



NJECC Working Group: Stretch/Zero Energy Codes

NJ Energy Code Collaborative

February 9, 2026

Agenda



- Welcome and introductions (5 min)
 - Purpose, guiding principles
- Stretch/Net Zero Code Review (5min.)
 - What is a Stretch/Net Zero Code
 - Typical Areas of Focus
 - Metrics
 - Current Incentive Levels
- IECC Appendices Review (10 min.)
 - RG – 2024 IECC Stretch Code
 - CC/RC – Zero Net Energy Building Provisions
- Other Options for a Stretch/Net Zero Code/Standard (5 min.)
- Discussion (30 min)
- Next steps (5 min)

Meeting Guidelines – Antitrust Statement



- Throughout our meetings, participants shall comply with competition law requirements and shall not enter into any discussion, activity or conduct that may violate any applicable competition law. Should the meeting discuss matters that contravene competition law requirements, it is the responsibility of participants to notify the Moderator who will discontinue the discussion or close the meeting.

NJ ECC Purpose



Establish a timely and robust, stakeholder-guided process to research and develop a **New Jersey Zero Energy Building Roadmap that provides options to build government and market capacities** to effectively advance an increasingly more energy-efficient building energy code and improve administration, enforcement and compliance, aligned with relevant clean energy policies of the State, including the Energy Master Plan goals and recommendations.

NJ ECC Guiding Principles



The New Jersey Energy Code Collaborative and its subcommittees are committed to establishing a transparent, collaborative, and evidence-based process to advance energy efficiency and high-performance buildings across New Jersey. The following principles guide our work:

- **Shared Commitment to Progress:**
 - we are united by a common goal: to help New Jersey transition toward more efficient, resilient, and high-performing buildings, in alignment with relevant clean energy policies of the State.
- **Welcoming All Perspectives:**
 - we value broad stakeholder engagement and are committed to creating a space where all voices can be heard and respected. Meetings will be facilitated to encourage open dialogue and thoughtful participation.

NJ ECC Guiding Principles



- **Transparency and Accountability:**
 - meeting summaries will be shared with the group for review prior to publication to ensure accurate reflection of discussions and input. We are committed to documenting the process clearly and consistently.
- **Commitment to Education:**
 - we aim to support stakeholders with access to relevant information through educational sessions, panels and other learning opportunities.
- **Draft Net Zero Building Roadmap as Living Document:**
 - the Draft Net Zero Building Roadmap will be treated as a dynamic, evolving resource that reflects emerging best practices, market developments, and stakeholder feedback.
- **Role of the New Jersey Energy Code Collaborative:**
 - the New Jersey Energy Code Collaborative facilitates and informs this process in a manner consistent with the principles.

What is a Stretch or Net Zero Code?



