the benefits of energy efficiency and weatherization for low-to-moderate income Vermonters. Furthermore, because Vermonters with fewer financial resources are choosing to implement only half measures and are, consequently, receiving considerably smaller incentive checks from Efficiency Vermont’s HPwES, the reputation of the program is diminished among this population. If we can offer increased financial support for HPwES participants, we can build much greater enthusiasm around the program and energy upgrades broadly among those for whom the proportion of their income going toward energy costs is the greatest.

13. What are the expected costs of the program?

HEAT Squad is requesting an investment of \$399,000 as shown in the table below. With this investment we planning to hire a certified energy auditor (represented in Tech Assistance) to help us expand into additional CVPS legacy territory and to help with the increased auditing and energy advising workload. We are also planning on hiring an outreach coordinator (represented in Marketing) to help with education and networking about the HEAT Squad program in the expanded territories and about the new incentives available. Marketing materials will be necessary for this new program as well as updates to our social media and websites. We will have additional costs to cover the extra audits that have to have desk review through our CAKE software system while also needing necessary equipment for the energy auditor and outreach coordinator (represented in Information Technology).

Cost Element	Start-Up Costs	Total Program Costs
Planning & Reporting	\$ -	\$ 5,000.00
Admin	\$ -	\$ 20,000.00
Tech Assistance	\$ -	\$ 95,000.00
Incentives	\$ -	\$ 189,000.00
Marketing	\$ -	\$ 75,000.00
Information Technology	\$ -	\$ 15,000.00
Participant Share of Costs	\$ -	\$ 1,092,000.00
Total Costs	\$ -	\$ 1,491,000.00

14. Can the program be easily scaled up or down within 2017 to use the remaining CEED funds if necessary?

Yes, the program can easily be scaled up or down within calendar year 2017. In fact, our intention is to significantly ramp up expansion to meet our goal of 150 retrofits far in advance of the December 1st, 2017 deadline. We expect that our incentive increases in conjunction with reaching new territories with pent up demand for our services and large populations in need, in addition to the new collaboration and increased funding we expect to receive from Rutland Regional Medical Center to make efficiency

upgrades in the service of improving health outcomes for patients suffering from asthma, COPD, and other severe respiratory diseases, will act as very forceful catalysts to get vastly more homeowners to invest in retrofits.

15. When is the proposed start date of the program?

We will be able to implement the expansions to the program immediately. Because HEAT Squad has a ready-built, successful platform, we are able to make changes right away. New hires will be necessary for sustained geographic expansion, but existing staff will be able to service new territories in the interim. HEAT Squad has a track record of nimbleness; pivoting and adapting quickly when the success and growth of the program necessitated change.

16. How long will customer benefits persist after the initial benefit is achieved (in years)?

Based on estimates of the life-span of the technology installed, we can conservatively estimate that savings achieved through weatherization will persist for a minimum of 20 years, that domestic heat pump hot water heaters will offer savings for at least 13 years, and that cold climate heat pumps will deliver savings for at least 18 years.

17. How will program results be measured and evaluated?

Since fall of 2014, HEAT Squad has been working with our customized CAKE modeling software and audit reporting tool which allows the program to track participation in both energy audits and retrofits, capturing the energy savings and impacts. These estimated savings levels are consistent with Efficiency Vermont's methodology. The CAKE software is able to upload and report into the Efficiency Vermont energy modeling system. We have also integrated Salesforce into our intake process. This will be the tool that captures customer demographics. We also conduct customer surveys at the audit stage and after the completion of an energy efficiency project.

18. How will program costs and benefits be reported to GMP?

We have tracked our program results since 2010, having to report to DOE so we have reporting templates and methods in place. We have the ability to generate reports out of Salesforce and CAKE, and are able to make adjustments if GMP so desires to ensure that GMP has all the information it may need to track program performance and savings achieved.

19. How often will reports be provided to GMP?

HEAT Squad will provide reports on program participation, conversion rates, scope of work completed, energy savings achieved, and incomes of participants along with any other pertinent information that is required, to GMP on a monthly basis.