



Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 19-4
EFFECTIVE DATE: January 17, 2019

SUBJECT: REVISED ENERGY AUDIT APPROVAL PROCEDURES, RELATED AUDIT AND MATERIAL APPROVALS

INTENDED AUDIENCE: WAP Grantee Program Managers, WAP Subgrantee Managers

PURPOSE: To provide clarification on energy audit tool (hereafter referred to as “energy audit” or “audit”) approval criteria used by the U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP), specifically; clarifies procedures by which Grantees can submit energy audits and lists of general heat waste reduction measures to DOE for approval every five years pursuant to [10 CFR 440.21\(i\)](#); clarifies requirements for switching between energy audit tools; clarifies requirements for DOE access to web-based energy auditing tools; establishes requirements for maintenance of software audit tools; and, clarifies requirements to ensure compliance with materials procured under [10 CFR 440.21 \(b\)](#).

SUPERSEDES: Weatherization Program Notice (WPN) 19-4 supersedes WPN 16-8, WPN 16-7, WPN 10-16 and WAP Memorandum 011.

SCOPE: The provisions of this Guidance apply to all Grantees applying for financial assistance under DOE’s WAP.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes DOE to administer the WAP (42 U.S.C. § 6861, *et. seq.*). All grant awards made under this Program shall comply with applicable law and regulations, including the WAP regulations contained in [Code of Federal Regulations \(CFR\) Title 10, Chapter II, Subchapter D, Part 440](#). The final rule, published in Interim Final Rule December 8, 2000, established the minimum criteria for an energy audit, and the requirements for Energy Conservation Measures (ECMs) installed in the Program.

BACKGROUND: Since Program Year (PY) 2000, all Grantees have been required to adopt computerized energy audits to determine the most cost-effective ECMs to install in a home. These audit tools have continued to improve, and some have moved to web-based platforms. In the fast-moving industry of computer software development these software tools often require frequent updates. These updates combined with a movement towards online platforms provide the opportunity to ensure that file integrity is adequately maintained throughout the process. This has created a need for guidance regarding software updates and increased monitoring by DOE.

GUIDANCE:

Section 1: Energy Audit Approval Process

Section 2: Additional Energy Audit Issues

Section 3: Use of WAP Funds for Renewable Energy Systems

Section 4: Special Approval of Energy Conservation Materials

To assist Grantees, the following [Attachments](#) are included with this notice:

- Attachment 1: Details the information Grantees must submit and establishes the evaluation criteria used to approve energy audit procedures.
- Attachment 2: Details the information Grantees must submit if they choose to use a priority list and sets forth the evaluation criteria DOE will use to approve priority lists for the WAP.
- Attachment 3: Lists Expedited energy audit tools and applicable building types
- Attachment 4: Lists Standard energy audit tools and applicable building types.
- Attachment 5: Provides guidance on fuel switching.
- Attachment 6: Provides access to a form for special approval of energy conservation materials not included in Appendix A of 10 CFR 440
- Attachment 7: Outlines Program rules in 10 CFR 440, including Appendix A
- Attachment 8: Provides clarification on measure skipping
- Attachment 9: Sets the maximum lifetimes of weatherization measures

SECTION 1: ENERGY AUDIT APPROVAL PROCESS

Energy audit processes are approved by DOE every 5 years. Grantees are required to submit the energy audit information to their DOE Project Officer (PO) at least six months before their previous approval expires to allow sufficient time for review and approval. **All Grantees must have site-built and manufactured housing procedures and protocols in place** (except for the limited instances where manufactured housing is rare or prohibited, as is the case with some territories).

Grantees whose multifamily units (see clarifying *definition* below) make up more than 20% of the annual production are required to go through the same approval process for multifamily housing. Because of the specialized skill set required in the auditing of multifamily buildings, approvals are conditional on the ability of the Grantee to adequately oversee the multifamily audits. If the Grantee no longer maintains the necessary staffing and skillset at the Grantee level to oversee this component, DOE will require the Grantee to submit the audits for review to the PO on a case-by-case basis until the Grantee is able to rebuild the staff/skill set at the Grantee level.

