New Jersey Energy Code Collaborative Meeting Minutes

October 20, 2025, 1:00 PM

Attendees

- Abby Brown, NEEP
- Abigail Andrews, Center for Urban Policy Research, Rutgers
- Ben Adams, MaGrann Associates
- Cornelia Wu, NEEP
- Dean Potter, K. Hovnanian Companies, LLC
- Doug McCleery, MaGrann Associates
- Giulianna Rivera, Center for Urban Policy Research, Rutgers
- Jason Kliwinski, Center for Urban Policy Research, Rutgers
- Jeff Kolakowski, NJ Builders Association
- Jennifer Senick, Center for Urban Policy Research, Rutgers
- Jennifer Souder, Center for Urban Policy Research, Rutgers
- Jerry Ryan, NJ Natural Gas Company
- Karl Hartkopf, NJ DEP
- Kiran Ghosh, Rutgers
- Kyle Cruz, NJHMFA
- Liu Liu, KEA Engineering
- Lou Rugulo, Energy Systems Project Development Consultant
- Mamie Purnell, NJ Division of Rate Counsel
- Maura Caroselli, NJ Division of Rate Counsel
- Melissa Miles, NJ Environmental Justice Alliance
- Michael Winka, NJIT Center for Building Knowledge
- Nick Kikis, NJ Apartment Association
- Nicole Provost, DEP
- Pat Miller, NJ Electrification Coaching Network
- Paul Heitmann, NJ BPU
- Steve Miller, NJ Electrification Coaching Network
- Stephanie Staub, New Jersey Community College Consortium for Workforce & Economic Development
- William Amann, M&E Engineers/USGBC NJ
- William Healy
- Yousaf Shahid, Center for Urban Policy Research, Rutgers

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1. Welcome and Introductions

Cornelia Wu (NEEP): Welcomed participants and facilitated introductions. Asked attendees to introduce themselves. Noted that meeting minutes will attribute comments to individuals unless objections are raised. No objection was raised.

2. Meeting Agenda Overview

Cornelia Wu (NEEP): Provided antitrust statement and shared the agenda:

- Report-outs from NJ ECC subcommittees

- Defining metrics for Building Performance Standards (BPS)
- Grid Modernization Incentives in New Jersey
- IECC voluntary appendices and cost
- Networking
- NEEP's HEW 2025 Welcome Reception

Provided historical context on NJ energy policies that led to the development of the NJ ZEB Roadmap draft and provided an overview. For more information, please see the presentation slides.

Visit the New Jersey Energy Code Collaborative website: https://njenergycodecollaborative.org/

NJ ZEB Roadmap: https://njenergycodecollaborative.org/roadmap/

3. Report-outs from NJ ECC subcommittees

Code Compliance and Workforce:

The subcommittee reviewed three related reports in previous meetings. The first report that was reviewed was the Energy Code Compliance Workforce Gap Analysis published by NEEP that surveyed nearly 500 code officials, including more than 300 from New Jersey. The report highlighted upcoming retirements and low awareness about the code enforcement profession. The other report that was reviewed is the New Jersey Code Compliance Baseline, tied to the 2015 ICC, which report identified the area's most often found non-compliant, and strong demand for additional technical training. The group also discussed Workforce Needs and Equity Assessment and noted active initiatives, including Building and Industry Leadership Team (BILT) efforts and collaborations among NJBPU, NJDOT, and NJIT. The Energy Code Official – Training and Education Collaborative (ECO-TEC), with ASHRAE, ICC, and NASEO as partners, is a project that will create specialized training for officials, and New Jersey is a partner state. The training will focus on ASHRAE 90.1-2019 and 90.1-2022, and the current outline for the training was shared with the subcommittee, allowing them to review and provide feedback.

