Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 22-10 Revised
ISSUE DATE: October 21, 2022

SUBJECT: Including Non-Energy Impacts within the Weatherization Assistance Program

INTENDED AUDIENCE: WAP Grantee Program Managers, WAP Grantee Technical Monitors, WAP Subgrantee Program Managers/Coordinators, WAP Subgrantee Technical Monitors, WAP Auditors, WAP Quality Control Inspectors

PURPOSE: Provide guidance to Weatherization Assistance Program (WAP) Grantees on the inclusion of Non-Energy Impacts (NEI) in the energy audit process and the approval for use following the requirements under 10 CFR 440.21(f)(7).

RELATED GUIDANCE: Energy Audit Approval Procedures (currently, WPN 19-4).

SCOPE: The provisions of this Weatherization Program Notice (WPN) apply to all WAP Grantees applying for financial assistance under the Department of Energy (DOE) WAP.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes the Department to administer the WAP (42 U.S. Code § 6861, *et. seq.*). All grant awards made under this Program shall comply with applicable law and regulations including, but not limited to, the WAP regulations contained in the Code of Federal Regulations (CFR) at 10 CFR 440, specifically 10 CFR 440.21(f)(7), and Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 CFR 200.

BACKGROUND: In Fiscal Year (FY) 2020, Congress amended the authorizing statute for the WAP and included direction for the Program to consider non-energy benefits from weatherization. Consistent with this direction, DOE has worked together with the WAP network, its stakeholders, and national laboratories to analyze the potential ways in which WAP Grantees can best consider NEI through the energy audit tool that provides both ease of adoption and consistency. This October 2022 notice revises the July 2022 notice regarding the same subject.

GUIDANCE: DOE encourages WAP Grantees to consider two types of NEI from weatherization in the determination of measures to be implemented in a home retrofit. Through this guidance, DOE is providing the following methods for Grantees to use in the evaluation of two types of NEI in any energy audit tool that is used to identify the most cost-effective energy conservation measures to install in a dwelling unit:

1) *Social Cost of Carbon,* established using national emissions.
2) *Water Usage Reduction*, based upon a site-specific utility cost for water savings.

Grantees may begin to use these methods beginning on the effective date of this revised program notice as part of their energy audit calculations. Whether a Grantee chooses to implement these NEI into its energy audit process will have no effect on any DOE decision making regarding the implementation of WAP.

Please note that a Grantee may also submit alternate methodologies and measures for inclusion as NEI and should follow procedures outlined in WPN 19-4 for review and approval by DOE of any measure as part of the energy audit tool. Grantees should also submit to DOE methodologies and measures for inclusion of these other types of NEI in their energy audit calculations. DOE will continue work to develop methodologies for other types of NEI in the future and will review Grantee submissions for their applicability more broadly in the Program.

Outlined below are the specific methods and tools DOE is providing to implement the Social Cost of Carbon and Water Use Reduction NEI in the WAP, as well as the procedures for use.

Social Cost of Carbon (SCC)

The SCC is the monetary value of the net harm to society associated with adding a carbon to the atmosphere each year. WAP is providing both a method for implementation of SCC and a predetermined value for the savings generated by WAP. WAP intends to update the value of this savings on a regular basis.

Methodology

WAP is providing a method for including the SCC in any energy audit tool, which can be implemented across the WAP network in a consistent manner. This method follows that published in the Technical Support Document: Social Cost of Carbon and Nitrous Oxide Interim Estimates under Executive Order 13990, which is the method DOE has used previously (e.g., for the appliance standards program) but with some modifications to account for constraints in the currently available audit tools[1]. This method directly includes the social cost of carbon emissions in the fuel price used in the energy audit by adding a modifier to the site-specific fuel costs which will increase the predicted savings for energy conservation measures when energy modeling is performed. The values contained in *Attachment 1* of this revised program notice provide the fuel price modifier in terms of cost per unit of fuel (e.g., cents per kilowatt hour (¢/kwh) of electricity) for the most common primary fuel types encountered by the WAP network. These fuel cost modifiers are to be included in the total fuel cost used in the energy audit for the evaluation of all Energy Conservation Measures (ECMs). Carbon emission rates for fossil fuels burned in the home

