



Development of a Biomass Heating Roadmap for New York Request for Proposals (RFP): 2329

\$350,000 Available

**PROPOSALS DUE: December 6, 2011
5:00 pm Eastern Time***

The New York State Energy Research and Development Authority (NYSERDA) Request for Proposals (RFP) 2329 seeks proposals to develop a Biomass Heating Roadmap for New York ("the Roadmap").

For the purposes of the Roadmap, "biomass heating" refers to space, water, and process heating using biomass, with a primary focus on "clean" solid biomass feedstocks such as pellets, wood chips and cord wood. The goals of this project are to assess critical technical, environmental, public health, economic, and policy issues related to biomass heating to provide a better understanding of the possible impacts and opportunities in New York State, and to provide the information in a format that will assist in the development of a responsible and economically viable biomass heating industry in New York State. Ultimately, it is hoped that New York State will become a national leader in the research and development, manufacture, and deployment of clean, efficient biomass heating technologies.

The Roadmap will address feedstocks and technologies that are currently being used, near-term technologies that are expected to significantly contribute to industry-wide improvements in efficiency, fossil fuel use, emissions and economics in a three (3) to ten (10) year time period, and promising future technologies that may make significant contributions in more than ten years. Technologies to be addressed range from: residential to industrial scale.

NYSERDA has a total of \$350,000 available under this RFP. It is anticipated that one (1) contract will be awarded. Cost sharing and leveraging of other funding is encouraged but not required.

PROPOSAL SUBMISSION:

Proposers must submit two (2) copies and one (1) digital copy on CD-ROM of the proposal, with a completed and signed Proposal Checklist attached to the front of each copy, one (1) of which must contain an original signature, clearly labeled and submitted to:

**Roseanne Viscusi, RFP No. 2329
NYSERDA
17 Columbia Circle
Albany, NY 12203-6399**

If you have **technical questions concerning this RFP**, contact Judy Jarnefeld at (518) 862-1090, ext.3293 or jj1@nyserda.org. If you have **contractual questions concerning this RFP**, 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 Judy Jarnefeld (Designated Contact) at (518) 862-1090, ext. 3293 or jj1@nyserda.org. 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.

*Proposals must be **received** by NYSEDA on or before 5:00 pm on December 6, 2011. Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist will be returned. Faxed or e-mailed 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 RFP, notification will be posted on NYSEDA's web site at www.nyserda.org.

I. INTRODUCTION

GOALS AND OBJECTIVES

The goal of this RFP is to create a Biomass Heating Roadmap that will assess the critical technical, environmental, public health, economic, and policy issues related to biomass heating to provide a better understanding of the possible impacts and opportunities in New York State, and to provide the information in a format that will assist in the development of a responsible and economically viable biomass heating industry in New York State. Ultimately, it is hoped New York State will become a national leader in the research and development, manufacture, and deployment of clean, efficient biomass heating technologies. For the purposes of the Roadmap, “biomass heating” refers to space, water, and process heating using biomass, with a primary focus on “clean” solid biomass feedstocks such as pellets, wood chips and cord wood.

To meet the goals, NYSERDA seeks proposals to develop and complete a comprehensive Roadmap that addresses the six (6) objectives summarized here:

- 1) compares current and potential future biomass heating feedstock and technologies to each other and to current and potential future fossil fuels in terms of trends, barriers, and potential solutions;
- 2) addresses environmental and public health implications of different biomass heating options, and compare to fossil fuels;
- 3) outlines criteria, testing protocols and best management practices that could mitigate potential negative impacts with respect to performance efficiency, emissions, sustainability, safety, and public health;
- 4) addresses economic effects in terms of New York State market potential, commercial viability, and job creation;
- 5) delineates needs for research, workforce training and public outreach; and,
- 6) analyzes policies in the context of local, state, regional, national, and global events and markets.

Include tasks in the proposed work that define and address these six (6) specific Objectives to the extent possible. Use existing literature where appropriate (see Section III(7)), and in each task, define the method proposed to complete the deliverables.

The objectives summarized above are provided in more detail below:

- Objective 1) Compare current and potential future **biomass heating technologies and feedstock technologies** to each other and to current and potential future fossil fuels (e.g. ultralow sulfur heating oil) in terms of trends, barriers, and potential solutions;
 - For all technologies, compare efficiency, fuel use, emissions and economics;
 - Address **technologies** that are **currently** being used, **near-term** technologies that are very close to significantly reducing fuel use and contributing to industry-wide improvements in efficiency, emissions and economics in a three (3) to ten (10) year time period, and promising **future** technologies that may make significant contributions in more than ten (10) years. Address advanced technologies being used in Europe and elsewhere.

