



RESNET Home Energy Audit Program Guidelines

Section I. GENERAL PROVISIONS

A. Purpose

The purpose of these guidelines is to define a framework for a home energy audit process. A certified home energy auditor, an accredited Provider and/or a program can apply this program to improve the energy performance of existing homes through uniform, comprehensive home energy surveys for existing residential buildings. These guidelines are intended to encourage investments by building owners that produce the following outcomes:

- Increase the energy efficiency of homes;
- Increase the comfort of homes;
- Increase the durability of homes;
- Reduce the risk that energy improvement recommendations will contribute to health, safety, or building durability problems;
- Reduce waste and pollution, protecting the environment; and
- Ensure that the recommendations are within the community standards (e.g. historic districts, flood zones, subdivision covenant).

And to ensure that throughout the process, energy improvement recommendations are portrayed with reasonable and consistent projections of energy savings.

B. RESNET Home Energy Audit Program.

There are 3 categories of home performance assessments defined in these guidelines, listed in order of increasing accuracy and completeness:

1. Home Energy Survey (HES)
2. Building Performance Audit (BPA)
3. Comprehensive HERS Rating (CHER)

Visual examination and measurement of the home as built are the first steps for any audit process; BPA and CHER exceed HES since they require performance testing. All steps produce a list of recommended improvements, but BPA and CHER include a formalized work scope. A CHER exceeds a BPA only in that a CHER also includes a formal Home Energy Rating.

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C. Relationship to State Law

These guidelines specifically recognizes that some state laws or regulations have additional requirements to those specified in this document. To the extent that such state laws or regulations differ from these guidelines, state law or regulation shall govern.

D. Scope

This RESNET Home Energy Audit Program will address RESNET Providers for each area of home inspection, applicable procedures, certifications of the inspectors, summary of requirements, and the reports to accompany the inspection.

E. Application of Program

This program applies to existing site-constructed or manufactured, single- or multi-family, residential buildings three stories or less in height.

Section 2. HOME ENERGY AUDIT PROVIDER ACCREDITATION CRITERIA

A. Minimum Standards for Home Energy Audit (HEA) Provider Accreditation

Home Energy Audit Providers shall be accredited in accordance with the Accreditation Process specified in the application for accreditation. An HEA Provider shall specifically meet the following minimum standards for Accreditation.

Home Energy Survey Professional and Building Performance Auditor Certification Standard. Home Energy Survey Professionals (HESPs) and Building Performance Auditors (BPAs) shall be certified (and recertified) by RESNET-accredited HEA Providers, who shall abide by the following provisions:

HEA Providers shall provide documentation that the HESPs and/or BPAs under their Providership meet the following certification requirements:

- 1. Performance Evaluation.** HESPs and BPAs shall pass a performance evaluation of their ability to perform accurate Home Energy Surveys and/or Building Performance Audits in accordance with these guidelines. Each HESP and BPA shall complete a probationary period where supervision is provided by the HEA Provider's QA Designee. The probationary period covers a minimum of three Home Energy Surveys and/or Building Performance Audits (as applicable) after which the QA Designee shall determine if additional training is needed.
- 2. Professional Development for HESPs and BPAs.** HESPs and BPAs shall complete one of the below three options:
 - Complete 18 hours of professional development every three years.

The 18 hours shall include completion of 18 hours of refresher course(s) offered by a RESNET Accredited HEA Training Provider; or

- Documentation of 18 hours of attendance at a RESNET Conference every three (3) years; or
- Pass the HESP online test every three years.

3. Testing. Testing. All certified HESPs shall pass the national Home Energy Survey Professional (HESP) online test administered by RESNET with a score of at least 75 percent. Each certified BPA shall pass the national Building Performance Auditor (BPA) online test administered by RESNET with a score of at least 80 percent, and pass any additional field evaluations to determine competency to perform building air leakage and duct pressurization tests, and combustion safety procedures as required in Chapter Eight of the RESNET National Home Energy Rating Standards.

