



Next Generation and Emerging Technologies for Residential Buildings Program Opportunity Notice (PON) 1215 \$1,500,000 Available, in Two Rounds

PROPOSALS DUE:

May 15, 2008 - 5:00 PM Eastern Time *, Round 1
September 10, 2008 - 5:00 PM Eastern Time *, Round 2

OBJECTIVES: The New York State Energy Research and Development Authority (NYSERDA) seeks proposals to perform product development and demonstration projects worthy of research categorization that will benefit residential buildings. The technologies should promote improvement to the containment, production, distribution and/or durability of the energy systems in the building. The energy systems typically involved perform or enhance the delivery of heating, cooling, or hot water distribution. Two rounds are scheduled for PON 1215 and total available NYSEDA funding is \$1,500,000. All, partial or no funds could be awarded in either round.

ELIGIBLE PROJECTS: Preferred projects include but are not limited to:

- Improvements that reduce energy losses from fenestrations within the building envelope, including installation improvements
- Low leakage air duct transitions and connections
- Hot water distribution systems that minimize in-line standby losses in conjunction with recirculating loops
- In-Floor Radiant heat systems that are NOT electrically driven
- Compressor-less or reduced capacity scroll or vane rotary air conditioning systems
- Control technologies that enhance energy devices
- Whole house energy monitoring systems
- Integrated heat pumps or other integrated systems that deliver heating, cooling or domestic hot water into the building
- On-site energy production/recovery systems, i.e. micro Combined Heat & Power (CHP), improved Heat Recovery Ventilation (HRV)/Energy Recovery Ventilation (ERV) units, Gravity Film Heat Exchanger (GFX) systems

Proposals addressing technologies that optimize first cost, are easily integrated into a building, improve performance reliability and enhance energy performance, will be given the most consideration.

NYSERDA anticipates making multiple awards in the following categories:

Category A: Product Development (\$350,000 maximum NYSEDA funding per project with preferred cost share: (50% for proprietary projects, 25% for non-proprietary projects)

Category B: Product Demonstration (\$200,000 maximum NYSEDA funding per project with preferred cost share of 50%)

Proposal Submission: Proposers must submit one (1) copy of the proposal and one (1) electronic copy on compact disc (CD), including the completed and original signature of the Proposal Checklist attached to the front. Proposals must be clearly labeled and submitted to:

**Roseanne Viscusi, PON 1215
NYS Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399**

If you have technical questions, contact Greg Pedrick at (518) 862-1090, ext 3378 or gap@nyserda.org. If you have contractual questions, contact Nancy Marucci at (518) 862-1090, ext 3335 or nsm@nyserda.org.

No communication intended to influence this procurement is permitted except by contacting Greg Pedrick, listed 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 offerer, and (2) may result in the proposer not being awarded a contract.

*Late proposals or 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 NYSEDA location other than the address above. If changes are made to this solicitation, notification will be posted on NYSEDA's web site at www.nyserda.org.

I. INTRODUCTION

NYSERDA seeks proposals to support the development and demonstration of technologies that enhance the delivery or reduction of energy use within a residential building. Residences account for over 20% of total energy consumption in the U.S., thus continued development of technologies that can reduce this demand, is important for energy independence.

NYSERDA specifically seeks proposals that can utilize existing discrete building technologies, and improve their overall energy efficiency. These building technologies need to be robust, easy to maintain, easy to install, and most importantly, reliable. Technologies that rely on the platform of other existing technologies, are acceptable. The preferred technologies will optimize the first cost by contributing an overall reduction in energy demand and be simple for the homeowner to use.

An Advanced Building Program (ABP) goal is to develop products and methods that enhance the energy performance of residential buildings substantially beyond current practice. Developing and demonstrating discrete technologies can provide owners and builders with greater opportunities to improve overall energy efficiency. This solicitation encourages innovation in the following area:

- **New product and materials development to achieve higher utilization of energy flows -** heating system improvements, cooling system improvements, ventilation improvements, humidity controls, hot water systems, whole building energy monitoring, building controls and energy production systems.
- **Demonstration of equipment or configurations in residential buildings - utilize discrete technologies within a residence to demonstrate proper installation and recorded energy improvements**

This Program Opportunity Notice encourages the development of high performance building sub-systems that minimize on-site labor, and can tolerate installation interpretations. Proposers are encouraged to address technologies at varying stages of maturity, from early prototype assessments through prototype bench test and from early product development to field evaluation and market introduction.

II. PROGRAM REQUIREMENTS

Projects considered under this solicitation will be limited to building technologies applicable to one to four family homes and will have two award categories. Proposer must indicate under which category they are proposing.