Current technologies: 0-3 years Near-term technologies: 3-10 years Future technologies: 10+ years

- Address technologies for space, water and process heating. If the current generation of biomass heating is represented by single stage combustion, what are the second and third generation opportunities?
 - Address technologies to produce feedstocks and process them into fuels for biomass heating appliances (e.g. grass pellet production), including ways to address the fuel property challenges with using some feedstocks in specific applications (e.g. ash content of grass pellets in residential boilers, emissions from feedstocks high in chlorine, or varying moisture content of wood chips).
 - Address technologies sized for applications from residential to industrial scale;
 - Address emission control technologies for various system sizes, including emission control technologies appropriate for advanced biomass heating technologies;
 - Address potential coproducts;
 - Address innovative combinations of systems (e.g. thermal storage, solar thermal, combined heat and power);
 - Outline technologies for feedstock planting, harvesting, storage, densification, transportation and processing;
 - Perform a comparison of biomass heating technologies with the fossil fuel systems they may replace, including trends in the fossil fuel industry such as the changing composition of home heating oil or other fossil fuel products. Fossil fuel products may include but are not limited to: home heating oil, #2 oil, propane, natural gas, or liquefied natural gas (LNG).
- Objective 2) Address **environmental and public health implications** of different biomass heating technologies, and compare to fossil fuels;
- Expand on and interpret the comparative emission results determined through Objective 1.
 - Address localized and regional air quality and climate impacts, including greenhouse gas, toxic, and particulate emissions (fine particulates, CO, VOC, CO₂, N₂O, CH₄, SO₂, NO_x, black carbon) of current and future technologies and feedstocks.
 - Focus on an in-depth analysis of emissions from appliances, rather than upstream emissions from land use, feedstock or fuel production.
 - Address other impacts of expanding the development and deployment of biomass heating in New York State in a qualitative fashion as budget allows, including:
 - occupational health and safety (fugitive dust, noise, etc.).

- indoor air quality implications (e.g. CO) of increased use of biomass from heating, particularly in smaller-scale residential systems
 - environmental justice issues related to biomass heating (e.g. health effects in sensitive and/or vulnerable populations from biomass emissions)
- Objective 3) Outline criteria, testing protocols and best management practices that could mitigate potential negative impacts with respect to performance efficiency, emissions, sustainability, safety, and public health;
- Outline **best practices** for producing biomass heat on a clean, sustainable and affordable basis. Address the following questions:
 - What are the *minimum* efficiency and emissions targets that must be met to meet New York State environmental standards and not contribute significantly to negative public health impacts?
 - What are the *recommended* performance standards and environmental safeguards needed to responsibly promote biomass heating in New York State, including at locations with sensitive populations (e.g. children, nursing home patients)?
 - How should compliance be tracked or verified?
 - Briefly summarize existing best practices for supplying feedstocks.
 - To justify best practice recommendations, use the results from Objective 2 to model impacts to New York State with and without best practices. Choose scenarios (for example, assume various technologies each achieve a particular market penetration, or assume overall use of biomass for heating increases to various levels in the future.) and define a specific timeframe, e.g. through 2030. If needed, NYSERDA will assist the selected contractor with synchronizing the selected timeframe with other timeframes chosen for other NYSERDA planning activities. Include modeling of localized air quality and exposure at locations with sensitive populations. Address the following questions:
 - To what extent can specific new biomass heating and emission control technologies improve the status quo with respect to efficiency, fossil fuel use, emissions and economics?
 - Present impacts of specific best practices at the individual installation level as well as for statewide market deployment.
 - What would be the impacts to New York State under the chosen scenarios if specific technologies were or were not widely deployed?
 - If not widely deployed, what would be the impacts of alternatives?
 - Develop sizing guidelines for biomass heating systems that optimize efficiency performance and emissions and avoid oversizing. Consider thermal storage, solar thermal and combined heat and power.