4. Recertification. Recertification of individuals by the HEA Provider shall occur every three (3) years.

5. Agreements. As a condition of certification, each HEA Provider shall ensure that each certified individual enters into a written agreement with the Provider to provide the applicable field verification services in compliance with these guidelines. An unexecuted copy of the written agreement shall be provided to RESNET with the Provider's accreditation application, and again within 60 days of making changes to the agreement. The written agreement shall, at a minimum require Auditors to:

- Provide audit verification services in compliance with these Standards;
- Provide accurate and fair Professional Surveys; and
- Comply with the RESNET Code of Ethics. The RESNET Code of Ethics shall be attached to the written agreement.

Minimum Standards for HEA Provider Operation Policies and Procedures shall be submitted in written form to RESNET for approval, and shall at a minimum provide for the following:

- Written conflict of interest provisions that prohibit undisclosed conflicts of interest, but may allow waiver with advanced disclosure. The "Standard Disclosure" form adopted by the RESNET Board of Directors shall be completed for each home that receives a Home Energy Survey and shall be provided to the client and made available to the homeowner. Each form shall accurately reflect the proper disclosure for the home that it represents. For the purpose of completing this disclosure, "Auditor's employer" includes any

affiliate entities. Recognizing that a number of different relationships may exist among the auditor or the auditor's employer, other contractors that may complete work on the home, and the survey client and/or homeowner, the HEA Provider shall ensure that all disclosures are adequately addressed by the Provider's quality assurance plan, in accordance with the relevant quality assurance provisions of these Standards.

- Written Auditor discipline procedures that include progressive discipline for probation, suspension, and decertification.
- In accordance with the minimum requirements set forth in Chapter 9 for quality assurance in the National Home Energy Rating National Standards, a written audit Quality Assurance Plan and designation of a Quality Assurance Designee.

B. Auditor Registry. The HEA Provider shall maintain a registry of all of its certified Auditors. The specified Provider shall also keep on file the names and contact information for all certified Auditors, including company name, mailing address, voice phone number, fax number, and email address. Upon request, the HEA Provider shall provide to RESNET its registry of certified Auditors.

C. Complaint Response Process. Each HEA Provider shall have a publicly accessible system for receiving complaints. HEA Providers shall ensure that Auditors inform clients about the complaint process by publicizing the web address of the complaint resolution process. Each HEA Provider shall retain records of complaints received and responses to complaints for a minimum of three (3) years after the date of the complaint.

D. Additional HEA Provider Duties Related to Oversight of Building Performance Auditors (BPAs)

Certification of Performance Testing Proficiency. The HEA Provider is responsible for certifying that each BPA has successfully completed the following:

- Passing the 50 question RESNET HESP exam shall pass the 50 question BPA exam with a minimum score of 80%.
- BPA candidates shall complete a combined total of twenty (20) hours of RESNET approved training in Pressure Diagnostics, Combustion Appliance Zone (CAZ) Testing and Work Scope Requirements which includes field training and a field proficiency demonstration as defined in Chapter 8 of the RESNET Mortgage Industry National Home Energy Rating Standards.

Section 3. NATIONAL HOME ENERGY SURVEY PROCEDURES

A. Home Energy Survey

The purpose of the Home Energy Survey is to assess the general condition of the home with respect to energy performance. The Home Energy Survey shall include a report that shows a general range of a home's energy efficiency based on minimum specific criteria (e.g. insulation, equipment age, general condition, energy usage and costs) and a lookup matrix based on regional norms and climate, as approved by RESNET.

The Home Energy Survey Professional (HESP) shall interview the homeowner regarding energy, comfort problems and related durability issues. The HESP shall review the goals listed in these guidelines, and provide an explanation of the home energy audit process and potential availability of incentive programs that maybe accessed by the homeowner. The interview shall include, but is not limited to, the following subject areas:

- Comfort complaints, including areas of the home that are too hot or too cold.
- Energy billing concerns.
- Durability issues, including water intrusion, ice damming, etc.
- Interest in potential home energy performance improvements.

The HESP shall inform the homeowner of low cost/no cost improvements that can be implemented by the homeowner.