Energy Codes for New Construction Subcommittee:

The subcommittee reviewed base codes and stretch-code activity across states from Maine to Washington, D.C. The group also examined incentive-based stretch models, such as Massachusetts Green Communities and New York's Clean Energy Communities and NYSERDA ENERGY STAR. Participants discussed opportunities to align incentives with potential future stretch-code concepts in New Jersey. Two working groups were created, one exploring a stretch code and another exploring zero energy code approaches. The work of the working groups is yet to begin.

Existing Buildings and Retrofits Subcommittee:

The subcommittee reviewed the New Jersey Rehabilitation Subcode, which applies to work on existing buildings and does not require full-building renovations. This subcommittee discussed opportunities for incentive-program coordination across agencies, including alignment with the definition of various project types noted in the rehab subcode, and for regulatory alignment to make processes clearer for users. The subcommittee is looked into a few activities, including developing an incentive matrix and decision tree; examining Rehab Subcode energy requirements and their alignment with incentives to identify opportunities for amendments or

improvements; and addressing multi-family incentive gaps and opportunities. NJDEP released a "one-stop-shop" tool on October 14, 2025, which provides project-specific information based on user prompts and is updated weekly. It also has the capability to be sorted by incentive type and other filters which we believe meets the intent of developing a decision tree-based incentive tool. Simultaneously, Rutgersdeveloped a comprehensive cross-agency list of incentives in a detailed matrix speadsheet that is sortable by new or existing construction, residential or commercial construction and/or agency. This addresses the request for development of an incentive matrix. Additional work is needed on alignment of incentives with the rehab project type definitions, addressing multifamily incentive gaps and identification of amendments to strengthen the rehab code energy requirements to help meet State Energy Master Plan and GHG goals.

4. Defining metrics for Building Performance Standards (BPS)

Abigail Andrews, Rutgers Center for Urban Policy Research, explained that building performance standards (BPS) aim to reduce energy use and emissions in existing buildings. She noted that there are currently around 11 or 12 active BPS policies and roughly 40 jurisdictions committed to developing one. It was also noted that about 25% of New Jersey's emissions come from energy use in existing buildings and that, under the Clean Energy Act, New Jersey's benchmarking program requires annual energy and water reporting but does not impose performance requirements. Reference was made to Public Law 2018, Chapter 17, which applies benchmarking requirements to buildings 25,000 square feet or larger.

A question was asked about designing BPS and what metrics would be used. Abigail explained Rutgers is focusing on evaluating three categories measured against several questions to determine what metric may be best suited for New Jersey in future policy development (see tables in presentation slides). For energy-efficiency metrics, they have reviewed Site EUI, Source EUI (which accounts for energy losses), and ENERGYSTAR SCORE. For greenhouse-gas metrics, they are considering on-site GHG emissions, which tends to favor electrification and is used in places such as Washington, D.C., and a total GHG-intensity that includes both on-site emissions and those associated with electricity generation, used in places like Boston and New York City. For grid-balancing metrics, it was explained that current BPS policies do not directly address demand; peak-demand metrics are complicated, may or may not be controllable, are not always available to all buildings, and lack a standard normalization approach. Additionally, demand-related elements could be considered in an alternative compliance pathway.

On EUI, a question was asked about how end use is being defined, what is included, and how those choices relate to equipment decisions. Abigail explained how accounting for building-use types is harder, but in Energy Star you can account for this. The site EUIs currently use consider all end use energy.

The group also discussed data handling: whether Site EUI would be defined "at the meter," how to accumulate all building meters, the feasibility of automatic energy-use data uploads, how to flag cases where whole-building aggregation is not possible, and whether sub-use disaggregation could offer more granular insights before rolling back up to the whole building.

It was noted that many incentives already align with EUI-based metrics and asked whether incentives should attach to specific uses or to whole-building performance. Metering approaches for multifamily buildings were also raised.

5. Grid Modernization Incentives in New Jersey

Paul Heitmann, NJ BPU stated that the key to grid modernization is retooling the distribution system so that third-party aggregators can participate easily and add value. He emphasized that energy efficiency functions as permanent load reduction and, even if some customers view upgrades as burdensome, it enables aggregators to deliver cost-effective grid services. He described the overall objective as a cost-effective transformation, what some might consider a "game change" with aggregators playing a central role.

