



**Emerging Insulation Practices for Existing Residential Buildings, Pilot
Program Opportunity Notice (PON) 1232
\$ 70,000 Available**

Proposals Due: July 21, 2009 by 5:00 PM Eastern Time

OBJECTIVES: The New York State Energy Research and Development Authority (NYSERDA) seeks proposals from Building Science Teams (BST) to develop a methodology of implementing “deep” energy retrofit strategies for the benefit of existing low-income single family residential buildings in New York State. Working with NYSERDA personal on the methodology, the BST will then develop, conduct and monitor a comprehensive training course to be administered to a group of Building Performance Institute (BPI) accredited Contractors enabling the necessary skills to perform the “deep” energy retrofits. The primary focus of the project and training will emphasize exterior insulation techniques that greatly improve the performance of the building shell. The comprehensive training will involve both classroom and field components, at actual jobsite(s) where the “deep” retrofit practices will be exemplified to the participants and provide hands-on experience to the participants.

ELIGIBILITY: The BST will have experience in lecturing, giving educational presentations and demonstrating from field examples the skills necessary to achieve “deep” energy retrofits. Proposers submitting must demonstrate the following expertise:

- Full understanding of the whole house system approach for energy flows associated with an existing building.
- Building science principles including heat, air and moisture movement through envelopes.
- Importance of combustion, makeup air and ventilation for occupancy health and safety.
- Importance of air barriers and thermal bridges at connection points such as: foundations, sill plates, walls, roofs, windows and doors.
- Mechanical systems, including whole house ventilation and point source systems.

Successful proposals will exemplify the BST’s experience level with “deep” retrofits, their understanding of the challenges associated with this work, and a portfolio of examples demonstrating the outcomes of work they have influenced.

NYSERDA may make multiple awards to BST’s, depending on the nature of their capabilities, resources offered and availability to teach selected BPI Contractors.

Proposers must submit one (1) paper copy and one (1) electronic version (CD) of the proposal with a completed and signed proposal checklist attached to the front of paper copy. Proposals must be clearly labeled and submitted to:

Roseanne Viscusi, PON 1232
NYS Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Address technical questions for PON 1232, to Greg Pedrick at (518) 862-1090, ext. 3378, gap@nyserda.org
Address contractual questions for PON 1232, to Nancy Marucci, ext. 3335, nsm@nyserda.org.

No communication intended to influence this procurement is permitted except by contacting Greg Pedrick at contact above. Contacting anyone other than this designated contact (either directly by the proposer or indirectly through a lobbyist or other person acting on the proposer’s behalf) in an attempt to influence the procurement: (1) may result in a proposer being deemed a non-responsible offer, and (2) may result in the proposer not being awarded a contract.

*** Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist will be returned. Faxed or emailed proposals will not be accepted. Proposals will not be accepted at any other NYSERDA location other than the address above. If changes are made to this solicitation, notification will be posted on NYSERDA’s website at www.nyserda.org*

I. Program Overview

The NYSERDA Buildings R&D Group introduced the Advanced Buildings Program (ABP) in 2006, with an objective to drastically improve the building envelopes and insulation techniques found in a residential building. The program started by attempting to influence the design and build of newly constructed residential buildings. The focus is now broadening to employ these same objectives to the existing residential building stock found in New York State. Much of New York's housing stock was built before the first energy crisis of 1973, and will remain in use for many years ahead. This project will explore the opportunity to apply "deep" energy retrofit techniques to this housing stock, and represents a great opportunity to make significant improvements.

The term "*deep*" energy retrofit refers to a practice that goes well above and beyond the current common practice of performing energy efficiency work. This involves substantially improving the exterior building envelope with aggressive, emerging insulating practices (*e.g.* installation of non-CFC/HCFC boardstock insulation, application of open cell spray foam insulation with alternatives to CFC/HCFC blowing agents), installing new or relocating existing windows, sealing the below grade foundation to the wall connections and sealing the roof to the wall connection with insulation that also provides an air barrier. The following mechanical practices are then implemented to complete the overall retrofit; incorporation of whole house ventilation and downsizing the mechanical plant typically found in residential buildings. Performing this retrofit with attention to detail and comprehensively, will typically reduce the whole building energy load by 60 – 75%. It is important for the methods to exemplify truly sustainable practices when at all possible to achieving the intended large reductions.