The HESP shall request copies of utility bills and/or written permission to obtain past energy use information from the utility supplier(s), for the purpose of estimating generalized end-use consumption (base, heating, and cooling). If the customer declines, the HESP shall explain the reason for the request and the potential effect on the home energy survey.

B. Minimum Procedures for a Professional Home Energy Survey:

The Home Energy Survey Professional (HESP) shall complete a RESNET- approved survey form. The survey form will require the HESP to visually review the home to determine, measure or estimate the following features:

- R-values and location of wall/ceiling/floor insulation;
- Square footage and approximate age of home;
- Glazing type(s), frame material(s), and permanently installed shading devices such as screens or applied films;

- Type, model number, efficiency (if available), and location of heating/cooling system(s);
- Type of ductwork, location and R-value of duct insulation, visual assessment of obvious duct leakage, and any indications of previous duct sealing;
- Type of foundation is crawl space, basement, or slab, along with venting and insulation locations;
- Type of attic, approximate age, type and color of roofing material and presence and type of venting.
- Checklist of common air-leakage sites; indicating likely opportunities for leakage reduction;
- Estimated age and efficiency (if available), condition, number and location of major appliances such as dishwashers, refrigerators, freezers and washing machines;
- Number, type, and controls of indoor and outdoor light fixtures and portable lamps that are suitable for energy efficient re-lamping;
- Durability issues such as visual indications of common moisture problems, including condensation, roof leaks, foundation leaks, ground-water intrusion, ice damming, and plumbing leaks, as well as signs of mold, mildew, insect damage, efflorescence, and stains;
- Presence, size, and location of exhaust fans, and determination of whether they are vented to the outdoors;
- Number, type, and flow rate of water fixtures (e.g. faucets, showerheads), presence and control of hot water recirculation loop/pump;
- Presence and type(s) of combustion equipment; visually identifiable evidence of flame rollout, blocked chimney, rust and corrosion; missing or damaged vent connectors;
- Mechanical systems that are likely to cause or contribute to excess infiltration or pressure imbalances, such as attic fans or bedrooms with no return air or transfer grilles.
- Any identified potential combustion appliance safety hazards related to energy retrofit work.
- The potential for the homeowner to follow up with a Building Performance Audit or Comprehensive HERS Rating.

- Interest in potential home energy performance improvements.

The following elements are outside the scope of a Professional Home Energy Survey:

- The use of blower doors, duct leakage test equipment or an infrared camera.
- Any other diagnostic testing of the home
- Quantification of any levels of air tightness, duct tightness, or ventilation amounts.
- Combustion Appliance Zone (CAZ) testing
- Energy savings estimates will only be generalized and presented along with the qualification that a HERS Rating shall be obtained to calculate more detailed energy savings estimates.

C. Minimum Professional Home Energy Survey Report Documentation

At the completion of the Professional Home Energy Survey the Home Energy Survey Professional shall provide the homeowner a standardized report using a format approved by RESNET, signed and dated by the HESP. The report at a minimum shall provide information to the homeowner that addresses:

- All data collected;
- Whole-house solutions overview of how the home works as a system and how to prioritize actions;
- The quality of installation of HVAC equipment including general information on proper sizing of equipment, duct sealing, insulation and general condition of the ductwork, and the importance of proper refrigerant charge and air flow;
- The quality of the building envelope air sealing and proper levels of insulation;
- An overview of potentially appropriate ENERGY STAR or better products and appliances;
- Potential non-energy benefits of improving the energy efficiency of the home including reduction of carbon emissions, improved comfort and air quality;
- General statement regarding opportunities to improve the thermal envelope, mechanical equipment, lighting and appliances in the home;

- General discussion of observations and concerns regarding combustion appliance operation;
- A safety notification form approved by RESNET that is filled out and presented to the homeowner identifying potential hazards such as lead paint, asbestos, mold, and radon that are outside the scope of the Home Energy Survey;
- Information on available rebate, financing, and/or tax incentive programs that will help the homeowner

Limitations. The Home Energy Survey Professional shall not produce a detailed written work scope for improvements as part of a Professional Home Energy Survey.

