



New Jersey Zero Energy Roadmap Draft

BUSINESS AS USUAL

2022:

- DCA reviews and adopts ICC 2021 codes including IECC 2021 in Uniform Construction Code with no weakening amendments
- DCA allows municipalities to adopt voluntary Zero Energy Appendices

2023-2024:

- Focus on achieving above >90% compliance with adopted base code

2025:

- Adopt new base code (**ICC 2024 Codes**) with considerations for zero energy ready and/or electrification requirements for all building types

2028:

- Adopt new base code for all building types (**based on ICC 2027 Codes**) with zero energy requirements

STRETCH CODE PATH

2022:

- DCA reviews and adopts IECC 2021 in Uniform Construction Code with no weakening amendments
- DCA develop and adopts a statewide voluntary stretch code with x% better energy efficiency req., electrification, renewable energy interconnection

2025:

- Adopt new base code (**ICC 2024 Codes**) with any electrification provisions from stretch code
- Update stretch code with higher energy efficiency benchmark

2028:

- Adopt zero energy base code (**based on ICC 2027 Codes**) and fully incorporated provisions from stretch code

REHAB CODE PATH

2022:

- DCA reviews and adopts IECC 2021 in Uniform Construction Code with no weakening amendments
- DCA adopts electrification amendments to Rehab Code

2023-2024:

- Municipalities use benchmarking law to implement building performance standards (BEPS)

2025:

- Adopt new base code (**ICC 2024 Codes**) with considerations for zero energy ready and/or electrification requirements
- Update Rehab Code with additional electrification and renewable energy procurement provisions

2028:

- Adopt new base code for all building types (**based on ICC 2027 Codes**) with zero energy requirements
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Business as Usual Actions:

- The New Jersey Department of Community Affairs, Board of Public Utilities, and the Department of Environmental Protection coordinate to develop a zero-energy code adoption timeline that establishes a high-level plan to reach a zero-energy code for new construction.
- Conduct research and analysis of grid impacts from building electrification and electric vehicles infrastructure
- Conduct a lifecycle cost analysis of zero energy buildings.
- Update New Jersey Green Building Manual and develop strategies for how to expand its usage around the state
- Identify ways to coordinate state financing initiatives for building decarbonization.
- Provide additional energy efficiency and electrification funding for low-to-moderate income (LMI) communities.
- Work with real estate industry to create home energy labels for residential/multifamily properties and reporting mechanisms for Multiple Listing Service (MLS) Databases. Home energy labels can populate home listings in MLS databases with energy efficiency features of the home (HERS Index, certifications, high performance appliances, solar PV, etc.) and demonstrate how the home compares to the average conventional home.
- Improve the reporting of energy efficiency features during the home appraisal process by using the existing ANSI standard and other strategies.
- Implement "Lead by Example" Initiatives for state-owned/financed buildings.
- Expand utility incentives for whole building performance, building electrification technology, and weatherization. Update incentive structure to prioritize gradual phase out of fossil fuels with a focus on propane and heating oil first.
- Expand energy code training opportunities
- Support local implementation of electronic permitting/virtual Inspections capacity
- Develop and improve energy efficiency-focused workforce training programs by creating better pathways to recruit younger code enforcement professionals.
- Expand use of third-party energy efficiency certification programs as a code compliance path – including credentialed third-party implementation/verification/testing
- Develop resources on the importance of appliance standards for codes
- Conduct research on the use of new high efficiency technologies (such as inverter-based heat pumps (ductless minisplits, etc.), induction cooktops, smart thermostats, etc.) and produce consumer resources

***Stretch Code Path Actions (Including actions from Business as Usual):***

- Propose legislation to amend the Uniform Construction Code to allow for the adoption of a statewide voluntary stretch energy code that charges the Department of Community Affairs with developing and promulgating it.
- Develop and promulgate a statewide voluntary stretch energy code during the next code cycle that municipalities can adopt at the local level to require additional energy efficiency beyond the base energy code provisions in the Energy Subcode.
- Implement incentive programs and provide technical assistance to municipalities interested in adopting stretch code.

