

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment



Green Building Fund Grant
Net-Zero Energy Project Design Assistance
RFA #2019-1912-USA

Q&A 4/11/2019

Meeting Location: DOEE Offices and Conference Call

Attendees & Contact Information:

Name	Organization	Email
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Andy Ludwig	George Washington University	aludwig@email.gwu.edu

Main Points/Discussion:

Introductions (All)

Attendance and contact list is included above.

Grants Overview (Casey Studhalter – DOEE)

A brief overview of the grant program included in this RFA was reviewed, including the outcomes and deliverables. Greater detail is provided in the RFA available on the DOEE website,

<https://doee.dc.gov/node/1394781>

Questions and Answers:

1. **Q:** When do final reports need to be submitted?

A: All work supported by the grant and associated reporting must be completed and submitted to DOEE by September 30, 2019. All funds must be spent by September 30, 2019 as well, however final invoices may be accepted during the first week of October. DOEE does not provide advance payment, except in limited circumstances upon application.

2. **Q:** Have these grants been issued in prior years?

A: No, DOEE has not previously awarded any grants of this nature. The Green Building Fund Grant Program, which this grant is a part of, has been in existence since 2013 providing funding for various projects. Details for each of those are available at

<https://doee.dc.gov/publication/green-light-grant-program>.

3. **Q:** Is there a definition for net-zero energy (NZE) or an Energy Use Intensity (EUI) target that applicants need to adhere to?

A: No, there is no set definition for net-zero energy or EUI target that needs to be utilized for the purposes of this grant. For projects looking for a working NZE definition, the draft 2018 DC Energy Conservation Code contains Appendix Z, which will be DC's net-zero energy voluntary code. Appendix Z provides a clear definition for net-zero energy performance and is included as an appendix to this document.

4. **Q:** Does Appendix Z allow onsite combustion of natural gas?

A: No, Appendix Z does not allow onsite combustion of fossil fuels except as specified by the code official. That definition, however, does not have to be used by projects for the purposes of this RFA.

5. **Q:** Are the deliverables listed in Section 7 of the RFA for the District or the applicant?

A: All of the five listed deliverables will be completed by successful project teams while the overall impact to the District will be amplified by having multiple grantees. For the first deliverable, each team is only tasked with generating one more NZE building in the District but the overall benefit will be to generate multiple new successful projects.

6. **Q:** What is the timeline for completion of deliverables?

A: All work supported by this grant must be completed by September 30, 2019. The project itself does not need to be complete by then, but all grant supported activities need to be completed and documented. It could be possible to complete all preparations for a future charrette or other work that will take place after the close of the grant performance period but requires advance preparations that can be completed ahead of time. DOEE is open to project teams' proposals for how to best support the unique needs of each project.

7. **Q:** Is it possible to use the grant award to support future tenant engagement and education?

A: The goal of this RFA is to support a project to achieve NZE performance. If the engagement and education is focused on helping the project perform as designed in support of achieving that NZE target that would be an appropriate use. If the education and engagement is more broadly about the design and construction of NZE buildings, that would be outside of the scope of the RFA and not likely to score as well during the application review.

8. **Q:** Is it possible to use the grant award to develop a toolkit on how to do NZE design?

A: The goal of this RFA is to support a specific project to achieve NZE performance. In keeping

with that intent, developing a general resource for NZE design and construction is outside of the scope of the RFA and not an appropriate application for these funds.

9. Q: How should a project demonstrate their commitment to NZE performance?

A: Applicants are welcome to provide whatever demonstration of commitment is appropriate to their project. For example, this could take the form of a letter of commitment, codified project goals, examples of previous projects demonstrating the capacity to deliver NZE performance, or other forms.

10. Q: What is the distinction between Partnering Organizations and Property Owners made in Section 3.2.d.4 on page 13 of the RFP?

A: This is standardized language included in all DOEE RFPs and is not specific to this particular application. DOEE expects that in many instances property owners may also be partners in the grant application but it is not required. This section of the RFP does need to be addressed regardless of the makeup of the project team.