- Objective 4) Address **economic effects** in terms of New York State market potential, commercial viability, and job creation;
 - Perform an inventory of the current industrial infrastructure and manufacturing base in New York State that can participate in the biomass heating **market**. How can New York State attract new or established companies to drive the development of the industry?
 - Identify and define **workforce** and training needs and relevant assistance programs;
 - Identify the **financial resources and mechanisms** necessary to build a sustainable biomass heating industry, and potential sources of funding;
 - Discuss the economic development **benefits and impacts to rural and agricultural regions** of New York State, including:
 - the impact of replacing imported heating fuels with in-state fuels,
 - a net analysis of high-tech and low-tech job creation and loss related to: feedstock supply and distribution, in-state equipment manufacturing, and trends in changing use of biomass (e.g. what is the impact of replacing markets for feedstocks currently used in large but potentially declining industries like paper or saw mills?)
 - Discuss the technical, economic, and social factors that could impact the **commercial viability** of biomass heating
 - Address the following questions, including but not limited to:
 - Which future clean and efficient technologies are likely to become widely available and affordable, and when?
 - How can New York State develop an industry that manufactures competitive products in New York State?
 - What effect may reduced dependence on imported fossil fuels have on New York State's energy security and fuel source diversity?
 - How are exports of feedstocks or products such as pellets or electricity to other states, Canada, or Europe affecting availability of biomass for use in New York State?
 - How might the use of efficient technologies or improved feedstocks affect total statewide feedstock use?
 - How would financing and long term supply contracts affect feedstock availability?
 - Briefly discuss how the supply of biomass for biomass heating may be affected by the demand for biomass in biopower and biofuels under various scenarios. It is anticipated the demand for biomass in the biopower industry will be affected by policy decisions.

- Objective 5) Delineate needs for research, workforce training and public outreach;
 - Identify where additional scientific inquiry is needed, including data uncertainties, specific areas of interest for future research and demonstration, and research priorities. Address the following questions:
 - What is the magnitude and time frame of the annual investment in research and development needed for New York State to develop a responsible and economically viable biomass heating industry?
 - How can New York State’s educational institutions meet the identified research and training needs?
 - Identify the testing protocols for codes and the standards needed to accurately assess new technologies and establish criteria for identifying highest performing units via a consumer ratings system analogous to Energy Star. Address fire safety and building codes as appropriate.
 - Identify technical outreach needs. Address how the industry could connect with and present findings tailored to key stakeholders (e.g. architects, engineers, code officials, fire safety officers, landowners, loggers, farmers, state agencies or permitting entities, environmental groups, equipment companies).
 - Identify consumer outreach needs. Discuss what lessons can be learned from others to develop full consumer awareness and adoption of efficient technology and clean practices (e.g. two-stage combustion, hybrid systems with thermal storage, use of seasoned wood.) Determine any needs for informational tools (e.g. a municipal toolkit) that could be developed to help promote responsible biomass heating.
- Objective 6) Analyze policies in the context of local, state, regional, national, and global events and markets
 - Recognizing the appropriate performance standards and environmental and public health safeguards as defined by the best practices, provide an analysis of the drivers and implications of existing or potential **policy options**, including the probability of success of specific approaches based on technical and economic criteria.

Address the following questions, including but not limited to:

- How do we create performance-based standards and policies that continually improve the environment and New York State’s economy, rather than feedstock-specific or technology-specific policies that create artificial market responses with unintended consequences?
- How can New York State create affordable policies that are not too stringent, too lax or too transient to be effective, yet are flexible enough to address future circumstances?

- What policies make sense to implement now, and what should wait?
- How can New York State integrate our efforts with efforts elsewhere in the Northeast and nationally (e.g. Regional Greenhouse Gas Initiative or Renewable Portfolio Standard for larger-scale technologies, carbon cycling, equipment changeout programs)? How could New York State incorporate export demand for feedstocks and technologies into our policies?
- What is an appropriate mix of regulations, incentives, codes for emission performance, safety guidelines, outreach programs, demonstrations, low interest loans, or other programs?
- What role could incentives play as New York State transitions to advanced technologies and where are those incentives best placed? What time frame could subsidies take and how could funding for the incentives be provided?

II. RFP REQUIREMENTS

Who May Propose:

- Proposers are encouraged to form interdisciplinary teams when appropriate to meet project goals.
 - Teams may consist of a variety of **entities**: scientists; analysts; technologists; experts in specific fields; economists; commercial firms; government organizations; universities; research organizations; industry associations; or other stakeholders.
 - **Result-oriented** teams are encouraged with expertise in team leadership, technical, business, analytical, operations, technical communication, financing, and administrative fields.
 - Teams should consider providing the following **technical** expertise: environmental scientists; atmospheric scientists; public health scientists; air quality modelers; social scientists; agronomists; public policy analysts; economists; engineers; technologists; experts in: biomass heating technologies, forestry, agriculture, biomass production and distribution; or experts in other fields, as appropriate.
 - The lead proposer could be any organization responsible for successful completion of the project. If the proposal is selected for funding, the lead proposer will be selected to enter into an agreement with NYSERDA as NYSERDA's contractor.
 - Include **letters of commitment** from each team member in an appendix to the proposal.

