



Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 23-06

DATE ISSUED: March 3, 2023

EFFECTIVE DATE: March 3, 2023

SUBJECT: Revised Energy Audit Approval Procedures, Related Audit and Material Approvals Including Fuel-Switching And Solar PV

INTENDED AUDIENCE: WAP Grantee Program Managers, WAP Subgrantee Managers

PURPOSE: Clarifies criteria used by the U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) for evaluation of Grantee compliance with [10 CFR 440.21](#); simplifies the process by which Grantees submit energy audit procedures (hereafter referred to as “energy audit”), priority lists, materials lists, and lists of general heat waste reduction measures to DOE for approval every five years pursuant to [10 CFR 440.21\(i\)](#).

SUPERSEDES: Weatherization Program Notice (WPN) 23-06 supersedes WPN 19-4 and WAP Memorandum 24.

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 including renewable energy systems.

BACKGROUND: DOE is responsible for ensuring that only cost-effective weatherization measures are installed with DOE WAP funds. Grantees must use energy audit tools and procedures that ensure cost-effectiveness of WAP and treat each weatherized building as a whole system.

Energy audit requirements for WAP are described in the regulations governing the Program ([10 CFR 440.21](#)). These energy audit tools have continued to advance with many moving to more accessible web-based platforms requiring continuing maintenance and monitoring. Solar PV and fuel-switching from carbon intense energy sources are receiving increasing priority.

GUIDANCE:

Section 1: Energy Audit Approval Process

Section 2: Additional Energy Audit Items

Section 3: Use of WAP Funds for Solar PV Systems

Section 4: Special Approval of Energy Conservation Materials

To assist Grantees, the following Attachments are included with this notice:

- Attachment 1: Energy Audit Tool Submittal Requirements
- Attachment 2: Priority List Submittal Requirements
- Attachment 3: Expedited Energy Audits for WAP
- Attachment 4: Solar PV Implementation
- 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
- Attachment 8: Measure Skipping Clarification
- Attachment 9: Maximum Lifetimes of Weatherization Measures

SECTION 1: ENERGY AUDIT APPROVAL PROCESS

Pursuant to [10 CFR 440.21\(i\)](#), Grantees must submit/resubmit energy audit processes to DOE for approval every 5 years. At least six months in advance of the expiration of the prior approval, Grantees are required to submit the energy audit procedures to DOE to allow sufficient time for review and approval.

DOE will issue action items for any audit tools that are not fully in compliance with [10 CFR 440.21](#) and this guidance, including, but not limited to timeliness for updates, known software issues that adversely affect the energy savings estimates, expired audit approvals, and failure to submit the required materials for energy audit renewals prior to the 6-month due date.

Single Family Site-Built and Manufactured Housing Energy Audits: Pursuant to [10 CFR 440.21\(f\)7](#), Grantees must have DOE-approved site-built and manufactured housing energy audit procedures in place as these housing types “represent a significant portion” of the weatherization program (except for the limited instances where manufactured housing is rare or prohibited).

Attachment 1 details all required information to be supplied to DOE as part of energy audit approval request.

Multifamily Energy Audits: Grantees whose multifamily units (see clarifying *definitions* below) make up more than 20% of the annual production are required to go through the same approval process for multifamily housing as detailed in Attachment 1.

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 DOE Project Officer (PO) for review prior to the project commencing.

Multifamily Housing – Any building which contains two or more “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) from the foundation to the highest point of conditioned space.

Due to complexities that impact the real-world performance of energy audits DOE provides the following clarification regarding applicability of the energy audit procedures to housing types.

- ***Large Multifamily Housing*** – This housing category consists of buildings containing 5 or more dwelling units that are 4 or more stories above grade, or that contain 5 or more units with centralized/shared mechanical systems (e.g., heating, cooling, hot water, ventilation).
- ***Low-Rise Multifamily*** – Formerly known as Small Multifamily, this housing category consists of buildings containing 5 or more dwelling units per building, no more than 3 stories above grade, with each individual unit containing its own mechanical systems (no centralized mechanical systems).
- ***2-4 Unit Buildings*** – These buildings are treated as single-family residences from the perspective of the energy audit procedures, though they are reported as multifamily units to DOE.

