

STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION OF ECONOMIC DEVELOPMENT
172 Pembroke Road P.O. Box 1856 Concord, New Hampshire 03302-1856

June 1, 2010

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Jack Ruderman
Director, Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

RE: PUC RFP #10-001 – Greenhouse Gas Emissions Reduction Fund

Dear Director Ruderman:

I am pleased to submit a Category I proposal to continue our Expanded Energy Efficiency and Renewable Energy Program. This program is being renamed, to Efficiency Training Program (ETP), to better reflect the focus of the funded portion of the original program. I have enclosed a signed original and six photocopies. One electronic PDF version of the proposal has been e-mailed.

NH Department of Resources and Economic Development's Division of Economic Development, the Lakes Region Community College, and the Plymouth Area Renewable Energy Initiative (PAREI) are pleased to be ETP's key Partners. A major objective of the ETP is to build upon the successes of our Building Performance Institute (BPI) energy efficiency weatherization training. In addition to continuing to train a number of students throughout the state we plan to further develop the courses offered and the field training. We understand from our prior students that their BPI Certification is very important first step towards a career in weatherization. They have also stated clearly that it is their hours of practical field experience that really makes them marketable.

In partnering with PAREI we will expand upon our field experience opportunities. This will allow ETP to support real energy savings and greenhouse gas emissions reductions in homes statewide. To accomplish this, ETP combines PAREI's GHGERF funded Housewarming weatherization experience with the home weatherization goals of the federally funded Beacon Communities. In leveraging these two programs, and in combination with other key Allies, we will make a real impact on achieving a portion of the NH Climate Action Plan.

We appreciate your consideration of our proposal.

Sincerely,

Roy C. Duddy
Interim Director



TDD ACCESS: RELAY NH 1-800-735-2964 recycled paper

DIVISION OF ECONOMIC DEVELOPMENT 603-271-2341

Proposal to

**State of New Hampshire Public Utilities
Commission**

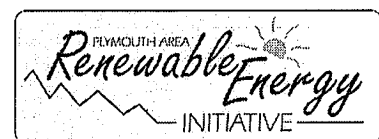
In response to

**Request for Proposals #10-001 for
Category I. Program Continuation:
Efficiency Training Program**

June 1, 2010

Prepared and Submitted by:

**New Hampshire Department of Resources and Economic Development,
Division of Economic Development
in partnership with Lakes Region Community College
and the Plymouth Area Renewable Energy Initiative**



1. Title Page: 1.1 Program Type & Title

Category I Program Continuation: Efficiency Training Program (ETP)

(continuation of: Expanded Energy Efficiency and Renewable Energy Program)

1.2 Program Summary

The State of New Hampshire Division of Economic Development (DED) with lead partner Lakes Region Community College (LRCC) and supporting partner Plymouth Area Renewable Energy Initiative (PAREI) will continue to offer building energy efficiency training programs throughout the state of New Hampshire. The team will build upon the success and collaborations of the Year 1 program to include both weatherization analyst and installer training programs that lead to Building Performance Institute (BPI) certifications. Professionals trained through these programs will implement energy efficiency measures that reduce greenhouse gas emissions. Programs in this grant proposal include:

- BPI Building Analyst Training Courses
- BPI Installer Training Courses
- Boot Camp Performance Contractor BPI Trainings
- Short-Term Energy Efficiency Trainings
- LRCC Energy Services & Technology Efficiency Intensive Certificate Program
- Energy Efficiency Professional Mentoring Support Site Visits
- Efficiency Equipment Rental Program
- Funding for Other Energy Efficiency Training Courses

1.3 Identification of Applicant Organization

George Bald, Commissioner (contracting officer/authorized negotiator)
Roy Duddy, Division of Economic Development, Interim Director
Bob Reals, Jr., DED Energy Efficiency Program Manager
NH Department of Resources and Economic Development
172 Pembroke Road, Concord, NH 03301 (mail: P.O. Box 1856, Concord, NH 03302)
Tel: 603-271-2341 Email: bob.reals@dred.state.nh.us

1.4 Length of Program

The expected life of the Efficiency Training Program is three years starting October 2010 and ending September 2013. The targeted time for which funding is sought is two years, starting October 2010 and ending September 2012. The minimum time for the new programs is two years, and the maximum time is beyond three years, with a comprehensive program evaluation after two years.

1.5 Total Program Costs

	Year 1 Program	Year 2 Program	Year 3 Program
Total Program Costs	\$543,288	\$543,288	\$543,288

Note: In terms of this budget, "Year 1" starts October 2010 and runs four quarters through September 2011. "Year 2" runs from October 2011 to September 2012.

1.6 GHGER Funds Requested

	Year 1 Request	Year 2 Request	Year 3 (budgeted)
GHGER Funds Requested	\$226,600	\$226,600	\$226,600

2. Proposed Work Scope and Schedule

2.1 Applicant's Success in Implementing the Goal Set Forth in the 2009 GHGERF Proposal

The Building Performance Institute (BPI) Building Analyst trainings are an ever improving story of success. LRCC is the provider of the training and has completed the following goals. LRCC has secured an "Affiliate" relationship with BPI and has completed the faculty certification process for our Instructor and multiple field proctors. LRCC purchased and updated the nationally recognized NYSERDA Building Analyst curriculum. The College also purchased equipment needed to provide this energy auditor training.

The GHGEF training scholarship opportunities are promoted by LRCC and DED, and by the first and second quarters of the grant 84 students have been enrolled for the first six sessions offered in Laconia, Littleton, Nashua, and Concord (3). Of these students, a total of 64 passed a written and field test to become BPI certified Building Analyst, representing a 85% success rate for those who chose to take the certification tests. LRCC has conducted student evaluations for program assessment and improvement, and the comments were largely positive. Two contracted jobs and several part-time positions were created in support of this activity. The activity of BPI Certified students' job shadowing experienced weatherization professionals has been begun on a limited basis. Additional program benefits, not outlined in the original goals, include home energy diagnostics conducted on 38 homes during the 1st and 2nd Quarter. Some homeowners have implemented recommended weatherization improvements.

2.2 Modifications to Original Proposal

At the request of the PUC, the original proposal "Expanded Energy Efficiency and Renewable Energy Program" was substantially modified. In essence the scope of the original proposal was reduced to eliminate the expanded business energy audit program, leaving primarily LRCC's energy efficiency training program. This training program has been implemented largely as stipulated in the July 1, 2009 contract between the PUC and DED.

Because the business energy audit and associated job shadowing were taken out of the original grant proposal, more emphasis had to be placed on field experience during the training course. Changes in the grant meant there were not as many job shadowing and internship opportunities as originally anticipated. This also meant relatively few opportunities to track specific energy savings.

Work outcomes is another difference between the original grant application and actual implementation. The Building Analysts who were trained have undoubtedly added to the "green wave" of professionals who are using their knowledge to increase energy efficiency in buildings. Their ability to add to this energy efficiency infrastructure is very important, as documented in the dozens of career paths these students have taken, from starting new companies to adding energy efficiency services to an existing line of work. But the vision of energy auditor jobs just waiting to be filled does not match a field that is still developing. This grant application represents a more robust effort to match training outcomes with the energy efficiency needs in New Hampshire.

2.3 New Program Plan and Completion Milestones

The 2010 – 2012 two-year program plan is a continuation and expansion of the existing activities, all with goal of increasing the amount of building energy efficiency services provided in New Hampshire. The overall program plan consists of the following eight programs:

Four (4) BPI Building Analyst Training Courses These trainings will continue with the bulk of instruction provided by LRCC staff instructors rather than through a contractor. Each course covers six full days plus an optional field review day and a two-hour one-on-one field test for each student. This grant period will not include as many Building Analyst courses as in the first year because of the success of the first year's trainings, and because the boot camp and EST trainings include a Building Analyst component (see below). If the need is greater (such as from passage of the Home Star bill), BPI Envelope Professional, building energy software modeling, BPI energy audit protocol trainings may be substituted for one or more of these Building Analyst trainings.