11. Q: Is there a separate scoring methodology for rehabilitation projects compared to new construction?

A: No, all projects are held to the same evaluation criteria. Both rehabilitation projects and new construction are welcome to apply.

12. Q: Can a project team member submit multiple applications?

A: Yes, both individuals and organizations can be included in multiple awards however the same development project can only receive one award.

13. Q: What project team members should be included in the application?

A: Applicants are welcome to include any partnering organizations in their application that they deem appropriate. In many cases, partners can help to demonstrate previous experience which helps to provide assurances of the project team's capacity to meet the stated goals. Financial declarations are only required from the lead applicant. Depending on the expertise of partner organizations, resumes can be provided to demonstrate prior experience.

14. Q: Is any preference given to Certified Business Enterprises (CBEs)?

A: No, applicants do not need to be CBEs, SBEs or other designations and no preference is provided. The projects do need to be located within the District of Columbia, but project team members can be located anywhere.

15. Q: Where should applicants submit their application?

A: The deadline for application submissions is May 1, 2019, at 4:30 p.m. Five hard copies must be submitted to the address below and a complete electronic copy must be e-mailed to greenbuildingrfa.grants@dc.gov.

District of Columbia Department of Energy and Environment
RFA - Grants
1200 First Street NE, 5th Floor
Washington, DC 20002
Attn: 2019-1912-USA

16. Q: When will recipients be selected?

A: The RFA stipulates that applicants will be notified within six to twelve weeks after the application due date, however DOEE will endeavor to expedite this process in recognition of the

September 30th deadline for completion. If applicants have not previously conducted business with the District of Columbia government, they are advised to register in the vendor portal at <https://vendorportal.dc.gov>.

Appendices and Application Guidelines

- Cover sheet – Required for all applications
- Budget Template –
 - General categories remain as they are. (Contractors, personnel)
 - Adjust other categories for the budget needs
- PCA – Promises Certifications and Assurances
 - The PCA contains the terms that apply to the Applicant if awarded to the grantee, and should be reviewed carefully.
 - If an advance payment is anticipated, it must be planned and requested in the Application and will be considered after the award.
 - Reimbursements go to Accounts Payable and DOEE
- Email is encouraged for all questions, GreenbuildingRFA.Grants@dc.gov. Questions may be submitted for response until COB April 24, 2019. Questions and Answers will be posted to the DOEE website regularly.
- **Applications are due by 4:30 on May 1, 2019.**

Low-carbon neighborhood thermal energy system. A district-scale energy system that uses acceptable sources of renewable energy per section Z3.2 to produce steam, hot water, or chilled water for the purposes of providing for building heating, cooling, and/or domestic hot water needs.

Net-zero energy building. A highly energy-efficient building that produces on-site, or procures through the construction of new renewable energy generation, enough energy to meet or exceed the annual energy consumption of its operations.

Renewable energy microgrid. (As defined by the U.S. Department of Energy) A group of interconnected loads and distributed renewable energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid.

Zero Energy Performance Index (zEPI). A scale representing the ratio of the energy performance of a proposed design or an existing building compared to the mean energy performance of the building stock from the benchmark year of 2000 (Commercial Buildings Energy Consumption Survey, US Department of Energy, 2003 Average).

Z1.2. Scope and intent. The provisions of Appendix Z regulate the design, construction, commissioning and operation of buildings and their associated building sites for compliance with the *Energy Conservation Code-Commercial Provisions*. The intent of this Appendix is the reduction of energy use to achieve net-zero performance.

Z1.3. Administration and enforcement. Administration and enforcement of Appendix Z shall be governed by Chapter 1 of the *Building Code*, 12-A DCMR.

Z1.4. Application. The provisions of Appendix Z shall apply to each project that is new construction, or classified as a Level 3 alteration under the *Existing Building Code*, and for which this compliance path option has been chosen.

Z1.5 Compliance. Compliance with Appendix Z requires that the building and its site comply with the provisions of Sections Z2, Z3, Z4, and Z5.