Because of the specialized skill set required in the auditing of multifamily buildings, energy audit process approvals are conditional on the oversight ability of the Grantee. 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 proposed multifamily projects’ energy audits for review and approval on a case-by-case basis until the Grantee regains the level of oversight capability required.

DOE Review Process: Submitted energy audit tools and procedures are reviewed for compliance per [10 CFR 440.21](#). Grantees requesting approval of any energy audit tool must submit all information described in Attachment 1 including any additional requests for special materials or process approval (as outlined in Attachments 4, 5, 6 & 9). The following two-tiered approach will be applied to all reviews:

1. **Expedited:** Energy audit tools that are independently third-party verified for energy modeling accuracy and currently approved for use on DOE WAP projects (see Attachment 3), qualify for expedited review. If the submittal package contains all the required information described in Attachment 1, 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 energy 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 energy audit tool version that is not listed in Attachment 3, the request will be moved to the standard review process.
2. **Standard:** The standard review process is handled on a case-by-case basis, based on the complexity of the request and its completeness, review times will vary. Attachment 1 (Section VI) to this guidance contains the submittal requirements for a standard energy audit tool. If additional submittal requirements are identified for compliance during the initial review the PO will inform the Grantee what additional items are necessary for the review to be completed.

Supplemental Energy Audit Changes: During the five-year approval period, Grantees may revise or change their energy auditing procedures, including adding materials such as Solar PV or implementation of fuel-switching by submitting the required documentation in Attachment 1 for any new materials or processes being added to DOE for approval as described in the pertinent attachment.

Priority Lists: As allowed by [10 CFR 440.21\(g\)](#), Grantees may develop and submit for review and approval Priority Lists (PL) to address homes with similar characteristics developed using site-specific audits in compliance with [10 CFR 44.21\(b\)-\(g\)](#). Grantees requesting approval of any PL must submit all information described in Attachment 2. PL 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.

Cost Effective Installations: All weatherization measures must be “cost effective” as defined by DOE, except for 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 an 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 energy audit approval process 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/production version of all Grantees’ web-based auditing software throughout the duration of the grant.

SECTION 2: ADDITIONAL ENERGY AUDIT ITEMS

Fuel Switching: Due to increasing financial and environmental costs associated with the continued use of fossil fuels, DOE strongly encourages WAP Grantees to implement cost-effective fuel switching whenever possible. This may be particularly cost-effective when switching away from delivered bulk fuels (e.g., Liquid Propane (LP), and Fuel Oil) and when implementing Social Cost of Carbon enhancements as outlined in [WPN 22-10 - Including Non-Energy Impacts within the Weatherization Assistance Program](#).

Grantees have two options for administering fuel switching decisions:

1. Submit individual fuel switching requests to DOE for review and approval; or
2. Administer the fuel switching policy at the Grantee level.

To facilitate ease of adopting Grantee administered fuel switching, a sample fuel switching policy and further guidance is provided in Attachment 5.

Measures Considered: The energy audit tool and procedures selected by the Grantee for submission to DOE must be able to evaluate all *major measures* as defined in Attachment 8 for cost-effectiveness and be able to address both heating and cooling demands for all dwelling types and include the impact of both heating and cooling in the energy use calculations.

ASHRAE Implementation: While the requirements for ventilation per ASHRAE 62.2-2016 are outlined in the Grantee health and safety plan, the implementation of appropriate ventilation strategies are an integral part of the energy audit process. As such, Grantees are reminded that ASHRAE implementation must be included in the energy audit procedures submitted for DOE review and approval. Grantees are also reminded that in some homes, e.g., homes where outside ambient air is unhealthy, a more sophisticated ventilation system may be necessary.