Completion Milestones: Upon successful completion of each Building Analyst course in the first, third, fifth and seventh quarters.

Ten (10) BPI Installer Training Courses During the implementation of the Building Analyst energy auditor trainings, there has been considerable interest in building energy performance installer trainings. Coincidentally BPI is in the final stages of developing an installer certification for both Air Sealing Installer and Insulation Installer. DED with LRCC partnership will develop two 3-day courses: Air Sealing Installer and Insulation Installer that can be offered independently or together. These courses will primarily be taught in the field, both in existing homes as well as at a training facility. The BPI certification test is entirely in the field using constructed mock-ups of building assemblies. LRCC is in consultation with other Community College System of New Hampshire (CCSNH) campuses as well as secondary school career and technical education centers (CTECs) to establish one or more collaborations for this installer training. There are considerable curriculum development, space and constructed assembly needs, instructor training, and material needs that are associated with this grant request. Once the developmental hurdles have passed, ongoing installer trainings courses will become easier and less costly to offer.

Completion Milestones: Upon development of Air Sealing & Insulation curriculum in the first and second quarters, and upon successful completion of each course in the first through seventh quarters.

Six (6) Boot Camp Performance Contractor BPI Trainings The proposed "boot camp" training courses will combine the energy auditor and installer trainings. Over approximately 10 days (plus field certification tests), students will integrate their knowledge of building science and energy assessments with skill-based training installing air sealing and insulation measures. Students would take three BPI certification tests: Building Analyst, Air Sealing Installer and Insulation Installer. Upon completion the students could become accredited BPI performance contractors. All of these boot camp trainings will be held in partnership with other organizations. At least three boot camps will be continuing the partnership developed with the Home Builders and Remodelers Association of New Hampshire (HBRANH), in which this component will be part of a longer HBRANH boot camp that will provide business development skills and Certified Green Professional training. At least one of the boot camps will be in Plymouth in conjunction with PAREI and the Beacon Community program. Other boot camp trainings may be in Nashua and Berlin to coincide with Beacon Community training needs there. Depending on the need, some boot camp trainings may combine BPI Building Analyst with Envelope Professional and/or building energy software modeling trainings, assuming comparable training length.

Completion Milestones: Upon successful completion of each Boot Camp course in the first, second, third, fifth, sixth and eighth quarters.

Sixteen (16) Short-Term Energy Efficiency Trainings While the intensive BPI trainings are essential to create a trained, certified building energy professional work force, shorter term trainings are also needed. These professional trainings would vary from one-half to two days in length. The trainings would be targeted primarily towards professional audiences, such as real estate professionals, building supply center staff, home building contractors, mortgage brokers and bankers, and other sectors. Some trainings will be targeted towards high-level do-it-yourselfers and contractors through the Plymouth Area Renewable Association (PAREI), the Sustainable Energy Resource Group (SERG) in the Upper Valley, and other partners. Some of these trainings can also be targeted towards specific needs in the three Beacon Communities. Other trainings may target existing energy professionals, such as graduates of LRCC BPI courses, with a specific topic such as controlling ice dams. Altogether, there will be at least four different short-term training modules developed, and 16 trainings. All of these short-term trainings will be designed to increase the demand for and/or supply of building energy efficiency services in New Hampshire.

Completion Milestones: Upon development of four short-term training modules in the first four quarters, and in each quarter upon successful completion of each short-term training.

Two (2) Energy Services & Technology Efficiency Intensive (ESTEI) Certificate Cohorts This Efficiency Intensive program is designed to fill the wide gap between the existing two-year LRCC Energy Services & Technology (EST) Associates degree program and taking one BPI training course. The EST Efficiency Intensive (ESTEI) program is for students who want intensive training in the skills and application of an energy professional. Students would earn a LRCC ESTEI certificate for the equivalent of 20 semester-hours of course credits, in addition to two BPI certifications (Building Analyst & Envelope Professional) and specialized training in indoor air quality (IAQ). Assessment and work scope development skills would be emphasized over installer skills. A key component of the ESTEI program is a supervised practicum component, with about half of the student's effort spent honing skills in volunteer homes and other field applications. In addition to the practical experience, the ESTEI program has a significant service learning aspect with the energy assessment services provided by students. The two EST Efficiency Cohorts would be in mid-2011 and mid-2012.

Completion Milestones: Upon development of the ESTEI in the second quarter, after enrollment and start-up in the third quarter, and upon successful cohort program completion in the fourth and eighth quarters.

Seventy (70) Mentoring Support Site Visits In response to student comments from the Year 1 training program, this Mentoring Support Program will give qualified candidates supervised hands-on experience with both energy assessments and installations. Mentors will include LRCC staff, PAREI staff, and other experienced professionals selected for their knowledge and instructional capabilities. Mentors will be present at a site visit with the student, and will oversee the student as s/he develops an energy audit report and/or energy efficiency measures work scope. Energy auditing equipment will be available for student use. This service is oriented towards students who have already had BPI or equivalent training, with priority given to students who have participated in LRCC training programs. It is assumed that the student can charge a small fee to the homeowner for this service, but the bulk of the mentoring cost is covered by grant funds. Ten (10) mentoring opportunities will be available per quarter in the program.

Completion Milestones: At the end of each quarter.

Equipment Rental Program in Three (3) Sites Students in the first year also had comments about the high capital cost (\$5,000+) needed to purchase a blower door, combustion analyzer, gas leak detector, and other energy assessment equipment. Infrared thermal imagers, while not required, are increasingly used by energy auditors, and they start at about \$4,000. In addition, a cellulose insulation blower that is capable of dense-packing (as required by the new BPI Insulation Installer certification) costs \$7,000+. In order to increase the number of energy efficiency assessments and installations, we are proposing to use GHGERF grant funds to purchase capital equipment and use local rental companies to rent this equipment (blower door, infrared thermal imager and cellulose blower) at low cost to qualified BPI certified individuals. In the first year PAREI would coordinate a pilot rental in Plymouth, a Beacon community. In the second year, the rental program would extend to two other communities, potentially Nashua, Berlin (Beacon communities) and/or Lebanon (coordinated by SERG).

Completion Milestones: After the first year with the PAREI pilot, and after the second year with two additional rental programs.

Funding for Sixteen (16) Other Training Courses DED recognizes that there are other schools and organizations that are providing or may provide professional building energy efficiency training opportunities in New Hampshire. We would like to use this program continuation funding to provide funding to support other training offerings. For example, Manchester Community College has recently offered a infrared thermal imaging class, and Keene State University has offered Building Analyst trainings. Other organizations such as trade associations may be interested in developing building science trainings for their members. This pass-through program will enable other organizations to offer training programs at a reduced price. With a requested grant amount of \$100 per person per course-day (e.g., \$400 for a four-day course), we estimate this will reduce the student price of trainings by 40%. Funding for approximately sixteen (16) trainings will be offered, or two per quarter over the two-year grant period.

Completion Milestones: At the end of each quarter with successful other trainings.

2.3.1 Program Schedule

See the Completion Milestones above for timing of major program areas. Please consult the *Detailed Program Timeline* in Appendix A.

