Guiding Questions for Appendix Z Exemption Requests

The following questions and requests are commonly posed to project teams during the GBAC's review of exemption requests. The prompts are grouped by the requirements of Appendix Z of the 2017 District of Columbia Energy Conservation Code, the standard with which covered building projects must comply to meet the Green Building Act's net-zero energy requirement.

This document aims to give project teams a better sense of typical questions that may be asked during the exemption process. While not required, DOEE recommends that project teams review the prompts related to the requested exemptions (i.e., if requesting exemption from Z2.2.1 Annual Heating Demand, prepare responses to questions listed under Z2.2 Building Thermal Energy Performance).

General Project Overview

- For existing buildings: provide an analysis of avoided embodied carbon emissions resulting from reuse of the existing building. This analysis can be completed using the CARE Tool from Architecture 2030.
- Are any embodied carbon reduction strategies being used?
- Is the project pursuing any green building certifications other than LEED?
- Have any voluntary sustainable design guidelines been used to inform the design?

Z2.1 Building Energy Use Intensity

- How will the project improve the energy efficiency of the areas and systems in scope?
- Where will the building exceed code minimums?
- What energy conservation measures were evaluated, but not implemented? Why?
- If the project's energy consumption is driven by a unique load that is critical to the project's use (e.g., dehumidification for indoor pools, ventilation for healthcare facilities, etc.), provide additional calculations for zEPI that exclude that load.
- Have passive design strategies been evaluated?
- Is electric resistance used as a primary source for space or water heating? If so, have other electric systems been evaluated?
- Have load reduction opportunities (e.g., additional insulation and air sealing) been evaluated to downsize mechanical equipment?
- Have demand control ventilation systems been evaluated?
- Have dedicated outdoor air systems (DOAS) been evaluated?
- Have heat recovery systems been evaluated?
- Have variable refrigerant flow (VRF) systems been evaluated?
- What other MEP systems have been evaluated?

Z2.2 Building Thermal Energy Performance

- How will the project improve the thermal energy performance of the areas in scope?

- Where will the building exceed code minimums?
- If the project's energy performance is driven by a unique load that is critical to the project's use (e.g., dehumidification for indoor pools, ventilation for healthcare facilities, etc.), provide additional calculations for annual heating demand and annual cooling demand that exclude that load.
- Has the project considered the impacts of thermal bridging in its envelope performance?
- Has the project considered reducing the window-to-wall ratio?

Z2.5 Building Commissioning

- How will the project ensure that new or updated systems (e.g., building envelope, HVAC, lighting, domestic hot water, renewable energy, etc.) and their associated controls are operating as intended?

Z2.6 Airtightness Testing

- How will the project identify envelope leaks and remediate failures?
- Has compartmentalized airtightness testing, smoke tracer, or infrared imaging been considered to identify and remediate significant failures in the existing envelope? See below for excerpt from ASHRAE 90.1-2022 regarding remediation requirements.
    - 5.4.3.1.4(c). "…a diagnostic evaluation, such as a smoke tracer or infrared imaging, shall be conducted while the building is pressurized, and any leaks noted shall be sealed if such sealing can be made without destruction of existing building components. In addition, a visual inspection of the air barrier shall be conducted, and any leaks noted shall be sealed if such sealing can be made without destruction of existing building components. An additional report identifying the corrective actions taken to seal leaks shall be submitted to the code official and the building owner and shall be deemed to satisfy the requirements of this section."

Z3.1 On-site Combustion

- What efforts have been made to eliminate gas from the design?
- What non-gas alternatives have been evaluated?
- What actions are being taken to plan for and facilitate future electrification?
- If the building includes existing gas systems or is proposing to add new gas systems, plan to provide:
    - Gas phase-out plan,
    - Decarbonization commitment letter from the client, and
    - Indoor air quality mitigation and occupancy health monitoring plan to address health and safety concerns related to gas exposure.
- If the building's primary use is educational and requires Bunsen burners for its curriculum, provide a summary of evaluation of non-gas alternatives.

Z3.3 On-site Renewable Energy

- Have other locations on the building's site/campus been evaluated for potential renewable energy systems?
- Have renewable energy systems other than solar photovoltaic panels been evaluated?
- What procurement methods have been evaluated?
- Will the building be designed to be solar-ready?

Z3.4 Procurement of Off-site Renewable Energy

- What procurement methods have been evaluated?