

# **NYSERDA RESEARCH & DEVELOPMENT (R&D) PROGRAM**

## **FINAL Process Evaluation Plan**

July 16, 2009

### **I. Introduction**

The detailed evaluation plan presented in this document builds upon prior evaluation activities conducted for the NYSERDA Research and Development (R&D) programs. In developing this evaluation plan, NYSERDA has incorporated feedback provided by the Department of Public Service (DPS), and has worked closely with its team of independent evaluation contractors to select the most appropriate evaluation approaches based on the current design of the program. This plan was developed to conform to the DPS evaluation guidelines released on August 7<sup>th</sup>, 2008 and to provide the highest level of rigor possible within the available resources.

As the R&D programs work to meet their current SBC program goals, NYSERDA and its evaluation contractors will closely monitor aspects of that process in order to adapt this plan, as needed, to provide the most relevant and useful evaluation. For example, adjustments may be needed to sample sizes or research issues if assumptions about the programs do not develop as initially anticipated. As such, NYSERDA views this plan as a flexible, living document that will be updated, as necessary, with appropriate notice to DPS and other interested parties.

This evaluation plan provides a formative process evaluation study to help improve the efficiency and effectiveness of the R&D programs supported by SBC funding, particularly the solicitation, project selection and contracting process. A separate R&D program impact evaluation is ongoing. Additional evaluation studies may be added to address other elements of the R&D portfolio or programs as needed.

### **II. Summary of Goals, Cost and Schedule for Evaluation Activities**

The overarching goals of NYSERDA's **New York Energy \$mart<sup>SM</sup>** program evaluation efforts are to conduct credible and transparent evaluations, and provide NYSERDA program staff and managers, the New York State Public Service Commission (PSC), DPS staff, and other stakeholders with timely and unbiased information regarding program implementation.

The R&D programs engage in various solicitation processes to identify research projects to fund. These solicitation processes have resulted in some outstanding projects. Nonetheless, NYSERDA R&D staff would like to gain an understanding of which aspects of the solicitation process work well and which aspects could be improved. The current processes were initially developed in the 1980s and have evolved, yet R&D staff members believe that their processes are not as successful as they could be. Questions about the current program/processes include target market awareness, knowledge of the program, barriers to participation, estimating the number of potential service providers, efficiency and effectiveness of the solicitation process, use of technical evaluation panel (TEP) and the needs of both internal and external stakeholders. This evaluation plan is focused on 2009 activities.

The R&D program evaluation budget for activities included in this plan totals \$120,000, which includes \$45,000 for survey implementation and \$15,000 for data collection through interviews. This budget represents a

negligible percentage of the total program budget of approximately \$211 million in unspent SBC3 funds as of May 31, 2009.<sup>1</sup>

### **III. R&D Program Description**

NYSERDA's R&D activities are organized into seven overarching program areas: energy resources, transportation and power systems, energy and environmental markets, industry, buildings, transmission and distribution, and environmental research. In addition, crosscutting areas such as environmental protection, waste management, energy product development, and renewable energy technologies are addressed in several programs:

- Public Benefit Power Transmission and Distribution Research
- Clean Energy Infrastructure
- Power Systems Product Development
- DG-CHP Demonstration
- Demand Response and Innovative Rate Research
- Electric Transportation
- Environmental Monitoring, Evaluation, and Protection
- Industrial Process & Product Innovation
- Municipal Water and Wastewater Efficiency
- Next Generation and Emerging Technologies

Complete program descriptions can be found in NYSERDA's annual program evaluation and status report to the Public Service Commission.<sup>2</sup> The five year SBC3 R&D budget (including both spent and unspent funds to date) is \$282.5 million.

### **IV. Process Evaluation Plan**

This section presents the 2009 process evaluation plan for the R&D portfolio of programs. As noted earlier, the R&D programs engage in various solicitation processes to identify research projects to fund. NYSERDA R&D staff would like to gain an understanding of which aspects of the solicitation process work well and which aspects could be improved. The current processes were initially developed in the 1980s and have evolved, yet R&D staff members believe that their processes are not as successful as they could be. Questions about the current program/processes include target market awareness, knowledge of the program, barriers to participation, estimating the number of potential service providers, efficiency and effectiveness of the solicitation process, use of the TEP, and the needs of both internal and external stakeholders.