These energy load reductions are necessary and offer a great opportunity to teach BPI Contractors of the possibilities and raise the awareness of homeowners to request this work. The objective of the ABP is to always educate, lead by example and prime the resources for deployment to a larger group.

II. Program Requirements

NYSERDA specifically seeks proposals from Building Science Teams (BST) well versed in the area of retrofitting residential buildings to achieve the reductions mentioned above. The Team should possess skills in "*deep*" retrofit, with primary focus on exterior insulation improvements, and be able to conduct and monitor a training program which enables a selected group of BPI Contractors to enhance their skills aligning with the objectives of the "*deep*" retrofit. Each proposing BST must outline and describe their personal experiences in performing "*deep*" retrofits, and demonstrate how they will transfer this knowledge to the BPI Contractors in a classroom setting, then in-field setting where hands-on experience will be taught and evaluated. The field work will be an extension of the classroom, and the BPI Contractors once trained, must demonstrate the implementation skills of the knowledge gained.

Developing a strategy and establishing a training curriculum is the initial step in the overall objective of this Pilot project. NYSERDA's Residential Energy Affordability Program (REAP) will then select BPI accredited Contractors to attend this training, with the intent of utilizing them to influence and effect up to 20 existing low-income single family residential buildings within New York State. The development and application of the "*deep*" retrofit techniques, monitoring of the process and tracking the project outcomes will provide the required data and research necessary to determine whether this type of program could be offered on a broader scale.

The program intent is to have trained BPI Contractors identify candidate buildings which will benefit from the "*deep*" energy retrofits, while performing within their existing NYSERDA contractual obligations of whole house energy surveys. The BPI Contractors will assess whether a "*deep*" retrofit is viable, and if undertaken they will capture the associated costs, and track the work sequence involved through to completion. This type of work is typically overlooked, for fear of it being costly, invasive and not viable. This program hopes to alleviate those concerns by collecting actual data associated with the retrofits and sharing it with the public. Retrofit of existing building stock, represents a great, vast opportunity to bring existing buildings significantly above energy code and reduce the burden they place on energy supplies. The solutions involved in these "*deep*" retrofits and the work done is more a challenge

of will, than a challenge of technology. The attendees of the training will have expressed a desire to overcome these challenges, and exemplified their desire to take the extra necessary steps towards achieving the results associated with a carefully planned and executed “*deep*” retrofit.

This solicitation encourages the BST to address the following requirements:

- Review practiced and proven retrofit insulation techniques/strategies and select the most appropriate methodology to teach for the BPI Contractors.
- Develop a curriculum in workshop style, to be administered in both a classroom and field setting, to educate and enable the BPI Contractors to adequately learn, and formally demonstrate the skills needed to perform this work.
- Review and comment on NYSERDA’s developing screening criteria for identifying existing low income single family residential building candidates which will be selected for the “*deep*” retrofit projects.
- Provide guidance via an appropriate level of visits per project, and consulting to the BPI Contractor’s as they engage in the 20 possible retrofit projects.
- Track material and labor costs associated with each “*deep*” retrofit project the BPI Contractor initiates.

Project Awards – NYSERDA will select the proposal(s) which have best exemplified the ability to develop a cost effective methodology and provide training to accomplish this task. Background, field experience, and practical application of the concept will be considered when reviewing the submitted proposals.

It is important to follow “Proposal Requirements” carefully and answer all questions.

III. Proposal Requirements

- Proposers must submit one (1) paper copy of their completed proposal (double-sided preferred), and one (1) electronic version on CD (preferably combined into 1 pdf file) to the attention of Roseanne Viscusi at the address indicated on the first page of this PON.
- A completed and signed Proposal Checklist must be attached as the front cover of your proposal.
- ***Bindings, report covers, or other presentation materials should not be used (a single staple in the upper left-hand corner is preferred).***
- ***Limit your proposal to 10 pages (12-point font) excluding letters of support, resumes, and NYSERDA forms (Attachments A, B, and C).***
- Do not include unnecessary attachments beyond those sufficient to present a complete, comprehensive, and effective response.
- Each page of the proposal should state the name of the proposer, the PON number, and the page number.
- **Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist will be returned.**
- Faxed or e-mailed copies will not be accepted.

Please provide the information requested in each section below.