2.3.2 Staff Members and Program Partners

Authorized negotiator, program oversight, quality assurance, grant reporting & financial management:

George Bald, DRED Commissioner (authorized negotiator)

Roy Duddy, Division of Economic Development (DED), Interim Director

Christopher S. Way, DED Business Services Manager

Bob Reals, Jr., DED Energy Efficiency Program Manager

172 Pembroke Road, Concord, NH 03301 (mail: P.O. Box 1856, Concord, NH 03302)

Tel: 603-271-2341 Email: bob.reals@dred.state.nh.us

Lead Subcontractor-Partner:

Mark Edelstein, President

Thomas Goulette, Vice-President for Academic Affairs

Andy Duncan, Program Coordinator

Wesley Golomb, Professor

Carl Daniels, Professor

Lakes Region Community College 379 Belmont Road, Laconia, NH 03246
Tel: 603-524-3207 Email: tgoulette@ccsnh.edu

Supporting Subcontractor-Partner

Sandra Jones, Co-director
Craig Cadieux, Energy Solutions Manager
Plymouth Area Renewable Energy Initiative (PAREI), P.O. Box 753, Plymouth, NH 03264
Tel: 603-536-5030 Email: sandra@plymouthenergy.org

2.4 Key Partners and Allies

In this grant DED would continue its collaboration with lead partner Lakes Region Community College (LRCC). In addition Plymouth Area Renewable Energy Initiative (PAREI) is joining the team as a supporting partner.

We also plan to continue and enhance our collaboration with all of New Hampshire's six other community colleges:

- Great Bay Community College
- Manchester Community College
- Nashua Community College
- New Hampshire Technical Institute
- River Valley Community College
- White Mountain Community College

Already indentified key allies during the grant period include:

- Home Builders and Remodelers Association of New Hampshire (HBRANH)
- Keene State University (KSU)
- Plymouth Energy Commission (PEC)
- Sustainable Energy Resource Group (SERG)

We anticipate working with a number of other allies – other educational institutions, not-for-profit organizations, utilities, community action agencies, trade associations and other entities.

2.5 Estimated Number of Hours Allocated to Each Major Task/Milestone

LRCC has developed a preliminary work plan with estimated hours for LRCC staff, PAREI staff, other collaborators, and contracted labor. Please note these estimated hours are preliminary.

	<u>Total Hours*</u>
BPI Building Analyst Training Courses	750
BPI Installer Training Courses	1,670
Boot Camp Performance Contractor BPI Trainings	1,720
Short-Term Energy Efficiency Trainings	620
EST Efficiency Intensive Certificate Program	1,440
Mentoring Support Site Visits	280
Equipment Rental Program^	250
Funding for Other Training Courses^	80

Overall Program Development[#] 380
TOTAL 7,190

*Total hours include all direct and estimated subcontracted hours, but do not include overhead and indirect hours

^Most funds for the Equipment Rental Program go to purchasing equipment; and most funds for Other Training Courses program go to funding other trainings, where the hours have not been estimated.

[#]Overall Program Development includes grant reporting, overall marketing, instructor trainings, and other components not attributable to individual programs.

3. Program Benefits

3.1 Energy Savings

This infrastructure development program indirectly results in energy savings primarily from the supply of trained energy efficiency professionals who will then perform weatherization services in homes and other buildings. The quality and quantity of the weatherization services performed can directly impact the amount of energy saved, and this program will both increase the quality and quantity of energy efficiency work in New Hampshire. Volunteer homes and other buildings used as part of the trainings will also achieve greenhouse gas reductions by implementing recommended We envision some direct energy savings by implementing air sealing, insulation and other energy efficiency measures in real buildings as part of the installer trainings. It is difficult to predict the amount of energy savings from these projects, but likely the indirect savings will be much greater.

While the bulk of the grant activities would be aimed at increasing the *supply* of energy services, some activities will also indirectly result in greenhouse gas reductions by increasing the *demand* for these services. For example, short-term trainings of real estate professionals will underscore the role of energy performance in the value of a home, and will thus increase the demand for energy efficiency home upgrades.

3.2 Cost-Effectiveness

Cost-effectiveness is one of the key features of a community college education, and this program with lead partner LRCC provides a very cost effective suite of energy professional trainings. In particular the cost-effective features of this program include:

- Providing short-term trainings, so professionals can spend more time earning money rather than spending money.
- Generally require a cost-share in the form of a tuition payment, to reduce the free-loader effect.
- Include nationally recognized BPI certifications to cost-effectively raise the energy performance bar in this field.
- Leverage the use of program partners' staff labor and infrastructure when possible to reduce expenses.
- Provide creative solutions to financial hurdles such as the high cost of energy diagnostic and installation equipment

- Promote health and safety in residences and other buildings, thereby reducing health care costs of building occupants.

3.3 Promote: 3.3.1 Market Transformation; 3.3.2 Innovative Technologies; 3.3.3 Economic Development; 3.3.4 Reduced Energy Costs

Market Transformation (3.3.1) is a key element of this grant proposal. These Efficiency Training Program grant components will improve the quantity and quality of trained energy performance professionals, a key stumbling blocks from achieving the 30,000+ annual home weatherizations necessary to implement the New Hampshire Climate Action Plan. This infrastructure development is a crucial ingredient for achieving market transformation of the building energy efficiency field. With this grant application, the project team is using its experience from the first year to implement programs where the need is greatest, such as Beacon Communities, further amplifying its market transformation benefits. And grant components will also help increase the demand for energy efficiency services, from volunteer homes that will be getting energy assessments to training real estate professionals about the benefits of energy efficiency.

This Efficiency Training Program grant will encourage the adoption of Innovative Technologies (3.3.2) by focusing on performance goals in homes and other buildings, and encouraging manufacturers to meet these challenges with new materials and services. At the core of this grant is Economic Development (3.3.3), particularly in the home energy performance assessment and installation field. With market transformation, this grant is leading the way in New Hampshire for a dramatically expanded building energy field. Everything in this grant supports the new green economy, with triple-bottom-line benefits: job creation – energy cost savings – and environmental protection. Thus Reduced Energy Costs (3.3.4) is also at the core of this proposal. DED, LRCC, PAREI, BPI and other allies all share a common goal of promoting economic development while reducing energy costs.

3.4 Effectively Measure and Verify Program Performance Against Stated Goals

The training programs have inherent components that allow for measurement of program performance such as number of courses offered, students enrolled, course evaluations, etc. We will also measure our success in the number of collaborations made, and in our scope of training offerings both in terms of breadth and geographic diversity

3.5 Promote Collaboration

Collaboration is an essential feature with this Efficiency Training Program grant proposal. DED collaborating with lead partner LRCC and supporting partner PAREI. In addition LRCC has already made large and small collaborations with other community colleges, other educational institutions, numerous organizations, and the dozens of homeowners who allowed students into their homes. These collaborations will continue and be strengthened with, for example, the short-term training programs (collaborating with trade associations and other organizations) and the funding for training courses at other campuses and organizations.

4. Measurement and Verification

4.1 Measurement and Verification of Program Performance Against Stated Goals and Program Benefits

Because this Efficiency Training Program is an infrastructure development grant proposal, the energy savings are indirect. Instead the measurement and verification focus will be on the student outcomes and the market transformation qualities of the training programs. As stated in Section 3.4, the training courses and similar programs can be measured by the number of courses offered, students enrolled, BPI certifications earned, course evaluations, etc.

In addition to these standard evaluation metrics, we plan to extend the evaluation to more innovative tools and data points. Qualitative data, such as post-training student stories, can be very helpful in providing a fuller picture of outcomes. We plan to use online surveys, possibly social networking media and similar tools to track the progress of students after the students have graduated from these training programs. We hope to share a number of success stories.

The project team is very interested in documenting, to the extent feasible, the actual energy savings from the training program. However, at this time we do not have the methodology to do so. Nor have we budgeted for what would likely be a laborious task of connecting training outcomes with actual energy efficiency projects. The grant team welcomes the opportunity to undertake this task, with the caveat that additional grant funds would be necessary in order to implement it.

5.1 Proposed Budget Supporting Narrative

Please note again that the budget has been developed on a program basis, with each program running the length of the two year grant term. The quarterly budget shown assumes an even distribution of program and grant funding over eight quarters, which approximates the actual distribution of programs.

