

Attachment H

Affordable Housing Retrofit Accelerator – Performance Testing Services

Background:

The CleanEnergy DC Omnibus Amendment Act of 2018 (D.C. Law 22-257) established the BEPS program which requires all privately-owned buildings with at least 50,000 square feet of gross floor area and all District-owned or District instrumentality-owned buildings with at least 10,000 square feet of gross floor area are to meet building energy performance standards every 5 years.

The Affordable Housing Retrofit Accelerator (referred to as the “Retrofit Accelerator” or “RA”) provides a comprehensive suite of technical and financial assistance to help affordable multifamily residential building owners decarbonize their buildings and comply with the District’s Building Energy Performance Standards (BEPS).

As part of the ASHRAE auditing process, AHRA buildings will also be required to perform unit-to-unit compartmentalization testing as applicable including infiltration, duct leakage, combustion safety, and ventilation flow rate, and generate recommendations based on the test results.

Summary of Services:

The Service Provider shall provide the full range of performance testing services and provide any relevant support, including technical, management expertise and solutions to meet the requirements of the DCSEU Scope of Work. Specific requirements are defined below, However, the Service Provider will furnish the necessary personnel, materials, equipment, facilities, and other services required to satisfy the performance testing Scope of Work specified in the IQC and related WOs.

As tasked, each Service Provider awarded an IQC through this RFQ shall provide solutions for the for the DCSEU Retrofit Accelerator as further defined below and by any relevant DCSEU Program Protocols and requirements

RFQ Evaluation Criteria:

The DCSEU will evaluate and score responses in accordance with the evaluation criteria outlined in Section VII of the RFQ. Preference points will be awarded under “Company Qualifications” to Service Providers who possess 1) at least one of the below active certifications as listed on the DOEE Building Energy Performance Standards Guidebook Section 3.3.4.1 and 2) provide at least one (1) work product example demonstrating proficiency in providing the requested services detailed below with their RFQ response.

- Certified BPI Certified Building Analyst (Multi-family)
- HERS Energy Rater
- Comparable certifications may be submitted for consideration

To obtain the maximum points available, Service Providers must also provide evidence of continuing education credits related to their certification.

Scope of Work:

Building Owner Communication

At the request of the DCSEU, Service Provider will be expected to complete performance testing services as further outlined below for DCSEU building owners/property managers ("DCSEU Customers"). The DCSEU will provide Service Providers with a list of DCSEU Customers. Service Provider will be responsible for all communication with the DCSEU Customer related to the performance testing, including but not limited to, scheduling the performance testing and coordinating with the DCSEU Customer to complete tenant notifications, as needed. All performance testing shall adhere to the below requirements, DCSEU program guidelines, and any other requirements set forth in the Work Order.

Unit Sampling

Sampling of units shall be carried out in accordance with one of the following:

- The methods described in Section 5.3.1.2 of ASHRAE 211
- [BPI Technical Standards for the Multifamily Building Analyst Professional \("BPI MF"\)](#)
- [DC Weatherization Assistance Program Multifamily Energy Audit Process Guide \("DC WAP"\)](#)

Units will be selected based on the following sampling guidelines:

- At least one of each unit type (studio, 1 bedroom, 2 bedroom, etc.)
- At least one unit from each location (bottom floor, top floor, and mid floor, and any other unique locations such as over the garage)
- At least one of each end condition (interior or end/corner unit)

Visual Inspection

Visually inspect the sampled units to identify evidence of air leakage. This will include but not be limited to windows, doors, common walls, exterior walls, utility penetrations, ductwork, window/wall air conditioners, ceiling/wall intersections, floor/wall intersection, slab edge, vents, rim joist, cantilevered floors. In some unique cases the contractor will need to pay additional attention to units that have basements, attic hatches, or crawlspaces or be adjacent to stairwells or elevator shafts.

Performance Testing

Blower door (compartmentalization) testing, duct leakage testing, and mechanical ventilation testing shall be carried out in accordance with the relevant sections of at least one of the following:

- The methods described in Section 5.3.1.2 of ASHRAE 211
- [ANSI/RESNET/ICC 380-2019](#)
- [DC Weatherization Assistance Program Multifamily Energy Audit Process Guide \("DC WAP"\)](#)

Blower Door Unit to Unit Compartmentalization Testing

Compartmentalization testing will be done per the procedures outlined in the standards referenced above. For the purpose of the compartmentalization test, each apartment unit will be considered a "single zone." Excerpts from ASTM E779 state the following:

- All doors inside the apartment should be opened for the test. All doors to the exterior (porch or entrance) shall be closed and locked.
- Windows should be closed and locked including storm windows if they exist.

- Balancing dampers and registers should not be adjusted. Fireplace and other operable dampers should be closed.
- Note the indoor and outdoor temperatures at the time of the test as well as wind speed and direction
- Depressurize the unit to 50 and take readings.
- Readings should be adjusted for air density based on tables provided by blower door equipment company.
- Record all conditions when test was complete (ex. Interior and exterior door positions, window conditions, ventilation, and heating damper positions) such that a repeat test with similar conditions can be done.

