

## ATTACHMENT B

### FY24 WHOLE BUILDING COMMERCIAL RETROFIT PROJECT DESCRIPTION/SCOPE OF WORK

#### ABC Building Company – Southern Region

#### PROJECT DESCRIPTION

This project will deliver eligible energy efficiency upgrades to three commercial buildings identified below. These energy efficiency measures include lighting, air sealing, weatherization, and HVAC upgrades.

#### DELIVERABLES

The deliverables included below will be designed, purchased, developed, and implemented by **ABC Building Company** hereinafter “Grantee.” Each of these deliverables shall include cost effective measures that directly contribute to energy savings or facilitate energy conservation behavioral practices in Maryland.

#### 1. Eligible Project Sites

- A. Grantee has identified one commercial building in **County**, as an eligible facility serving low-to-moderate income Marylanders to receive an energy efficiency upgrade under this Grant.

Address Building 1

- B. To avoid duplication of materials or work, Grantee shall ensure that any building or dwelling unit receiving energy efficiency upgrades and weatherization services under the Grant has not received the same energy efficiency upgrades or the same weatherization measures proposed in the Grant through another program. An exception to this is buildings or dwelling units receiving HVAC replacements, which must have been weatherized by this or a previous program within the last five years.
- C. Grantee shall provide personnel to comply with the reporting and invoicing requirements of this Grant.
- D. Each reimbursement request for Administrative costs or Indirect costs shall include supporting documentation detailing the work performed. For further details, refer to the [FY25 Funding Opportunity Announcement](#).

- E. All work must be completed by contractors and/or staff holding all necessary certifications and licenses. Additionally, all work performed pursuant to the Grant shall comply with all applicable local, State, and federal building codes.

## 2. Commercial Energy Audit Requirements

- A. Grantee will provide cost effective energy efficiency upgrades and weatherization services to the specified number of buildings in the target region. See Section 3 for details on identified buildings.
- B. Each building receiving energy efficiency services under this Grant will first undergo an energy audit that will include a visual inspection, a combustion safety test (if applicable), and may include a before and after blower door test.
  - 1) All energy audits of buildings funded by the Grant must be completed by individuals holding the appropriate certifications for the building type from the Association of Energy Engineers (AEE) or the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). MEA will consider auditors without the certifications listed below if, after a MEA review of their certifications, it is determined that the auditor possesses the necessary qualifications and experience for the type of facility.
    - i. Appropriate certifications include but are not limited to [AEE Certified Energy Auditor \(CEA\)](#), [AEE Certified Energy Manager \(CEM\)](#), or [ASHRAE Building Energy Assessment Professional \(BEAP\)](#).
    - ii. For buildings more than 10,000 square feet, auditors shall have CEM certification, BEAP certification, and at least 2 years of experience performing commercial energy efficiency audits or commissioning of existing buildings of comparable size.
    - iii. The auditor and the grantee, as applicable, shall clearly explain test results, recommended measures, and observations including combustion safety, indoor air quality, mechanical ventilation, utility bill analysis, insulation, air sealing, health and safety recommendations/concerns, and others as necessary to educate building occupants on the audit and upgrade process.
    - iv. For energy audits of buildings Grantee must submit to MEA in writing the type of audit (level) proposed, the credentials of the individual(s) performing the audit, and its cost. Upon request by MEA, Grantee must provide energy audit reports to MEA.
- C. Energy audits shall result in the development of cost-effective energy improvement packages. An energy efficiency upgrade is cost effective when the project, on a per building basis, has an acceptable simple payback of 20 years or less for commercially metered buildings and 15 years or less for residentially metered buildings.
  - 1) Projects including the installation of new HVAC equipment shall include weatherization of the building shell based upon audit recommendations, unless it can be demonstrated that the dwelling has been weatherized within the last 5 years.

- 2) In order to educate building occupants on the audit and upgrade process, the Auditor or Grantee shall clearly explain test results, recommended measures, and observations, including combustion safety, indoor air quality, mechanical ventilation, utility bill analysis, insulation, air sealing, health and safety recommendations/concerns, and other matters as necessary.
- D. Grantee shall report the primary heating fuel type used by each building that is included in the Project.
- E. The audit, installation of efficiency measures, and post installation diagnostics shall be performed consistent with the requirements of Building Performance Institute (BPI) Standards 1100 and 1200 and any failures addressed.