The budgeted amounts for each program area are shown in more detail in Appendix D: *Detailed Budget by Program*. Labor amounts include labor of partners LRCC and PAREI, with oversight labor by DED funded through another grant program. Benefits and fringe are approximately 35% of total wage costs. A significant portion of the Contracted Labor and Services category covers the \$250 per student cost that the Building Performance Institute (BPI) bills LRCC as an affiliate to process each BPI certification application. Another major portion of the Contractor category will go to other institutions to help pay for training programs beyond LRCC. Some advertising and marketing efforts will utilize allies such as SERG and PAREI to help spread the word about training programs through already established networks, and web-based marketing will also be used.

Originally \$500 was budgeted to cover 50% of the BPI Building Analyst course tuition, and this figure proved to be too low. There are several major factors that increased the cost of providing these courses. One is that BPI charges affiliates a \$250 administrative fee for each certification application. This was not included in the original budget. Second, the cost of coordinating and providing significant field instruction and individualized field testing is much greater than classroom instruction costs. It was not adequately budgeted for in the original grant, but this field component is an essential

June 1, 2010

5.1 Proposed Budget Using GHGERF 2010 RFP Budget Worksheet

NH PUC Greenhouse Gas Emissions Reduction Fun 04-30-10 RFP Proposed Budget Worksheet															
Efficiency Training Program															
NH Division of Economic Development															
Program Title:	REQUESTED AMOUNTS FOR PROGRAM														
	Applicant Name:														
USE OF FUNDS	Year 1				Year 2				Year 3						
	Q1	Q2	Q3	Q4	Total Year	Q1	Q2	Q3	Q4	Total Year	Q1	Q2	Q3	Q4	Total Year
EXPENSES															
Salaries & Wages	\$22,465	\$22,465	\$22,465	\$22,465	\$87,395	\$22,465	\$22,465	\$22,465	\$22,465	\$87,395	\$22,465	\$22,465	\$22,465	\$22,465	\$87,395
Benefits/Fringe	\$11,676	\$11,676	\$11,676	\$11,676	\$35,028	\$11,676	\$11,676	\$11,676	\$11,676	\$35,028	\$11,676	\$11,676	\$11,676	\$11,676	\$35,028
Contracted Labor & Services	\$49,574	\$49,574	\$49,574	\$49,574	\$148,722	\$49,574	\$49,574	\$49,574	\$49,574	\$148,722	\$49,574	\$49,574	\$49,574	\$49,574	\$148,722
Rent & Utilities	\$3,875	\$3,875	\$3,875	\$3,875	\$11,625	\$3,875	\$3,875	\$3,875	\$3,875	\$11,625	\$3,875	\$3,875	\$3,875	\$3,875	\$11,625
Advertising & Marketing	\$4,370	\$4,370	\$4,370	\$4,370	\$13,110	\$4,370	\$4,370	\$4,370	\$4,370	\$13,110	\$4,370	\$4,370	\$4,370	\$4,370	\$13,110
Travel & Mileage Reimbursement	\$1,518	\$1,518	\$1,518	\$1,518	\$4,554	\$1,518	\$1,518	\$1,518	\$1,518	\$4,554	\$1,518	\$1,518	\$1,518	\$1,518	\$4,554
Tools, Supplies, Subscriptions	\$13,563	\$13,563	\$13,563	\$13,563	\$40,689	\$13,563	\$13,563	\$13,563	\$13,563	\$40,689	\$13,563	\$13,563	\$13,563	\$13,563	\$40,689
Other Current Expenses (such as office expense, insurance, maintenance, repairs, taxes, legal, etc.)	\$14,818	\$14,818	\$14,818	\$14,818	\$44,454	\$14,818	\$14,818	\$14,818	\$14,818	\$44,454	\$14,818	\$14,818	\$14,818	\$14,818	\$44,454
Cost of Goods Installed	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
General Overhead & Profit*	\$13,963	\$13,963	\$13,963	\$13,963	\$41,889	\$13,963	\$13,963	\$13,963	\$13,963	\$41,889	\$13,963	\$13,963	\$13,963	\$13,963	\$41,889
TOTAL EXPENSES	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466
Capital Invested in Building Improvements					\$0					\$0					\$0
Funds used for Loan Fund capital					\$0					\$0					\$0
Loan Fund credit enhancement (such as interest rate buy-down)					\$0					\$0					\$0
TOTAL USE OF FUNDS	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466	\$135,822	\$135,822	\$135,822	\$135,822	\$407,466
SOURCES OF FUNDS															
Applicant Cash Contribution					\$0					\$0					\$0
Applicant In-Kind Contribution	\$4,786	\$4,786	\$4,786	\$4,786	\$14,358	\$4,786	\$4,786	\$4,786	\$4,786	\$14,358	\$4,786	\$4,786	\$4,786	\$4,786	\$14,358
Program Participant Contribution	\$73,638	\$73,638	\$73,638	\$73,638	\$220,914	\$73,638	\$73,638	\$73,638	\$73,638	\$220,914	\$73,638	\$73,638	\$73,638	\$73,638	\$220,914
Loans & Other Financing					\$0					\$0					\$0
Forward Capacity Market Payments					\$0					\$0					\$0
Other Grants	\$750	\$750	\$750	\$750	\$2,250	\$750	\$750	\$750	\$750	\$2,250	\$750	\$750	\$750	\$750	\$2,250
GHGER Fund (this proposal)	\$56,650	\$56,650	\$56,650	\$56,650	\$169,950	\$56,650	\$56,650	\$56,650	\$56,650	\$169,950	\$56,650	\$56,650	\$56,650	\$56,650	\$169,950
TOTAL SOURCES OF FUNDS	\$135,824	\$135,824	\$135,824	\$135,824	\$407,472	\$135,824	\$135,824	\$135,824	\$135,824	\$407,472	\$135,824	\$135,824	\$135,824	\$135,824	\$407,472
GHGER Funds as a % of TOTAL					42%					42%					42%

Note1: for General Overhead & Profit, please indicate to what extent any amounts are proposed to be contingent on program performance.
 Note2: Budget was created by two-year program area rather than by quarter, thus estimated even distribution over quarters

5.1 Continued Proposed Budget Supporting Narrative

ingredient for student success. And third, the original grant also assumed relatively large (14+) class sizes, but in the haste to quickly start the program in 2009, all of the first three classes (Laconia, Littleton and Nashua) had 7 – 9 students per class. Because of significant fixed costs per class, the cost per student rose dramatically for these small classes while grant compensation was fixed. Later classes were larger, in some cases too large at 22 students.

These lessons learned result in this grant proposal where LRCC will set up a more equitable reimbursement system for that includes a course development cost as well as a smaller per-student cost. Generally, the formula will aim to achieve approximately \$100 per student-course-day, where a 6-day training would aim to achieve a grant reimbursement of approximately \$600, with some as per course reimbursement and the rest as a per-student reimbursement. It should be noted that the average market price for a BPI Building Analyst course is about \$1,800 per student, while LRCC’s cost is about \$1,500 per student.

5.2 Details on Key Personnel

<u>Person</u>	<u>Position</u>	<u>Hourly Rate</u>
*Bob Reals	Business Energy Efficiency Manager, DRED-DED	\$60
*Andy Duncan	Program Coordinator/Professor (anticipated), LRCC	\$52
*Wesley Golomb	Energy Services & Technology Professor, LRCC	\$54
*Carl Daniels	Energy Services & Technology Professor, LRCC	\$52
*Sandra Jones	Co-Director, PAREI	\$40
-----	Administrative Assistant, LRCC	\$28
-----	BPI Proctor (consultant)	\$65

*Approximate hourly rate for salaried personnel assumes a 40 hour work-week. It includes benefits (medical, paid time off, retirement, etc.), but does not include institutional overhead

5.3 Indirect Cost Rates or General Overhead

The overall “Other Current Expenses” and “General Overhead” cost rate for lead partner LRCC is 27.2% which includes both LRCC’s own indirect cost rate as well as the rate for the overall Community College System of New Hampshire. This rate has been determined from data from LRCC and CCSNH staff. The attached GHGERF 2010 Budget Worksheet budget includes both an “Other Current Expenses” as well as “General Overhead & Profit” line items. The overall 27.2% rate covers both line items, with approximately a 10.8% rate attributed to Other Current Expenses, and a 16.4% rate for “General Overhead.” LRCC is not-for-profit educational institution. The indirect cost rate for supporting partner PAREI is 15%, solely for general overhead.