- ***Each required section below is followed by questions, which are the criteria by which the Technical Evaluation Panel (TEP) will evaluate your proposal.***

1. Executive Summary (one page) - Provide a brief response to each of the following:

- The approach to the topic and the opportunity you will provide.
- What you will do, to address the opportunity, and why that is good.
- Likely educational and economic benefits to you and New York State.
- Team qualifications

Criteria:

- Does the BST understand the requested service, and possess the skills and competency to deliver?

2. Method of Training and Proposed Approach – Please discuss:

- The method of training you will use to educate the attendees, and how it will be administered
- The proposed curriculum and how it addresses opportunity, including:
 - Description of course curriculum
 - Innovative characteristics of the curriculum, *e.g.* use of case studies, field examples, etc.
 - Alternative methods, and why the proposed method of teaching will be superior, and
 - Barriers to success and project risks

Criteria:

- Is the curriculum well defined, comprehensive and described clearly?
- Is the approach practical and technically feasible?
- Are the techniques to be taught innovative, practical and achievable?
- Will there be measurement of an attendee’s comprehension of the curriculum?

3. Project Benefits: - Provide:

- Quantify estimated energy benefits to the extent possible as if 20 buildings will be influenced by a “*deep*” retrofit (*e.g.* kWh and MMBtu savings)
- Estimate other benefits, for example:
 - Increased: revenue, productivity, contracts obtained, or new/retained jobs; or
 - Decreased: non-energy related greenhouse gas emissions, maintenance costs, capital, etc.
 - Provide a cost/benefit projection
 - Discuss what entity/entities will reap these benefits

Criteria:

- Are energy and economic benefits significant (for proposer and New York State)?
- Do estimates of benefits seem reasonable, and their associated costs?
- Is there a plan to quantify actual benefits after project completion?

4. Tech Transfer of the Tabulated Results to be monitored: - Please discuss:

- Distribution of course curriculum, both classroom and field components, possibility of broadening the curriculum to reach large number of Contractors in future
- Method for capturing the results of the project work, *e.g.* photos, video of unique applications of materials, field problems solved
- How audio/visual material will be transmitted to NYSERDA’s Advanced Buildings Program for posting on website and brochures
- If papers will be submitted to relevant conferences (*e.g.* ACI, NESEA Buildings Conf.) that promote the work engaged and its associated costs

Criteria:

- How likely will the results from this teaching effort, gain traction in the Building Contractor’s portfolio of scheduled work over the next 5 years?
- How likely will the “*deep*” retrofit solutions be recognized and requested for by homeowners looking to make energy improvements?
- How likely is the potential for project results to be demonstrated to a given community of homeowners?

5. Scope of Work and Schedule:

- Describe each task required to accomplish goals and who will perform each task.
- Prepare a schedule of when each task will be performed, milestones and budget for each milestone, using the format below (add as many lines as necessary; give total on bottom line):

Milestone Description	Labor (hours)	Labor (\$)	Materials & Equipment (\$)	Other (\$)	Total (\$)	Start Date	End Date

Total milestone budget should be the same as the total budget on the Contract Pricing Proposal Form.

Criteria:

- Is the approach likely to meet the proposal’s goals?
- Is the schedule reasonable for the scope defined?
- Does the Statement of Work include tasks for: acquiring materials, developing a curriculum, accessing a facility for the instruction (preferably in the field), collecting representative data (costs, time), and outlining a tech-transfer strategy?
- Are the benefits quantified realistic?

6. Cost Sharing:

- The proposal should show non-NYSERDA funding of preferably 25% of the total cost of the project. Cost sharing can be from the proposer, other team members, and other government or private sources. Contributions of direct labor (for which the laborer is paid as an employee) and purchased materials may be considered “cash” contributions to proposer’s cost share. Unpaid labor, indirect labor, or other general overhead may be considered “in-kind” contributions.
- NYSERDA will NOT fund efforts that have already been undertaken. The proposing teams CAN NOT claim as cost-share any expenses that have already been incurred.
- Show the cost-sharing plan in the following format (expand table as needed).

Source	Cash	In-Kind Contributions	Total
NYSERDA	\$		\$
Proposer	\$	\$	
Others (list individually)			
Total	\$	\$	\$

Criteria:

- Do the level, type and source of cost sharing indicate a sufficient commitment to the project by the proposer and proposing team?
- Are there any supplier donations indicated to offset equipment/material cost sharing?

