



Grid Impact of Plug-in Hybrid Electric Vehicles

**Request for Proposal (RFP) 1220
\$ 250,000 Available**

Proposals Due: July 29th, 2008 by 5:00 PM Eastern Time*

The New York State Energy Research and Development Authority (NYSERDA) seeks proposals and expects to execute one agreement under this RFP to assess the impact of increased market penetration of Plug-in Hybrid Electric Vehicles (PHEVs) on the New York State (NYS) electric grid infrastructure and associated grid and vehicular greenhouse gas emissions. Identification and assessment of grid impacts is necessary to understand the implications of, and plan for, the increased market adoption of PHEVs that is being brought about, in part, by the New York State PHEV Initiative.

Proposals should consist of a comprehensive study that addresses the following four items:

- 1) Identification of the 'base case' scenario of grid capacity assuming no PHEV penetration;
- 2) Identification of several realistic PHEV penetration scenarios, including vehicle characteristics and required load support;
- 3) Identification of grid, environmental, and financial impacts of the various penetration scenarios; and
- 4) Implications of Vehicle-to-Grid (V2G) applications or utility aggregated load control.

Proposal Submission: Proposers must submit ten (10) copies of the proposal with a completed and signed Proposal Checklist attached to the front of each copy, one of which must contain an original signature. Proposals must be clearly labeled and submitted to:

**Roseanne Viscusi, RFP 1220
NYS Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399**

If you have technical questions concerning this solicitation, contact Sarah Osgood at (518) 862-1090, ext. 3301 or sjo@nyserda.org. If you have contractual questions concerning this solicitation, 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 Sarah Osgood (Designated Contact) at (518) 862-1090, ext. 3301 or sjo@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.

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

I. INTRODUCTION

Plug-in Hybrid Electric Vehicle (PHEV) technologies allow vehicles to plug into the electric grid to charge their high capacity batteries to better utilize the vehicle's electric motor during the drive cycle. This results in a vehicle capable of achieving very high fuel economy, in some cases exceeding 100 miles per gallon of gasoline, at a reduced vehicle fueling cost and with reduced tailpipe emissions. As PHEV penetration levels increase the aggregated impact on the grid and associated emissions could be substantial. While the implications of increased penetration of PHEVs have been studied generally on a national level and in several regions, the specific impact to New York State has not yet been fully understood.

Under this solicitation, NYSERDA will provide funding for one comprehensive study to assess the energy, environmental and wholesale market electricity price impacts of PHEVs in New York State. Of particular interest is the impact on Zones J and K, i.e. downstate, due to the concentrated electric demand and vehicle population in those areas.

II. PROGRAM REQUIREMENTS

Project Scope

Proposers are asked to submit proposals for a comprehensive study that addresses the impacts of various potential PHEV penetration levels in New York State, with particular focus on the New York City and Long Island areas (Zones J and K). Proposals should outline the study to be performed and the processes of gathering and analyzing the data, including consultation with NYSERDA's Energy Analysis group. The study should address the following four items:

1. Identification of the current 'base case' scenario

The 'base case' scenario is the current state of New York's generation, transmission and distribution infrastructure assuming no PHEV penetration. This current state should be clearly described with planned upgrades and changes to the system identified, along with the expected timing and characteristics of the changes. Current demand levels and expected growth should be provided. Limitations of the current and future system, assuming no PHEV penetration, should be identified. The emissions profile, including CO₂, NO_x, and SO₂, associated with the system should also be described.

2. Identification of several realistic PHEV penetration scenarios

Several New York State PHEV penetration scenarios should be identified to define the range of potential market adaptations. The number of scenarios identified should be sufficient to map out a reasonable range of potential market penetrations. The scenarios should address both near-term and long-term timeframes and should take into account the number of vehicles, vehicle characteristics, charging characteristics and timing schemes, and required load support. The scenarios developed should be realistic based on projected vehicle cost, availability, and perceived customer value. All assumptions and backup information for the selected projections should be identified.

3. Identification of grid, environmental, and financial impacts of the various penetration scenarios

The penetration scenarios identified in item (2) above should be applied to the "base case" scenario from item (1) to develop new potential load profiles and to determine the potential impacts of each scenario. The impacts on electricity generation, transmission, and distribution should be addressed, as well as impacts to statewide and local Loss of Load Expectation (LOLE). In addition, specific fuel requirements, grid and vehicular greenhouse gas emissions and wholesale market pricing impacts should be examined, particularly during peak seasons.