Z2. MINIMUM PERFORMANCE REQUIREMENTS. Minimum performance requirements for building energy use intensity have been set to ensure maximum energy efficiency prior to adding renewable energy generation. The building and its site shall be designed and constructed to meet the mandatory prescriptive requirements in sections Z2.1, Z.2, Z.3, Z.4, and Z.5.

Z2.1. Building energy use intensity. Applicant shall submit, with the building permit application, *permit documents* with data and calculations sufficient to ascertain compliance with the net-zero energy performance target for buildings and their sites, using predictive modeling. Predictive modeling shall use a source energy unit of measurement, expressed in kBtu/ft²/yr, based on the use of the *Zero Energy Performance*

Index (zEPI) as outlined in section Z2.1.1. In a mixed-use building, all uses shall be included in demonstrating compliance, and an area-weighted calculation method shall be used to account for each use.

Z2.1.1. Zero Energy Performance Index, zEPI. Building design shall demonstrate a zEPI of 30 or lower as determined in accordance with Equation 1.

$$zEPI = 50.4 \times (EUI_p/EUI) \quad (\text{Equation 1})$$

Where:

EUI_p = The annual energy use of the building in source kBtu/ft², for the proposed design of the building and its site, calculated in accordance with Section Z2.1.2, not taking into account any on-site or off-site renewable energy.

EUI = The annual energy use of the building in source kBtu/ft² for a baseline building and its site, calculated in accordance with Section Z2.1.2, not taking into account any on-site or off-site renewable energy.

Z2.1.2. Annual energy use indices. The EUI_p of the building and building site, and the EUI, shall be calculated in accordance with Appendix G to ASHRAE 90.1-2004/16, as modified by Sections Z2.1.2.1 and Z2.1.2.2, and *approved* modeling guidelines published by the *Department* in *administrative bulletins*. The annual energy use shall include all energy used for the building systems and its anticipated occupancies.

Z2.1.2.1. Additional Modeling Rules and Procedures. Modeling inputs shall be in accordance with the *COMNet Rules and Procedures Manual*.

Z2.1.2.2. Electricity. In calculating the annual energy use indices, consistent units shall be used for electric energy use, converting the electric energy use, measured at the utility meter or metered point of delivery, from kWh to kBtu. kWh shall be converted to kBtu by multiplying the annual electric energy use, in kWh, by 3.412 kBtu/kWh, and multiplying the result by the dimensionless conversion factor found in Table 1.

**TABLE Z2.1.2.2
ELECTRICITY GENERATION ENERGY CONVERSION FACTOR
BASED ON EPA eGRID SUB-REGION**

eGRID 2010 SUB-REGION ACRONYM	eGRID 2010 SUB-REGION NAME	CONVERSION FACTOR
RFCE	RFC East	3.28

Z2.2. Building Thermal Energy Performance. Building thermal energy performance shall comply with Sections Z2.2.1 through Z2.2.2.

Z2.2.1. Annual heating demand. Building design shall demonstrate a maximum *annual heating demand* of 4.2 kBtu/ft² iCFA/yr (4.8x10⁴ kJ/m² iCFA/yr).

Z2.2.2. Annual cooling demand. Building design shall demonstrate a maximum *annual cooling demand* of 6.4 kBtu/ft² iCFA/yr (7.3x10⁴ kJ/m² iCFA/yr).

Z2.3. Multiple buildings on a site. Where there is more than one building on a site, each building shall comply with Sections Z2.2.1 and Z2.2.2 or the combined demands of all the buildings on the site shall comply with Sections Z2.2.1 and Z2.2.2.

Z2.3.1. Assignment of energy to multiple buildings on a site. For building sites employing district energy systems and with multiple buildings, the energy use associated with the building site shall be assigned to each building proportionally to the gross floor area of each building as a fraction of the total gross floor area of all buildings on the building site. Where energy is derived from either renewable or waste energy, or both sources, either located on the building site, within individual buildings, or on individual buildings and delivered to multiple buildings, the energy so derived shall be assigned on a proportional basis to the buildings served, based on each served building gross floor area. Energy delivered from renewable or waste energy sources located on or within a building shall be assigned to that building.