Rehab Code Path Actions (Including actions from Business as Usual):

- Develop energy efficiency updates (Basic Requirements) and electrification amendments (Supplementary Requirements) to the Rehabilitation (existing buildings) Subcode, making full use of triggers for proportional requirements.
- Propose legislation to amend the Uniform Construction Code to allow municipalities to adopt building energy performance standards (BEPS) and charge the Department of Community Affairs and/or Board of Public Utilities with developing model ordinance language for BEPS.
- Provide resources and technical assistance during municipal adoption of BEPS.
- Provide additional utility incentives to building owners that meet and/or surpass the energy efficiency benchmark of adopted BEPS ordinance.

APPENDIX***Relevant State Policy:*****Global Warming Response Act 80x50 Report – Buildings Chapter**

To achieve New Jersey's 80x50 goal the building sector will need to phase out reliance on fossil fuels and aggressively pursue electrification of heating, cooling and appliances.

At least 90% of the residential and commercial sector must be electrified to meet the state's clean energy and climate goals.

To achieve the 80x50 GHG reduction target, the state should prioritize the creation of a building electrification roadmap paired with incentives that initially target buildings currently relying on propane and heating oil for space and water heating and inefficient electric resistance baseboard heating.

2019 Energy Master Plan – New Construction and Building Energy Codes (overview see [Gov. Murphy Unveils Energy Master Plan and Signs Executive Order](#) – 1/27/2020)



- [Energy Master Plan Section](#) - GOAL 3.3: STRENGTHEN BUILDING AND ENERGY CODES AND APPLIANCE STANDARD (begins **page 76**)
 - **3.3.1** Advocate for net zero carbon buildings in new construction in the upcoming 2024 International Code Council code change hearings
 - **3.3.2** Establish transparent benchmarking and energy labeling.
 - **3.3.3** Establish mechanisms to increase building efficiency in existing buildings.
 - **3.3.4** Build state-funded projects and buildings to a high-performance standard
 - **3.3.5** Improve energy efficiency in and retrofit state buildings to, a high-performance standard.
 - **3.3.6** Increase compliance of mandated building and energy codes
 - **3.3.7** Adopt more stringent appliance standards.

BPU Energy Efficiency Order – June 10, 2020

- **Page 14** – BPU to lead New Construction Programs – Residential, Commercial, Multifamily, and for Energy Codes & Standards with the Dept. of Community Affairs
 - *“Energy codes and standards in collaboration with the New Jersey Department of Community Affairs”*
- **Page 37** – Formation of Energy Codes & Standards Subcommittee (see all committees pp. 35-37)
 - **“Energy Codes and Standards Subcommittee:** Staff proposes to form an energy codes and standards subcommittee within the EM&V WG that seeks to identify opportunities for greater energy efficiency via building energy code strategies and to quantify the energy savings that could result from updates to energy codes. In addition, Staff recommends that the Board procure an energy code compliance baseline study and review and adopt as appropriate recommendations arising from the study.”
- **Page 18-19** - Energy Codes and standards to be considered in utility-specific energy performance goals for their programs.
 - **“Energy Use Reduction Targets:** In order to comply with the energy use reduction requirements of the CEA and to guide the development of EE programs, Staff recommends that the Board establish overall annual utility territory specific energy use reduction targets. Staff further recommends that the Board establish separate utility and State targets that represent a breakdown in the overall utility-specific target based on the program administrator. State targets in each utility territory will represent the energy use reductions to be achieved by programs administered or sponsored by the State, including State programs, state building codes, and state appliance efficiency standards.” ...
 - “Staff recommends that, in calculating net energy use reductions and assessing compliance with QPIs, utilities be permitted to apply energy savings from any other EE or PDR programs in their territory, as well as any other programs that reduce electricity or natural gas by customers and can reasonably be quantified based on accepted standards, except those savings attributable to State-led EE or PDR programs (including state building energy codes and state appliance efficiency standards) and any other State-sponsored EE or PDR programs. Savings attributable to State-led or State-sponsored EE or PDR programs will not apply to utility program energy use



reduction targets because these targets have been reduced by the amount that the State commits to achieving. Similarly, utilities will not receive incentives or penalties based on the performance of the programs that they are not responsible for administering and do not receive incentives or penalties based on the performance of State-administered programs or initiatives.”