[1] Consistent with social cost of carbon estimates provided by the Interagency Working Group on the Social Cost of Greenhouse Gases, DOE presents the monetized benefits from reducing greenhouse gas emissions where appropriate and permissible by law. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in Louisiana v. Biden, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order.

for space or water heating do not vary regionally, so a single value for each fuel type will suffice; however, emission rates for electricity production can vary in some regions or states depending on the energy sources used. Due to this potential variation, Grantees have two options at this time for selecting the fuel cost modifiers used in their program implementation:

1. Use national average values (such as Option 1 or 2) provided in *Attachment 1* to this revised program notice for **all fuel types**.
2. Use national average values for on-site combustion provided in *Attachment 1* of this revised program guidance (such as Option 1 or 2) but use an **electric emissions** modifier calculated specifically for the region or state that the Grantee serves.

If the Grantee selects option 2, then the following guidelines apply:

- Grantee must use binding electric sector policies to account for projected reductions in electricity emissions rates.
- Grantee must use the 3% discount rate when predicting future emissions costs/savings.

To implement the SCC in its program, the Grantee must submit the following information to its DOE Technical Project Officer for review and written approval:

1. A written request to "include SCC in the fuel price used in energy modeling".
2. The exact fuel price modifier to be used for each fuel analyzed by the Grantee.
3. A sample energy cost library which includes the fuel price modifier selected by the Grantee and provided to the Subgrantees for implementation.
4. Updated energy audit procedures provided to direct the energy audit process in the initial evaluation and site-specific energy modeling to include the SCC.

   See "*Fuel-Switching Impacts*" below for additional information required for Grantees that have current DOE-approval for "Grantee administered fuel-switching."

Once DOE receives a complete request from a Grantee, the request will be evaluated for accuracy and compliance with current regulations and program guidance. After a Grantee receives written approval by means of an updated Energy Audit Approval Memo, then it may implement SCC in its program and include them in the cost savings evaluation for each project.

Fuel-Switching Impacts

While this SCC inclusion method is simple to implement it does have certain potential for unintended impacts when conducting fuel switching evaluations due to the increase in fuel costs not being related to out-of-pocket costs to the client. For this reason, implementation of any fuel-switching must be undertaken with caution to ensure that the client does not see an increase in energy burden as a result of any weatherization activity. Fuel-switching is addressed in Energy Audit Approval Procedures (currently WPN 19-4, Revised Energy Audit Approval Procedures, Related Audit, and Material Approvals - Attachment 5) and this guidance allows for either case-by-case fuel switching, which requires DOE approval of each fuel switch conducted by the Grantee, or

Grantee administered fuel switching which transfers this decision making authority to the Grantee based on demonstrated capability to administer the fuel- switching process.

If a Grantee currently does not have written DOE approval via Energy Audit Approval Memo to perform "Grantee administered fuel-switching," then this revised program notice does not change the "case-by-case" approval process outlined in the Grantee's audit tool approval, see section 1 of WPN 19-4. However, if a Grantee has received a prior approval to administer fuel- switching at the Grantee level, then this revised program notice modifies that procedure to ensure that WAP meets the original requirement that the program reduce their client's total residential energy expenditures.

To ensure compliance with this requirement, DOE has identified that additional safeguards be included in the implementation of SCC. Any Grantee that currently has written DOE approval to administer fuel switching and wishes to adopt the inclusion of SCC into these calculations must provide the following additional supporting information when requesting addition of the SCC to their energy audit procedures:

- Grantee must provide updated written energy audit policy that outlines how it will ensure fuel-switching performed in a home where the SCC is included in the fuel price does not result in a net increase in out-of-pocket energy expense for the client.
    - This policy may include an analysis of the heating/cooling annual cost for each potential fuel type without the inclusion of the SCC in the fuel prices, including any cooling costs that did not previously exist in the home due to the addition of cooling via installation of heat pump systems.