### **3. Commercial Energy Efficiency and Weatherization Services**

The following energy efficiency measures are eligible for grant funding when identified as cost effective in the energy audit report. These measures will be reported in the new commercial projects section of the Monthly Reporting Attachment reports:

- A. Air Sealing and Insulation
  - 1) Increase attic insulation to appropriate International Energy Conservation Code (IECC) levels for commercial buildings where feasible.
  - 2) For buildings where this is not possible, add cost-effective additional insulation as allowable.
- B. HVAC tune-up
- C. HVAC filter replacement
- D. Duct sealing and/or insulation
- E. Water heater wrap for electric water heaters older than 2004 located in unheated spaces.
- F. Hot water pipe wrap with a minimum R-value of 3.
- G. Hydronic heating and process hot water pipe wrap with a minimum R-value of 3.
- H. ENERGY STAR certified appliance replacements to include new clothes washers, electric clothes dryers, dishwashers, window air conditioners, heat pump water heaters, commercial cooking equipment, refrigerators, dehumidifiers, and freezers.
  - 1) Maximum Grant-eligible reimbursement for a residential refrigerator is \$1,000;
  - 2) To be reimbursed for an appliance replacement, the original appliance must have been functional within the last year;
  - 3) Installation of gas appliances is not eligible for reimbursement;
  - 4) MEA strongly recommends chest freezers over upright freezers where space allows as they are usually more energy efficient.
- I. ENERGY STAR certified office equipment upgrades, if the energy benefits can be shown to accrue to low-or moderate-income Marylanders.
  - 1) Equipment being replaced needs to have been functional within the last year.
- J. Light bulb replacements with LEDs:
  - 1) CFL installation is prohibited.
  - 2) T12 to LED, T8 or T5 lighting replacements.
- K. Installation of low flow showerheads and/or faucet aerators. To facilitate maximum energy savings, MEA strongly recommends the installation of EPA's Water Sense® low flow showerheads (2.0 gal/min maximum) and faucet aerators.

- L. Controls/Building automation – with MEA program manager approval
  - 1) Grantee shall submit in writing estimated savings from controls/building automation tunes up for approval consideration. Estimates should explain the underlying rationale for the claimed savings.
  - 2) Program managers will consider and respond to requests in writing as to whether it is approved, approved with modifications, or not approved.
- M. Controls/Building automation tune up– with MEA program manager approval.
  - 1) Grantee shall submit in writing estimated savings from controls/building automation tunes up for approval consideration. Estimates should explain the underlying rationale for the claimed savings.
  - 2) Program managers will consider and respond to requests in writing as to whether it is approved, approved with modifications, or not approved.
- N. Replacement of existing motors with higher efficiency motors
- O. Installation of variable-frequency drives (VFD) on motor systems
- P. HVAC Replacements: HVAC replacements may involve: 1) installing a new heat pump or A/C system to replace an existing heat pump, electric heating system, or A/C system, or 2) installing a new heat pump to replace or augment an existing fossil fuel-fired space heating system (i.e., gas-fired furnace or boiler). Both types of replacements are addressed in this section.
  - 1) Load Calculations: For all HVAC replacements, industry standard commercial HVAC load calculations must be performed to ensure that the new system is properly sized.
  - 2) Weatherization: Prior to adding or replacing an HVAC system in a residence, the residence shall be weatherized with respect to air sealing and attic insulation (through this program or as noted during inspection as having previously occurred). Weatherization must have been completed within the last five years.
  - 3) Duct Leakage Test/Sealing
    - i. Duct sealing work shall include duct blaster leakage tests performed before and after completion of duct sealing. For each duct leakage test, the distribution efficiency shall be estimated based on the current BPI Guidance on Estimating Distribution Efficiency or a comparable method that quantifies the improvement in delivery efficiency.
    - ii. Ducts that leak outside or affect health and safety should be sealed with approved mastic or aerosol spray duct sealant and/or repaired.
  - 4) Pipe Insulation
    - i. Existing or new refrigerant lines must be insulated to a minimum of R-3.
    - ii. Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance and wind.
  - 5) Existing HVAC: For HVAC unit replacements, the following attributes of the existing HVAC system being replaced must be noted and reported in the Monthly Reporting Attachment:
    - i. Equipment type (i.e., electric baseboard; ASHP; PTAC; furnace)
    - ii. Approximate age of unit
    - iii. Performance efficiency (i.e., SEER, HSPF, AFUE)

- 6) New HVAC Equipment: Newly installed equipment must be an ENERGY STAR® certified heat pump (including mini-splits) or air conditioner. For Packaged Terminal Air Conditioner (PTAC) unit replacements that currently do not have ENERGY STAR® rating qualifications, PTAC replacements shall have an EER rating meeting the following minimum levels:

Capacity (Btu/hr.)	Minimum EER
8,000 or less	11.8
8,001 – 10,500	11.4
10,501 – 13,500	10.7
13,501 or more	10.0

If these EER levels cannot be met due to the size of a replacement PTAC or PTHP, then the EER must be at least 10% greater than the IECC minimum value for replacements. For other HVAC system types that are not certified by the ENERGY STAR program, equipment must meet or exceed the minimum efficiency level as specified in the current Maryland energy code commercial chapter.