Grantees whose multifamily units are less than 20% of annual production have the option of going through the same approval process. If a Grantee does not have an approval in place but will be undertaking a multifamily project, the Grantee must submit the project details to its PO for review prior to the project commencing.

Definition: Multifamily Housing – For energy audit purposes, per [10 CFR 440.22](#), any building which contains five or more single-family dwelling units as defined in [10 CFR 440.3](#), with the following exception: Row houses and townhomes may be treated as single-family dwellings if they have independent mechanical systems and are attached only by vertical walls that contain a continuous pressure boundary (i.e. fire-rated assembly) that is not penetrated from the foundation to the highest point of conditioned space.

DOE will review all Grantee audit procedures for compliance based on the following:

1. **Expedited:** A fast-track review where the Grantee proposes to use an already-DOE-approved audit tool (see [Attachment 3](#)). If the submittal package contains all the required information and meets the review requirements, the application will be processed within 30 calendar days of official acknowledgement of receipt by DOE, and any DOE comments will be sent to the Grantee. If the audit submittal package is lacking sufficient information for an adequate review; or the audit procedures are not in compliance with Program regulations; or submittal includes the use of an audit tool version that is not listed in [Attachment 3](#); the audit will be moved to the standard review process.
2. **Standard:** The standard review will be handled on a case-by-case basis, based on the complexity of the request, and Grantee compliance. DOE will work with Grantees to assist them in gaining approval. The PO will inform the Grantee what is required to gain audit approval. This approach is more time consuming and can delay operations at the Grantee level while the audit is under review. As a reference for Grantees that might be considering development of their own audit tools, [Attachment 4](#) includes the Grantee-developed tools that are currently approved for specific Grantees.

For audit procedure reviews, DOE reviews not only how the energy audit tool is used to estimate energy use and potential weatherization savings, but also how a Grantee implements its energy audit procedures. Therefore, Grantees requesting approval of any energy audit tool must provide a list of measures typically enabled and provide the input data, assumptions, and audit results (recommended measures) for at least ten dwelling units of each housing type, e.g., 10 site-built audits, 10 manufactured home audits. If a Grantee requests multifamily approval and wishes to submit fewer than 10 multifamily audits, then the Grantee should contact the DOE PO of record to discuss this requirement. Audit results must come from previously completed Subgrantee audits that are typical of homes weatherized by the Grantee's program and represent climate zones throughout the service territory. All information on field procedures and administrative requirements described in [Attachment 1](#) must be provided with requests audit procedure reviews.

If a Grantee wants to revise or change its auditing tool during the five-year validity period of the DOE approval, it must request DOE's approval to do so and provide sufficient information in accordance with [Attachment 1](#). Until the request is approved, the Grantee must continue to use its currently approved audit procedures.

DOE will issue findings for any audit tools that are not fully in compliance with [10 CFR 440.21](#), including, but not limited to timeliness of updates, known software issues that adversely affect the energy savings estimates, and expired audit approvals.

Priority Lists: Rather than perform a site-specific energy audit on every home, Grantees may develop and use Priority Lists to address homes with similar characteristics. If a Grantee wants to use a Priority List for any housing type with WAP funds, additional submittals are required (see [Attachment 2](#)). Priority List submittals will only be considered for approval if the Grantee has an unexpired audit approval for the housing type in question.

Priority Lists are based on specific parameters. Many of these, like energy costs and labor and material costs, change with time. **Grantees must evaluate energy costs, measure implementation costs, technological advancements, and best weatherization practices (no less frequently than annually)** to ensure the approved priority lists remain cost effective and appropriate for the weatherization process. When material and/or labor costs are changing rapidly or significantly, more frequent evaluations are strongly recommended. Grantees must revise their Priority Lists when appropriate.

Grantees must submit a request to DOE to alter their priority lists based on adjusted calculations. These requests are generally processed within a week of acknowledgement of receipt, if all required materials are included in the submission. This action does not “restart” the five-year approval cycle, but merely adjusts the priorities.

DOE will review Priority Lists during the monitoring process to ensure the ECMs in the approved Priority Lists continue to be cost-effective and installed in the proper order.