Proposers must:

- Address **each of the six (6) specific Objectives listed in Section I.**
- Focus on “clean” solid biomass feedstocks such as pellets, wood chips and cord wood from forest or agricultural sources, not municipal solid waste.
- Define specific **deliverables** to be met at the completion of each task. Interim deliverables that provide frequent feedback to NYSERDA for use in evaluation of progress are required. It is anticipated that certain tasks (or chapters in the Final Report) will need to be completed earlier than others. **In particular, the First Draft Report should** identify data uncertainties as well as consumer outreach needs.
- Provide a **Research Methodology Addendum** as described in III.6, Appendix, summarize it briefly in the Executive Summary, and include research methodology in the proposed tasks as appropriate.
- Include tasks in the proposed work that describe coordination with a **Roadmap Advisory Group**, as directed. Membership in the Roadmap Advisory Group will be determined by NYSERDA, but is anticipated to include NYSERDA, Department of Environmental Conservation, the Department of Agriculture & Markets, and New York State Department of Health. Where appropriate, work should also include coordination with other entities the Roadmap Advisory Group may identify.
- Describe the **management plan**, including how the management plan has been organized, and how the team will partner with other research groups.
- Describe how the **technical breadth** of the project team addresses the necessary balance of interdisciplinary experience for successfully completing the project.
- Provide evidence of a **demonstrated track record** of successfully completing complex subject-relevant technical reports or publications in a timely fashion.
- Identify the **Project Manager** who will be responsible for managing the team. Previous experience managing diverse teams is highly desirable. Provide actual examples of relevant past work.
- Include tasks in the proposal to develop and implement strategies to **measure success** of the project. Specify performance goals.
- Submit a **per-task cost table**. It is anticipated that projects will be paid on a performance basis as per-task deliverables are met.
- Address the required **timeline** for the proposed work. At a minimum, deliverables are expected on the following dates: Outline of the Final Report on May 15, 2012, First Draft Report on January 15, 2013 and Final Report on May 15, 2013.
- **Cost sharing is not required.**
 - NYSERDA’s share of funding will be limited to a maximum of **\$350,000**.

- The amount of funding requested will be considered for overall reasonableness with respect to meeting RFP Objectives.
- In addition, proposers are encouraged to identify and emphasize, as appropriate, other innovative and effective approaches, strategies, and tools that support the Goals and Objectives of this RFP.

Other Considerations:

- A proposal may be considered **non-responsive** if it fails to comply with the requirements above, the Proposal Format of Section III, or the General Conditions of Section V.
- Before an award is made, potential contractors may be required to demonstrate: access to financial resources sufficient to perform the proposed work, appropriate technical experience and 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

Format - Your goal as a proposer should be to **concisely** present the information needed to fully address the Objectives and Evaluation Criteria (see Section I and V). Proposals that grossly exceed the page limits or fail to follow the format guidelines may be rejected as non-responsive.

Proposers must submit two (2) copies of the completed proposal (and one (1) digital copy on CD-ROM as detailed below) to the attention of Roseanne Viscusi at the address on the front of this RFP. A completed and signed Proposal Checklist must be attached as the front cover of your proposal, one (1) of which must contain an original signature. **Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist may be returned.** Faxed or e-mailed copies will not be accepted.

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 RFP that could result in agreements with an annual estimated value in excess of \$15,000, additional 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 RFP will disqualify your proposal.

In addition to the paper copies, a **digital copy of your proposal must be submitted** on a CD-ROM in a format readable on Microsoft Windows XP systems. Narrative files must be in Microsoft Word. Other files such as schematics or brochures may be included in Portable Document Format (PDF). An optional additional copy of the proposal in PDF may also be submitted. All responses submitted as part of the NYSERDA RFP 2329 solicitation process become the property of NYSERDA. Proposers will not be reimbursed by NYSERDA for any costs associated with the preparation of their proposals.

Proposals should not be excessively long or submitted in an elaborate format that includes expensive binders or graphics. 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 RFP number, and the page number.

The proposal must be organized in the following format:

1. Proposal Checklist - Complete and sign the Proposal Checklist attached to this RFP, and include it as the front cover of 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, be prepared to provide alternative terms with justification based on the risk and benefit to NYSERDA and New York State.
- Be sure the individual signing the Checklist is authorized to commit the proposer's organization to the proposal as submitted.

2. Executive Summary - Briefly summarize your proposal emphasizing the following:

- The problem or opportunity addressed and its significance to New York State.
- The **research methodology**, including how data will be gathered and analyzed, what models will be used, why those models were chosen, and what topics will be emphasized. (Provide more detail in the required Research Methodology Addendum as described in III.6. Appendix, and fully describe research methodology in specific tasks in the Statement of Work, as appropriate.)
- Alternative approaches, and why your proposed approach was selected. Include assumptions.
- Benefits if the project is successful. Quantify the benefits to the extent possible.