#### ***Research Objectives***

Anticipated research objectives for the 2009 process evaluation are listed below. In order for the process evaluation to provide the greatest value, other relevant or necessary objectives may be added, or objectives listed

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<sup>1</sup> This evaluation budget includes only external contractor costs. Other overarching evaluation costs, including NYSERDA's internal evaluation management and statewide study costs, are additional; however, the total evaluation costs will not exceed 5% of program funding at the portfolio level.

<sup>2</sup> NYSERDA, *New York Energy \$mart<sup>SM</sup> Program Evaluation and Status Report*, Year Ending December 31, 2008, Report to the Public Service Commission, March 2009.

below may change somewhat, as the timing of this research draws closer.

1. Assess the cycle time for the R&D solicitation process
  - a. Develop a cycle time analysis for the past three years of R&D solicitations.
  - b. How do different requirements based on funding source affect cycle time?
  - c. How does cycle time affect potential respondents and respondents' willingness and interest to respond?
2. Assess the potential for market response
  - a. What is the size of the market of the potential service providers for R&D solicitations?
  - b. What is the awareness of the R&D program by the market?
  - c. What is the knowledge of the R&D programs by the market?
  - d. What are the barriers to response?
3. Assess the solicitation processes for efficiency and effectiveness
  - a. How is the solicitation process typically structured?
  - b. How are variants to the solicitation process developed and chosen?
  - c. Are there different responses to different types of processes: one-step, two-step, etc?
  - d. What is staff's assessment of the strengths and weaknesses of the solicitation process?
  - e. What has been the market response to the different solicitation processes?
  - f. Can response to the process be seen to differ because of factors such as frequency of response, types of responder, etc?
4. Assess the TEP process
  - a. What do TEP members see as the strengths and weaknesses of the process?
  - b. How would TEP members like to be engaged in the process?
  - c. How does NYSERDA R&D staff perceive the role and strengths and weakness of the TEP process?

### ***Activities***

The assessment of the solicitation process will begin with an analysis of the project database to assess cycle time for R&D solicitations. The different types of solicitations will be compared and used to identify samples for the study – specifically stratifying potential respondents, TEP members and R&D staff into groups based on their cycle time experiences. This approach will ensure the Process Evaluation Team can illuminate unique issues of different types of solicitations that might be causing the differences in cycle time.

Once the different strata of solicitations are identified, the Process Evaluation Team will develop data collection protocols appropriate to the different groups. The expectation is that interviews will be conducted by phone with solicitation respondents and potential respondents (based on the mailing lists), with TEP members and with internal stakeholders. In some cases, external stakeholders in addition to TEP members may also be interviewed. Data collection will begin in Fall 2009 and a report will be prepared by March 2010.

### ***Populations/Samples***

Determination of the populations will be difficult. The analysis of the individual project databases will be a first step in the process. Given the unique characteristics of the various R&D efforts, the lists of the networks of potential respondents are maintained by each program manager and are not centrally located. These lists will need to be obtained and analyzed to determine which R&D subject areas apply to the various potential respondents. Table 1 displays the Process Evaluation Team's best estimate of the population and samples at this time.

## **Data Collection**

The Process Evaluation Team will obtain the project databases from NYSERDA in Summer 2009 and begin the analysis of cycle time, at the same time NYSERDA program staff will be asked to begin compiling their lists of potential solicitation respondents to provide to the Process Evaluation Team by late-Summer. The Process Evaluation Team will present the R&D staff with the analysis of cycle time and recommended strata for the assessment in late-Summer 2009. Following review, the Process Evaluation Team will develop interview guides for each target group. The interview guides will be based on a common set of questions and concerns that the evaluation is addressing but will be designed to reflect the specific experience of each target group and each stratum as determined by the cycle time analysis.