- **Page 42** – Board Directive to establish Stakeholder Groups
 - **Stakeholder Groups:** The Board **DIRECTS** Staff to take the necessary steps to ensure that the EEAG includes: (1) a Workforce Development Working Group, (2) an Equity Working Group, including Comfort Partners and Multifamily Subcommittees, (3) an EM&V Working Group, including an Energy Codes and Standards Subcommittee; and (4) a Marketing Working Group, as recommended by Staff. The Board also welcomes Staff’s recommendations for future Advisory Groups or Advisory Councils to assist in future efforts, as necessary.

Building Energy Benchmarking

NJ 2018 Clean Energy Act – see: [Assembly Bill 3723](#) (no action to date for implementation)

- *Within five years of enactment, benchmarking is required by all owners and operators of commercial buildings over 25,000 ft² using Portfolio Manager.*

State Uniform Construction Code Act (P.L. 1975, c.217, as amended)

- https://www.nj.gov/dca/divisions/codes/publications/pdf_ucc/UCC_gen_info.pdf
- https://www.state.nj.us/dca/divisions/codes/publications/pdf_licensing/co_comment.pdf

NJHMFA- 2020 QAP Green Requirements

Green Building Manual v2 2019 - <http://greenmanual.rutgers.edu/>

The New Jersey Green Building Manual (NJGBM) is a resource tailored for New Jersey that provides economic and environmental best practices across the spectrum of green building categories including energy, emissions, water, waste, siting, transportation, and human health. The Manual comprises Commercial and Residential sections with best practices strategies applicable to new and existing buildings.



Regional Stretch Energy Code Examples:

Massachusetts: The state is currently reviewing zero energy codes for its next stretch code update in 2021-2022. Legislation passed in the states requires the development and promulgation of a zero-energy municipal opt-in stretch code that municipalities may voluntarily opt into in addition to a regular stretch code.

The state administers the [Green Communities program](#), which includes the nation's first stretch code to be adopted statewide. Communities must meet five criteria – solar or renewable generation zoning, expedited permitting for zoning, 20% reduction in energy use over 5 years, purchasing hybrid or electric vehicles for all state department vehicles, and reducing the life cycle cost of buildings (recommends stretch code) – at which point communities receive grants pursue additional energy efficiency measures. Massachusetts also allows for energy code savings attribution for compliance.

Vermont: Vermont's 2020 Residential and Commercial Building Energy Standards include a significantly strengthened residential and commercial version of the 2018 IECC as its [residential stretch code \(section R407\)](#). Vermont revised the 2018 IECC to be more efficient and provide more flexibility for its stretch code. Each project must achieve a minimum number of points by choosing various energy reduction options.

New York: The state provides a stretch code option to municipalities called the [NYStretch Energy Code](#). The code was developed by NYSERDA and the current version (NYStretch 2020) provides savings of roughly 11% over the 2020 Energy Conservation Construction Code of New York State (2020 ECCCNY). NYStretch is updated in conjunction with the ECCCNY and NYSERDA provides resources and guidance to local governments looking to adopt the stretch code.

Rhode Island: [Rhode Island](#) uses the Department of Energy Zero Energy Ready Homes (ZERHs) program for residential construction and ICC's International Green Construction Code (IgCC) for commercial construction. Specific state-financed construction is required to use the IgCC. Rhode Island also allows for [energy code savings attribution](#) for compliance. DOE's ZERH program comes with supporting resources, training, and guidance already available.

District of Columbia: Washington D.C. recently passed [Appendix Z](#) for commercial buildings, which takes a whole-building EUI performance approach to reach zero energy for new commercial buildings. Appendix Z's focus on tight envelopes, low loads, and renewable energy makes it a simple and high-performing option for commercial buildings.

Maine: Maine has adopted the 2021 International Energy Conservation Code (IECC) as a voluntary stretch code for municipalities. The state is also planning training and adoption guidance for local governments interested in adopting the stretch code.

Maryland: Maryland adopted the [2012 IgCC](#) and added efficiency measures in its energy efficiency section. This provision applies only to state-owned buildings, but its design allows them to not have to update the stretch code whenever the base code is updated since it merely requires performance based on whatever base code is effective. The state of Maryland adopted the IgCC, but local jurisdictions can choose to adopt the stretch code locally.