Exception: Where it can be shown that energy to be used at the building site is associated with a specific building, that energy use shall be assigned to that specific building.

Z2.4. Registered design professional in responsible charge of building energy simulation. Where the *applicant* chooses to utilize Appendix Z as the path of compliance with the *Energy Conservation Code-Commercial Provisions*, the owner shall engage the services of, and designate on the building permit application, a registered design professional who shall act as the registered design professional in responsible charge of building energy simulation. Building energy simulation services engaged by the registered design professional shall be certified by an *approved* accrediting entity as determined by the *code official*. As authorized by the *code official*, the owner is allowed to designate a substitute registered design professional who shall perform the duties required of the original registered design professional in responsible charge of building energy simulation. The owner shall notify the *code official*, in writing, whenever the registered design professional in responsible charge of building energy simulation is changed or is unable to continue to perform his or her duties.

Z2.5. Building Commissioning. All systems shall be commissioned in accordance with this section and the *Energy Conservation Code-Commercial Provisions*. Energy systems commissioning and completion shall be performed for the following systems and their associated controls:

- Building envelope;
- HVAC (both mechanical and passive systems as well as HVAC controls);
- Lighting, daylighting, and lighting control systems;
- Domestic hot water systems; and
- Renewable energy systems.

Z2.6. Airtightness Testing. A whole building pressurization testing shall be conducted in accordance with Section 11.3.1.2.4(a) of the *Energy Conservation Code – Commercial Provisions* to measure the airtightness of the building envelope. The owner shall verify that the airtightness specified in the final approved predictive energy model is achieved in the field by providing the *code official* with a copy of the test results before the final *Certificate of Occupancy* is issued.

Z3. RENEWABLE ENERGY. The building and building site shall be provided with renewable energy equal to the EUI_P on an annual basis and calculated in accordance with Section Z2.1.1. Sources of renewable energy shall comply with Sections Z3.1 through Z3.3.

Z3.1. On-site combustion. On-site combustion of fossil fuels shall not be permitted for the provision of thermal energy to the building except as specified by the *code official*.

Z3.2. Acceptable sources of renewable energy. Acceptable sources of on-site renewable energy to be used on the building site include:

- Photovoltaic panels;
- Solar thermal systems;
- Wind turbines; and
- Biogas.

No other source of on-site renewable energy is acceptable for building design, unless the rationale for its selection is approved by the *code official*.

Z3.3 On-site renewable energy. Renewable energy shall be generated on-site wherever feasible.-Before procuring off-site renewable energy, a project must demonstrate one of the following:

1. A minimum of 5% of the total building energy consumption shall first be met by an acceptable source of renewable energy installed on the building roof or site.
2. For projects generating onsite renewable energy through solar photovoltaic systems, a minimum of 25% of total site area, including building footprint, shall be allocated for photovoltaic array and energy production.

Exception: Where there is not adequate solar access as determined by Chapter 13 of the *Energy Conservation Code-Commercial Provisions*.

Z3.34. Procurement of off-site renewable energy. The procurement of off-site renewable energy is acceptable only where the energy is procured from a qualified

electricity supplier providing energy from Tier 1 ~~and Tier 2~~ renewable sources meeting the minimum percentages of the District of Columbia Renewable Portfolio Standard. Acceptable methods for the procurement of off-site renewable energy include any of the following or as approved by the *code official*:

- Owner shall provide the *code official* with documentation of a signed, legally-binding contract to procure off-site renewable energy through a power purchase agreement for a minimum period of 5 years for electricity generation from, solar or wind-generation facilities that are located within the District of Columbia, Maryland, or Virginia. The owner remains subject to, and must comply with, the District of Columbia's Renewable Portfolio Standard;
- Connection to a *renewable energy microgrid*; or
- Connection to a *low-carbon neighborhood thermal energy system*.

