



draft 12-31-12
January 2013

Energy Audits and Retrofits for Existing Mobile Homes in Hinesburg, Vermont

Memorandum of Understanding

**between Vermont Energy Investment Corporation
and Town of Hinesburg**

Overview

Vermont Energy Investment Corporation's (VEIC) mission is to reduce the costs — both monetary and environmental — of energy use. VEIC, doing business as Efficiency Vermont, is interested in increasing the affordability of Vermont's housing stock through increased energy efficiency. Moreover, VEIC has a particular interest in assisting those homeowners with a high energy burden, e.g. energy costs as a percentage of income.

The Hinesburg Affordable Housing Committee (HAHC) is seeking to implement energy saving measures in six mobile homes in Mountain View Mobile Home Park. In partnership with the Department of Community Development and Applied Economics at the University of Vermont and Reiss Building and Renovation, the HAHC aims to lower monthly energy costs in these households while collecting important energy usage and savings data that can inform future efforts to increase the energy efficiency of mobile homes across Vermont. Energy audits will be completed by a BPI-certified (Building Performance Institute) professional. Based upon the audit findings, high return energy-saving investments will be made to six homes. The HAHC will evaluate the effectiveness of this project by comparing energy usage data before and after the energy-saving investments have been completed.

The goal of this project is to conserve energy and reduce energy-related costs to owners of existing mobile homes. The specific objectives the HAHC expects to achieve in the Mountain View Mobile Home Park within the one-year timeframe proposed for this project include:

1. Conduct six full energy audits on mobile homes, including both thermal and electrical audits;
2. Prioritize "high return" energy-saving investments;
3. Implement energy-saving investments for the highest return projects with available funding; and,
4. Use electrical and fuel use data to evaluate the effectiveness of the energy-saving investments.

Purpose

This purpose of this Memorandum of Understanding is to establish the working partnership and delineate the respective roles and expectations between VEIC and the Town of Hinesburg Affordable Housing Committee (hereinafter referred to as the "Local Partner") for the Project "Energy Audits and Retrofits for Existing Mobile Homes in Hinesburg, Vermont."

Period of Performance

This agreement begins on January 1, 2013 and extends until December 31, 2013.

Roles and Expectations

VEIC will work in partnership with the Local Partner to help implement the project, *“Energy Audits and Retrofits for Existing Mobile Homes in Hinesburg, Vermont.”*

VEIC will provide technical and financial assistance for the project, including:

- Provide technical review of proposed efficiency improvements following completion of energy audits;
- Provide a grant of \$7,500 to Local Partner to contractor fees and materials, and,
- Work with Local Partner to develop recommendations for other local, regional, and statewide organizations interested in helping improve efficiency in mobile homes.

Local partner will have primary responsibility for ensuring successful completion of this project, including:

- Reach out to and coordinate all efforts with mobile home owners;
- Contract with a BPI-certified professional to conduct energy audits and perform the work;
- Meet with homeowners to provide them with their audits and to discuss the priority list of improvements relative to the amount of funding available;
- Oversee successful completion of priority efficiency improvements, including both thermal and electrical;
- Ensure the collection of data from efficiency improvements, including test-out data and collection of home heating fuel and electrical use data from participating homes;
- Secure full project funding from other funding sources and ensure successful coordination with other project partners; and,
- Prepare a project report to VEIC that evaluates the effectiveness of the energy-saving investments and provides recommendations for other organizations interested in improving efficiency in mobile homes.

See Attachment A: Background, Approach, and Budget for more details. The parties have no other duties or obligations to each other expressed or implied.

Expenses

Local partner will be reimbursed for the following eligible expenses (included within the total allocated grant funds):

- Contractor fees
- Energy saving materials, including insulation and air sealing materials
- Office related expenses, including copying and mailing costs

Any other expenses may only be reimbursed with the prior written approval of VEIC.

Contact Information

VEIC

For additional program information and clarification, please contact:

Paul Markowitz
Community Energy Program Manager
Efficiency Vermont

Memorandum of Understanding between Vermont Energy Investment Corporation and Town of Hinesburg Affordable Housing Committee

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Burlington, VT 05401
802 540 7608
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Local Partner

The principal contact for the Local Partner is:

Rocky Martin, Chair
Hinesburg Affordable Housing Committee
10632 VT Route 116
Hinesburg VT 05461
482-2281 Extension 229
hinesburgpw@gmavt.net

Modification or Termination

No changes, modifications, amendments or extensions to Memorandum of Understanding shall be effective unless reduced to writing and signed by the duly authorized representatives of VEIC and the Local Partner. VEIC or the Local Partner may cancel this agreement for any reason whatsoever at any time prior to the expiration date by issuing written notice to the other party no less than 60 days before the proposed termination date.

Any disputes or differences arising out of this *Memorandum of Understanding* that cannot be amicably settled between the parties shall be finally settled under the Rules of Conciliation and Arbitration of the American Arbitration Association by one or more arbitrators appointed in accordance with said Rules. The arbitration shall take place in Burlington, Vermont. Each party to the arbitration shall fully bear its own costs.