- 7) Heat Pump and A/C Installations Replacing Existing Electric HVAC Systems:
- i. Replacement of the existing system is an acceptable measure when the existing heat pump or A/C has a SEER rating of 10 or less; or replacement has a simple payback of 15 years or less; or the entire project, inclusive of the HVAC replacement and other ECMs, has a simple payback of 20 years or less; or the heat pump does not retain its refrigerant charge and runs on emergency electric resistance heat.
- 8) Heat Pump Installations Replacing Fossil Fuel-Fired HVAC Systems:
- i. Allowable system replacements for a dwelling unit include installation of a high efficiency electric heat pump to replace a furnace or boiler fired by gas, propane, or heating oil; or the installation of a high efficiency electric heat pump to meet part of the heating load while retaining a furnace or boiler fired by gas, propane, or heating oil to provide backup heating. The existing furnace or boiler must be less than 10 years old
  - ii. An energy audit shall show the proposed fuel switching HVAC measure is cost effective and results in energy savings and energy cost savings for the resident when measured in aggregate with other recommended measures.
  - iii. Heat pump installations to replace (or supplement) existing fossil fuel-fired HVAC systems are eligible if:
    - a) The entire building retrofit package results in Simple Payback of 20 years or less;
    - b) The dwelling's electric service is upgraded per applicable building codes to address the new load, if necessary, including

compliance with the jurisdiction's permitting and inspection requirements;

- c) Any combustion safety issues created by the removal of the furnace/boiler are addressed consistent with BPI Standards 1100 and 1200.
- d) Combustion safety testing per BPI Standards 1100 and 1200 is conducted for any existing furnace or boiler systems which are retained for backup heating;

9) Heat Pump Water Heater Installation to Replace Fossil Fuel-Fired Water Heaters.

This is an acceptable measure if each of the following conditions is met:

- i. The comprehensive whole-house retrofit package results in a Simple Payback of 20 years or less;
- ii. The installed heat pump water heater is ENERGY STAR certified;
- iii. The dwelling's electric service is upgraded per applicable building codes to address the new load, if necessary, including compliance with the jurisdiction's permitting and inspection requirements; and,
- iv. Any combustion safety issues created by the removal of the gas/propane water heater are addressed consistent with BPI Standards 1100 and 1200.

Q. Additional measures recommended by the audit as being cost effective not on this list may be considered by MEA Program Managers.

- 1) Such measures will be considered on an individual basis and will be subjected to an additional Maryland Historic Trust review.
- 2) Any approved additional energy measures must be approved in writing by MEA program managers.

#### **4. Cost Limits and Additional Requirements**

- A. MEA Cost Limits: The cost of MEA's contribution to the energy efficiency upgrade is capped at a set dollar value, depending on the extent of the work scope. For further details, refer to the [FY24 Funding Opportunity Announcement](#).
- B. Any energy efficiency upgrade work scope estimated to exceed these spending limits must be approved in advance by the MEA program manager.
- C. MEA will not allow a charge for an upgrade that solely includes HVAC. (Consider the limited upgrades project category for this type of measure.)
- D. Incidental/ Health and Safety Repairs: Incidental repairs required to correct health and safety issues identified through the energy audit may be performed as long as the total cost of the materials and labor associated with incidental repairs charged to MEA does not exceed a cost of \$5,000 per building. For further details, refer to the [FY24 Funding Opportunity Announcement](#).
- E. For commercial buildings electrical panel upgrades, electrical circuit upgrades, or repairs that enable or support energy efficiency upgrades to electrification are capped at \$5,000 per building, after first receiving approval from MEA. For further details, refer to the [FY24 Funding Opportunity Announcement](#).

- F. Upon request by MEA, Grantee shall provide a list of all buildings upgraded using funds from this Grant.

**5. Building To Be Served Under this Award**

- A. The following buildings may be served under this award:
  - 1) Building 1
- B. Additional energy efficiency measures and locations may be approved by the assigned MEA program manager on a case-by-case basis if the simple payback for the measure is deemed to be acceptable by the program manager and the simple payback for the entire upgrade (all energy efficiency measures combined) is equal to 20 years or less.
  - 1) Any approved additional measures or locations must be approved in writing by MEA program managers.
  - 2) Additional buildings will be subject to an additional historic preservation review.
- C. MEA shall request written verification that the energy savings achieved through this project have been directed to low- and moderate-income Maryland residents.