Z4. ENERGY METERING, MONITORING AND REPORTING.

Z4.1 Scope. The provisions of this Section Z4 shall apply to all projects that opted for Appendix Z as a path of code compliance.

Z4.2. Purpose. The purpose of this Section Z4 is to provide requirements that will ensure that buildings are constructed or altered in a way that will provide the capability for their energy use, production and reclamation to be measured, monitored and reported. This includes the design of energy distribution systems so as to isolate load types, the installation of meters, devices and a data acquisition system, and the installation of energy displays and other appropriate reporting mechanisms.

Z4.3 Energy metering. All forms of energy delivered to the building and building site, or produced on the building site or in the building, shall be metered and all energy load types measured.

Z4.4. Ventilation flow rate. In addition to requirements outlined in the *Energy Conservation Code-Commercial Provisions*, all centrally ventilated building systems shall be designed to enable the collection of real-time and historical ventilation flow rate data.

Z4.5. Grid integration. In places where equipment constraints in the distribution network render net metering impossible, onsite storage options shall be considered.

Z5. ENERGY REPORTING. Owners of buildings that used Appendix Z as a path for code compliance shall comply with this Section.

Z5.1. Post Occupancy Measurement and Reporting.

Z5.1.1. Owners of buildings that use Appendix Z as a path for code compliance shall ~~must~~ annually benchmark and report their energy and water performance using the Energy Star® Portfolio Manager tool, including renewable energy generation and green power usage, pursuant to rules in *20 DCMR 3513*, regardless of square footage.

Z5.1.2. Energy Star Portfolio Manager account. The *owner* of a *building* that used Appendix Z as a path for compliance with the *Energy Conservation Code-Commercial Provisions* shall create an Energy Star® Portfolio Manager account and property record on the U.S. Environmental Protection Agency’s benchmarking website, and share the property with the District of Columbia’s Department of Energy and Environment. The *code official* is authorized to require proof of compliance with this Section Z5.3.1 and proof that all utilities have been linked to the account.

Z5.2. Performance Verification. Within 24 months of occupancy, the owner or owner’s representative shall submit documentation to the *code official* demonstrating 12 continuous months of operation with no less than 90% occupancy where the energy consumed by the building and building site as measured in accordance with Section Z4 are equal to or less than the renewable energy associated with the building and building site in accordance with Section Z3. Documentation shall be in a form acceptable to the *code official*.

Z5.2.1. Normalization for abnormal conditions. At the discretion of the *code official*, the owner or owner’s representative may submit documentation demonstrating that abnormal weather or occupancy conditions during the compliance period are responsible for the variance between the energy consumed by the energy and energy site and the renewable energy associated with the building and building site and that the building would comply with Z5.2 under normal conditions.

Z6. NORMATIVE REFERENCES

[Section numbers indicate where the reference occurs in Appendix Z.](#)

U.S. Army Corps of Engineers

<u>Standard Reference number</u>	Title	<u>Referenced in code section number</u>
Version 3: 2012-05-11	Air Leakage Test Protocol for Building Envelopes	Appendix Z, Z2.6

Passive House Institute US (PHIUS) 116 W Illinois St #5e
Chicago, IL 60654

<u>Standard reference number</u>	Title	<u>Referenced in code section number</u>
Version 1.03 July 27 2016	Passive Building Standard for North America	Appendix Z, Z.1

RESNET P.O Box 4561 Oceanside, CA
92052 www.resnet.us

<u>Standard reference number</u>	Title	<u>Referenced in code section number</u>
August 16, 2010	<i>COMNET Rules and Procedures Manual</i>	Appendix Z, Z2.1.2.1

DC Renewable Portfolio Standard

<u>Standard reference number</u>	Title	<u>Referenced in code section number</u>
Section 15-2901 RPS Compliance Requirements Section 15-2902 Generator Certification Section 15-2999 Definitions	<i>DC Renewable Portfolio Standard</i>	Appendix Z, Z3.3