

Quality Assurance Best Practices: Home Performance with ENERGY STAR Programs

While the EPA's Home Performance with ENERGY STAR is not the only whole house retrofit program in operation, it offers a set of standard guidelines and best practices for Quality Assurance (QA) that should be utilized in starting any new or updating existing home retrofit programs.

In order to sponsor a Home Performance with ENERGY STAR program, organizations must submit an implementation plan which includes Quality Assurance protocols. In order to meet ENERGY STAR requirements, QA plans must explain how the program will ensure participating contractors will meet program standards. QA plans must explain:

- Contractor company and staff qualification requirements intended to ensure that qualified building scientists are assessing the home and are capable of protecting the brand promise of ENERGY STAR. These capabilities include:
 - Contractor staff understand how to represent the program and their participation in it
 - Contractor staff understand the energy efficiency strategies applicable for residential retrofits
 - Contractor staff can protect the health and safety of occupants when installing energy efficiency measures
 - Contractor companies have proper licenses, insurance, etc.
 - Contractor companies sign participation agreements that outline proper conduct and program requirements
- Reporting process that requires participating contractors to report jobs that are promoted to homeowners and performed under the HPwES logo.
 - Some – but not all – programs want to pre-approve jobs prior to commencement. However, this pre-approval tends to slow down jobs and can potentially reduce the audit-to-retrofit conversion rate.
 - Compliance with program requirements and industry standards (see below)
- Job report review process that ensures program compliance and provides for follow-up with the contractor when necessary
 - Reporting of jobs (aka “file checks”) serve multiple purposes:
 - Rebate processing (i.e., eligibility of installed measures)
 - Sufficient data to have some reasonable assurance that measures will save energy
 - Confirmation that health & safety measures were being followed
 - Combustion safety – draft test, Combustion Appliance Zone (CAZ) tests
 - Ventilation – ASHRAE compliance
 - Lead safe practices
 - Other (moisture, asbestos, etc.)
 - Data that could be used to inform an on-site QA visit
 - Opportunity to mentor contractors

- Obtain data to track performance over time and identify trends that cannot be seen on a job-by-job basis
- Method of reporting data and types of data may be more important than amount of data
 - Paper based reporting adds significant transaction costs
 - Scanning, mailing, etc. is time intensive
 - Paper is non-dynamic and forms often have the same information that must be repeated over and over (e.g., “Customer Name, Customer Address”)
 - Data points should pass cost/benefit idea – ask for data that is easier (less costly) to collect (“hot”, “warm”, “cold” setting on water heater rather than “degrees”) could provide sufficient level of data for program purposes – depending on program needs and goals
- Customer feedback mechanism which allows customers to provide feedback directly to the Program Sponsor. Feedback mechanisms can include phone, web browser (e.g., Survey Monkey), email, postal mail, and on-site during QA visit (see also below).
- On-site inspection protocols including a sampling rate set at a minimum of 5% (1 in every 20 jobs) for all participating contractors. ENERGY STAR recommends a tiered sampling rate for newly enrolled contractors, including 100% QA on a contractor’s first few jobs.
 - High performing programs recognize the training value of on-site inspections and will utilize them effectively by:
 - Scheduling inspections at various stages of the job (post audit, during work, post work)
 - Provide training while on-site if possible, but at least use inspections results to design future training curricula
- Conflict resolution mechanism for responding to and resolving customer complaints.
- Record keeping and tracking of results from on-site inspections, customer surveys, and corrective actions. Records must be available for review upon request from the national HPwES program. ENERGY STAR recommends that contractor performance should be measured over time to identify patterns and areas of improvement that may not be visible on a per job basis.

ENERGY STAR provides a Program Implementation Plan Template and a Sponsor Guide, among other resources, to help organizations including utilities, states, municipalities, and non-profit organizations develop local program. These resources are available at the ENERGY STAR website:

http://www.energystar.gov/index.cfm?c=home_improvement.hpwes_sponsors_develop

The Recovery Through Retrofit effort has also produced a document that provides more explicit references to resources that address the health & safety of the occupants – a fundamental component of a quality retrofit program.

<http://www.epa.gov/iaq/homes/retrofits.html>

http://www.epa.gov/iaq/pdfs/epa_retrofit_protocols_draft_110910.pdf