Base codes

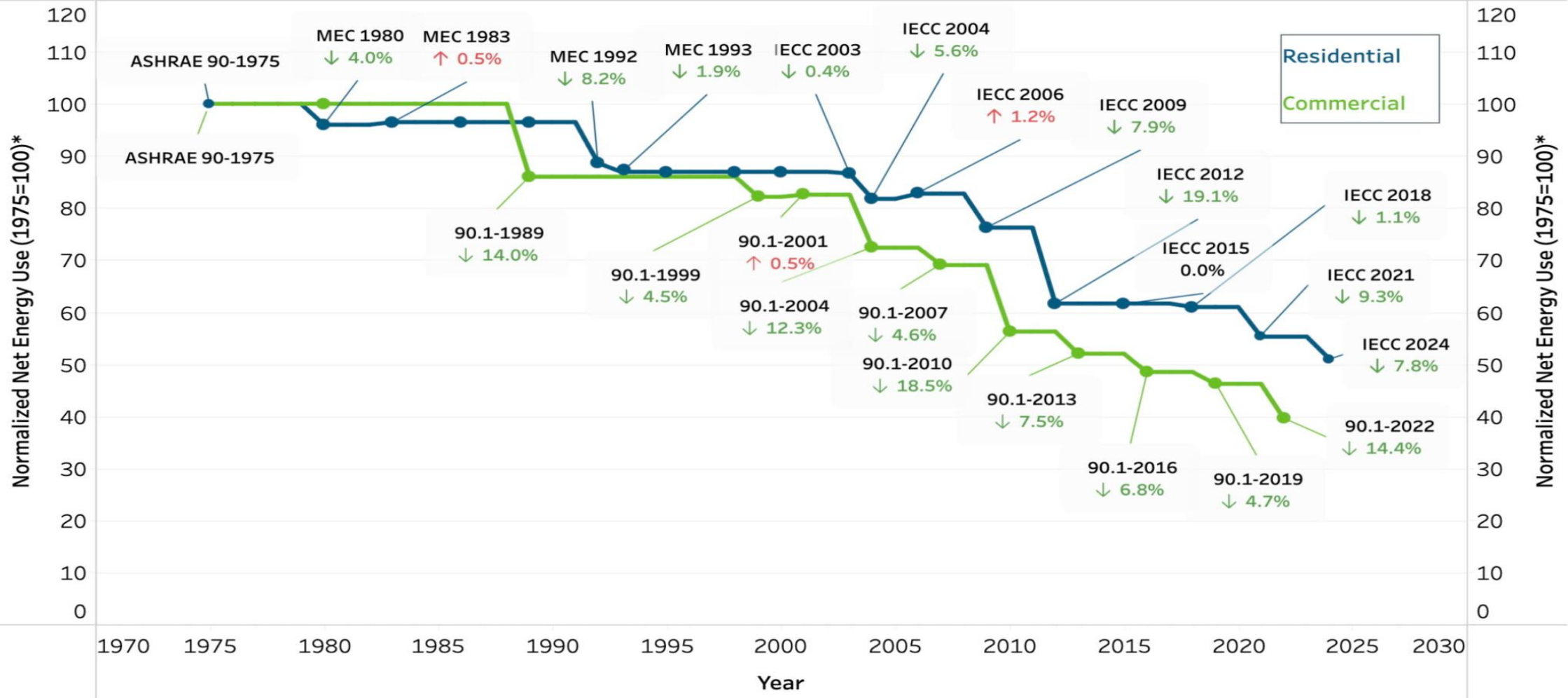
The minimum energy efficiency levels set in the state-adopted version of a national model code, which may have state specific amendments.

Stretch & Net Zero codes

Stretch codes are building energy codes that require building construction above the minimum energy efficiency levels of the base code.

Net zero codes require demonstration that all site energy is provided from renewable sources generally either installed onsite or offsite.

Code Energy Reduction History



Source: DOE

Energy Master Plan Context



- **2019 EMP:**

- Goal 2.3.6: Develop mechanisms for achieving 600 MW of **energy storage** by 2021 and 2,000 MW of energy storage by 2030.
- 4.1.3 Expand and accelerate the current statewide **net zero carbon homes** incentive programs for both new construction and existing homes
- 4.1.4 Study and develop mechanisms and regulations to support **net zero carbon new construction**
- 4.1.5 **Develop electric vehicle-ready and demand response-ready building codes for new multi-unit dwelling and commercial construction**

- **Progress Since 2019:**

- Target of **100% clean energy by 2035** (EO 315)
- EO316 (Feb 2023) targets installing zero-carbon emission space heating and cooling systems in 400k homes and 20k commercial properties and aims to make 10% of all LMI properties **electrification-ready** by 2030
- NESCAUM MOU (Feb 2024) pledged - along with 8 other states - to have **heat pumps make up 90% of residential heating, air conditioning, and water heating sales by 2040**
- 2024 EMP Update (22GW solar capacity by 2050, grid modernization, electrification, green economy, wind)
- 2026 EO 2 Garden State Energy Storage Program Acceleration (GSESP)