Water Usage Reduction

Reduction of water use in weatherized homes is already a common measure for many Grantees who install low-flow devices such as faucet aerators and showerheads. Including hot water use reduction in the cost-effectiveness calculation is common. DOE encourages Grantees to include the price of water in the cost-effectiveness calculations of measures that save water such as faucet aerators and showerheads. DOE has developed a spreadsheet calculator (available on the WPN 22-10 webpage) that can be used to determine the cost-effectiveness of water savings devices, including both hot and cold water usage. The values generated using this calculator can then be included in the energy modeling of the home and included in the package of measures installed by DOE WAP.

Grantees should be aware that faucet aerators, showerheads, and toilets are not currently included in the approved materials list contained in 10 CFR 440 Appendix A. This means that for these measures to be included in the package of DOE WAP installed measures, the Grantee will need to submit a Special Materials Request Form as outlined in WPN 19-4, Revised Energy Audit Approval Procedures, Related Audit, and Material Approvals (Attachment 6) to install any of these measures as ECMs.

To adopt water usage reduction measures into the Grantee's program, the following must be submitted to the Grantee's DOE WAP Technical Project Officer for consideration and approval:

1. A Special Materials Request Form WPN 19-4, Revised Energy Audit Approval Procedures, Related Audit, and Material Approvals (Attachment 6) for each specific water savings measure (e.g., aerators, showerheads, toilets, etc.).
2. A sample energy model of each item using the Grantee's DOE-approved audit tool demonstrating the cost-effectiveness evaluation of the measure that is compliant with 10 CFR 440.21.
3. The written procedures that are provided to direct the energy audit process in the initial audit, evaluation, energy modeling, and final inspection of each measure.

Once DOE receives a complete request from a Grantee, it will be evaluated for accuracy and compliance with current WAP regulations and program guidance.

After a Grantee receives written approval by means of an updated Energy Audit Approval Memo from DOE, then it may implement the water savings measures in its program and include them in the cost savings evaluation for each project.

CONCLUSION: This revised program notice is the first step in considering NEI associated with SCC and Water Use Reduction in an energy audit tool. As this procedure is implemented, DOE will provide technical assistance to Grantees as requested. DOE will also continue to consider other methods for valuing household health and safety benefits and other NEI resulting from weatherization in the energy audit tool and publish additional guidance as available. WAP is considering the inclusion of additional NEI as part of a larger effort to amend its existing regulations to address the statutory amendments from the Energy Act of 2020 and more information will be made available later this year regarding this effort.

WAP Grantees are encouraged to pursue DOE-approval for the consideration of other NEI by submitting requests directly to the appropriate DOE Project Officer for review and approval.

If you need additional information, please contact your respective DOE Project Officer.

ANNAMARIA GARCIA

Digitally signed by ANNAMARIA GARCIA
Date: 2022.10.21 09:26:13 -04'00'

AnnaMaria Garcia, Director
Weatherization and Intergovernmental Programs Office
Energy Efficiency and Renewable Energy

Attachment 1 – Program Year 2022 SCC Values

Attachment 1 – Program Year 2022 SCC Values

The following national fuel modifier values were established for Program Year (PY) 2022 for inclusion in the site-specific fuel prices used in the energy modeling of homes in the WAP. These values are based on the social cost of carbon estimates provided in the Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases' *Technical Support Document: Social Cost of Carbon and Nitrous Oxide Interim Estimates under Executive Order 13990* published in February 2021, the EIA annual Carbon Dioxide Emissions Coefficients, which can be utilized to calculate the carbon emissions by fossil fuel consumption, and electricity generation related carbon emissions from EIA's 2022 Annual Energy Outlook.

DOE WAP provides two options for calculating fuel cost modifiers depending on what type of audit tool is used by the Grantee[2].

Option 1

If the Grantee is using an audit tool that can only accept one value for the fuel cost modifier, WAP suggests the Grantee use Option 1 with the following default modifiers[3].

