



Department of Energy
Washington, DC 20585

EECBG PROGRAM NOTICE 10-017
EFFECTIVE DATE: July 21, 2010

SUBJECT: GUIDANCE FOR ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT RECIPIENTS ON PROGRAM EVALUATION GUIDELINES.

PURPOSE

To provide guidance to Department of Energy's (DOE's) Energy Efficiency and Conservation Block Grant (EECBG) Program grantees on planning and conducting program evaluations.

This guidance only applies to those EECBG grantees and sub-grantees (collectively, the State, local units of government, and Indian tribes will be referred to as "Grantees") that elect to: (1) conduct their own evaluation, monitoring, and verification (EM&V) efforts pertaining to their use of EECBG funds; and (2) follow certain of the suggested guidelines from DOE set forth herein. **DOE is in no way requiring EM&V activities by Grantees as part of their award agreement.**

This document is provided as optional guidance for those Grantees that choose to conduct their own EM&V activities. There is no mandatory requirement for grant recipients to conduct EM&V activities. Grantees are only required to report to Office of Management and Budget (OMB) and DOE pursuant to guidelines set forth in EECBG Program Notice 10-07A. The guidance contained in this document consists of recommendations, not requirements, for recipients that plan to voluntarily conduct EM&V activities. Note that some of the guidance provided may be inapplicable to particular Grantee programs.

SCOPE

The provisions of this guidance apply to recipients of EECBG funds, pursuant to Formula Grant, Competitive Grant, or the American Recovery and Reinvestment Act of 2009 (Recovery Act).

LEGAL AUTHORITY

Title V, Subtitle E of the Energy Independence and Security Act of 2007, as amended, authorizes DOE to administer the EECBG Program. All grant awards made under this program shall comply with applicable law, including the Recovery Act, and other procedures applicable to this program.

GUIDANCE

This guidance provides Grantees with suggested guidelines to plan and conduct EM&V efforts for their Recovery-Act funded EECBG programs and activities. It is important that the results achieved with funds provided by the Recovery Act are documented and assessed to the extent practicable for Grantees.

This guidance is divided into two parts. The first part is intended to guide EECBG Grantees' administrative and management efforts, while the second part presents technical standards pertaining to the methods used to conduct program evaluations. These are intended to serve as recommendations, rather than requirements, for Grantees when conducting program evaluations.

Administrative and Management Standards

The following recommended administrative and management standards are provided for use by Grantees electing to conduct their own Recovery Act-funded EECBG program evaluations. These standards allow evaluation efforts to be implemented using a number of research approaches, provide flexibility in determining how EECBG Recovery Act evaluation results reporting¹ objectives are met, and avoid the necessity for Grantees to acquire significant new staff resources or evaluation management capabilities.

Evaluation Metrics: Projects supported by EECBG funds should be evaluated via a process that focuses on reporting metrics reflecting the principal objectives of the EECBG Program. The overall mandatory program reporting that must be conducted by grantees pursuant to guidelines set forth in EECBG Program Notice 10-07A, will focus on the following list of metrics, and we recommend that Grantees focus on them during voluntary EM&V as well, adding others as desired to reflect individual priorities:

- Job creation and retention (including number, type and duration of term);
- Energy and demand savings;
- Renewable energy capacity and generation; and
- Carbon emissions reductions.

Other possible metrics include, but are not limited to, economic impacts (in addition to job creation), funds leveraged, and the adoption of new technologies.

Independent Evaluations: Programs should be evaluated independently in order to obtain reliable results. EECBG Recovery Act evaluations should be conducted by

¹ Evaluation results reporting is not required of grant recipients. Evaluation results reporting is separate from Recovery Act progress reporting under the EECBG Program, which is mandatory and must be conducted pursuant to guidelines set forth in EECBG Program Notice 10-07A.

independent evaluators who have no financial or management interests in the projects being evaluated. The evaluators should be independent professionals who do not benefit, or appear to benefit, from the study's findings, and the Grantee program managers and administrators should have no influence on the findings of the study being conducted.

Attribution of Effects: Evaluations of EECBG Recovery Act-funded efforts should document the resulting effects (job creation/retention, energy savings, renewable energy generation, and carbon reductions) that are above and beyond the effects that would have been achieved without those funds. That is, studies should focus on net effects of the EECBG Recovery Act initiatives. The effects of jointly-funded initiatives, such as when EECBG Recovery Act funds are combined with funds from other programs or financial offerings, will be allocated to the Recovery Act in proportion to the percentage of those funds in relation to total program or project funding.