Typical Stretch Code Areas of Focus



Topics covered by stretch codes

Energy Efficiency

- Envelope, Fenestration, Air Leakage, ERV, Fan Power, Heat Pump, Water Heating

Electrification

- Heat and Hot Water (NO/limit combustion), EV Ready, Grid Connected/Responsive

Renewables

- PV ready, percentage on site required, off-site/community

Stretch Codes Metrics



Approaches to Stretch Codes

- Percent better than base code, (*ME 2025*)
- Metrics such as Energy Use Intensity (EUI), Home Energy Rating System (HERS), Thermal Energy Demand Index (TEDI), (*MA*)
- Prescriptive, Performance w/backstop, (*MA*)
- Point Based, (*VT*)
- Programmatic (Passive House, DOE ZERH), (*MA*)

NJ Clean Energy Program Energy Efficiency Incentives



Pathways offer increasingly higher savings:

- ➔ **High Performance**
Deeper energy savings with tiered incentives
- ➔ **Streamlined**
More efficient than code compliance
- ➔ **Bundled**
Two or more eligible energy efficiency improvements



Pathways for Higher Savings

Base and GHG Incentives



Pathway	Incentive Rate	GHG Reduction Bonus	
		Tons CO ₂ e per kSF	\$/SqFt
Bundled	\$0.25 /SqFt	n/a	n/a
Streamlined	\$0.50 /SqFt		
High Performance <i>Non-Proxy</i>	\$1.00 /SqFt		
High Performance <i>LEED V4.1</i>	\$1.00 /SqFt		
High Performance <i>ENERGY STAR®</i>	\$1.00 /SqFt	0.7 - 0.99 tons	\$0.25
High Performance <i>DOE Zero-Energy Ready Home</i>	\$1.75 /SqFt	1.0 - 1.99 tons	\$0.50
		2.0 - 2.99 tons	\$1.00
High Performance (choose one): <i>PHIUS Core 2021</i> <i>PHIUS Zero 2021</i> <i>PHIUS CORE REVIVE 2021</i> <i>PHI Classic V10</i> <i>PHI Plus V10</i> <i>PHI Premium V10</i>	\$2.50 /SqFt	3.0+ tons	\$1.50

- Streamlined— 5% better than project's relevant code
- High Performance Non-Proxy (ASHRAE) —5% site energy savings compared to baseline
- LEED v4.1— 5% better than ASHRAE 90.1 2019 or 9% better than 2016
- Energy Star MF & US DOE ZER— 10% site energy savings compared to IECC 2021 or 15% compared to 2019.
- PHIUS — meet PHIUS standard & develop baseline for comparison to show energy reduction (generally 40 to 85% better than code)

Incentive Ranges



	ENERGY STAR®	DOE Zero Energy Ready	PHI/PHIUS
Incentive Range	\$2,700	\$4,725	\$6,750
Greenhouse Gas Bonus	\$675 – \$4,050	\$675 – \$4,050	\$675 – \$4,050
TOTAL	\$2,700 – \$6,750	\$4,725 – \$8,775	\$6,750 – \$10,800

Up to
20% INCREASE
from previous program incentives



	ENERGY STAR®	DOE Zero Energy Ready	PHI/PHIUS
Incentive Range	\$70,000	\$122,500	\$175,000
Greenhouse Gas Bonus	\$17,500 – \$105,000	\$17,500 – \$105,000	\$17,500 – \$105,000
TOTAL	\$70,000 – \$175,000	\$122,500 – \$227,500	\$175,000 – \$280,000

Up to
41% INCREASE
from previous program incentives



	Bundled Pathway	Streamlined Pathway	High Performance Pathway
Incentive Range	\$63,000	\$126,000	\$252,000 – \$630,000
Greenhouse Gas Bonus	N/A	\$63,000 – \$378,000	\$63,000 – \$378,000
TOTAL	\$63,000	\$126,000 – \$504,000	\$252,000 – \$1,008,000

Up to
133% INCREASE
from previous program incentives



RG101.1 Simulated Building Performance Compliance

- Building Envelope thermal conductance 15% better than prescriptive factors in table R402.1.2
- Dwelling Units with Fuel-burning appliances for space heating, water heating or both requires 30% reduction of annual energy costs from standard reference design
- All other Dwelling Units require 25% reduction of annual energy costs from standard reference design
- Dwelling units larger than 5,000sf of living space above grade require an additional 5% reduction