Signed

Vermont Energy Investment Corporation

Name

Title

Signature

Date

Town of Hinesburg

Name

Title

Signature

Date

Attachment A: Background, Approach, and Budget

Background:

The town of Hinesburg has three mobile home parks consisting of 173 lots which provide a significant share of this growing community's affordable housing. In 2012 the Hinesburg Affordable Housing Committee (HAHC) identified energy issues as one of the primary challenges facing mobile home owners. The HAHC began to think about how best to approach the issue. One of the challenges identified early in the project was that many mobile home park residents, while low-income, are just above the income guidelines for the existing free weatherization program.

HAHC began a partnership with the Dept. of Community Development & Applied Economics (CDAE) at the University of Vermont. The Committee also reached out to HFI, the owner of the Mountain View Mobile Home Park. They organized a meeting in July 2012 with stake holders and park residents to discuss the energy issues mobile home owners faced. Following this meeting, the HAHC collaborated with CDAE to design, implement and organize a park resident survey in September 2012 as well as an "energy fair" on October 27 in the Mountain View Park. The energy fair included two full mobile home energy audits and "mini-evaluations" of six additional homes. Local builder Chuck Reiss, a BPI certified building contractor, provided valuable experience and volunteered his time and equipment to conduct the audits.

Twenty-eight households responded to the September survey—representing nearly two thirds of the park's total households. The results of the surveys are briefly summarized below:

Key findings:

- The average resident has lived in the park for 12 years.
 - 18% of the households surveyed were home to at least one person over the age of 65
 - 40% of the households were home to at least one child under the age of 18.
- Six residents have already been through the State Weatherization Program
- Nineteen households reported that they were not income eligible for the state Weatherization Program
- The average home was 28 years old; 23% of the homes were built before the 1976 HUD Code.
- The average home was 1,023 square feet.
- Most homeowners heat with kerosene (48%); 63% of homeowners reported using a secondary source (electric space heaters or wood) to supplement their primary heat source.
- Homeowners reported heating costs ranging from a modest \$400 per year to an astonishing \$5,000 per year, averaging \$1,729 per year.
- The average electrical cost reported was \$135 per month. Homeowners reported spending between \$37 and \$300 per month.

The exceedingly large range of reported electric bills surprised the HAHC and led the committee to include an investigation of electrical issues in this proposal.

Approach

The project builds on the prior work and relationships that the HAHC has established with park residents, HFI and CDAE. An important element of this prior work has been the advice provided by Reiss Building and Renovation, a firm with many years of experience in energy audits and retrofits. Park owner HFI/VSHA has also pledged \$3,000 in funds for this project.

With funding from VEIC and HFI/VSHA the HAHC will complete full energy audits on the four of the six mobile homes that were partially assessed in the mini-evaluations. The decision to exclude two homes was made because one mobile home assessed in the mini-evaluation is a 2010 model and one was weatherized by the State Weatherization Program two years ago. Reiss Building and Renovation will conduct these audits assisted by a student intern from CDAE. When full audits have been completed on six units the areas of greatest energy loss will be identified for each home and recommendations provided to the homeowners.

The list of all possible energy efficiency projects on the 6 mobile homes will be prioritized with regard to their potential energy return relative to cost. Cost estimates will be prepared for each possible energy-improvement and a preliminary decision regarding the best use of available funds will be made by the HAHC utilizing a cost/benefit analysis

The HAHC will meet with homeowners to provide them with their audits and to discuss the priority list of improvements relative to the amount of funding available. Following this discussion and any subsequent changes to the priority list, the energy improvements will be implemented by Reiss Building and Renovation.

The project will be evaluated in two ways. First, Reiss Building & Renovation will do a “test-out” to evaluate the change in air leakage. In addition, households that participate will provide an “energy release” that will allow pre and post evaluation of the projects with regard to home heating fuel and electrical use. CDAE will assist with data management.

Project Timeline:

- January to June 2013 – Completion of energy audits on 4 mobile homes
- June 2013 – Meetings with residents
- June to November 2013 – Completion of energy improvements
- Dec. 2013 – Submission of final report

Project Budget:

<i>Income</i>		
	<i>Source</i>	<i>Amount</i>
	VEIC	\$7,500
	HAHC	\$800
	HFI	\$3,000
	Reiss Bldg & Renovation	\$600
	Total	\$11,900

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Expenses				
	Item	Cost/Unit	Number of Units	
	Audit	\$300	6	\$1,800
	Energy Improvements (on average)	\$1,683.33	6	\$10,100
	Total			\$11,900

Reiss Building and Renovation estimates that energy audits for a mobile home, including testing of electrical boxes and connections, as well as the “test-out” would be \$300 per unit. Insulating a mobile home roof with cellulose is expected to cost roughly \$1,200-\$1,500 per unit. Assuming this was the highest return investment, with \$10,100 there would be funds available for all six homes in the study group.