Cost Effective Installations: All weatherization measures must be “cost effective” as defined by DOE, except for the cost of measures to eliminate health and safety (H&S) hazards that meet the Grantee’s approved H&S plan. “Cost effective” means that each measure and package of measures installed in a dwelling unit must have a savings-to-investment ratio (SIR) which meets or exceeds 1.0. There is a single exception: blower door guided air sealing may have a SIR less than 1.0, if the cumulative SIR of the package of measures is equal to or greater than 1.0, not including H&S measures.

The cost effectiveness requirement stipulated above, along with [2 CFR 200.323](#) which states that Subgrantees “must perform a cost or price analysis in connection with every procurement action,” means that Subgrantees must review and make necessary updates to energy audit cost libraries at least annually, corresponding with the start of new contracts (or annual reapprovals of multi-year agreements).

Ongoing Monitoring: The initial DOE audit approval ensures compliance with regulations, but ongoing monitoring by the Grantee and DOE is required to ensure energy audit tools continue to be compliant. This requirement is especially important to ensure the integrity of version changes when Grantees elect to use web-based energy auditing software. DOE requires access to the live version of all Grantees’ web-based auditing software throughout the duration of the grant. This will be provided by the Grantee in the form of a written request to the designer of the software system, granting DOE access to these systems for the duration of the grant award. As of January 2019, HEAT, ECOS, EA-QUIP and MulTEA are the only WAP-approved web-based software audits used nationally, but others are anticipated to move to web-based applications in the future.

SECTION 2: ADDITIONAL ENERGY AUDIT ISSUES

Software Updates: [10 CFR 440.21 \(e\)](#) requires that energy audit procedures assign priorities among individual weatherization measures in descending order of cost effectiveness. If a change is made to an approved audit tool that changes the SIR calculation of any measure, the latest version of the software must be submitted to DOE for approval. Upon receiving approval of the updated version, it shall be implemented by the audit developer for all Grantees using the same nationally approved audit tool within 60 calendar days of the DOE approval. Any software bugs, errors, or issues arising from an update to the software must be corrected by the software developer no more than 30 days after identification.

Derating Heating/Cooling Systems: Unlike combustion appliances, air conditioners and heat pumps cannot accurately be measured for efficiency while on-site. When addressing a system that utilizes a compressed refrigerant cycle to provide heating or cooling (does not apply to evaporative coolers), the following derating formula may be used.

$$\text{Degraded Efficiency} = (\text{Base EFF}) * .99^{\text{age}}$$

Where:

- Base EFF = Typical efficiency of Pre-Retrofit equipment when new (Seasonal Energy Efficiency Ratio (SEER), Energy Efficiency Ratio (EER), or Heating Seasonal Performance Factor (HSPF))
- Age = Age of equipment in years.

For example: An existing HVAC unit that is 20 years old, was originally rated at 10 SEER.

$$\text{Degraded SEER} = 10 * .99^{20}$$

$$\text{Degraded SEER} = 10 * .818$$

$$\text{Degraded SEER} = 8.18$$

Any other variation of this process or formula currently used by Grantees will no longer be allowed unless first approved in writing by DOE. Derating of combustion appliances in lieu of testing for combustion efficiency is not allowed.

Measure Skipping: Energy audits are required to use interactive procedures to determine the most cost-effective measures and to prioritize these energy saving measures by SIR. Once approved, all prioritized weatherization measures modeled in the audit that meet the SIR requirement must be installed in the dwelling unit. Deviating from the audit prioritized list of modeled measures conflicts with the intent of the rules. A more detailed discussion of measure skipping is in [Attachment 8](#) of this Guidance.

Fuel Switching: WAP Grantees have two options for fuel switching decisions:

1. The Grantee may continue to submit individual fuel switching requests to DOE for review and approval, or
2. The Grantee may opt to administer the fuel switching policy at its level.

Further fuel switching guidance and submittal requirements are included in [Attachment 5](#).