He reviewed progress to date. The work began with DER interconnection, connecting solar and having utilities approve applications, and included examining written rules to increase transparency and efficiency, particularly through hosting-capacity information to help applicants identify feasible points of interconnection. The next point discussed is raising the residential solar limit from 10 kW to 25 kW and keeping the process simple for oversized solar so customers can electrify more end uses and self-supply a larger share of their load with induction cooking, EV charging, and other equipment. Paul explained that the next phase involves opening clear paths for participation. He said the Grid Mod Forum is establishing what utilities need to provide, including the communications systems required to call upon distributed resources. Key topics under the Grid Mod Forum include hosting solar, charging infrastructure, systems integration, and "plug-and-play" connectivity for end devices. Essentially, "tell us how that world works" if the distribution grid becomes plug-and-play. He also described a Grid Flexibility Services Working Group focused on evolving interconnection standards into a true service architecture, and he noted that DERs offer the most value when they are hosted in highly efficient buildings. While efficiency itself is not a dispatchable service, he said, it enables other services to be delivered.

Ben Adams asked about third-party access to energy-consumption data as a prerequisite to efficiency-linked services; Paul replied that AMI meters are fully deployed, that earlier decisions separated data access from deployment, and that BPU has advocated for third-party use of 15-minute data and even local minute-by-minute data, while considering what other AMI signals, such as voltage, could be trusted to third parties. Ben then asked how end-use customers would be motivated to use their resources, and Paul observed that the "era of incentives" is ending and giving way to compensation models; Ben clarified that he meant compensation rather than incentives, and Paul agreed that compensation is the appropriate frame.

Another question was asked about whether EDCs are saying current AMI meters can support five-minute intervals. Paul said PJM's market operates on five-minute intervals and that while current AMI meters are capable of that resolution, utilities have maintained 15-minute intervals due to cost and operational concerns.

Dean Potter was interested about the impact of data centers and commented that the region is already seeing price impacts through PJM's reliability market even where data centers are not local. He added that, as a homebuilder, he has reduced energy use, but rates are rising as overall system demand grows rapidly after decades of flat load.

Pat Miller asked about the status of bills; Paul mentioned Senate Bill 258 as providing helpful momentum while emphasizing that interconnection rulemaking (NJ 14:b-5) is especially important in the near term. When asked whether neighbors could share produced energy, Paul said that any overproduction must currently pass through the retail center and that, while compensation for overbuilding is a goal, customers cannot abandon the grid; he cited California's Rule 21 and noted rights-of-way constraints that block direct peer-to-peer transfers. In response to a question about net metering, Paul said a Net Energy Metering proceeding is underway. He distinguished the market construct from the physical grid and explained that customers can overproduce within limits and receive retail compensation with a monthly accounting and an annual true-up intended to net to zero. He added that designing the right framework can drive storage adoption similar to California's experience, whether storage is stationary or "on wheels" in the form of EVs.

Abby Brown asked about residential interconnections that hit capacity constraints and trigger costly upgrades for individual customers. Paul said a third working group focused on Cost Estimation, Verification, and Allocation, referred to as CEVAR, would address how estimates are produced and validated.

Michael Winka asked whether codes should explicitly account for demand response and flexibility. Paul replied that building-side approaches remain vendor-specific, while utilities employ OpenADR to issue the right signals at the right aggregation level. He also posed the question of whether it is preferable, under the Clean Energy Act, to set goals rather than prescriptive numbers and suggested that some readiness requirements (for example, garage charger readiness) could be embedded in code rather than prescribing specific vendor solutions.