5.4 Other Potential Funding Sources

Tuition revenue has been and will continue to be a significant source of other revenue. Approximately 60% of the programs’ cost is to be collected from tuition revenue. These programs are not yet self-supporting for several reasons. First, the cost of developing and providing these field-based trainings is greater than typical courses, as noted in Section 5.1. Second, in our effort to promote market

transformation we have set prices low enough to encourage students from wide backgrounds to take the training courses.

Other grant monies will be used to extent possible with these training programs. Supporting partner PAREI will be contributing supplies towards weatherization installer training through a grant with the New Hampshire Electric Cooperative. The Home Builders and Remodelers Association of New Hampshire is also applying for a continuation of GHGERF grant funding, and if funded, their grant will help pay for the costs of developing the overall weatherization Boot Camp programs. The staffing position for DED coordination is primarily funded from other grants, but this has not been specifically listed.

Participants in past training courses have been funded, in part, by electric and natural gas utilities, NH Department of Employment Security, county community action weatherization agencies, and employers. Such cost-share funding will likely continue, but has not been specifically included other than "Program Participant Funding."

The project team will encourage other funding sources when developing programs such as the short-term trainings and other training courses.

6.1 Applicant's Prior Experience

6.1.1 Identify All Persons Employed by Skill and Qualifications

Bob Reals, Business Energy Efficiency Manager at DRED-DED has over 25 years experience running energy efficiency programs, including programs at NH Electric Cooperative and Laconia Housing Authority.

Andy Duncan, Ph.D., Program Coordinator/Professor (anticipated) at LRCC has been teaching the Building Analyst and Envelope Professional as a subcontractor to LRCC. Prior to his anticipated move to LRCC he has been co-owner of Building Energy Technologies, LLC.

Wesley Golomb, EST Professor at LRCC is the founding professor for the Energy Services and Technology program at LRCC. Prior to LRCC, he directed the Energy Codes office at NH PUC.

Carl Daniels, EST Professor at LRCC came to LRCC in 2009 with many years experience in both the heating, ventilation and air conditioning (HVAC) and building management fields

Sandra Jones, Co-Director, established PAREI in 2004 and has excellent track record of developing an "energy raiser" model to cost-effectively provide renewable energy and energy efficiency measures in buildings.

Craig Cadieux, Energy Solutions Manager, has worked with PAREI to provide energy efficiency and renewable energy programs, and has many years of facility management experience.

6.2 List Known Subcontractors

Lakes Region Community College (LRCC)

Plymouth Area Renewable Energy Initiative (PAREI)

Please see Section 2.4 for a listing of key partners and allies.

6.3 Criminal Convictions by the Applicant's Officers, Directors or Other Principals

None.

Appendix A: Detailed Program Timeline

<p>Quarter 1: October – December 2010</p>	<ul style="list-style-type: none"> • <u>Preparation:</u> Prep BPI Installer Trainings with Collaborators, Plan Mentoring Program with PAREI, Plan Short-Term Trainings, Plan Equipment Rental Program • <u>Teaching:</u> BPI Building Analyst, BPI Installer, Short-Term Trainings • <u>Support & Collaboration:</u> Fund Other Trainings • <u>Monitoring & Evaluation:</u> Renew/revise monitoring and evaluation systems
<p>Quarter 2: January – March 2011</p>	<ul style="list-style-type: none"> • <u>Preparation:</u> Additional BPI Installer Trainings Prep, Plan Additional Short-Term Trainings, Plan EST Intensive Program • <u>Teaching:</u> BPI Boot Camp, BPI Installer Courses, Short-Term Trainings • <u>Support & Collaboration:</u> Start Mentoring Program, Fund Other Trainings, Start Equipment Rental • <u>Monitoring & Evaluation:</u> Evaluation and Previous Quarter Reporting
<p>Quarter 3: April – June 2011</p>	<ul style="list-style-type: none"> • <u>Preparation:</u> Plan Additional Short-Term Trainings, EST Intensive Program Enrollment • <u>Teaching:</u> BPI Building Analyst, BPI Boot Camp, BPI Installer Courses, Short-Term Training • <u>Support & Collaboration:</u> Mentoring Program, Fund Other Trainings, Equipment Rental • <u>Monitoring & Evaluation:</u> Evaluation and Previous Quarter Reporting
<p>Quarter 4: July – September 2011</p>	<ul style="list-style-type: none"> • <u>Teaching:</u> BPI Boot Camp, Short-Term Training, EST Intensive Program • <u>Support & Collaboration:</u> Mentoring Program, Fund Other Trainings, Equipment Rental • <u>Monitoring & Evaluation:</u> Evaluation and Previous Quarter Reporting
<p>Quarter 5: October – December 2011</p>	<ul style="list-style-type: none"> • <i>Continuation of Previous Quarters – similar cycle</i>
<p>Quarter 6: January – March 2012</p>	<ul style="list-style-type: none"> • <i>Continuation of Previous Quarters – similar cycle</i>
<p>Quarter 7: April – June 2012</p>	<ul style="list-style-type: none"> • <i>Continuation of Previous Quarters – similar cycle</i>
<p>Quarter 8: July – September 2012</p>	<ul style="list-style-type: none"> • <i>Continuation of Previous Quarters – similar cycle</i>
<p>Year 3: October 2012 – September 2013</p>	<ul style="list-style-type: none"> • <i>Continuation of Previous Quarters adding new programs and collaborations</i>

Appendix B: Letters of Support



June 1, 2010

Jack Ruderman
Director, Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

Dear Mr. Ruderman:

Lakes Region Community College is again pleased to partner with the New Hampshire Division of Economic Development in proposing an *Energy Efficiency Training Program* as a continuation grant proposal to the NH PUC's Greenhouse Gas Emissions Reduction Fund.

With experience gained from the first year of our original grant and with additional staffing and expertise, LRCC is eager to expand into other areas of need, such as weatherization installer training, mentoring support, and short-term professional programs. We also look forward to collaborating with other community colleges, non-profit organizations, and other groups throughout New Hampshire to build an infrastructure of trained energy efficiency professionals.

New training programs such as the Efficiency Intensive and Mentoring programs will better utilize the staff and facility resources of the College's Energy Services and Technology (EST) program and help meet the needs of beginning energy professionals. These programs also open up avenues for students to continue their education at LRCC in the EST degree program. This year our EST program has been recognized by the New England Board of Higher Education with a state excellence award and has also received its second Congressionally-directed grant in support of its continuing development.

LRCC is proud of its important educational role in the promotion of energy efficiency and sustainable energy. We look forward to continue our positive working relationship with DED and to help minimize greenhouse gases throughout New Hampshire.

Please feel free to contact Tom Goulette, Vice President of Academic Affairs, Andy Duncan, Program Coordinator, or myself should you have questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark G. Edelstein".

Mark G. Edelstein, Ph.D.
President



Plan For Your Energy Future

Jack Ruderman
Director, Sustainable Energy Division, Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

May 27, 2010

Dear Jack,

The Plymouth Area Renewable Energy Initiative is pleased to partner with the NH Department of Resources and Economic Development (DRED) and the Lakes Region Community College (LRCC) on the continuation of their 2009 GHGERF grant regarding their energy efficiency professional training program. We are excited about the possibility of utilizing the PAREI Energy Audit and Housewarming Process developed through PAREI's 2009 GHGERF grant as a way to further the learning opportunities for professionals seeking hands on experience in the field of weatherization.

