# Measure Selection Guidelines Quiz Answer Key

# Weatherization Energy Auditor – Single Family

DISCLAIMER: This quiz is intended for use as an interim review. Distribute to students after training the associated curriculum chapter, or the next day, to refresh the lesson. Being publicly available renders this specific quiz invalid for use as a formal assessment tool for accreditation.  See Tier 2.14(b) IREC 01022 ISPQ accreditation standard.

Learning Objectives

By attending this session, participants will be able to:

* Describe selection criteria for weatherization measures.
* Identify Appendix A of the DOE WAP Rule 10 CFR, Part 440.
* Explain the concepts of present value and fuel escalation rate as they relate to SIR.
* Practice SIR calculations.

Questions and Rationale

**Objective:**

* Describe selection criteria for weatherization measures.

**Question:**

1.Which of the following is a required criterion for weatherization efficiency measures?

1. Will pay for themselves through associated energy savings.
2. Simple payback is one or greater.
3. Improve the water-tightness of the home.

**Rationale:**

**A** is correct. It is a requirement that energy efficiency measures be cost-effective. Health and safety measures are exempt from this requirement.

**B** is incorrect because simple payback refers to the cost-effectiveness, but a requirement of one or greater doesn’t make sense. The SIR must be one or greater.

**C** is incorrect because it is not required that all efficiency measures be related to the water-tightness of the home.

**Objective:**

* Identify Appendix A of the DOE WAP Rule 10 CFR, Part 440.

**Question:**

2.After conducting the audit and entering data into the software, you have a list of appropriate measures. When writing up your work order, if you have doubts about whether certain materials are approved for use in the program, where should you look?

1. The official WAP SIR calculator
2. National Energy Audit Tool’s library
3. Appendix A of 10 CFR 440

**Rationale:**

**A** is incorrect because the SIR calculator does not list materials.

**B** is incorrect because the library is user generated and may include materials that are not officially approved or may *not* include all the materials that are approved.

**C** is correct because Appendix A lists all of the materials that have been approved for use in WAP. Other materials may be approved upon specific application by the state.

**Objective:**

* Explain the concepts of present value and fuel escalation rate as they relate to SIR.

**Question:**

3.Which of the following best describes the concept of present value (PV)?

1. A penny saved is a penny earned.
2. $10 saved today is likely worth more than $10 saved 15 years from now.
3. Energy production is becoming more efficient and will likely cost less in the future.

**Rationale:**

**A** is incorrect because it does not include the time value of money.

**B** is correct because present value refers to the time value of money.

**C** is incorrect because PV refers to the time value of money in all respects, not just as related to energy costs.

**Objective:**

* Explain the concepts of present value and fuel escalation rate as they relate to SIR.

**Question:**

4.Which of the following **BEST** describes the concept of fuel escalation rate as it relates to measure selection guidelines?

1. Energy production is becoming more advanced, and escalated fuel availability reduces the need for efficiency.
2. Heating appliances may not be replaced if it requires switching to a different fuel source, e.g., swapping electric heat for natural gas.
3. Fuel prices change. Predicting overall savings includes predicting how much the saved energy will be worth in the future.

**Rationale:**

**A** is incorrect because it is not the best option presented. The “need for efficiency” is unrelated to the fuel escalation rate, which determines future prices only, not how energy is used.

**B** is incorrect because fuel escalation rate is not related to fuel switching.

**C** is correct because it is the best and most complete answer to the question. Refer to slide 3 of the presentation.

**Objective:**

* Practice SIR calculations. (This objective is met through the activity described in the lesson plan for this chapter. This questions checks learner knowledge of basic principle of SIR and what it indicates.)

**Question:**

5.A savings-to-investment ratio (SIR) lower than 1.0 indicates that a measure:

1. Will pay for itself through energy savings within one year.
2. Will not pay for itself through energy savings in its lifetime.
3. Will save less than 1MmBTU per year for the life of the measure.

**Rationale:**

**A** is incorrect because it confuses the concept of Simple Payback with SIR.

**B** is correct because that is the proper interpretation of an SIR lower than 1.

**C** is incorrect because SIR does not indicate the *amount* of energy saved, just the cost-effectiveness of the measure.