7. Budget - Complete the **Contract Pricing Proposal Form** (Attachment C) (see CPPF instructions). Indicate requested NYSERDA funding in the column labeled “Funding & Co-funding via NYSERDA.” Include non-NYSERDA cash and in-kind contributions in the column labeled “Cost-sharing and other co-funding.”

If you include indirect costs in your budget, you MUST attach supporting documentation to support indirect cost (overhead) rate(s) in your proposal as follows:

1. Describe the basis for the rates proposed (*e.g.* based on: prior period actual results, projections, federal government, or other independently approved rates).
2. If rates are approved by an independent organization, such as the federal government, provide a copy of such approval.
3. If rates are based on estimated costs or prior period actual results, include calculations to support proposed rates. Calculation should provide enough information for NYSERDA to evaluate and confirm that rates are consistent with generally accepted accounting principles for indirect costs.

NYSERDA reserves the right to audit indirect rates presented in the proposal and adjust for differences. Requests for financial statements or other financial information may be made if deemed necessary.

Product developers may be required to repay NYSERDA through a royalty agreement. (see Attachment D, sample agreement. Article VIII 8.03 Payments to NYSERDA)

Criteria:

- Is cost reasonable when measured against project goal, scope of work, and expected benefits?
- Are costs clearly specified?

8. Business Description:

- Describe your business: number of employees, what you produce, or what services you provide; what kind of facilities you have.

Criteria:

- Is the business financially sound and stable?

9. Project Team: the following is important for the team description:

- List team members, including the project manager, subcontractors and other participants and co-funders involved in the project.
- Explain their roles and responsibilities.
- Describe qualifications and relevant experience or expertise.
- Identify any special facility, equipment or capability possessed by the project participants that is relevant to the project.

Criteria:

- Does the project team have the qualifications and resources needed to succeed?
- Does the team give examples of their experience with this work?

10. Letters of Commitment or Support:

- If other organizations or businesses are doing some of the work, providing services or equipment, serving as a demonstration site, or share in the non-NYSERDA cost, include a signed letter from that organization or business (on their letterhead) describing their commitment (include cash/in-kind dollar commitment if applicable). If you will solicit for donated building materials or equipment, include letters of interest from potential providers.

Criteria:

- if applicable, do letters of support exist and do they reflect the level of involvement (e.g., co-funding, potential interest in promoting services, etc.) from the supporter(s)/potential customer(s)/ partner(s), commercialization supporter(s)?
- If a site is proposed for the field portion of training, is there a letter of interest/commitment from that potential site to host field training of “*deep*” retrofit?

IV. PROPOSAL EVALUATION

Proposals will be reviewed by a Technical Evaluation Panel (TEP) and will be scored and ranked according to the **criteria** indicated above in the Proposal Requirements. After the proposals are reviewed, NYSERDA will issue a letter to each proposer indicating whether the proposal was recommended for funding. A proposer receiving a favorable evaluation will be invited to enter into contract negotiations with NYSERDA. The proposer may also be asked to address specific questions or recommendations of the TEP before contract award.

V. GENERAL CONDITIONS

Proprietary Information - Careful consideration should be given before confidential information is submitted to NYSERDA as part of your proposal. Review should include whether it is critical for evaluating a proposal, and whether general, non-confidential information, may be adequate for review purposes. The NYS Freedom of Information Law, Public Officers law, Article 6, provides for public access to information NYSERDA possesses. Public Officers Law, Section 87(2)(d) provides for exceptions to disclosure for records or portions thereof that "are trade secrets or are submitted to an agency by a commercial enterprise or derived from information obtained from a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the subject enterprise." Information submitted to NYSERDA that the proposer wishes to have treated as proprietary, and confidential trade secret information, should be identified and labeled "Confidential" or "Proprietary" on each page at the time of disclosure. This information should include a written request to accept it from disclosure, including a written statement of the reasons why the information should be excepted. See Public Officers Law, Section 89(5) and the procedures set forth in 21 NYCRR Part 501 www.nyserda.org/nyserda.regulations.pdf. However, NYSERDA cannot guarantee the confidentiality of any information submitted.

Omnibus Procurement Act of 1992 - It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises, as bidders, subcontractors, and suppliers on its procurement Agreements. Information on the availability of New York subcontractors and suppliers is available from: Empire State Development, Division for Small Business, 30 South Pearl Street, Albany, NY 12245. A directory of certified minority- and women-owned business enterprises is available from: Empire State Development, Minority and Women's Business Development Division, 30 South Pearl Street, Albany, NY 12245.

