



**New Jersey Energy Code Collaborative**  
**Existing Buildings and Retrofits Subcommittee**  
**Meeting Minutes**

**March 27, 2026, 10:00 – 11:00 AM**

**Attendees**

- Amin Sepehri, Pennsylvania State University
- Andy Garcia, NJ EDA
- Cornelia Wu, NEEP
- David Hattis, Rutgers CUPR
- Dragana Thibault, NEEP
- Eric DeGesero, EDGE Consulting
- Jason Kliwinski, Rutgers CUPR
- Jeff Kolakowski, NJ Builder Association
- Jennifer Souder, Rutgers CUPR
- Kiran Ghosh, Rutgers CUPR
- Kyle G. Cruz, NJ HMFA
- Matthew Kaplan, ReVireo
- Nicholas Kikis, NJ Apartments Association
- Pamela DeLosSantos, NJ HMFA
- Rebecca Lynskey, TRC
- Rupa Deshmukh, NJ BPU
- Ryan Jerome, NJ NG
- Terra Meierdierck, NJ IT
- Tim Fagan, PSEG
- Yousaf Shahid, Rutgers CUPR

**1. Introduction**

**Cornelia Wu (NEEP)** welcomed participants to the third meeting of the Existing Buildings & Retrofits Subcommittee and provided an overview of the agenda. She noted that the meeting would include a technical presentation on the impact of change of occupancy under updates introduced in the 2024 model code by the International Code Council (ICC), followed by discussion on mapping incentives for existing buildings and identifying gaps, particularly in the multifamily sector, along with a review of case studies from the New Jersey Green Building Manual and a discussion and next steps.

She provided an antitrust reminder and reiterated the purpose of the New Jersey Energy Code Collaborative, emphasizing its role in supporting a stakeholder-driven process to develop a Zero Energy Building Roadmap aligned with the state’s Energy Master Plan. She noted that the roadmap includes three concurrent pathways, new construction base code, stretch/zero energy code, and existing buildings, intended to guide New Jersey toward zero energy building codes by 2030 or sooner.

Cornelia then turned the discussion over to Yousaf Shahid for the technical presentation.

**2. Change of Occupancy – Energy Modeling**



**Yousaf Shahid (Rutgers CUPR)** presented analysis on the impact of change of occupancy under new provisions in the 2024 ICC model code, specifically focusing on energy use intensity (EUI), which is not currently addressed in New Jersey’s rehabilitation code except in cases of increased hazard classification.

**Jason Kliwinski (Rutgers CUPR)** provided context, explaining that existing code provisions only address change of occupancy in terms of hazard, whereas the proposed national code introduces requirements related to energy performance. He noted that the modeling work aims to evaluate the implications of adding energy use intensity considerations to code requirements.

**Yousaf Shahid (Rutgers CUPR)** described one modeled scenario, conversion from religious worship to retail. He noted that adaptive reuse of religious buildings is increasingly common both nationally and in New Jersey, with examples including conversions to retail, residential, mixed-use developments, and small commercial spaces such as bakeries and boutiques.

He explained that the modeling approach involved:

- A baseline religious worship model calibrated to New Jersey conditions
- Conversion to a retail occupancy through changes in schedules and activity templates
- Comparison of energy use across lighting, domestic hot water, heating, and cooling
- A third scenario incorporating HVAC upgrades to code-compliant performance

Baseline assumptions reflected existing conditions with systems operating approximately 20–30% below code efficiency, consistent with literature and Local Government Audit (LGA) reports indicating significant degradation of older HVAC equipment in religious buildings.

Yousaf presented findings showing that:

- Energy use increased across all end uses after change of occupancy
- The increase was significantly higher in cases where baseline systems were further below code performance
- Existing systems often could not meet new demand, with modeled increases of approximately 24% in cooling load and 10% in heating demand

He noted that under these conditions, building owners may resort to supplemental HVAC solutions (e.g., window units or split systems), which increase utility costs but do not achieve the same performance as full system upgrades. Modeling showed that:

- Supplemental systems increase utility costs
- Code-compliant HVAC upgrades result in lower overall energy use and utility costs
- Estimated annual HVAC-related savings from upgrades range from approximately \$1,400 to \$2,100 depending on baseline performance

He emphasized that additional savings would also result from improvements to lighting and domestic hot water systems.



Yousaf outlined the next steps, including refining baseline assumptions with additional data, incorporating equipment upgrade costs and incentives, and evaluating return on investment using metrics such as simple payback and cost-benefit analysis.

**Eric DeGesero (EDGE Consulting)** asked about assumptions used for utility costs in modeling.

**Yousaf Shahid (Rutgers CUPR)** responded that utility cost inputs were based on New Jersey's avoided cost data for 2025 and noted that detailed values could be shared with the group. He clarified that the modeling did not include electrification scenarios and instead assumed in-kind replacement of existing systems, to reflect lower upfront capital costs for building owners.

**Eric DeGesero (EDGE Consulting)** also asked about building configuration assumptions, particularly whether converted buildings retained open layouts or were subdivided into separate retail spaces.

**Yousaf Shahid (Rutgers CUPR)** explained that the model assumes a single system and distribution serving the entire building, with occupancy changes reflected only in schedules and use patterns. He noted that more complex configurations with multiple tenants and systems would vary case by case and were not included in the current modeling scope.