SECTION 3: USE OF WAP FUNDS FOR RENEWABLE ENERGY SYSTEMS:

Assistance under the WAP may be provided for renewable energy systems. [10 CFR 440.18](#) (Allowable Expenditures) incorporates the renewable energy system provisions and specifies a ceiling of \$3,000, with annual escalations, per dwelling for labor, weatherization materials, and related matters. In PY2019, the adjusted average is \$3,699. For subsequent program years, the adjusted average for renewable energy measures will always be specified in the Program Year Weatherization Grant Guidance in the paragraph related to Adjusted Average Cost per Dwelling Unit.

[10 CFR 440.21\(c\)\(1\)](#) specifies performance and quality standards criteria for renewable energy systems. Paragraph (c)(2) establishes a procedure for submission and action on petitions by manufacturers requesting the Secretary of Energy to certify a new technology or system as an eligible renewable energy system.

Grantees that want to add photovoltaic (PV) systems to their approved list of measures must refer to [WAP Memorandum 024, *The Use of Solar PV in the WAP*](#). The memo provides related guidance and details the four step PV approval process:

1. A request to the DOE PO,
2. A sample analysis that includes solar PV as a measure in the energy modeling,
3. Complete (with PO assistance) the required National Environmental Policy Act (NEPA) impact assessment, and
4. Develop a Solar Pilot Program.

SECTION 4: SPECIAL APPROVAL OF ENERGY CONSERVATION MATERIALS

If a Grantee is currently installing a material not listed on the attached copy of Appendix A ([Attachment 7](#)) and cannot provide a copy of the written DOE approval for the material, it must immediately stop using DOE funds for this installation and request inclusion of this material through the process outlined below. It is recommended that Grantees include these requests in their audit approval process when possible.

This Guidance only pertains to materials approved outside of the rulemaking process; therefore, it does not apply to materials listed in the official version of Appendix A. The most recent revision of Appendix A was published in the Federal Register with the [10 CFR 440](#) Final Rule, March 4, 1993.

This Guidance only pertains to materials installed as ECMs that are cost justified per [10 CFR 440 440.21.b](#). Materials installed as General Heat Waste (GHW) measures, H&S measures ([WPN 17-7](#)), Incidental Repair measures ([WPN 12-09](#)), or ancillary measures ([WPN 12-09](#)) do not have to comply with this requirement.

Here is an informative list of items that are not listed on the current Appendix A, but which have been approved for some Grantees and could be approved for use in other Grantee programs upon request, per the instructions below:

- Wet Spray Applied Cellulose Thermal Insulation
- All types of Spray Applied Foam (if installed as insulation)

- Refrigerators
- Replacement Water Heaters (Electric and Fossil Fueled)
- CFL Lamps and Fixtures
- LED Lamps and Fixtures

To include a material not listed in Appendix A the Grantee must submit these items to the Project Officer:

- A written request for “Special Approval of Energy Conservation Material”.
- Documentation demonstrating the material’s cost effectiveness using the Grantee’s approved software audit tool.
- Grantee’s priority list showing material’s position (if applicable).
- Information related to applicable standards for the material or installation.

A form has been produced and is attached to this guidance ([Attachment 6](#)) to assist Grantees in this process.

Once reviewed, DOE will notify the Grantee of its determination in writing. Upon approval, the Grantee should immediately provide a copy of the standards for materials to each Subgrantee.

CONCLUSION: The WAP continues to make progress in many areas and updating the audit approval processes is just one of the components necessary to ensure quality work is being performed throughout the Program. The Department of Energy appreciates your many contributions that continue to make Weatherization Work!



AnnaMaria Garcia

Director

Weatherization and Intergovernmental Programs Office
Energy Efficiency and Renewable Energy

Attachment 1 Energy Audit Submittal Requirements

Attachment 2 Priority List Submittal Requirements

Attachment 3 Nationally-Approved Energy Audits for WAP

Attachment 4 Grantee-Developed Energy Audits for WAP

Attachment 5 Fuel Switching Submittal Requirements

Attachment 6 Request for Special Approval of Energy Conservation Material

Attachment 7 Appendix A to Part 440 Standards for Weatherization Materials

Attachment 8 Measure Skipping Clarification

Attachment 9 Maximum Lifetimes of Weatherization Measures