Based on the 2022 social costs of CO2 emissions from the IWG referenced above and utilizing a 3% discount rate ($53/metric ton of CO2 in 2020 dollars)[4], DOE WAP provides the following fuel cost modifiers for PY 2022 in 2020 dollar years.

- Electric emissions add 1.99 cents/kilowatt hour (kwh) to electric costs ($0.0199/kwh).
- Natural Gas (NG) emissions add 28.04 cents/therm to NG costs ($0.2804/therm).
- Liquid Propane (LP) emissions add 30.48 cents/gallon to LP costs ($0.3048/gallon).
- Heating Oil[5] emissions add 54.01 cents/gallon to Oil costs ($0.5401/gallon).

[2] Grantees who use Weatherization Assistant v8.9 may implement either option but will need additional technical assistance from Oak Ridge National Laboratory (ORNL) to facilitate the use of Option 2. Once Grantees switch to Weatherization Assistance v10, the software will include default values that allow for full inclusion of long-term SCC values.

[3] DOE WAP recognizes that this method may underestimate the fuel cost modifiers for fuels and likely overestimate the fuel cost modifier for electric -related upgrades but is providing this option for Grantees given limitations in audit tools at the present time.

[4] DOE WAP recognizes that the IWG provides median estimates at three different discount rates (2.5, 3, and 5%) as well as a 95% confidence interval for the 3% discount rate and that the IWG does not provide a recommendation on a central tendency. However, for ease of reporting, WAP can only use one discount rate and has chosen the median estimate at the 3% discount rate which is likely a conservative estimate (see 2021 IWG report for further discussion).

[5] "Heating Oil" encompasses all heating oil distillates including kerosene.

Option 2

If the Grantee is using an audit tool that can accept different fuel modifiers by year for the lifetime of the WAP measure, WAP suggests the Grantee use Option 2 with the fuel cost modifiers in Table 1.

DOE will provide future updates to these figures which may be implemented by any Grantee with a current written DOE approval for SCC inclusion in their energy audit tool upon their release.

Table 1. Fuel cost modifiers for the Social Cost of Carbon by year and fuel type.

	SC-CO2	Electric	Natural Gas	Propane	Distillate Fuel Oil/Kerosene
	Annual SC- CO2, Discount Rate and Statistic 3% Average	AEO 2022 Annual Electric Grid Emissions Estimates by year	52.91 kg CO_2 Per Million Btu	5.75 kg CO_2 Per gallon	10.19 kg CO_2 Per gallon
Year	\$/metric ton of CO_2	\$/kwh	\$/therm NG	\$/gal LP	\$/gal Heating Oil
2022	53	0.0199	0.2804	0.3048	0.5401
2023	54	0.0195	0.2857	0.3105	0.5503
2024	55	0.0180	0.2910	0.3163	0.5605
2025	56	0.0176	0.2963	0.3220	0.5706
2026	57	0.0176	0.3016	0.3278	0.5808
2027	59	0.0180	0.3122	0.3393	0.6012
2028	60	0.0182	0.3175	0.3450	0.6114
2029	61	0.0180	0.3228	0.3508	0.6216
2030	62	0.0179	0.3280	0.3565	0.6318
2031	63	0.0179	0.3333	0.3623	0.6420
2032	64	0.0179	0.3386	0.3680	0.6522
2033	65	0.0182	0.3439	0.3738	0.6624
2034	66	0.0178	0.3492	0.3795	0.6725
2035	67	0.0176	0.3545	0.3853	0.6827
2036	69	0.0176	0.3651	0.3968	0.7031
2037	70	0.0177	0.3704	0.4025	0.7133
2038	71	0.0178	0.3757	0.4083	0.7235
2039	72	0.0180	0.3810	0.4140	0.7337
2040	73	0.0180	0.3862	0.4198	0.7439
2041	74	0.0182	0.3915	0.4255	0.7541
2042	75	0.0183	0.3968	0.4313	0.7643
2043	77	0.0186	0.4074	0.4428	0.7846