6. IECC voluntary appendices and cost

Abby Brown, NEEP, introduced the IECC appendices and explained that, under New Jersey's UCC, they may be used voluntarily. From 2021 to 2024, both commercial and residential appendices expanded from three to ten. She described the solar-ready appendices (CB and RB) and the Zero Energy commercial appendix (CC), which now frames targets in terms of net-zero operational energy rather than net-zero carbon and provides prescriptive tables and guidance for off-site renewable energy. She also noted the residential zero-energy appendix, which changes the title to "zero net energy" and lowers the maximum ERI from 47 to 42 in New Jersey climate zones.

A question was raised about how commercial IECC appendices apply in New Jersey given that the State uses ASHRAE for commercial energy code. Abby notes that the appendices do not

apply directly; however, **Jennifer Senick** clarified that, in New Jersey, elements adopted into the model code can be translated into the Rehabilitation Subcode, making the concepts potentially relevant with appropriate adaptation.

Abby then summarized the new IECC requirement for EV-charging infrastructure in new construction, stating that one- and two-family buildings must have at least one EV-ready space and that R-2 occupancies in mixed-use buildings must provide EV readiness for roughly 40 percent of parking spaces or dwellings. A participant observed that running conduit to parking areas can be expensive.

Other states are evaluating these appendices as they consider the 2024 updates; for example, Delaware is looking at them and Massachusetts uses solar-ready and zero-ready provisions—heavily modified—within its stretch code. Rhode Island is using the electric ready provisions for both commercial and residential buildings, following a legislative mandate. The UCC adoption process for the I-codes is ongoing in New Jersey and is expected around mid-2026, and the draft language does not include the appendices as mandatory.

Yousaf Shahid, Center for Urban Policy Research, Rutgers, addressed IECC 2024 voluntary appendices RE (EV Charing Infrastructure) and RK (Electric Ready Residential Building Provisions), as an opportunity to avoid future cost. RK was described as mandated for certain key advances, while RE expands EV readiness categories to include EV-capable, EV-ready, and EV-installed, and Yousaf explained the differences among them.

Yousaf noted New Jersey's goal-setting context, stating that the State has already set ambitious targets to electrify dwelling units and aims to put two million EVs on the road, and approximately 85 percent of new light-duty vehicle sales to be electric by 2040. He also reported that New Jersey is currently among the top five states for EV adoption and that about five percent of vehicles are either EVs or hybrids. Added that, as of June, there was roughly one Level-2 charger for every 80 vehicles and emphasized that access to charging remains a key barrier to adoption. He described the core components of electric and EV readiness as including the main electrical panel or switchboard and the associated conduit and wiring. Explained that new construction is the most cost-effective time to provide readiness because electrical layouts can be optimized from the start and because PVC in slab is less expensive than retrofit conduit.

Yousaf identified primary retrofit cost drivers as panel upgrades, demolition costs, permitting, revisions to building plans that are harder in retrofits, and indirect or management costs that are difficult to predict. Shared single-family examples comparing new construction to retrofit, noted that many costs could be avoided in new construction, and cited a Colorado example in which the same air and water heating equipment cost more to install in a retrofit. He noted that "additional costs of around $2100" for Electric readiness in retrofit vs new construction and presented future EV-ready retrofit costs projections per space in New Jersey. Stated that a scaled statewide estimate suggested $11–$17 million for electric-readiness and up to $44 million for EV-readiness if translated to all new 1- 2 family residential homes.

Ben Adams asked whether the numbers represented worst-case scenarios because they seemed high based on his experience. **Yousaf** responded that costs vary widely depending on individual site conditions and that in the past, he has received feedback that these figures reflect the best-case scenario for a typical home, so perspectives are different.

Paul Heitmann asked whether the assumptions were specific to single-family homes with panels located in garages and noted that costs are much lower in that case and much higher where trenching is required for multifamily or street charging; he also asked what the code intends for those situations. **Yousaf** replied that the code includes attached or detached garages and includes exceptions, and he added that costs become very high when utility-side upgrades are required while emphasizing that the commercial sector presents a particularly large opportunity.

Jerry Ryan asked how additional-load costs would be transferred to individual customers when entire streets require upgrades to poles and wires.