We are doubly interested in making this collaboration happen due to the current demand to step up the training and capacity building among contractors in the Plymouth area due to the influx of federal money for weatherization projects via the new Beacon Community Grant. Combining PAREI's ready audience, with Beacon Retrofit Goals and LRCC's expertise in weatherization training, this collaboration would have a big impact. Because the Beacon federal grant was funded at 50%, PAREI fears that field training may not be the priority for funding, making this grant with LRCC all the more important if we are to meet the Beacon goals and fully utilize the new Beacon loan program available to homeowners seeking retrofits.

PAREI would like to collaborate with LRCC in the following ways:

- ❑ **Co-Sponsor BPI Certifiable Weatherization Installer Trainings with LRCC in the Plymouth area in conjunction with the Beacon Grant Goals and Timeline.**
- ❑ **Use the Housewarming Sites to conduct one day Air Sealing and Insulation Trainings, combining the volunteer labor of the training participants with local volunteers to complete Weatherization installations in the Plymouth area.**
- ❑ **Provide in depth Job Shadowing Opportunities with PAREI Energy Auditors for BPI Building Analyst Graduates.**
- ❑ **Develop and Provide an Installation and Diagnostic Equipment Rental Program for trained auditors/installers in partnership with an existing local rental store. Document this model and expand it to the two other Beacon Communities.**

We welcome this collaboration to further the work started by DRED/LRCC and to utilize the expertise and the large number of educated and eager homeowners developed through the funding received through PAREI's year one GHGERF grant.

Sincerely,
Sandra Jones
Sandra Jones
Co-Director

Sustainable Energy Resource Group
432 Ulman Rd., Thetford Center, VT 05075
802-785-4126 • SERG@valley.net • www.SERG-info.org

June 1, 2010

Jack Ruderman
Director, Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

Dear Jack,

I am writing in support of Lakes Region Community College's "Efficiency Training Program" RGGI application. SERG has been collaborating with LRCC to advance energy trainings in the Upper Valley region of NH. We recently helped them recruit local contractors to participate in the ongoing BPI certification training, currently taking place in Lebanon. For that training we also solicited homes for field training and testing purposes – more than 50 homeowners from SERG's list in the Upper Valley region contacted Andy Duncan offering their homes for training purposes.

We also invited LRCC to participate in a local business leaders breakfast attended by more than 120 local business leaders. As part of that meeting we held a roundtable discussion with representatives of LRCC, PSNH, NH Electric Coop, Efficiency Vermont and other Upper Valley energy organizers and stake holders about promoting residential energy weatherization programs in the region.

In the coming year, we are hoping to work with LRCC to help organize and promote auditor and installer trainings in the Upper Valley region. SERG also hopes to work with LRCC to develop a new training program for real estate agents on technical and financial issues and advantages related to home weatherization. One of SERG's board members is COO of Lang, McLaughry, Spera, a prominent real estate broker in Vt. and NH who is very interested in helping to develop this training. Finally, SERG is interested in working with LRCC to explore options for setting up an equipment loan service to auditors in the Upper Valley region who do not own their own blower door and other diagnostic equipment.

SERG has embarked on a major initiative called Upper Valley Home Energy Assistance Team (UV-HEAT) to promote building weatherization throughout the region. We believe LRCC's programs will be very helpful in that effort and we are looking forward to collaborating with them as a project partner. We hope the PUC is supportive of LRCC's request for future RGGI support to help implement these important programs. Please feel free to contact me if you have any questions

Sincerely
Bob Walker
Director, SERG

SERG – Where Efficiency Makes Sense



June 1, 2010

Merritt Peasley
President

Roger Demanche, CGA, CGP
First Vice President

Bruce Sullivan, CGP
Vice President/Treasurer

Tricia Grahame
Vice President/Secretary

Dianna Beaton, CGA, CGP
Vice President of Associates

Mark A. Pedercini,
GMB, CAPS, CGB, CCP
Immediate Past President

Everett Louder
NAHB State Representative

Dianna Beaton, CGA, CAPS
Associate National Director

Mark Flanders, GMB, CGP, CGP
National Director

Kendall Buck, CAE
Executive Vice President

Dave Sawman
Director of Member Services

Sharon Wayman
Accounting Manager

Denise LaRochelle
Administrative Assistant

Elizabeth Fischer
Build Green NH Program Manager
www.buildgreennh.com

Jack Ruderman
Director, Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

Dear Jack,

The Homebuilders and Remodelers Association of New Hampshire/Build Green NH supports the weatherization training proposals in the New Hampshire Department of Economic Development in partnership with Lakes Region Community College. Through Build Green NH and the Construction Institute of New Hampshire and GHGERF grant we have been able offer builders and remodelers BPI training and in the next two years we look forward to LRCC's key involvement in our upcoming Retrofit Boot camp for contractors. The LRCC team will provide a 9 or 10 day module with intensive training on residential building analysis, air sealing and insulation. This depth of training, with an installer component is important for transitioning contractors and builders to the new green economy. We also like the fact that this component of the boot camp leads to multiple BPI certifications.

Because it is a stand-alone module, LRCC can register students for this component of the boot camp. Build Green NH will take the lead in developing the overall boot camp program, marketing the program, and will share responsibility with LRCC in determining training locations and other logistics.

On an ongoing basis we look forward to developing other training opportunities for New Hampshire's builders and remodelers. We are committed to making the installer training happen – key element. Developing the curriculum, facilities and BPI testing apparatus is going to be costly, so RGCH grant is crucial for this to happen.

Sincerely,


Kendall Buck
Executive Vice President



Division of Continuing Education and Extended Studies

Keene State College

229 Main Street, Keene, New Hampshire 03435-2605
603 358-2290 FAX 603 358-2569 www.keene.edu/conted/

Jack Ruderman
Director, Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

May 28, 2010

Dear Mr. Ruderman:

The Keene State College is very interested in collaborating, with NH Division of Economic Development and the Lakes Region Community College, on the continuation of their 2009 GHGERF grant program regarding energy efficiency professional training. Our College offers Building Professional Institute (BPI) training and we welcome being listed as an Ally on the proposal.

As an Ally we would work with the program Partners to offer weatherization training and job development throughout the state. We would also offer some version of the program's scholarship funding to our students. We would focus these scholarships on students planning to start or expand a weatherization business. We understand one of the strengths of this program is job creation and job retention for skilled weatherization professionals.

Keene State looks forward to collaborating with the proposal's Partners and other Allies on the shared goals of reducing greenhouse gas emissions and increasing energy efficiency and savings for New Hampshire's residents.

Sincerely,

A handwritten signature in cursive script that reads "Robert L. Baker".

Robert L. Baker
Director of Continuing Education and Extended Studies
Keene State College

Appendix C: Resumes of Key Personnel

Bob Reals, Jr.
603-717-5808 bob.reals@dred.state.nh.us

172 Pembroke Rd – PO Box 1856
Concord, NH 03302

SUMMARY

Business and Energy Professional experienced in the marketing, design, implementation, and evaluation of residential and commercial energy efficiency and renewable energy programs. Managed millions of dollars of construction and energy related projects. Advise clients regarding energy efficiency, load management, and sustainable energy issues. Project Manager with extensive technical, financial, operational, and project implementation experience related to the delivery of sustainable building development and related services.

EXPERIENCE

NH DRED - Division of Economic Development, Concord, NH 03301 2010 – Current
Business Energy Efficiency Manager

Division of Economic Development - Business Resources Center's primary point of contact for NH businesses regarding energy efficiency and renewable energy options. Coordinate business energy efficiency programs and policy planning initiatives as well as facilitating collaboration between public and private entities advocating for sustainable energy practices. Manage ARRA and GHGER funded programs.