State Finance Law sections 139-j and 139-k - NYSERDA is required to comply with State Finance Law sections 139-j and 139-k. These provisions contain procurement lobbying requirements which can be found at <http://www.ogs.state.ny.us/aboutogs/regulations/advisoryCouncil/StatutoryReferences.html>

The attached Proposal Checklist calls for a signature certifying that the proposer will comply with State Finance Law sections 139-j and 139-k and the Disclosure of Prior Findings of Non-responsibility form includes a disclosure statement regarding whether the proposer has been found non-responsible under section 139-j of the State Finance Law within the previous four years.

Tax Law Section 5-a - NYSERDA is required to comply with the provisions of Tax Law Section 5-a, which requires a prospective contractor, prior to entering an agreement with NYSERDA having a value in excess of \$100,000, to certify

to the Department of Taxation and Finance (the "Department") whether the contractor, its affiliates, its subcontractors and the affiliates of its subcontractors have registered with the Department to collect New York State and local sales and compensating use taxes. The Department has created a form to allow a prospective contractor to readily make such certification. *See*, ST-220-TD (available at http://www.tax.state.ny.us/pdf/2006/fillin/st/st220td_606_fill_in.pdf). Prior to contracting with NYSERDA, the prospective contractor must also certify to NYSERDA whether it has filed such certification with the Department. The Department has created a second form that must be completed by a prospective contractor prior to contacting and filed with NYSERDA. *See*, ST-220-CA (available at http://www.tax.state.ny.us/pdf/2006/fillin/st/st220ca_606_fill_in.pdf). The Department has developed guidance for contractors which is available at http://www.tax.state.ny.us/pdf/publications/sales/pub223_606.pdf.

Contract Award - NYSERDA anticipates making multiple awards under this solicitation. It may award a contract based on initial proposals without discussion, or following limited discussion or negotiations pertaining to the Statement of Work. Each offer should be submitted using the most favorable cost and technical terms. NYSERDA may request additional data or material to support proposals. NYSERDA will use the Sample Agreement to contract successful proposals. NYSERDA, at its soles discretion, will decide whether to contract successful projects using time and materials terms or milestone delivery terms. NYSERDA reserves the right to limit any negotiations to exceptions to standard terms and conditions in the Sample Agreement to those specifically identified in the submitted proposal. NYSERDA expects to notify proposers in approximately 10 weeks from the proposal due date whether your proposal has been selected to receive an award.

Recoupment - For any new product development projects requesting NYSERDA funding over \$50,000, NYSERDA will require a royalty based on sales of the new product developed. NYSERDA's standard royalty terms are 1.5% of sales for products produced in New York State (for a period of fifteen years or until the Contractor pays NYSERDA an amount equal to the amount of funds paid by NYSERDA to the Contractor, whichever comes first) and 5% of sales for products produced outside of New York State (for a period of fifteen years or until the Contractor pays NYSERDA an amount equal to the amount of funds paid by NYSERDA to the Contractor, whichever comes first).

Limitation - This solicitation does not commit NYSERDA to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for services or supplies. NYSERDA reserves the right to accept or reject any or all proposals received, to negotiate with all qualified sources, or to cancel in part or in its entirety the solicitation when it is in NYSERDA's best interest. NYSERDA reserves the right to reject proposals based on the nature and number of any exceptions taken to the standard terms and conditions of the Sample Agreement.

Disclosure Requirement - The proposer shall disclose any indictment for any alleged felony, or any conviction for a felony within the past five years, under the laws of the United States or any state or territory of the United States, and shall describe circumstances for each. When a proposer is an association, partnership, corporation, or other organization, this disclosure requirement includes the organization and its officers, partners, and directors or members of any similarly governing body. If an indictment or conviction should come to the attention of NYSERDA after the award of a contract, NYSERDA may exercise its stop-work right pending further investigation, or terminate the agreement; the contractor may be subject to penalties for violation of any law which may apply in the particular circumstances. Proposers must also disclose if they have ever been debarred or suspended by any agency of the U.S. Government or the New York State Department of Labor.

Attachments

Attachment A: Proposal Checklist

Attachment B: Disclosure of Prior Findings of Non-responsibility Form

Attachment C: Contract Pricing Proposal Form

Attachment D: Sample Agreement