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Energy Audits (and Energy Assessments)

The starting point and the key to success for anyone seeking a Rural Energy for America (REAP) energy efficiency grant is to first obtain an independent, professional energy audit or energy assessment. This report is the foundational document that justifies the energy efficiency improvements being proposed.

What is an "energy audit"?
An energy audit is a written report by an independent, qualified party using a methodology that meets professional and industry standards. Audits typically involve detailed gathering of field data and engineering analysis. The audit provides detailed project costs and savings information with a high level of confidence. An Energy Audit provides adequate and appropriate evidence of energy savings expected when an energy efficiency project is completed and operated as designed.

When is an energy audit required?
All REAP grant applications for energy efficiency improvements must be supported by either an Energy Audit (or an Energy Assessment described below) prepared by an independent professional. Energy audits are preferred in all cases and are mandatory when total eligible project costs exceed $50,000. Projects which are based on energy audits receive a higher priority score. It is an integral part of the REAP proposal's Technical Report and should be placed at Tab 15 of the application.

Who prepares the energy audit?
The energy audit should be conducted by an experienced energy professional from an independent firm or the local utility. Typically, an energy auditor will be a Certified Energy Manager, Professional Engineer, or have some comparable level of expertise in energy efficiency improvements.

Where can I find an energy auditor?
A good starting point is your local utility. They may also offer audit cost-sharing or free audit services.

Who pays for the energy audit?
Although the cost of the audit can be reimbursed with REAP grant funds if the applicant is ultimately successful in winning a grant, the applicant is ultimately responsible for bearing the cost of the energy audit. It can be a wise investment since it will guide the applicant in identifying the most beneficial energy efficiency improvements.

Does USDA require a specific energy audit format?
Although USDA does not mandate any specific form, the audit must address the following:

(1) Situation report. Provide a narrative description of the facility or process, its energy system(s) and usage, and activity profile. Also include price per unit of energy (electricity, natural gas, propane, fuel oil, renewable energy, etc.) paid by the customer on the date of the audit. Any energy conversion should be based on use rather than source.

(2) Potential improvements. List specific information on all potential energy-saving opportunities and their costs.

(3) Technical analysis. Discuss the interactions among the potential improvements & other energy systems.

(a) Estimate the annual energy and energy costs savings expected from each improvement identified in the potential project.

(b) Calculate all direct and attendant indirect costs of each improvement.

(c) Rank potential improvement measures by cost-effectiveness.

(4) Potential improvement description. Provide a narrative summary of the potential improvement and its ability to provide needed benefits, including a discussion of non-energy benefits such as project reliability and durability.

(a) Provide preliminary specifications for critical components.

(b) Provide preliminary drawings of project layout, including any related structural changes.

(c) Document baseline data compared to projected consumption, together with any explanatory notes. When appropriate, show before-and-after data in terms of consumption per unit of production, time or area. Include at least 1 year's bills for those energy sources/fuel types affected by this project. Also submit utility rate schedules, if appropriate.

(d) Identify significant changes in future related operations and maintenance costs.

(e) Describe explicitly how outcomes will be measured.

(5) Summary of proposed energy efficiency improvements.

(a) Estimated cost of the improvements

(b) Expected energy savings.

(c) Dollars saved per year.

(d) Payback period in years & months (total project cost divided by annual dollars of energy savings).

(6) Appendix. Qualifications of the energy auditor. Typically, an energy auditor will be a Certified Energy Manager, Professional Engineer, or have some comparable level of expertise in energy efficiency improvements.

What is an "energy assessment"?
Energy assessments are less rigorous studies than energy audits but serve a similar purpose. An energy assessment is a brief written report by an independent, qualified party using a methodology that meets recognized industry standards. Assessments typically involve analyzing energy bills and briefly surveying the target building, machinery, or system. The report identifies and provides a savings and cost analysis of low-cost/no-cost measures.

When is an energy assessment used?
Energy assessments may be submitted if the total eligible project costs do not exceed $50,000.

Who prepares the energy assessment?
The energy assessor should have experience and expertise in energy efficiency improvements though no specific credentials are mandated.

Is a specific energy assessment format required?
Although USDA does not mandate any specific form, an energy assessment must cover the following:

(1) Situation report. Provide a narrative description of the facility or process, its energy system(s) and usage, and activity profile. Also include price per unit of energy (electricity, natural gas, propane, fuel oil, renewable energy, etc.) paid by the customer.

(2) Proposed energy efficiency improvement description. Provide a narrative summary of the improvements proposed and their benefits.

(3) Summary of proposed energy efficiency improvements.

(a) Estimated cost of the improvements

(b) Expected energy savings.

(c) Dollars saved per year.

(d) Payback period in years & months (total project cost divided by annual dollars of energy savings).

(4) Appendix. Qualifications of the energy assessor.