The executive summary should be no more than two (2) or three (3) pages in length.
Please put the bulk of your effort into fully describing each task in the Statement of Work.

3. Statement of Work - Provide the following:

The Statement of Work is the primary document that outlines work activities and required performance for payment by NYSERDA. It is an action document that specifically delineates each step or procedure required to accomplish the six (6) RFP Objectives. Therefore, each action shall be identified, indicating who will perform it, how it will be performed and its intended result. Be clear and specific; concentrate on "how" and not "why". Include quantifiable milestones as deliverables where possible.

You may use the following Statement of Work outline as the basis for your Statement of Work and expand or modify it as necessary to fit your project and provide additional information.

The Statement of Work must be structured as an ordered set of tasks as follows:

TASK 1: Project Management

Subtask 1.1: Project Manager

The Contractor shall assign [insert name] as project manager who will be responsible for communications with NYSERDA and coordination of all project personnel, subcontractors, schedule, budget, and reporting. [Name] shall serve as the coordinator between all project participants, including coordination of written Monthly Progress Reports, conference calls, project review meetings, and other developments.

Subtask 1.2: Meetings

At a minimum, plan a kickoff meeting and a wrap-up meeting in Albany for NYSERDA and the Roadmap Advisory Group. For each meeting, prepare a meeting agenda (in advance), take minutes, and describe key meeting results in the Monthly Progress and Final Reports. Arrange the kickoff meeting to present strategy and discuss project scope, Objectives, and overall task prioritization, as well as interim goals. Arrange a wrap-up meeting towards the end of the project to present findings and discuss NYSERDA's and the Roadmap Advisory Group's comments on the First Draft Report. In order to allow for detailed comments, distribute the First Draft Report to NYSERDA and the Roadmap Advisory Group at least two (2) weeks in advance of the wrap-up meeting. Although the First Draft Report must address all deliverables, be prepared to perform further analysis as required to address comments and incorporate them into the Final Report. (see note in Budget section)

Deliverables:

Kick-off Presentation

Kick-off meeting

Wrap-up Presentation

Wrap-up meeting

Subtask 1.3: Subcontractor Coordination (If applicable)

The Contractor shall... [State how activities will be coordinated between the proposer and any partners or subcontractors, and NYSERDA. A discussion of subcontracting arrangements should also be included.]

Subtask 1.4: Reporting

Monthly Reporting

The Contractor shall prepare and submit Monthly Progress Reports describing the progress of the project. Copies of the Monthly Progress Report shall be submitted to NYSERDA's Project Manager. The Monthly Progress Reports shall be in the following letter format:

- Title of project
- Agreement number
- Period of this report
- Progress during reporting period
- Planned progress in the future
- Identification of problems
- Planned solutions
- Ability to meet schedule and reasons for slippage in schedule
- Schedule -- percent completed and projected
- Analysis of actual costs incurred in relation to the budget.

Final Report

The Contractor shall prepare and submit a Final Report, consistent with Exhibit C of the Sample Agreement, documenting the results of the entire project, including all deliverables identified in the tasks, and a brief description of all methods, analyses, recommendations, and results. (The length of the Final Report is targeted to be 50 pages or less.) **The Final Report shall include a complete Executive Summary that succinctly summarizes findings, policy options, and future research needs. It shall identify technical or market barriers, and ways to overcome them.**

- 1) At least one (1) outline shall be given to NYSERDA for review.

- 2) *A First Draft Report of the Final Report shall be given to NYSERDA and the Roadmap Advisory Group for technical review, with at least 30 days allowed for review.*
- 3) *A Second Draft Report of the Final Report shall be prepared, which conforms with the "Report Format and Style Guide" (the Guide contained in Exhibit C of the Agreement). The second draft shall address or incorporate questions and comments resulting from review of the first draft. The Second Draft Report shall be given to NYSERDA for technical review follow-up and for format review, with at least 30 days allowed for review.*
- 4) *A copy of the Final Report, in compliance with Exhibit C, shall be submitted to NYSERDA's Project Manager, which adequately addresses NYSERDA's comments.*

Deliverables:

Monthly Progress Reports

Meetings: arrangements, agenda, minutes

Final Reports: Outline, First Draft Report, Second Draft Report, Final Report

Task 2, 3, 4, etc: Defining methodology, Developing protocols, Researching, Surveying, et al. Tasks (as appropriate)