BUSINESS & ENERGY SERVICES, Plymouth, NH 2001–2005 & 2008–2009
Senior Consultant, d.b.a. Business & Energy Services

Deliver services for sustainable development, construction management, energy efficiency, and renewables.

- Prepared an Energy Benchmarking Analysis Study, with detailed energy efficiency recommendations, for Plymouth State University. Utilized EPA's Energy Star Portfolio Manager benchmarking system, along with other energy use comparisons, for all campus buildings.
- Project Coordinator for Plymouth Area Renewable Energy Initiative's Building Weatherization program. Prepared Regional Greenhouse Gas Initiative grant application, coordinating BPI Energy Analyst training, organizing Button Up NH workshops, educating building owners in the science of weatherization, facilitating the implementation of weatherization improvements.
- Assisted New York State Energy Research and Development Authority with the presentation of NYSERDA's energy and environmental offerings to NY's 47 municipal and 4 rural co-op electric systems.

LACONIA AREA COMMUNITY LAND TRUST, INC, Laconia, NH 2005 – 2008
Housing Development Director

- Planned and set parameters for multi-family real estate development projects. Identified and procured building sites. Assembled the development teams. Lead building design team to incorporate Leadership in Energy and Environmental Design (LEED) building design planning.
- Procured funding through various sources including NHHFA's LIHTC, FHLB-Boston's AHP, CDFA's CDBG, USDA Rural Development, NeighborWorks America, Rural LISC, commercial banks, and others.
- Managed bid and RFP processes. Managed and clerked construction process. Satisfied funder and investor expectations. Managed punch list process and project close out. Closed out one 18 unit project. Managed a six unit \$1.3 million gut-rehab project from bidding and value engineering to occupancy.
- Clerk of the Works responsibilities included daily on-site inspections and invoice management. Implemented change orders to ensure building achieved 5 star+ Energy Star rating. Coordinated the fund raising and installation of 1 kW of solar electric panels for net metering. Also managed the design, government approvals, and construction funding of a new 32 unit townhouse style development.

NEW HAMPSHIRE ELECTRIC COOPERATIVE (NHEC), Plymouth, NH 1995 – 2001
Non-profit electric utility serving the needs of 80,000 member/owners in 115 NH towns.

Energy Services Manager

Directed the design and implementation of for-profit technical field installation services along with non-profit NH Public Utilities Commission mandated statewide energy efficiency and load management programs.

- Supervised staff and contractors for the delivery of \$12 million in energy efficiency products and services to over 10,000 residential and business consumers. Worked with NH-based electric utilities (National GRID, PSNH, and Unifil) to design eight NHSaves energy efficiency programs for consumers.
- Managed the development and implementation of a National Rural Electric Co-op Association Key Account program. Coordinated key account outreach leading to large consumers' purchasing energy and services. Coordinated energy efficiency services for a number of multi-building complexes.
- Reviewed the technical specifications of hundreds of energy efficiency projects. These projects included lighting, HVAC, insulation, air sealing, carpentry, electrical, power quality, water heating, heat pump water heating, remote metering, refrigeration, process equipment, and other technologies.

HEC, INC., ENERGY SERVICES, Natick, MA (Acquired by AMERESCO, Framingham MA) 1992 – 1995
Northeast Utilities' Select Energy - Energy & Design Services subsidiary with 60 consultants and engineers.

Senior Manager, Utility Consulting

Developed and implemented marketing services, program design services, program evaluation services, and data services for utility clients. Identified business leads, prepared proposals, and delivered timely results.

- Directed the design of a business-to-business marketing program for American Electric Power / Ohio Power. Lead a utility and business efficiency work group in developing energy audit / financing services. Managed the production of energy audit reports for 32 businesses.
- Managed the design and delivery of program impact and process evaluations for Long Island Lighting Company, NEPSCO (now National GRID), and Northeast Utilities. Inspections include 477 businesses.

ENERGY INVESTMENT, INC., (Acquired by Duke Energy) Boston, MA 1991 – 1992

Manager, Utility Consulting (Energy efficiency engineering consulting firm.)

Designed a new business line to provide energy efficiency audit software services to utility clients.

MASS-SAVE, INC., (Acquired by Conservation Services Group) Waltham, MA 1987 – 1991

Manager of Information Services (Energy efficiency non-profit business sponsored by 30 energy utilities)

Directed data processing operations for 120,000 residential and 6,000 commercial energy audits.

EDUCATION

Master of Business Administration, Major: Management Information Systems; University at Albany
BA, Major: Political Science; Minor: Environmental Studies; University at Albany, State University of NY

PROFESSIONAL DEVELOPMENT

Numerous Finance, Construction Management, and Green Building Design trainings. Certified Demand-Side Services and Energy Procurement Professional training by the Association of Energy Engineers. CEM related training associated with building systems, pressure diagnostics, new building technologies, lighting, HVAC, motors, refrigeration, and other energy engineering audit processes. BPI Energy Analyst certified.

MEMBERSHIPS

Local Energy Committee Working Group, NH Sustainable Energy Association, Plymouth Area Renewable Energy Initiative - DOE Million Solar Roofs Partnership (plymouthenergy.org) Prior member of Northeast Energy Efficiency Partnerships' NEEP Utility Managers Group. Prior member Plymouth Energy Committee, New Hampshire Electric Cooperative (nhec.com) Board of Director, AEE and Association of Energy Services Professionals (former AESP Northeast Chapter Treasurer for ten years).

Andrew P. Duncan

16 Kimball Street

Concord, NH 03301

603-227-9374h andyduncan@comcast.net / aduncan@bldenergytech.com 603-724-4977w

SUMMARY

Program manager focused on New Hampshire's building energy performance field. Seasoned and diverse background in business, academic and not-for-profit sectors. Collaborative decision maker with strong environmental values. Perceptive and diligent worker with strong analytical, communication and management skills.

EXPERIENCE

Adjunct Instructor, Lakes Region Community College, Laconia, NH 2009 – Present
Program Coordinator anticipated 2010

- With short notice successfully lead a statewide BPI energy auditor training course program, teaching over 100 students in seven classes.
- Prepared and taught Building Analyst training sessions, coordinated intensive field tests, and provided field-based learning opportunities in over 40 homes.
- 2010+ Program Coordinator role will add managerial responsibility for a wider variety of short-term energy trainings and related programs.

Principal, Building Energy Technologies, LLC, Bow, NH 2006 - Present

- Co-created a preeminent energy performance contracting and consulting business.
- Conducted a wide variety energy efficiency installations as well as building energy assessments.
- Developed management systems for a growing business.
- Provided high value-added services with excellent customer relations.

Vice-President of Operations, A+ Energy Services, Hampstead, NH 2003 - 2006

- Managed private and utility-funded energy efficiency projects serving over 2,000 households.
- Built constructive relationships with customers, employees, suppliers and subcontractors.
- Leveraged intensive use of technology to grow the business.

Assistant Professor of Environmental Science, New England College Henniker, NH 1997 - 2003

- Taught a wide range of environmental topics: introductory science, policy, economics, ethics, impact assessment, geographic information systems, behavior, and forest management.
- Provided leadership in service learning, internship placement, career preparation, online education, and laboratory/field methods.

Lecturer, Research Assistant and Teaching Assistant, University of Michigan, Ann Arbor, MI 1989 - 1996

- Research assistance affiliated with Environmental Extension Network and National Pollution Prevention Center for Higher Education.
- Lecturer for Greening the Maize & Blue, Ecological Issues and other courses.

Andrew P. Duncan

p. 2

Program Coordinator, Association of New Jersey Recyclers, 1987 - 1989
Bridgewater, NJ

- Managed a recycling trade organization -- prepared communications, organized events, interfaced with media, managed a member database, etc.