4. Implications of Vehicle-to-Grid applications

The high capacity batteries in PHEVs offer the potential to contribute back to the grid in times of peak demand, a concept known as Vehicle-to-Grid (V2G). The implications of V2G applications and the potential for utility aggregated load control should be considered. The results from item (3) should be used to determine the potential for using PHEVs for load control, as a means of selling reliability services (i.e. spinning reserves), and the resulting impacts to the grid. All assumptions, supporting data, and analyses should be included.

Eligibility

Proposals may be submitted by individual companies or teams. Proposing teams may include, but are not limited to, service firms, industry associations, consultants, educational institutions, research organizations, government agencies, utilities, end-users, and other stakeholders. Teaming arrangements are encouraged when necessary to meet project goals. Letters of interest or commitment from each identified team member should be included in an appendix to the proposal. The primary contractor of the team shall be identified and shall be responsible for maintaining continuous correspondence with NYSERDA and ensuring all deliverables applicable to the contract are provided to NYSERDA according to an approved time-line.

Proposers must have sufficient financial resources to perform the proposed work, and must also have appropriate technical expertise, access to adequate information, and a good performance record.

Project Funding

The total available NYSERDA funding for this solicitation is \$250,000 and it is anticipated that a single award will be made. Cost sharing, while not required, will be considered in the evaluation criteria and is encouraged at a level at or above 25% of total project costs. Proposers wishing to propose an effort that goes beyond the NYSERDA funding level offered should propose that additional effort and funding an option to be considered by the proposal evaluation committee.

Other Considerations

In addition, note that:

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

Proposers must submit ten (10) copies of the completed proposal to the attention of Roseanne Viscusi at the address on the front of this Program Opportunity Notice/Request for Proposal. A completed and signed Proposal Checklist must be attached as the front cover of your proposal, one of which 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 be not be accepted.

Proposals should not be excessively long or submitted in an elaborate format that includes expensive binders or graphics – double-sided prints with a staple in the upper left corner is the preferred format. 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 in the following format and should present the items in the sequence indicated:

- Proposal Checklist
- State Finance Law Form
- Proposal Sections:
 1. Executive Summary
 2. Statement of Work and Schedule
 3. Proposer Qualifications
 4. Proposer Experience
 5. Budget
 6. Appendices

Proposal Checklist - Complete the specific Proposal Checklist attached as part of this RFP, and include it as the front cover of the original and each copy of the proposal. Please 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 who is 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, 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 solicitation will disqualify your proposal.

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

1. Executive Summary (one to two pages) – Briefly summarize each major element of your proposal.

2. Statement of Work and Schedule (three to five pages) – This is a significant element of the proposal, and must:

- Address all elements of the Project Scope outlined in this RFP.
- Describe the approach and methodology for addressing each item in the Project Scope. The rationale for the approach and methodology should also be provided.
- Provide a plan of how the Project Scope will be addressed. Include an ordered list of major tasks to be accomplished under each item identified in the Project Scope outline, with a three- or four-sentence description of each task.
- Account for NYSERDA reporting requirements. NYSERDA will expect to receive written progress reports and a final report, and have occasional project meetings, as part of the project management activities.
- Provide the duration of the project and timing of major milestones, such as methodology design reviews, assumptions review, results reviews, and reporting to NYSERDA.

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

- Proposer and any other team members with a clear description of the roles and responsibilities of each team member in completing the work plan. Provide a chart showing the relationship among 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.
- Relevant qualifications and abilities of all individuals named above. Note, prior to an award being made, potential contractors may be required to demonstrate: access to financial resources sufficient to perform the proposed work, pertinent technical experience, 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.
- Availability of any relevant equipment, software, or other capabilities that are necessary or will enhance

the quality of the proposed work.

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

- The specific experience of the proposer and other team members with past projects in this area.
- The level of involvement of the each team member in relevant past projects, with specific roles and responsibilities identified.
- The deliverables/key results of the project(s).
- NYSERDA contracts awarded to and proposals submitted by the proposer, if any, in the past five years, with the current status of those contracts briefly described.