Two Project Award Categories – These categories of projects will be considered for funding:

Category A: Product Development

Development of systems or materials that improve existing performance leading to a technology that can be installed in a residential building. Product Development Projects should be completed within a 30 month period. NYSERDA's share of funding for any project in this category will be limited to a maximum of **\$350,000** with a preferred proposer cost share of 50% for proprietary products developed, and 25% for non-proprietary products developed.

Category B: Product Demonstration

Demonstration of a system or materials that have been developed (at least prototype level) which improves the energy efficiency of a sub-system or combination of systems within a building. Demonstration Projects should be completed within a 36 month period. NYSERDA's share of funding for any project in this category will be limited to a maximum of **\$200,000** with a preferred proposer cost share of 50%.

Project Scope – Projects selected for funding **must**:

- Address energy efficiency related challenges to the equipment commonly found in a residential building.
- Emphasize development of marketable products rather than basic research.

- Provide quantifiable energy, environmental, and economic benefits in New York State.
- Provide a summary discussion of the commercialization path appropriate to the stage of development of the proposed technology.
- Provide cost-sharing by the proposer or third parties:
 - Cost sharing may be in the form of cash or in-kind labor, materials, equipment, facilities, and other resources, subject to reasonable and verifiable valuation. Co-funding may be from the proposer or other private or government sources. NYSERDA's funds cannot be used to reimburse or replace normal expenses of other government organizations.
 - Co-funding is preferred in all of the categories. This co-funding is detailed under Section II. Program Requirements. Cofunding demonstrates a proposer's commitment to a project and willingness to share risk. A proposer's co-funding is examined during the proposal evaluation process. Cash, labor, and materials are considered superior to other types of co-funding.
- Provide sharing of success by agreeing to make royalty payments to NYSERDA upon product commercialization (see terms and conditions in Article 8 of Attachment E, Sample Agreement.)

Project Schedule, Phasing and Teaming – The following guidelines should be considered when developing proposals:

- Projects are expected to begin within six months of the proposal due date. The project schedule should not exceed 30 months for Category A, and 36 months for Category B.
- Teaming arrangements are encouraged, where appropriate, to enhance the likelihood of project success. Teams may include commercial firms, industry associations or research organizations, universities, government agencies, end-users, and other stakeholders. **Include letters of interest or commitment from each identified team member in an appendix to the proposal.**

Other Considerations – Note that:

- A proposal may be considered **non-responsive** if it fails to comply with the above requirements, the Proposal Requirements of Section III, or the General Conditions of Section VI.
- Prior to an award or contracting with a successful proposer, potential contractors may be required to demonstrate: access to financial resources sufficient to perform the proposed work; adequate facilities (or the ability to access them); a good performance record; and the ability to qualify for an award under applicable laws and regulations.

III. PROPOSAL REQUIREMENTS

Proposal should be limited to 20 pages or less, plus letters of interest or commitment in an appendix. Suggested page limits for each section are provided below in parentheses. If you believe proprietary information must be submitted to present an adequate proposal, comply with the instructions in Section V for submitting proprietary material. **A soft-spiral bound original proposal is preferred.** Proposals that grossly exceed the page limits or fail to follow the format guidelines may be rejected as non-responsive.

Proposers must submit one (1) copy of the completed proposal and (1) electronic version (CD) to the attention of Roseanne Viscusi at the address on the front of this Program Opportunity Notice. A completed and signed Proposal Checklist must be attached as the front cover of your proposal, and must contain an original signature. **Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist will be returned.** Faxed or e-mailed copies will not be accepted.

Unnecessary attachments beyond those sufficient to present a complete, comprehensive, and effective response will not influence the evaluation of the proposal. Each page of the proposal should state the name of the proposer, the PON number, and the page number. The proposal must be in the following format and should present the items in the sequence indicated below.

Proposal Checklist – Complete and sign the specific Proposal Checklist attached as part of this PON, and include it as the front cover of the original and each copy of the proposal.

Note the following:

- Indicate whether you accept the standard terms and conditions as contained in the attached Sample Agreement. If you do not accept the standard terms and conditions, provide alternate terms with justification based on the risk and benefit to NYSERDA and New York State.
- Be sure the individual signing the Proposal Checklist is authorized to commit the proposer's organization to the proposal as submitted.