*Add as many tasks and subtasks as necessary to cover all actions needed to achieve the Goals and Objectives of your project. Arrange your tasks logically and elaborate on the details of each one. Be specific as to who will perform the work, when, where, and how. Begin each task description with "Task 'X': Title, The Contractor shall.. (do such and such)." Fully detail tasks such as: defining methodology, planning, developing protocols, researching literature, data collection, analysis, preparation and submittal of interim reports, or reports on specific sections, or other tasks necessary as appropriate to fulfill the research design. You **must** include one (1) or more task deliverables for each task. Task deliverables should be specific and designed to be met at task completion. Measure benefits of the project, as appropriate. Identify and quantify performance targets. These are the means by which near-term success of the overall project will be measured, evaluated, and verified against the project's Goals and Objectives. These targets should relate to specific project Objectives, tasks, and deliverables, and should be measured by completion of the project.*

Your specific tasks might include the following components:

Document, synthesize and prepare a separate chapter in the Final Report for each of the topics outlined in the Objectives.

Review academic and private literature.

Review current policies and incentives.

Establish talking points, develop interviewee list, contact stakeholders, and conduct interviews or surveys as appropriate to define renewable fuel policy and investment priorities.

Provide information that will help implement the findings of the Roadmap.

Task 2, 3, 4, etc. deliverables (required):

For each task, delineate one (1) or more specific deliverables to be met at task completion.

4. Proposed Schedule – Provide the following: (one (1) page is suggested)

- Present a realistic schedule, with a starting point and duration for each task and subtask in the Statement of Work, preferably in a bar chart. Identify critical path items and timing of major milestones. At a minimum, deliverables are expected on the following dates: Outline of the Final Report on May 15, 2012, First Draft Report on January 15, 2013 and Final Report on May 15, 2013.

5. Proposer Qualifications and Management Plan - Identify the following: *(one (1) to five (5) pages is suggested, depending on number of team members)*

- Proposer and any other team members and major subcontractors. Provide a chart showing key roles and responsibilities, and the relationship between team members. Describe the **management plan** for your project team, and how it meets the criteria for technical, business, analytical, operations, technical communication, financing, and administrative experience that is necessary for successfully completing the project.
- Project Manager and other key individuals. Previous experience managing and leading diverse teams is highly desirable. Provide actual examples of relevant past work.
- Qualifications of all businesses, organizations, and individuals named above, including relevant experience and references.
 - Describe the **technical breadth** of your interdisciplinary team, including environmental scientists; atmospheric scientists; public health scientists; air quality modelers; social scientists; agronomists; public policy analysts; economists; engineers; technologists; experts in: biomass heating, forestry, agriculture, feedstock production and distribution; or experts in other fields, as appropriate.
 - Provide actual examples of team members' experience, as appropriate.
 - Provide evidence of a **demonstrated track record** of successfully completing complex subject-relevant technical reports or publications in a timely fashion.
 - Describe how you will partner with other research groups during the project, as appropriate.
 - Describe how your team is qualified to address issues specific to New York State, including specific New York State policies, biomass feedstocks, or trends in biomass heating. Specify team members located in New York State, if any.
- NYSERDA contracts awarded in the past five (5) years, if any.

6. Budget - Provide the following:

- **Contract Pricing Proposal Form (CPPF) - [The CPPF, with associated instructions, is provided as an attachment to this RFP. Each proposal must include a completed CPPF. Additional CPPF formats are available at: <http://www.nyserda.org/Funding/stdforms.asp>]**

Attach supporting documentation to outline indirect cost (overhead) rate(s) included in your proposal as follows:

1. 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).

2. If a rate is approved by an independent organization, such as the federal government, provide a copy of such approval.
3. If a rate is based on estimated costs or actual results from the prior reporting period, include calculations to support the proposed rate. 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 for any difference between the proposed and actual rate. Requests for financial statements or other needed financial information may be made if deemed necessary.

- **Per-Task Cost Table (required)** It is anticipated that projects will be paid on a performance basis as per-task deliverables and overall performance targets are met. Therefore, proposers **must** submit one (1) table indicating both:

- 1) the total expenditures for each task in the Statement of Work, and
- 2) the percent of total effort for each task.

Please note: Meetings based in Albany, NY are required. NYSERDA and the Roadmap Advisory Group will review the First Draft Report and NYSERDA may request additional analysis or clarification on certain tasks. **Allow funds for further analysis** of identified issues in between submission of the First Draft Report and the Final Report.

- **Cost Sharing Table (include only if cost-sharing is provided)** Cost sharing is not required, however leveraging of other funding is encouraged. **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 undertaken. 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 (expand table as needed):

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

7. Appendix

- **Letters of Commitment or Support** - If you are relying on any other organization or business to do some of the work, provide services or equipment, or share in any non-NYSERDA cost, include a signed letter from that organization or business describing its commitment. Also include signed letters of commitment or support from businesses or organizations critical to the future commercialization, demonstration, or implementation of the project. **Absence of signed letters**

of commitment or support will be interpreted as the proposer not having commitment or support from those parties.