Evaluation Budgeting: Evaluation budgets should be sufficient to ensure that reliable results are generated and reported. Typically, outcome evaluations require the allocation of between 2% and 8% of the program/project budget depending on the size and type of program/projects being evaluated. However, evaluation budgets also depend on the level of research rigor applied to those studies.

For planning purposes, we recommend that Grantees allocate 5% or less of their EECBG Recovery Act funds for evaluation. Under EECBG: (1) State Grantees may not use more than 10 percent of their awards for administrative expenses; and (2) City, County, and Indian tribe Grantees may not use more than 10 percent or \$75,000, whichever is greater, for administrative expenses (excluding the cost of meeting reporting requirements). It is important that Grantees do not exceed the cap on administrative expenses when designing program evaluation procedures.

Timing of the Evaluation: Planning for an evaluation (e.g., identification of key metrics, research questions, data requirements) should begin at the same time that project activities are initiated. For many Grantees, the services of an independent evaluator may not be immediately available upon project start-up, meaning that there may be a lag in the collection of baseline data regarding some important metrics. However, such data collection should begin as soon as possible and record-keeping on project expenditures and activities should start immediately. Evaluations should be structured to provide information to program managers as early as possible while still providing the necessary rigor and reliability. To this end, it would be productive if evaluations are structured so that initial study results are available within 12 months of the start of the evaluation. For those Grantees that have already commenced project activities, they can integrate a retroactive evaluation into their program design where practicable.

Technical Evaluation Standards

The following technical standards are recommended for the evaluation studies to be performed on Recovery Act-funded EECBG programs. These recommendations are presented in two sections. The first section presents general design and objectivity standards that focus on establishing reliable approaches. The second section contains more detailed study design and application standards to be used as part of the evaluation research approaches applied to individual studies.

General Design and Objectivity Standards

Study Design: The development of the evaluation approach should be independent of project administrators and implementers and should be capable of being implemented within the evaluation budget available for the study. The independent evaluator should work with project administrators to understand the project and its operational processes and establish an evaluation approach that is reliable and cost conscious.

Study Rigor and Reliability: The study results should be reliable. This means that the study approach must be rigorous and capable of accurately assessing impacts using the relevant EECBG metrics. The studies should be designed to fit within the evaluation budget without budget overruns, and should be conducted at the highest possible level of research rigor within that budget. The evaluation community has established a number of evaluation protocols that give substantial guidance on reliable evaluation approaches.² These documents provide guidance on establishing evaluation approaches that represent state-of-the-art evaluation approaches. There are several other protocols that can be used to guide the design and implementation of the evaluation efforts.³ The evaluation approach should be designed in a way that provides findings with the highest level of reliability that can be achieved within the available research budget.

² These include, but are not limited to the following: International Performance Measurement and Verification Protocol (IPMVP), Efficiency Valuation Organization (September 2009); National Energy Efficiency Program Impact Evaluation Guide (November 2007); U.S. DOE Impact Evaluation Framework for Technology Deployment Programs (July 2007); and California Evaluation Protocols (April 2006).

³ *Conservation Verification Protocols Version 2.0: A Guidance Document for Electric Utilities Affected by the Acid Rain Program of the Clean Air Act Amendments of 1990*, U.S. Environmental Protection Agency (April 1995); *Federal Energy Management Program (FEMP) M&V Guidelines: Measurement and Verification for Federal Energy Projects (Version 3.0)*, FEMP (April 2008); *American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) GUIDELINE 14: Guideline to Measurement of Energy and Demand Savings*, ASHRAE (October 2008); *Detailed Guidelines for FEMP M&V Option A*, Nexant and Lawrence Berkeley National Laboratory (May 2002); *A European Ex-post Evaluation Guidebook for DSM and EE Services Programmes*, AIS, SRC International (2001); *2001 DEER (Database for Energy Efficiency Resources) Update Study*, California Energy Commission (2001); *Evaluation, Verification and Performance Measurement of Energy Efficiency Programs*, International Energy Agency, prepared by D. Violette (1996).

Threats to Validity: The independent evaluator should assess the various threats to validity for the study design and analytical approach and develop a study plan that minimizes those threats and reduces the associated level of uncertainty. Both the evaluation plan and the study report should identify these threats and describe how the evaluation approach minimizes threats to the validity of the study findings.

Alternative Hypotheses: To the extent possible, the study design should be developed in a way that addresses alternative hypotheses regarding how observed effects may have occurred.

Ability to Replicate: The methodological description of the study should be sufficiently detailed to allow the research design to be assessed for appropriateness by outside reviewers. The description should also be sufficiently detailed to allow the study to be replicated by other evaluation professionals.

State-of-the Art Analysis: The study approach should, to the extent possible, use current state-of-the-art evaluation approaches that maximize the use of technical advancements and the most current analytical approaches.