B. Building Performance Audit

The purpose of the Building Performance Audit is to identify building performance deficiencies and provide a work scope sufficient for improvements to be made to the audited home. The Building Performance Audit includes an evaluation, performance testing, computer software analysis using software that is accredited by RESNET or approved by DOE for this purpose, and reporting of proposed treatments for improvement of an existing home. The evaluation shall include a review of the data collected from any previous energy audit or survey, any further required measurement and performance testing, and combustion appliance testing. The Auditor shall determine the appropriate work scope for the home. A homeowner may elect to go through this process with or without a prior Professional Home Energy Survey. A Building Performance Audit includes all of the provisions of the Professional Home Energy Survey (Section 704.1.2.5), plus the performance of diagnostic testing and reporting requirements as follows:

Evaluate building shell air leakage in CFM50

At a minimum, a single point (50 Pa) blower door depressurization test shall be performed in accordance with the envelope testing protocols contained in chapter 8 of these Standards and the results thereof shall be included in the audit report.

Evaluate duct leakage.

The Auditor shall perform a duct leakage test in accordance with the protocols in chapter 8 of these Standards, and/or specify a duct leakage test in accordance with RESNET standards prior to beginning any duct-sealing work.

Conduct CAZ Depressurization, Spillage and CO testing

The auditor must perform a worst-case depressurization, spillage, and CO test in accordance with the RESNET interim guidelines.

Prepare a Detailed Retrofit Work Scope

A BPA Report shall include a retrofit work scope in accordance with the RESNET interim guidelines.

The work scopes for recommended improvements shall be determined by the Auditor based upon the findings of the assessment and the client's budget and objectives. The recommendations shall be presented to the homeowner in order of priority based on cost effectiveness and priorities for remediation of combustion appliance deficiencies. At a minimum, five (5) of the most cost-effective measures must be recommended regardless of the client's budget.

Minimum Building Performance Audit Report Documentation

Upon completion of the audit, provide the client with a written record (physical or electronic) of the audit and resulting recommendations within five (5) business days. It shall include:

- General findings of audit
- General recommendations for improvements
- The results of the combustion appliance testing.
- Work scopes for suggested improvements
- Cost-effectiveness estimates based on analysis
- Information on where to locate qualified individuals (including the RESNET website) to conduct a Comprehensive HERS Rating and/or RESNET Qualified Contractors or other contractors suitable to complete the work on the home.

C. REQUIRED SKILLS FOR CERTIFICATION

Minimum skills and knowledge base required to conduct a Professional Home Energy Survey

- Basics of heat transfer concepts
- Basics of building performance testing
- Basics of air distribution leakage
- Calculating gross and net areas
- Definitions/energy terminology

- Basic combustion appliance concerns
- Basics of envelope leakage, thermal bypass, thermal bridging
- Determining envelope insulation
- Presence/absence of insulation and when observable, the quality of its installation
- Recommended levels of insulation by climate zone
- HVAC – determining equipment efficiencies from model numbers or default tables
- HVAC pros/cons, drivers and sensitivities of major system types
- Household appliances – estimate efficiency from model numbers or vintage
- Energy, power, moisture, heat-conductivity/resistance, and temperature units and key conversion factors
- Measuring building dimensions
- Identification and documentation of energy survey inspected features of the home
- Basics of specifications
- Determining window and door efficiency
- Determining building orientation and shading characteristics
- Defining the thermal boundary, and appropriate recommendations for changing the thermal boundary
- Basics of measure interaction, expected life, and bundling for optimal performance considering the house as a system and the emerging need for deep savings.

Minimum skills and knowledge base required for an individual to conduct a Building Performance Audit

- The skills and knowledge required for an individual to conduct a Home Energy Survey
- Ability to perform building envelope leakage testing in accordance with the envelope testing protocols in chapter 8 of RESNET Mortgage

Industry National Home Energy Rating Standards.