Duct Leakage Testing

Test total duct leakage and duct leakage to the outside in each unit inspected. Conduct a visual inspection to note the nature and quality of the duct work in a sampling of units. Primary attention should be paid to leakage at the connection of ductwork to finished surface (e.g. duct boots to drywall) and at accessible equipment in mechanical closet. The findings will support potential future work to be performed in all dwelling units.

Mechanical Ventilation

For buildings with unitized ventilation systems, evaluate ventilation air with direct air flow measurements and note ventilation control settings in a sampling of units. For buildings with central ventilation systems, measure air flow from multiple locations per the referenced standards and note control settings. Note any sign(s) of obvious over- or under-ventilation, if any energy savings opportunities are available while meeting ventilation requirements, or if additional ventilation is recommended or needed even if it may increase the building's energy consumption.

Post-retrofit buildings that include any weatherization and/or air sealing EEMs must comply with ASHRAE 62.1/62.2.

Check bath exhaust fans, kitchen exhaust ventilation, dryer venting and range hood operation, if applicable. If kitchen exhaust or dryer venting are not ducted to outdoors, the auditor must note this condition.

Combustion safety

Combustion safety testing shall be carried out in accordance with one of the following:

- [Chapter 8 of the RESNET Mortgage Industry National Home Energy Rating Systems Standards – Continuous Maintenance Version \(“RESNET MINHERS”\)](#)
- BPI MF
- DC WAP

Evaluate supply air to mechanical rooms, gas furnaces/hot water heater/appliances, complete CO testing of combustion equipment, and recommend CO detectors as needed.

Documentation/Expected Deliverables

For each type of inspection or testing Service Provider will provide a detailed report with pictures and narrative for each building tested that includes the following:

- Existing conditions in which the test was performed (for purpose of testing again post implementation),

- Description of testing protocol followed,
- ACH50 or CFM50 per square foot of enclosure result for each apartment tested,
- Recommendations for how to remediate issues found with air sealing between units and with respect to the exterior envelope, and
- An estimated ACH or CFM50 per square foot of enclosure reduction per DCSEU Program protocols if recommendations are implemented.

Recommendations must:

- be written in a manner such that they can be provided to air sealing and thermal envelope contractors for bidding on a written scope of work, and
- quantify estimated energy savings (MMBtu) and cost savings (\$/year)

Include a draft of a line-item bid document for the DCSEU to review for the recommendation(s).

After each report has been completed and submitted to the DCSEU, the DCSEU shall hold a follow-up meeting with a representative of the building/building owner to discuss the report findings. If the building owner or the DCSEU find the report to be inadequate, the Service Provider will be required to update the report as requested and submit for re-review.

Post Implementation Testing

If an air sealing package is implemented, then a separate, optional task may be requested for a post-retrofit “test-out.” Performance testing will be completed on the same units sampled earlier plus an additional 10% that were not tested during the initial sampling to obtain pre and post ACH50 or CFM50 numbers. The post-test should be performed consistent with the pre-retrofit testing setup and should be documented in the same manner.

Pricing:

Payment for the services outlined above will be awarded on a time and material, firm-fixed-fee, or hybrid basis. As outlined in the RFQ, Section IV (Response Requirements (Minimum Requirements)), Section 13 (Pricing), Service Providers shall include in their response their preferred pricing structure and the following information for each pricing structure acceptable to service:

Time and Materials –

Service Providers must include in their response the following:

- Fully loaded hourly rates for:
 - performance testing staff who meet the minimum requirements outlined in the Work Order; and
 - administrative staff who may provide professional or administrative services to meet the requirements outlined above.
- Detailed estimate of the hours, broken down by staff person or title, to:
 - visually inspect and complete a blower door test per the unit using the sampling methodology listed in “Unit Sampling” section above.
 - complete the report per building as noted in the “Documentation/Expected deliverables” section

Firm-Fixed-Fee (per unit test)

Service Provide shall include in their response the following:

- A list of the performance testing (combustion safety, blower door (compartmentalization), duct leakage, or mechanical ventilation testing) or other services that Service Provider would provide for a Firm-Fixed-Fee and the proposed fee. Service Providers may include in their response variable fixed fees depending on the level of effort involved (e.g. per unit or sliding scale based on the number of performance tests per building or building size). The Firm-Fixed-Fee shall include all costs associated with the services including general and administrative expenses.

Hybrid Pricing

The DCSEU will also consider hybrid pricing (i.e. a combination of the above pricing structures). Service Providers that wish to perform services utilizing a hybrid pricing structure shall include a detailed description of the services, proposed pricing structure for each service and pricing provisions.

Specific payment terms for the above Services will be specified in each Work Order.