5. Budget – A Contract Pricing Proposal Form (CPPF), with associated instructions, is provided as an attachment to this PON. **Each proposal must include a completed CPPF and also a cost-sharing table identifying the allocation of funding by task.**

Cost-Sharing: It is desirable, though not required, that the proposal contain non-NYSERDA funding in the amount of 25% to achieve the maximum leveraging of available funds. 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 complete. 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 support 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 rate(s) is approved by an independent organization, such as the federal government, provide a copy of such approval.
3. If rate(s) is based on estimated costs or prior period actual results, include calculations to support proposed rate(s). Calculation should provide enough information for NYSERDA to evaluate and confirm that the rate(s) 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 such difference. Requests for financial statements or other needed financial information may be made if deemed necessary.

6. 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. 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 as contained in the attached Sample Agreement, provide alternate terms with justification based on the risk and benefit to NYSERDA and New York State.
- **Potential Conflicts of Interest** – Identify the nature of any potential conflicts of interest among team members in providing services to NYSERDA under this RFP. Fully discuss possible conflicts of interest, actual and perceived, which could arise in connection with performance by team members of the proposed contract. Describe how your firm would resolve conflicts of interest. In the event that NYSERDA determines that a team member may have a conflict of interest or the appearance of such, NYSERDA may: (1) take this into consideration in evaluating the proposal; (2) exclude the proposer from consideration for an award; (3) adjust the scope of work to avoid the conflict of appearance of conflict; or (4) negotiate other appropriate actions with the team member to avoid the conflict or appearance of conflict.

IV. PROPOSAL EVALUATION

Proposals that meet Proposal requirements will be reviewed by a Technical Evaluation Panel (TEP) using the Evaluation Criteria below. After the proposals are reviewed, NYSERDA will issue a letter to each proposer indicating the proposal evaluation results. Proposers receiving favorable evaluations 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.

Evaluation Criteria

Statement of Work and Schedule

- Is the statement of work consistent with the RFP requirements?
- Is the Statement of work well-organized and complete?
- Is the approach and methodology of addressing the RFP requirements reasonable?
- Is the rationale for the approach and methodology sound?
- Are the tasks in the project scope clearly identified and described?
- Is the project schedule realistic and appropriate?

Proposer Qualifications

- Has the proposer provided evidence of having the required qualifications and abilities to perform the proposed work?
- Are the roles and responsibilities of each team member clearly described?
- Does the proposer have access to the relevant equipment, software, or other capabilities that are necessary for or that will enhance the quality of the proposed work?

Proposer Experience

- Does the proposer or proposing team have experience with past projects in this area?
- Was the level of involvement in past projects significant?
- Does the proposer or proposing team possess the relevant experience to successfully meet project needs?
- Has the proposer provided evidence of good past performance on similar projects?
- Are the specific roles and responsibilities of each team member clearly identified?

Budget

- Is the overall project cost justified based on the expected benefits?
- Are the total hours, hourly rates, overhead rates, indirect costs, and other cost multipliers clearly presented?
- Are the proposer's (and team members') rates reasonable compared to industry norms and other proposers?
- How appropriate are the proposer's co-funding contributions (sources and amounts) with respect to the potential to benefit from the work, and financial status of the organization?
- How firm is the financial support from essential participants, cofunders, and related businesses and other organizations?

Other Considerations

- Is the proposal well-organized, well-written, and complete?
- Do the appendices include resumes of key personnel?
- How firm are the commitments from the subcontractors and/or other team members?

V. GENERAL CONDITIONS

Proprietary Information - Careful consideration should be given before confidential information is submitted to NYSEDA 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 NYSEDA 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 NYSEDA 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 <http://www.nyserda.org/About/NYSEDA.Regulations.pdf>. However, NYSEDA 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 - NYSEDA 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 - NYSEDA is required to comply with the provisions of Tax Law Section 5-a, which requires a prospective contractor, prior to entering an agreement with NYSEDA 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/killin/st/st220td_507_fill_in.pdf). Prior to contracting with NYSEDA, the prospective contractor must also certify to NYSEDA 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 NYSEDA. 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_507.pdf.

Contract Award - NYSEDA anticipates making one award 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. NYSEDA may request additional data or material to support applications. NYSEDA will use the Sample Agreement to contract successful proposals. NYSEDA expects to notify proposers in approximately 10 weeks from the proposal due date whether your proposal has been selected to receive an award.

Limitation - This solicitation does not commit NYSEDA to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for services or supplies. NYSEDA 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 NYSEDA'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 NYSEDA after the award of a contract, NYSEDA 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:

The following attachments are included:

- 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