IECC Appendix RG: Stretch Code



RG101.2 ERI Based Compliance

- Requires ERI less than or equal to values in Table RG101.2 (OPP = Onsite Power Production)
(ERI of 62 to 61 is current max based on IECC 2021)

TABLE RG101.2 (R406.5) MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX NOT INCLUDING OPP	ENERGY RATING INDEX WITH OPP
0 and 1	46	27
2	46	26
3	45	24
4	48	32
5	49	37
6	48	39
7	47	43
8	47	43

IECC Appendix RG: Stretch Code



RG101.3 Additional Energy Efficiency Credits

- Residential buildings shall not earn less than 20 credits from not less than two measures specified in Table R408.2

Zero Energy

Appendix CC



- Purpose – Models how to apply new renewable energy generation when new buildings add electric load to the grid
- CC Description – Provides a framework for meeting minimum renewable energy requirements, including a table of prescriptive renewable energy requirements by building type and climate zone for onsite renewable generation and guidelines around procurement of off-site renewable energy.
- CC updates from 2021 IECC –
 - Changes from net zero carbon to net zero operational energy
 - Adds language about RECs
 - Changes adjusted off-site renewable energy calculation

Zero Net Energy

Appendix RC



- Purpose – Models how to apply new renewable energy generation when new buildings add electric load to the grid
- RC Description – Establishes criteria for compliance using ERI analysis
- RC updates from 2021 IECC –
 - Title change to be Zero Net Energy
 - Allows compliance using ASHRAE 90.2
 - Lower values for ERI to 42 when not including renewable energy (was 47 in both NJ climate zones) and 0 including adjusted onsite power production

IECC Appendix RC: Zero Energy Residential Building Provisions



RC103.2 ERI Compliance: Rated design meets one of the following

- Requirements of sections within Table R406.2 & Sections R406.3-406.7
- Requirements of ASHRAE Standard 90.2 including:
 - ERI requirements of ASHRAE 90.2 Table 6-1 without us of OPP
 - Requirements of sections R402.5.1.1, R402.5.1.2 & R406.3

RC103.3 Building Thermal Envelope

- No change. Same as Section R406.3

IECC Appendix RC: Zero Energy Residential Building Provisions



RC103.5 ERI-based Compliance: ERI analysis requires rated design be shown to have an ERI less than or equal to both values indicated in Table RC103.5 when compared to reference design

CLIMATE ZONE	ENERGY RATING INDEX NOT INCLUDING RENEWABLE ENERGY	ENERGY RATING INDEX INCLUDING ADJUSTED OPP
0	42	0
1	42	0
2	42	0
3	42	0
4	42	0
5	42	0
6	42	0
7	42	0
8	42	0

IECC Appendix RC: Zero Energy Residential Building Provisions



RC103.6 Verification by approved agency

- No Change. Same as R406.6

RC103.7 Documentation

- No change. Same as Section R406.7

Other Options for a Stretch/Net Zero Energy Codes/Standard



IgCC: The International Green Construction Code is a model code developed by the International Code Council (ICC), ASHRAE, USGBC, and IES to regulate the environmental impact of buildings. It provides mandatory, enforceable green building requirements for new and existing commercial structures, focusing on energy efficiency, water conservation, and sustainability.

ASHRAE Standard 189: is a comprehensive, code-enforceable standard providing minimum requirements for the design, construction, and operation of high-performance green buildings. It covers sustainability, water efficiency, energy efficiency, indoor environmental quality, and materials, acting as a technical basis for building codes.

LEED Zero Carbon/Energy: Zero Carbon recognizes buildings with net-zero carbon emissions from energy consumption and occupant transportation. Zero Energy Recognizes buildings that achieve a source energy use balance of zero.

Architecture 2030 Zero Code (commercial, institutional, mid to high rise residential): national/international building energy standard that combines energy-efficient construction with on-site or off-site renewable energy to achieve net-zero carbon (ZNC) performance.



Discussion



Next Steps



For more information

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