- **Research Methodology Addendum (required)** – Describe the research methodology in detail in a Research Methodology Addendum. Summarize it in the Executive Summary, and be sure to include research methodology in the proposed tasks as appropriate.

1) Provide an outline of the structure you anticipate using to develop the Final Report (i.e. the Roadmap). Delineate chapter headings.

2) Address the soundness of your project methods and research design:

- How are your proposed project methods and overall research design suitable for meeting the RFP Objectives and yielding accepted results?
- Where will you obtain the needed data?
- What existing **publications** do you plan on using? At a minimum, you must reference the following reports and use as appropriate:
 - Renewable Fuels Roadmap and Sustainable Biomass Feedstock Supply for New York State:
http://www.nyserda.org/publications/renewablefuelsroadmap/Report_10_05_Renewable%20Fuels%20Roadmap.pdf
 - New York State Energy Plan: www.NYSEnergyPlan.com
 - Climate Action Plan: www.nyclimatechange.us
 - New York State Department of Environmental Conservation Outdoor Wood Boiler Regulations and General Information: <http://www.dec.ny.gov/chemical/51986.html>
 - NYSERDA Biomass Heating R&D Program Case Studies:
http://www.nyserda.org/programs/Research_Development/biomasscasestudies.asp
 - Environmental Characterization of Outdoor Wood-Fired Hydronic Heaters: not yet published, see case study at
http://www.nyserda.org/programs/Research_Development/biomasscasestudies.asp
 - Staged Combustion Biomass Boilers: Linking High Efficiency Combustion Technology to Regulatory Test Methods:
http://www.nyserda.org/programs/Research_Development/spatial_modeling_monitoring_residential_woodsmoke.pdf
 - Spatial Modeling and Monitoring of Residential Woodsmoke Across a Non-Urban Upstate New York Region:
http://www.nyserda.org/programs/Research_Development/spatial_modeling_monitoring_residential_woodsmoke.pdf
 - “An Overview of Combustion Principles and the Energy and Emissions Performance Characteristics of Commercially Available System in Austria, Germany, Denmark, Norway and Sweden”
http://www.nyserda.org/programs/Research_Development/10-01_european_wood_heating_technology_survey.pdf
 - Biomass Combustion in Europe: An Overview of Combustion and Regulation
<http://www.nyserda.org/programs/Environment/EMEP/Report%2008-03%20-%20Biomass%20Combustion%20in%20Europe-complete-after%20corrections.pdf>
 - NYSERDA Report 08-07, "The Environmental Impacts of Biofuels in New York State," (draft Executive Summary) <http://www.nyserda.org/publications/default.asp>

- Assessing The Total Fuel Cycle Energy and Environmental Impacts Of Alternative Transportation Fuels: Development and Use of NY-GREET,”
<http://www.nyserda.org/publications/default.asp>
- New York State Renewable Portfolio Standard Biomass Guidebook
http://www.nyserda.org/rps/RPS_Biomass_Guide.pdf
- What **models** will you use and why are they appropriate? (As part of the tasks to be completed in the proposed work, you will be expected to clearly define model assumptions and default values.)
- What **stakeholders** (e.g. architects, engineers, code officials, fire safety officers, landowners, loggers, farmers, state agencies or permitting entities, environmental groups, equipment companies, end-users) will you contact and how will you gather information from them?
- How will you analyze the data?
- Which Objectives do you feel are most critical to emphasize, and why?
 - Be clear about how extensively topics will be treated (e.g. literature review, new in-depth modeling, stakeholder interviews, or only as budget allows).
 - What will not be addressed in the Roadmap? (For example, you are not expected to include tasks to analyze the use of feedstocks such as municipal solid waste or construction & demolition debris, model indirect land use impacts resulting from use of biomass, critique various methods to model carbon cycling of forests as it pertains to greenhouse gases, perform feedstock supply and demand modeling or make detailed predictions of future biomass or fossil fuel pricing. You will, however, be expected to identify and briefly describe the major issues affecting the biomass heating industry.)
- **Exceptions to the Terms and Conditions** - If you do not accept the standard terms and conditions 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 following criteria.

- **Requirements** - A **negative response** to any one (1) of the questions identified below by a check mark (✓) **may eliminate** the proposal from further consideration. **Does the proposal:**
 - ✓ Address the RFP Requirements in Section II?
 - ✓ Include the required Per-Task Cost Table?
 - ✓ Include the required Research Methodology Addendum?