- Ability to perform duct leakage testing in accordance with the duct testing protocols contained in chapter 8 of these Standards.
- Ability to perform CAZ, spillage, and CO testing in accordance with Worst-Case Depressurization and Combustion Appliance Testing protocols contained in the RESNET interim guidelines.
- Understanding of pressure influences and remediation of the following conditions
- Room and zone pressure imbalances caused by lack of ducted return air or pressure relief mechanisms such as transfer grilles or jumper ducts.
- CAZ depressurization or combustion appliance spillage caused by return leaks in the CAZ zone, supply leaks outside the house pressure boundary, zonal pressure imbalances, and/or exhaust appliances including other combustion equipment.
- Pressure differential diagnostics in intermediate buffer zones including (but not limited to) attics, garages, or crawlspaces.
- Ability to prepare a detailed work scope in accordance with protocols contained in the RESNET interim guidelines.
- Familiarity with local climate conditions, housing stock, and climate specific practices.

Section 3. GENERAL LIMITATIONS AND EXCLUSIONS

A. Limitations

The energy use information contained in reports resulting from Professional Home Energy Surveys, Building Performance Audits or Comprehensive HERS Ratings do not constitute any warranty of energy cost or savings.

Surveys, Audits and Ratings that are performed in accordance with these guidelines:

- Are not technically exhaustive.
- Will not identify concealed conditions or latent defects.
- Neither the Building Performance Audit nor the Comprehensive HERS Rating is intended to be an inspection of the structural soundness of the home or any other attributes of the home other than the home's energy features and safety issues related directly to proposed work scopes.

- The Professional Home Energy Survey is not applicable to building design and construction features except those previously.

Section 4. HOME ENERGY AUDIT TRAINING PROVIDER ACCREDITATION

A. Requirements for Accredited HEA-Training Providers

Duties and Responsibilities. In order to maintain their accreditation in good standing for providing HESP and/or BPA training courses, all HEA-Training Providers shall fully discharge the following duties and responsibilities:

- Hold the national core competency questions of the national HESP and BPA test administered by RESNET in the strictest confidence.
- Submit to RESNET for approval, copies of the HESP and BPA course presentation materials, training manuals, user manuals, course handouts and any other training materials used for training purposes,
- Submit for approval, copies of all policies, standards, guidelines and procedures to be used by the HEA-Training Provider.
- Maintain a record, for a period of three years, of all training materials and trainee data, including:
 - Historical records of all training schedules and curricula,
 - Historical records of all training attendance records,
 - Historical records of all examinations and individual examination results,
 - Historical records of all certifications issued to any individuals,
- Copies of all current policies, standards, guidelines and procedures in use by the HEA-Training Provider.
- Maintain acceptable accounting practices, suitable to satisfy the requirements of independent audit procedures.
- Maintain up-to-date training materials and provide adequate training facilities.

B. Privileges and rights. All accredited HEA-Training Providers in good standing shall have certain privileges and rights, as follows:

- The privilege to display the accreditation seal of RESNET on any publications, displays, presentations or marketing materials published, authorized for publication or otherwise issued by the HEA-Training Provider.

The privilege to make and use RESNET designated trademarked, copyrighted or otherwise restricted materials for marketing both HESP and BPA Training Courses.

The right to present evidence, arguments and a vigorous defense in any action brought under these standards by any party against a HEA-Training Provider.

SECTION 5. MINIMUM HOME ENERGY AUDIT TRAINER COMPETENCIES

Required HEA Trainer Competencies

To teach either HESP or BPA training curriculum, a HEA-Training Provider shall maintain RESNET Certified HEA Trainer(s) demonstrating the following skills:

- Mastery of the Home Energy Audit Standards knowledge base and skills set given in this chapter.
- Ability to communicate effectively the methods, procedures, knowledge and skills to produce accurate and fair Home Energy Audits from building investigation and performance testing and combustion safety in accordance with these guidelines.
- Understanding of the purposes and benefits of home energy surveys and audits and ability to communicate these to students.
- Understanding the basics of cost-effective energy improvements, preparing a work scope and the ability to communicate these to students.