Paul Heitmann suggested that community geothermal is a pathway that gas utilities are interested in pursuing. Participant observed that community geothermal works best where homes are situated on larger lots. Paul Heitmann responded that the analysis must consider total system cost and should not be framed as one side against another.

Doug McCleery stated that the National Electrical Code is behind current needs and said utilities are still figuring out where upgrades are required without creating stranded assets. Added that he is not sure existing diversification rules were written with EV chargers in mind.

Ben Adams emphasized the human-factors challenge in multifamily rental housing with limited parking, stated that property management will need to handle shared charging, and said this issue is not receiving enough attention. Noted that he has seen multifamily developments overseas where every space has an EV charger. **Jeff Kolakowski** asked Paul whether grid-demand expectations are being considered as EV charging increasingly occurs in buildings. **Paul Heitmann** explained that there is a difference between power and energy and said the timing of charging is the crucial factor. Stated that to participate in building-based EV programs, charging must be connected and controllable, and that overnight Level 2 charging is preferable to daytime charging because capacity is generally sufficient in that window. **Michael Winka** observed that approximately 200,000 EVs would represent only about one percent load growth, provided charging does not occur all at once. **Paul Heitmann** concluded that for multifamily settings he hopes to see more shared DC fast-charging hubs where drivers can pull up, charge, and move to another space, while acknowledging that such hubs impose very large loads

Cornelia Wu noted in closing that slides would be shared after the meeting and that a poll may be shared to gauge interest in amendments related to the base code.

Acronyms and Abbreviations

AMI — Advanced Metering Infrastructure
ASHRAE — American Society of Heating, Refrigerating and Air-Conditioning Engineers
BILT — Building and Industry Leadership Team
BPS — Building Performance Standards
BPU / NJBPU — New Jersey Board of Public Utilities
CB — IECC Commercial Solar-Ready Appendix
CC — IECC Zero Energy Commercial Appendix
CEVAR — Cost Estimation, Verification, and Allocation (Working Group)
D.C. — District of Columbia
DC — Direct Current (as in DC fast charging)
DCFC — DC Fast Charging
DEP / NJDEP — New Jersey Department of Environmental Protection
DER — Distributed Energy Resources
ECO-TEC — Energy Code Official – Training and Education Collaborative
EDC — Electric Distribution Company
ENERGY STAR — U.S. EPA/DOE Energy Efficiency Program
EUI — Energy Use Intensity
- **Site EUI** — Energy used at the site
- **Source EUI** — Site energy plus generation and transmission losses

EV — Electric Vehicle
EV-Capable / EV-Ready / EV-Installed — Tiers of EV charging readiness in IECC Appendix RE
ERI — Energy Rating Index
GHG — Greenhouse Gas
ICC — International Code Council
IECC — International Energy Conservation Code
I-Codes — International Codes
kW — Kilowatt
MA — Massachusetts
NASEO — National Association of State Energy Officials
NEEP — Northeast Energy Efficiency Partnerships
NEM — Net Energy Metering
NJ ECC — New Jersey Energy Code Collaborative
NJBA — New Jersey Builders Association
NJDEP — New Jersey Department of Environmental Protection
NJDOT — New Jersey Department of Transportation
NJHMFA — New Jersey Housing and Mortgage Finance Agency
NJIT — New Jersey Institute of Technology
NYSERDA — New York State Energy Research and Development Authority

OpenADR — Open Automated Demand Response
PJM — PJM Interconnection (Regional Transmission Organization)
PVC — Polyvinyl Chloride
RB — IECC Residential Solar-Ready Appendix
RE (IECC) — Appendix RE, Electric Vehicle Charging Infrastructure
RK (IECC) — Appendix RK, Electric-Ready Residential Building Provisions
RI — Rhode Island
R-2 — Multifamily Residential Occupancy Classification (Building Code)
UCC — Uniform Construction Code (New Jersey)
USGBC NJ — U.S. Green Building Council New Jersey
ZEB — Zero Energy Buildings