



February 28, 2024

Sherril L. Golden
Secretary of the Board
NJ Board of Public Utilities
Via email: board.secretary@bpu.nj.gov

Re: Applying BPI-2400 to Multifamily under the Home Energy Rebate (HOMES) Program

Dear Secretary Golden,

The Inflation Reduction Act (IRA) requires that Home Energy Rebate (HOMES) projects following the modeled approach to quantifying savings must use calibrated energy models consistent with the BPI-2400 standard. BPI 2400, as it is currently written, can only be applied to single-family, duplexes, and townhomes, and does not present a clear way to apply the standard to multifamily.

On July 27 last year, DOE issued the attached guidance (Home_Energy_Rebates...pdf) recognizing that “not every home will have conditions that allow for modeled savings consistent with the BPI-2400 calibration methodology.” Section 3.2.4.1.1 acknowledges that “multifamily homes” are among conditions inconsistent with the BPI-2400 calibration methodology and allows for States to provide alternative approaches.

We encourage the BPU to carefully consider how best to address this issue so as not to create barriers for multifamily participation under the modeled pathway for calculating energy savings. To assist in this process, we are providing below a set of recommendations specifically on this topic developed by our partners at PSD. These recommendations were originally crafted to inform NYSERDA on how they might apply BPI-2400 to multifamily under their own programs, referencing criteria outlined in NYSERDA’s Multifamily Performance Program (MPP) Simulation Guidelines, as well as The Department of Housing and Urban Development’s (HUD) meter sampling protocols.

We realize this input necessarily ventures deep in the weeds of modeling methodology as it relates to this issue. The MaGrann team would be happy to engage in further discussions with the BPU or provide other assistance as may be helpful.

Sincerely,

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Guidance for Applying BPI-2400 to Multifamily Properties

Purpose

Currently, the BPI-2400 standard states that it may be used for single-family homes, duplexes, or townhomes yet there is a pressing need to extend the standard to multifamily buildings. For the purpose of this document, multifamily buildings are considered to be residential buildings that are not currently covered in the BPI-2400 standard.

The purpose of this document is to serve as an informative guide of how to apply the BPI-2400 standard to multifamily buildings when it is required that savings estimates must use a calibrated energy simulation. For the most part, the BPI-2400 standard can be applied to multifamily buildings as written, however, the following sections of the current standard require some guidance and will be addressed in the sections below.

- Section 3.1. Energy Simulation Software Criteria
- Section 3.2.2. Model Calibration Utility Bill Criteria
- Section 3.4. Model Input Constraints

Note: This guidance document was developed by PSD under a NYSEDA contract and provided to the Building Performance Institute to support potential requirements for multifamily energy model calibration under the BPI 2400 standard. These comments were written prior to the release of the DOE Guidance for multifamily buildings in the Modeled Savings path.

Guidance for Section 3.1. Energy Simulation Software Criteria

The current BPI-2400 standard has requirements for qualifying single-family energy simulation software. For multifamily, one should adhere to the non-program specific requirements of section “3 Simulation Software” of the NYSEDA MPP Simulation Guidelines May 2022.

<https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/MPP-Existing-Buildings/library/mpp-simulation-guidelines.pdf>

Guidance for Section 3.2.2. Model Calibration Utility Bill Criteria

The following describes the process for obtaining sufficient utility data of multifamily properties needed to meet the requirements of Section 3.2.2 of BPI-2400. Unlike single family properties, most multifamily properties have many energy meters, both owner-paid and resident-paid, and sometimes trucked fuel sources. For the weather normalization of the energy data, the regression analysis can be performed on individual meters or groups of similar meters. In general, it is best to combine all meters of the same fuel type that serve similar space types of the property as this will provide the best information for the model calibration process.

For example, in a 100-unit building each apartment has one electricity meter and one natural gas meter for cooking that the residents pay. Additionally, the owner pays for the main gas meter that serves the boiler and five electricity meters that serve common areas. For this example, it would be best to have four regression analyses, one for all 100 apartment electricity meters, one for all 100 apartment natural gas meters, one for the five common area electricity meters, and one for the common area natural gas meter. This will allow for the most accurate

calibration of the energy model and keep the applicable utility rates separate for a more accurate cost savings analysis. The end-uses of apartment cooking are separated out from the common area natural gas which the regression analysis can determine the portion used for heating versus domestic hot water. Similarly, the regression analysis of the electricity should be able to determine the portion that is baseload, cooling, and/or heating related.

Owner-Paid Utility Meters

All energy meters and trucked fuels (e.g. fuel oil, propane) paid for by the owner that serve the building(s) of the property shall be included in the utility bill analysis.

Resident-Paid Utility Meters

When the residents pay the utility meter charges for their apartment unit, the data collection becomes increasingly difficult to obtain access to all resident-paid utility meters. There are two options described below for obtaining a 12-month history of the energy consumption data for all apartment units.

Aggregate Meter Data

Certain utilities will provide a file of the aggregate, anonymized data for all meters on the property including those paid for by the owner. This is by far the easiest way to obtain the complete utility data history for a property and should be used if the utility provides this. Typically, the aggregate data file will provide 12 to 24 records of monthly sums across all meters by the same utility rate class.

The following link from the EPA Portfolio Manager site can be used to determine if the utility provides aggregate meter data.

https://www.energystar.gov/buildings/owners_and_managers/existing_buildings/use_portfolio_manager/find_utilities_provide_data_benchmarking

Sampled Meter Data

When there are apartment meters that are paid for by the residents and it is not possible to obtain aggregate meter data from the utility, the following meter sampling protocol from the Department of Housing and Urban Development (HUD) should be followed. See section “Sampling Protocols for Tenant-Paid Utility Data (Method D)” of Multifamily Utility Benchmarking Toolkit and use the Tire 2 Sampling Protocol

<https://www.hudexchange.info/programs/utility-benchmarking/toolkit/utility-benchmarking-step-by-step/>

To make the process easier, HUD Exchange references and provides links to two helpful resources:

Tenant-Paid Utility Data Sampling Calculator

<https://www.hudexchange.info/resource/133/tenant-paid-utility-data-sampling-calculator/>

Multifamily Utility Benchmarking Plan Template

<https://www.hudexchange.info/resource/8/multifamily-utility-benchmarking-plan-template/>

When using the Tenant-Paid Utility Data Sampling Calculator, follow Steps 1 through 6 of the Instructions tab using the Tier 2 Sampling Protocol to get the estimated aggregate energy records that can be used for the weather normalization regression analysis as well as for benchmarking in Portfolio Manager.

Guidance for Section 3.4. Model Input Constraints

The model input constraints in the BPI-2400 standard are applicable to most multifamily buildings and should be adhered to. Because of the complexity of multifamily buildings and the challenges of translating field observations to energy simulation inputs, sections 5 through 13 of the NYSERDA MPP Simulation Guidelines May 2022 should be followed.

<https://www.nyseda.ny.gov/-/media/Project/Nyserda/Files/Programs/MPP-Existing-Buildings/library/mpp-simulation-guidelines.pdf>