Procurement Lobbying Requirements - State Finance Law sections 139-j and 139-k

Procurement lobbying requirements contained in State Finance Law sections 139-j and 139-k became effective on January 1, 2006. (The text of the laws are available at: <http://www.ogs.state.ny.us/aboutogs/regulations/advisoryCouncil/StatutoryReferences.html>). In compliance with §139-j and §139-k of the State Finance Law, for proposals submitted in response to this solicitation that could result in agreements with an annual estimated value in excess of \$15,000, an additional form (or forms) must be completed and filed with proposals: (1) a signed copy of the Proposal Checklist including required certifications under the State Finance Law and (2) a completed Disclosure of Prior Findings of Non-Responsibility form. Failure to include a signed copy of the Proposal Checklist referenced in this solicitation will disqualify your proposal.

Proposal Sections – Sections of your proposal should be as follows:

1. Executive Summary (one to two pages) – Briefly summarize your proposal, emphasizing:

- The emerging technology or opportunity being addressed, and its significance to New York State.
- Your proposed solution and how it will solve a problem or exploit an opportunity.
- A list of the project team members and if a demonstration, site identification.

2. Problem Statement and Proposed Solution (three to four pages) – Describe:

- The emerging technology-related problem or opportunity being addressed, and its significance to New York State.
- Your proposed solution and how it addresses the problem or opportunity, its technical basis, innovative characteristics, and current stage of research and development.
- Alternative solutions, and why your proposed solution is superior.
- Benefits from a successful project. Include an estimate of the market potential that project results would influence.
- If this proposal addresses a subsequent phase of a previously funded NYSERDA project, the results of the earlier phase(s) and current project status.

3. Proposed Work Scope and Schedule (two to three pages) – Provide:

- Technical or performance goals for proposed product or system.
- A list of major tasks to be accomplished and a three- or four-sentence description of each. Typical task titles may include, but are not limited to, the following: project management and reporting, requirements definition, preliminary design, fabrication, testing, final design, and demonstration. (Note: NYSERDA will expect to receive written progress reports and a final report, and have occasional project meetings, as part of the project management task. These activities should be considered when developing your cost estimates.)
- The duration of the project and timing of major milestones, such as design reviews, test result reviews, completion of working prototypes, and the start of metrics reporting to NYSERDA, showing progress toward project objectives and goals.

4. Proposer Qualifications (two to four pages, depending on team size) – Identify:

- Proposer and any other team members and major subcontractors. Provide a chart showing the relationship between team members. (Note: Subcontracts of \$25,000 or more are subject to competitive bid procedures except where the proposal identifies a specific subcontractor as an integral participant in the proposed work; see Sample Agreement).
- Project Manager and other key individuals.
- Qualifications of all entities named above, including relevant experience and references (appendix if applicable)
- NYSERDA contracts awarded to the proposer in the past three years.

5. Project Benefits (one to two pages) – Outline benefits as follows:

- Quantify** using realistic assumptions, the following direct benefits to New York State to the extent possible:

Energy benefits - electricity savings, peak demand reduction, or savings in other energy inputs

Environmental benefits - reduced emissions, reduced waste by-products

Economic benefits - capital investment, creation or retention of jobs in New York State, and the creation and use of intellectual property

- Describe** how the success of the project can be measured or verified, and how and for how long these metrics will be provided to NYSERDA.

6. Commercialization Plan (Two to three pages) – Cover the following topics:

Describe how project results will be commercialized or deployed. Projects nearing a demonstration phase should have a detailed commercialization plan, whereas an early-stage concept (i.e. Feasibility Study) should be accompanied by at least a rough outline of how the concept may ultimately be deployed.

- Technology Transfer:** Describe all actions to promote the new technology, bringing it into the public and disseminating results from the work, i.e. through technical papers, presentations, or displays.
- Project Timeline:** Provide a multi-year timeline (e.g., graph) showing the paths, activities, milestones, resources, timing to take the technology from its current state of development to commercial deployment, and cost sharing in relation to total costs.
- Manufacturing:** Describe any manufacturing, re-tooling or production of a product, if one evolves from the project undertaken.
- Marketing:** Identify target markets and their relevant characteristics, e.g., size, competition, trends (regulatory, technological, etc.); describe your proposed marketing strategies, explain why they should be successful, and provide sales estimates. Provide an estimate of the price of the product or service that eventually will be commercialized and provide a comparison of that price to competing products or services. Briefly explain the customer's economic motivation for buying the new product or service, versus alternatives.
- Design & Production:** Describe remaining technical development steps leading to start of manufacturing or deployment. Describe plans for setting up facilities for manufacturing or other deployment activities. Discuss any key issues such as: need for specialized production equipment or strategic alliances; critical make/buy decisions or cost/volume issues; and, plans for ancillary activities such as service support functions.
- Finance:** Estimate funds required to go from the current stage of development to a financially self-sustaining level of commercialization; include funding for R&D and initial marketing and manufacturing/deployment programs. Identify any potential strategic partners who could reduce your costs by providing access to marketing/distribution channels, manufacturing facilities or other assets.
- Organization Plan:** Describe staffing plans for transitioning from R&D stage to commercialization stage; include all organizational functions, such as management, administration, engineering, marketing/sales, and manufacturing.