EVALUATION CRITERIA

■ Overall Methodology and Approach

- What is the likelihood of the proposal achieving its stated goals?
- Have the risks been identified and addressed?
- How well does the proposer understand the project?
- Is the proposed project likely to be the best approach to exploit the opportunity?
- How suitable and sound are the proposed project methods and overall research design for meeting the RFP Objectives and yielding accepted results? Did the proposer provide an adequate explanation of research methodology, including how data will be gathered and analyzed, what models will be used and why those models were chosen? Is an adequate outline of the Final Report (i.e. the Roadmap) provided? Is there an adequate explanation of what will not be covered?
- Is the proposed work technically feasible, innovative, and superior to alternatives?

■ Proposer or Proposing Team

- Is the project's organizational structure appropriate and does it include a single lead proposer responsible for managing all aspects of the project and ensuring project success?
- Are roles of responsibility for individual project personnel defined and is their experience appropriate for their responsibilities?
- How qualified is the proposer or team to perform the proposed work, based on the evidence provided?
- Is the Project Manager who will be responsible for managing the team identified? Does the Project Manager have previous experience managing diverse teams? Are actual examples of relevant past work provided?
- Does the proposer or team show a balance of expertise appropriate for the work? How well has the proposer organized a management plan and a project team with the necessary team leadership, technical, business, analytical, operations, technical communication, financing, and administrative experience for successfully completing the project?
- Has the proposer assembled an interdisciplinary team, including environmental scientists; atmospheric scientists; public health scientists; air quality modelers; social scientists; agronomists; public policy analysts; economists; engineers; technologists; experts in: biomass heating, forestry, agriculture, feedstock distribution; or experts in other fields, as appropriate?
- Does the team include partnerships with other research groups?
- Is there evidence the proposer or team is qualified to address issues specific to New York State? Is the proposer familiar with specific New York State policies, biomass feedstocks, trends in biomass heating, and related topics? How many of the team members are located in New York State?
- Is there evidence of a good performance record on other relevant projects? Specifically, does the proposer or team have a track record of successful and timely completion of subject-relevant technical reports or publications?
- Does the work include appropriate coordination with the Roadmap Advisory Group?

- How firm are the commitments from essential team participants?

■ **Statement of Work (SOW) and Schedule**

- Is the SOW well-organized, clear, and complete?
- How comprehensive, realistic, and explicit is the SOW with respect to the RFP Objectives and proposal requirements? Is the level of detail provided sufficient to adequately describe the work to be accomplished?
- Is the SOW likely to achieve the goals of the project?
- Is the schedule provided in adequate detail?
- Are significant, appropriate, and quantifiable milestones and delivery of reports identified?
- Does each task list one (1) or more specific and appropriate deliverable(s)?
- Did the proposer identify an effective strategy to measure project success? Did the proposer specify appropriate, specific, and measurable performance targets where applicable?
- How likely is the project to meet the significant milestones according to NYSERDA's timeline requirements?

■ **Cost**

- Is the overall project cost justified based on the proposed work and expected benefits?
- Is the amount of funding allocated for specific tasks reasonable and sufficient? In particular, is the appropriate funding allocated for Final Report revisions?

OTHER CONSIDERATIONS

Proposals will be reviewed to determine if they reflect NYSERDA's overall objectives, including: the availability and quality of public data that will come out of the project, the balance among NYSERDA projects of long-term and short-term benefits, risk/reward relationships, similar ongoing or completed projects, the general distribution of NYSERDA projects among industries and other organizations, and the distribution of projects within New York State.

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 New York State Freedom of Information Law, Public Officers law, Article 6, provides for public access to information NYSERDA possesses. Public Officers Law, Section 87(d)(2) 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 State 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 New York 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 New York 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 New York State Finance Law within the previous four (4) 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/2007/fillin/st/st220td_507_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.pdf>.

Contract Award - NYSERDA anticipates making one (1) award under this RFP. It may award a contract based on initial applications 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 applications. NYSERDA will use the Sample Agreement to contract successful proposals. 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 eight (8) weeks from the proposal due date whether your proposal has been selected to receive an award.

Limitation - This RFP 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 RFP 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 (5) 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 United States Government or the New York State Department of Labor.

Attachments

Attachment A - Proposal Checklist

Attachment B - Disclosure of Prior Findings of Non-responsibility

Attachment C - Contract Pricing Proposal Form (CPPF) and Instructions (This is the budget form.
A form fillable Excel spreadsheet is available online)

Attachment D - Sample Agreement

(If you are selected, the Sample Agreement will form the basis of the contract you would sign with NYSERDA. Do not use Exhibits E or F of the Sample Agreement to format the proposal you are submitting now. Those are intended for the Final Report you would submit upon completion of the project.)