### 3. Mapping Incentives for Existing Buildings and Identifying Gaps

**Jason Kliwinski (Rutgers CUPR)** presented findings from an exercise mapping existing building incentive programs across New Jersey utility territories using the NJDEP one-stop tool. He explained that he evaluated programs as a typical user might, using consistent search parameters across utility territories.

He noted significant variation across utilities (JCP&L, PSE&G, and Atlantic City Electric), particularly in multifamily programs, including differences in:

- Available programs
- Program structure and requirements
- Level of detail and transparency
- Accessibility of information

He observed that while some programs (e.g., engineered solutions) exist across utilities, they are often described differently and can function as black box programs requiring direct engagement with utility representatives.

Jason concluded that:

- There is a lack of continuity and standardization across utility programs
- Variability creates challenges for developers and designers working across territories
- Streamlining and normalizing programs could improve participation and uptake



He also noted that commercial programs showed somewhat greater consistency but still varied in structure and presentation.

Jason shared insights from stakeholder discussions identifying key barriers in the multifamily sector:

- Prevailing wage requirements, which can increase labor costs significantly and reduce project feasibility, particularly for mid-rise buildings
- Electrification challenges, including infrastructure upgrade costs not fully covered by incentives
- Building envelope upgrades, where incentives are insufficient relative to the high cost of improvements such as insulation and window replacement
- Monetization of energy savings, particularly in multifamily buildings where tenants, rather than owners, benefit from reduced utility costs
- Program complexity and administrative burden, which can discourage participation

He noted that while New Jersey's incentives are generally considered strong relative to other states, these barriers limit their effectiveness in certain market segments.

**Ryan Jerome (NJ Natural Gas)** noted that the analysis focused on electric utilities and did not include gas utility programs, which are also significant. He emphasized that utility programs are developed collaboratively and are intended to be similar in design, though implementation differences may exist. He explained the concept of a “lead utility,” which manages project implementation and coordinates with partner utilities.

**Jason Kliwinski (Rutgers CUPR)** acknowledged that gas utilities were not included in the initial analysis and agreed that including them would provide a more complete picture.

**Ryan Jerome (NJ Natural Gas)** also noted that prevailing wage requirements are state-mandated and emphasized that utilities are working to address the complexity of multifamily building types, which range widely in scale and configuration.

**Cornelia Wu (NEEP)** referenced a comment noting that some programs, such as engineered solutions, may favor larger projects, limiting accessibility for smaller buildings.

**Jason Kliwinski (Rutgers CUPR)** further discussed the “gray area” in mid-rise multifamily buildings, where building code thresholds and prevailing wage requirements intersect, creating challenges for project feasibility.

**Tim Fagan (PSE&G)** noted that PSE&G is working toward a more streamlined approach for multifamily projects, including a single point of contact to guide applicants toward appropriate programs rather than defaulting to more complex options such as engineered solutions.



**Jason Kliwinski (Rutgers CUPR)** suggested that categorization approaches used in programs such as LEED (e.g., low-, mid-, and high-rise) could provide a useful framework for simplifying program design and improving alignment with building types.

**Ryan Jerome (NJ Natural Gas)** agreed that multifamily classification is complex and noted that utilities have been working for several years to address these challenges across different building types and regulatory frameworks.

#### 4. New Jersey Green Building Manual Case Studies

**Jennifer Souder (Rutgers CUPR)** introduced the New Jersey Green Building Manual as a resource and encouraged participants to submit updated case studies. She noted that while the manual has been updated over time, many case studies are older and there is a need for more recent examples.

She explained that case studies include information on project teams, design process, construction, performance outcomes, costs, and lessons learned. She highlighted an example project involving renovation of a former mill building into a high-performance facility with features such as geothermal systems and daylighting, noting that it achieved LEED Platinum certification.

**Eric DeGesero (EDGE Consulting)** asked about project cost and funding.

**Jennifer Souder (Rutgers CUPR)** noted that the example project had an approximate budget of \$430,000 (about \$190 per square foot), including site work, and included features such as landscape buffering and energy-efficient systems. Jennifer encouraged participants to submit projects for inclusion and noted that a template is available for case study submissions.

#### 5. Closing and Next Steps

**Cornelia Wu (NEEP)** thanked presenters and participants and noted that materials from the meeting, including slides and notes, will be posted on the Energy Code Collaborative website.

She announced that the next meeting will be the full Energy Code Collaborative meeting on April 17 at 10 AM, which will include subcommittee report-outs and guest presentations, including a presentation from ACEEE on proposed model code pathways, and a presentation from the Massachusetts Department of Energy Resources on a recent peak load study.

### ZOOM Chat Discussion Notes

**Pamela DeLosSantos, NJHMFA:** Hi Jason, I would also note, that with our experience with PSEG's Engineered Solutions, you need large enough projects that are master metered, so it leaves out a lot of smaller projects that are individually metered.

### Acronyms and Abbreviations

**ACEEE** – American Council for an Energy-Efficient Economy



**ASHRAE** – American Society of Heating, Refrigerating and Air-Conditioning Engineers

**EUI** – Energy Use Intensity

**HVAC** – Heating, Ventilation, and Air Conditioning

**ICC** – International Code Council

**IECC** – International Energy Conservation Code

**LGA** – Local Government Audit

**LEED** – Leadership in Energy and Environmental Design

**NEEP** – Northeast Energy Efficiency Partnerships

**NJ DEP** – New Jersey Department of Environmental Protection

**ROI** – Return on Investment