7. Budget – A Contract Pricing Proposal Form (CPPF), with associated instructions, is provided as Attachment C to this PON. **Each proposal must include a completed CPPF and also a cost-sharing table identifying the allocation of funding by task.** Use the following format (expand table as needed):

Cost-Sharing: Refer to Section II. Program Requirements for preferred percentages. 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. Unpaid labor, indirect labor, or other general overhead may be considered "in-kind" contributions. NYSERDA will not pay for efforts which have already been completed. The proposer or proposing team cannot claim as cost-share any expenses that have already been incurred. Show the cost-sharing plan in the following format:

PROPOSAL COST SHARING TABLE						
Proposed Funding By Task (Cash and In-Kind)					Project Total (\$)	
Funding Source	Task 1 (\$)	Task 2 (\$)	Task 3 (\$)	...	Cash (\$)	In-Kind (\$)
NYSERDA						
Proposer						
Co-Funder (identify)						
Co-Funder (identify)						
Task Total (\$)						

Attach supporting documentation to explain indirect cost (overhead) rates included in your proposal as follows:

- Describe the basis for the rates proposed (i.e., based on prior period actual results; based on projections; based on federal government or other independently-approved rates).
- If rates are approved by an independent organization, such as the federal government, provide a copy of such approval.
- 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 the rates are consistent with generally accepted accounting principles for indirect costs.

NYSERDA reserves the right to audit any indirect rate presented in the proposal and to make adjustment accordingly. Requests for financial statements or other needed financial information may be made if deemed necessary.

Recoupment – For product development projects under Category A requesting funding over \$50,000, NYSERDA requires a royalty or other payment based on sales or licensing of the new product developed. Please refer to the Sample Agreement attached which includes further explanation of recoupment terms.

8. Appendices – Include any resumes, company qualifications, or ancillary information which is deemed necessary to support your proposal. If appropriate, also include:

- Letters of Interest or Commitment** – If you are relying on any other organization to do some of the work, provide services or equipment, or share in the non-NYSERDA cost, include a letter from that organization describing their planned participation. Also include letters of interest or commitment from businesses or other organizations critical to the future commercialization, demonstration, or implementation of the project. **If the proposal is for a demonstration, commitment from demonstration site owner is preferred. Absence of letters of interest or commitment will be interpreted as the proposer not having support from the identified parties.**
- Exceptions to the Terms and Conditions** – If you do not accept the standard terms and conditions (including the recoupment provisions) as contained in the attached Sample Agreement, provide alternate terms with justification based on the risk and benefit to NYSERDA and New York State.

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 Proposal Sections**. 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 will be required to submit a detailed statement of work, budget, and schedule, and may also be asked to address specific questions or recommendations of the TEP before contract award.

Requirements – A negative response to any one of the questions identified below by a check mark (✓) **may eliminate** the proposal from further consideration. **Does the proposal:**

- ✓ Indicate Attention to Budget, maximizing NYSERDA's contributions towards the high risk activities, technologies?
- ✓ Emphasize development of marketable products rather than basic research?
- ✓ Provide direct and quantifiable energy, environmental, and economic benefits in New York State?
- ✓ Include a Commercialization Plan?
- ✓ Describe the Technology Transfer plan?
- ✓ Address the Cost-sharing requirements?

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 except 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 & 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/killin/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 perspective contractor prior to contacting and filed with NYSERDA. See, ST-220-CA (available at http://www.tax.state.ny.us/pdf/2006/killin/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 applications without discussion, or following limited discussion or negotiations. Each offer should be submitted using the most favorable cost and technical terms. NYSERDA may request additional data or material to support applications. NYSERDA will use the Attachment E, Sample Agreement to contract successful proposals. NYSERDA expects to notify proposers in approximately eight (8) weeks from the proposal due date whether your proposal has been selected to receive an award.

Recoupment - For product development projects under Category B requesting funding over \$50,000, NYSERDA requires a royalty or other payment based on sales or licensing 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 three times 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.

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.

VI. ATTACHMENTS

Attachment A - Proposal Checklist
Attachment B - Disclosure of Prior Findings of Non-Responsibility Form
Attachment C - Contract Pricing Proposal Form and Instructions
Attachment D - Sample Agreement