EDUCATION

University of Michigan, School of Natural Resources & Environment, Ann Arbor, MI 1989 - 1997

Ph.D., Resource Behavior, 1997 Dissertation title: *Source Reduction in Context: A Conceptual Framework and Field Study of Waste Prevention Behavior*
M.S., Resource Policy and Behavior, 1991

Macalester College, St. Paul, MN 1983 - 1985
Majors in Environmental Studies (Economics Core) & Geology,
Minor in Philosophy, B.A., 1985, magna cum laude

ADDITIONAL TRAINING, CERTIFICATIONS, AND PROFICIENCIES

Certified Building Analyst Professional & Envelope Professional, 2008-2009
Field & written proctor for both Building Analyst and Envelope Professional, Building Performance Institute (BPI)

Professional education from Residential Energy Performance Association (REPA), Affordable Comfort Institute (ACI), Efficiency Vermont, State of New Hampshire Energy Code Office, and National Grid Ongoing

Home Energy Rating System (HERS), successful completion of training and written test 2006

New Hampshire Community Tree Steward and Earth Team Volunteer 2002

Computer proficiencies: Microsoft Office suite (Word, Excel, PowerPoint, Publisher and Outlook). TREAT, REM/Rate & Surveyor energy modeling. FileMaker, ACT! & Customer Manager database/CRM. QuickBooks & Quicken accounting. ArcView GIS. Blackboard online education. SPSS statistics.

COMMUNITY SERVICE AND OTHER ACTIVITIES

- Energy efficiency presentations to numerous groups, 2005 - present
New Hampshire Sustainable Energy Association state conference, United Church of Christ state conference and regional workshops, Going Green Expo, Town energy committees, and others
- Board of Directors, Concord Cooperative Market, 2005 - present
Treasurer 2005 - 2009, President 2009 - present
- Merrimack County Cooperative Extension Advisory Committee, 2005 - present
UNH Cooperative Extension Energy Advisory Team, 2006 - present
- Residential Energy Performance Association (REPA), 2003 - present
Multiple positions: Secretary, Board member & Training Committee Chair
- Concord-area Coordinator, Green Buildings Open House, Northeast Sustainable Energy Association (NESEA), 2003 - 2005
- Concord Tree Volunteers, Concord, NH, 2001 - 2006

Sandra Jones

Co-Director, Plymouth Area Renewable Energy Initiative
PO Box 753 Plymouth, NH 03264

Sandra holds a BS in Elementary Education from Plymouth State College and a Masters in Education from the University of New Hampshire. Sandra has extensive experience in program startup and coordination and campaign management. From 1988 – 1996, Sandra ran both local and statewide electoral and public education campaigns. From 1998-2003, Sandra was the Director of a statewide career guidance program contracted by NH's Dept of Health and Human Services. In the span of four years, she grew the program from one part-time office (where she first served as a counselor since 1993) at Second Start in Concord, NH, to a statewide program with 15 offices from Colebrook to Salem, NH -- serving over 600 clients.

Sandra has been involved in a number of environmental projects in NH ranging from setting up local conservation easements, to organizing river clean ups to leading community meetings about the Northern Forest Lands Project. She has served as a spokesperson for the Land and Community Heritage Investment Program in its infancy, authored a fifty-page booklet on "Campaign Tips for Conservation Activists" for the Society for the Protection of NH Forests and was a featured interviewee on a national Audubon Society television broadcast. In 2002, Sandra was awarded the Lakes Region Planning Commission's "Social Capital Award" for her work on the Ashland Conservation Commission and the Ashland Historical Society.

From 1987-2002, Sandra was the co-owner of Riverside Cycles bicycle shop with her husband, Tim. In 1989, along with friends, she founded the White Mountain Wheelwomen cycling club, who still ride together today.

In 2004, Sandra paired up with long time friend Peter Adams to create a local energy initiative that would actively address the growing concern about the overuse of fossil fuels. Frustrated by the lack of governmental attention, (at that time) and a desire to prepare their families and community for the coming energy and economic crisis, Sandra and Peter created the **Plymouth Area Renewable Energy Initiative (PAREI)** -- a 501 C-3 non-profit organization designed to promote energy conservation, energy efficiency and renewable energy in the Plymouth region.

With less than \$55,000 in grant money over the last five years, PAREI's strong community connections and committed volunteers grew the membership organization to over 300 families and businesses. PAREI now offers a full slate of educational opportunities and services designed to provide members with the information and resources to reduce their energy consumption and produce renewable energy. In 2008, the organization grew by 50% and has a gross budget of over \$230,000.

Since the spring of 2005, PAREI created and conducted 33 volunteer solar Energy Raisers, coordinated over 30 professional solar water and solar electric installations and assisted with over 30 do-it-yourself renewable energy installations. They have conducted dozens of Energy Exchange membership networking meetings, expanded their Energy Raiser crews to include the Sandwich and Laconia area, created a year-round local foods on-line marketplace, conducted over 200 site visits to help members plan for their energy future and recruited a list of volunteer Energy Advisors willing to meet one on one with others in the community about their energy conservation and renewable energy projects.

Over the last two years, PAREI has received an enormous amount of attention from national and statewide press including front page coverage in the Boston Globe, a back cover story in a national recycling magazine and special features on several National Public Radio broadcasts on both the Energy Raiser concept and their local foods on-line website. Recently, PAREI completed the "PAREI Tool Kit" -- a video and cd-rom package for the purpose of sharing the PAREI model to other communities around the country.

Appendix D: Detailed Budget by Program

Detailed DED-LRCC-PAREI GHGERF Two-Year 2010-2012 Program Budget

Category	Building Analyst	Installer Training	Boot Camps	Short-Term Courses	ESTEI	Mentoring	Equipment	Other Trainings	Two Year Sum
Salaries & Wages	\$17,077	\$35,542	\$50,673	\$18,096	\$41,896	\$10,192	\$2,856	\$3,392	\$179,724
Benefits/Fringe	\$9,195	\$19,138	\$27,285	\$9,744	\$22,560	\$5,488			\$93,410
Contracted Labor & Services	\$25,246	\$51,713	\$63,360	\$6,912	\$14,265		\$11,100	\$224,000	\$396,596
Rent & Utilities	\$3,000	\$16,000	\$9,600	\$2,400					\$31,000
Advertising & Marketing	\$5,600	\$11,660	\$6,000	\$3,200	\$5,000	\$3,500			\$34,960
Travel & Mileage Reimb.	\$1,760	\$2,000	\$3,120	\$640	\$2,000	\$2,625			\$12,145
Tools, Supplies & Subscriptions	\$3,200	\$22,000	\$22,800	\$3,200	\$3,600	\$700	\$53,000		\$108,500
Other Current Expenses	\$12,945	\$28,960	\$35,042	\$8,717	\$17,048	\$3,704	\$5,579	\$6,549	\$118,544
Cost of Goods Installed									\$0
General Overhead	\$11,484	\$26,913	\$32,069	\$7,788	\$15,656	\$2,912	\$5,062	\$9,823	\$111,708
TOTAL EXPENSES	\$89,506	\$213,926	\$249,948	\$60,697	\$122,025	\$29,121	\$77,597	\$243,764	\$1,086,586
Applicant Cash Contribution									
Applicant In-Kind Contribution	\$4,906	\$16,426	\$948	-\$1,903	\$25	\$1,121	\$1,597	\$10,164	\$33,286
Program Participant Contribution	\$52,200	\$123,500	\$163,200	\$28,800	\$80,000	\$7,000		\$134,400	\$589,100
Other Grants				\$5,000			\$6,000		\$11,000
GHGER Fund (this proposal)	\$32,400	\$74,000	\$85,800	\$28,800	\$42,000	\$21,000	\$70,000	\$99,200	\$453,200
TOTAL SOURCES OF FUNDS	\$89,506	\$213,926	\$249,948	\$60,697	\$122,025	\$29,121	\$77,597	\$243,764	\$1,086,586