Unbiased Assessment: The evaluation design, data collection efforts, analytical approach, and reporting of results should be objective and unbiased. Unsubstantiated claims or unsupported conclusions or personal points of view should be excluded and the study results should be based on objective data and information analysis.

Attribution of Effects: The study should focus on identifying the outcomes of the project in question and identify the net effects that can be attributed to the EECBG Program's implementation and support efforts.

Use of Skilled Professionals: The evaluation should employ and be led by evaluation professionals who are trained, skilled, and practiced within the area of research associated with the study being conducted.

Conflict of Interest: Evaluators must disclose any real or perceived conflicts of interest that they might have and the Grantee should have an effective plan to manage conflicts.

Study Design and Application Standards

Evaluation Expertise: The evaluation planning and implementation efforts should be directed, managed and implemented by skilled evaluation professionals experienced in the specific areas of evaluation to which they are being used to support the EECBG

Recovery Act evaluation efforts. Inexperienced staff should be well supervised and their work reviewed by experienced evaluation professionals for objectivity and accuracy.

Study Plan: Each evaluation should have a detailed study plan that identifies how the evaluation is to be conducted, specifying the individual tasks within the study to be completed. The study plan should also specify how data will be collected, describe processes to assure objectivity and accuracy, and identify the analytical approach to be applied for each of the four types of evaluation metrics (jobs created/retained, carbon emissions reduced, renewable energy generated, and energy saved).

Study Report: If a study report is produced by the grantee, the grantee is highly encouraged to provide a copy to the DOE Headquarters EECBG Program Manager, with a copy to the appropriate EECBG Project Officer, and to include an Executive Summary of the results of the study. The Executive Summary should contain a table presenting:

- The net energy savings impacts for each year over the effective useful life of the actions attributable to the energy programs and projects supported by EECBG Recovery Act funds;
- The renewable capacity installed and the annual renewable energy generated and projected to be generated each year over the effective useful life of the installed capacity;
- The net tons of carbon not released into the atmosphere over the effective useful life of the projects implemented;
- The number and type of full-time and part-time jobs (both short-term and long-term) generated as a result of the programs and projects supported by EECBG Recovery Act funds; and
- The results of the EECBG Recovery Act cost-effectiveness test applied to the energy impacts achieved.

The study report should include the contact information, including their name, mailing address, telephone number and e-mail address, for the independent evaluation contractor directing or managing the study.

Sampling: All studies that rely on sampling approaches for collecting data to drive the impact analysis objectives should, to the extent possible, use procedures that minimize bias and maximize the degree to which the sample represents the targeted population. Sampling should be structured to be no less rigorous than a 90% level of precision with a confidence limit of plus or minus 10% for the key attributes on which the sample is being selected.

IPMVP Field Efforts: Field measurements of equipment baseline and post-retrofit or post-installation operations should be conducted using one of the four primary data collection protocols specified in the IPMVP (International Performance Measurement

and Verification Protocol). This protocol describes the types of field data collection typically used by the evaluation industry to obtain measurements needed to calculate energy impacts. This protocol describes IPMVP options A, B, C, & D for both single project end use and whole building actions. The IPMVP requires that key performance indicators that drive the estimates of program impacts should be collected via on-site metering, monitoring, and verification efforts. The protocol requires measurements to be collected that represent key savings calculation indicators. The 2002 Version of the IPMVP Protocol for Determining Energy and Water Savings is found at: <http://www.nrel.gov/docs/fy02osti/31505.pdf>.

Survey and Interviews: When surveys and interviews are used to collect data from which impacts are calculated, the questions should be objective, unbiased, and non-leading. Closed-ended, scaled, or quantitative response questions should be structured to allow a full range of applicable responses. Open-ended questions should be single-subject response questions that allow for a complete response. Complex questions that require a preamble to set a stage for a response consideration should be avoided to help assure that the response is objective and not guided toward a specific outcome.

DOE's Office of Energy Efficiency and Renewable Energy's website has a section on Program Performance and Evaluation, which contains a number of excellent resources providing specific information for program managers on managing evaluation studies, choosing among five basic study designs, and the technical issues addressed briefly above. The web address is as follows: http://www1.eere.energy.gov/ba/pba/performance_evaluation.html.

Among those resources are two especially helpful reports:

- "EERE Guide for Managing General Program Evaluation Studies" (February 2006); and
- "Impact Evaluation Framework for Technology Deployment Programs" (July 2007)

Both reports are available for download at the above website.



Tobias Russell
Acting Program Manager
Weatherization and Intergovernmental Program
Energy Efficiency and Renewable Energy