**Table 1. R&D Solicitation Process Evaluation Survey Specifics**

<b>Target Group</b>	<b>Estimated Population Size</b>	<b>Estimated Sample Size</b>	<b>Expected Sampling Precision</b>	<b>Administration By</b>	<b>Expected Start of Fielding</b>
Key NYSERDA R&D Program/Project Mgmt Staff	14	12	NA	Process Team	Oct. 2009
Solicitation Respondents	>500	140	90/10a	Survey Team	Nov. 2009
Potential Solicitation Respondents	>1,000	140	90/10a	Survey Team	Nov. 2009
Technical Evaluation Panel Members	>200	70	90/10a	Process Team	Oct. 2009
External Stakeholders (non-TEP)	~50	25	NA	Process Team	Oct. 2009

a. Assumes data are proportional, 2-tailed distributions, finite population correction, absolute precision.

## **Special Issues**

The Impact Evaluation Team is conducting an evaluation of completed R&D projects. The Process and Impact teams will coordinate to reduce the burden on any contacts that might be involved in both studies.

## **IV. NYSERDA Evaluation Process**

This evaluation plan is an early, but important step in NYSERDA's evaluation planning and implementation process. It is NYSERDA's understanding that DPS Staff wish to be involved as a reviewer/participant in the following parts of the evaluation process: detailed evaluation plans, project kick-off meetings, workplans (including sampling, statistics and modeling issues), data collection instruments, interim results reports (as applicable), presentation of evaluation results, and draft evaluation reports. NYSERDA will conduct evaluation planning and implementation in an open and transparent manner, and will invite DPS Staff participation in the designated aspects of the process and any others upon DPS' request.<sup>3</sup> Should DPS Staff choose to modify the level or manner of their involvement, NYSERDA should be notified about the change(s). DPS Staff should also choose when and how to involve their evaluation advisor consultant team in NYSERDA's evaluation processes, should directly provide any materials and information necessary for their advisor consultant team to fulfill this role, and should notify NYSERDA about the type and level of advisor consultant involvement.

<sup>3</sup> In order to maintain transparency, and allow for confirmation checking and follow-up analysis, evaluation data will be maintained by NYSERDA and made available to DPS on an as-needed basis. NYSERDA will continue to maintain its secure "data warehouse" which includes data files, code books, and analysis files which can be made available in electronic form to DPS upon request. In order to provide a comprehensive record of each study conducted, the data warehouse also holds copies of final evaluation reports and appendices, including blank survey instruments, although these documents will be made available to DPS and publicly upon completion of each evaluation project.

An important goal of NYSERDA's evaluation effort is to provide early feedback to program staff to help inform and improve program implementation. NYSERDA accomplishes this goal in several ways:

1. Ongoing communications between the NYSERDA evaluation staff and evaluation contractors to identify issues that need to be brought to the attention of NYSERDA program staff, DPS Staff, and other involved parties.
2. Interim results reports may be generated, sometimes at the request of NYSERDA program staff and sometimes by initiative of NYSERDA's evaluation team and contractors, where early results are required or deemed useful prior to completion of the full evaluation effort.
3. Presentations of draft evaluation results held with NYSERDA evaluation contractors, evaluation team, program staff, and DPS Staff before evaluation reports are written provide feedback on the programs as soon as possible, and provide evaluation contractors with additional perspective and context that will be useful in reporting final recommendations.

Upon completion of final evaluation reports, the NYSERDA evaluation team will also provide support and assistance to program staff with regard to implementation of recommendations and program improvements.

## **V. Reporting**

Final reports will align with requirements set forth in the DPS evaluation guidelines, and will include: methodology, key results, recommendations, summary and conclusions, and appendices with detailed documentation.

Upon completion of each major evaluation study effort, findings and results will be communicated by NYSERDA's evaluation contractors and evaluation staff to NYSERDA program staff. Actionable recommendations and information on program progress toward goals will be provided as input to the program design and improvement process. NYSERDA's evaluation staff will follow up regularly with program staff on recommendations arising from the evaluation and the status of their consideration or adoption of these recommendations.

NYSERDA's evaluation staff will prepare quarterly and annual reports to the Public Service Commission, DPS and the EAG summarizing the results on all programs and from all evaluation studies occurring in the most recent quarter or year. The latest evaluated program savings, realization rates, and net-to-gross ratios will be used in compiling data for these overarching reports. Quarterly reports will be provided to the Commission within 60 days of the end of each calendar quarter. The annual report will substitute for the fourth quarterly report, summarizing program and portfolio progress throughout the calendar year. The annual report will be submitted to the Commission within 90 days of the end of the calendar year.