General Heat Waste Measures: General Heat Waste (GHW) measures, also referred to as deemed or presumptively cost-effective measures, are measures that are deemed cost-effective without requiring inclusion in the site-specific energy modeling of the dwelling. These are capped at a total maximum cost of \$250 for all measures in this category. Grantees are required to submit a complete list of all measures included in this category for their program as part of the energy audit approval request. Additional information is provided regarding these measure lists in Attachment 1.

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 software update 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 six months 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 three months after identification.

Derating Heating/Cooling Systems: The following derating formula may be utilized for modeling heating, ventilation, and air-conditioning (HVAC) systems that utilize a compressed refrigerant cycle to provide heating or cooling (i.e., heat pump and air conditioning systems, does not apply to evaporative coolers).

$$\text{Derated Efficiency} = (\text{Base EFF}) \times .99^{\text{age}}$$

- Base Efficiency (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.

$$\text{Derated SEER} = 10 \times .99^{20}$$

$$\text{Derated SEER} = 10 \times .818$$

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

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 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.

Maximum Lifetimes of Weatherization Measures: Energy Conservation Measure (ECM) lifetimes are critical inputs to energy audits because they so strongly affect the cost-effectiveness of weatherization measures. DOE has historically limited ECM lifetimes to the default values established by the Oak Ridge National Laboratory (ORNL) during its development of the Weatherization Assistant (WA); however, some measure lifetimes have been revised to increase them based on more recent technologies. Attachment 9 details the maximum allowable lifetimes for use in a Grantee's energy audit, along with details regarding how to request additional lifetime increases.

SECTION 3: USE OF WAP FUNDS FOR SOLAR PV 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 maximum expenditure for WAP funds (with annual escalations) per dwelling for labor, weatherization materials, and related matters. For each program year, the adjusted average for renewable energy measures is specified in the Program Year Weatherization Grant Guidance (PYXX-1) in the paragraph related to Adjusted Average Cost per Dwelling Unit. Grantees are encouraged to identify leveraging opportunities to share the cost of installing Solar PV in Weatherization projects. For additional guidance relating to using leveraged resources, refer to Managing Multiple Funding Streams within the Weatherization Assistance Program (currently [WPN 22-9](#)).

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

Solar PV

Grantees that want to add photovoltaic (PV) systems to their approved list of measures must submit the required documentation according to Attachment 4. The attachment provides related guidance and details the steps to obtaining solar PV approval:

1. Provide a formal written request to the DOE PO.
2. Perform a sample analysis that includes solar PV as a measure in the energy modeling.
3. Develop policy and procedure for inclusion of solar PV in the program.

SECTION 4: SPECIAL APPROVAL OF ENERGY CONSERVATION MATERIALS

DOE reminds Grantees that only materials listed on Appendix A (attached to this WPN) are acceptable for installation with DOE WAP funds, unless or until the Grantee has requested and received approval for inclusion of the material(s) through the DOE-approved process outlined below. It is recommended that Grantees include these requests in their audit approval process when possible, however they may be submitted at any time for review and approval.

This Guidance only pertains to materials approved outside of the rulemaking process; 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.

In addition, 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 22-7](#)), Incidental Repair measures ([WPN 19-05](#)), or ancillary measures ([WPN 19-05](#)) 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)
- LED lamps and fixtures
- Solar thermal & solar PV
- Advanced power strips
- Electrically commutated furnace fan motors

To include a material not listed in Appendix A the Grantee must submit these items to the PO for review and approval:

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

To facilitate adding new materials to a Grantee’s energy audit a form has been produced and is attached to this guidance in this process (Attachment 6).

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 and implement its use.

CONCLUSION: The WAP continues to advance and streamline the energy audit approval processes while addressing high priority concerns such as integration of solar and electrification. The energy audit procedures are 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!

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Attachment 1 - Energy Audit Tool Submittal Requirements

Attachment 2 - Priority List Submittal Requirements

Attachment 3 - Expedited Energy Audits for WAP

Attachment 4 - Solar PV Implementation

Attachment 5 - Fuel Switching Submittal Requirements & Sample Policy

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