Regional Codes Stakeholder Meeting

2024 International Energy Conservation Code

(Public Comment DRAFT One)

Wednesday, November 30th

NEEP

Today's Agenda

- Welcome
- Introduction and Overview
- Overview of IECC 2024 Development Process
- How to Make a Public Comment
- Overview of IECC 2024 Residential Draft
- Overview of IECC 2024 Commercial Draft
- Highlights of the Commercial Public Comment Feedback
- Q&A and Discussion
- Next Steps

NYC Buildings

Work Permit Department of Buildings

Permit Number: *104921514-01-EQ-SH*
Issued: *03/22/2010* Expires: *03/22/2011*
Issued to: *FARI HAMA*
Address: *MANHATTAN 25 BROAD STREET*
Business: *PERIMETER BRIDGE & SCAFFO*
Contractor No: *GC-9285*

Description of Work:
ALTERATION TYPE 3 - CONSTRUCTION EQUIPMENT - SIDEWALK-SHED INSTALL HEAVY DUTY SIDEWALK SHED A TOAL OF 388 L.F. AT 25 BROAD STREET. DURING REMEDIAL REPAIRS, WORK SHALL COMPLY WITH LL 33/91. NO CHANGE IN USE, EGRESS OR OCCUPANCY.

Review is requested under Building Code: 1968
Electrical Application Number for Shed Lighting: M272682
To see a Zoning Diagram (ZD1) or to challenge a zoning approval filed as part of a New Building application or Alteration application filed after 7/13/2009, please use "My Community" on the Buildings Department web site at www.nyc.gov/buildings.

Emergency Telephone Day
Borough Commissioner:
Commissioner of Buildings:

Tampering with or knowingly making a false entry in or falsely altering this permit is a crime that is punishable by a fine, imprisonment or both.

OP-35A (5/10)

Today's Presenters

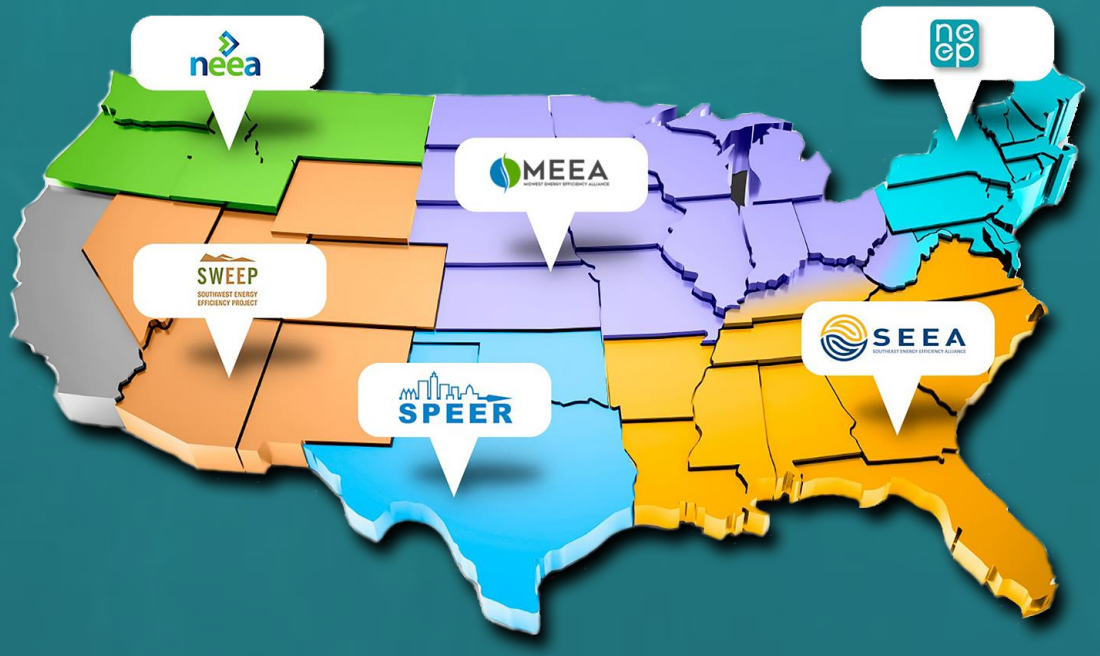
Andrea Krim

Darren Port

Michael Rossi

About NEEP

A Regional Energy Efficiency Organization



One of six REEOs funded in-part by U.S. DOE to support state and local efficiency policies and programs.

Northeast Energy Efficiency Partnerships

"Assist the Northeast and Mid-Atlantic region to reduce building sector energy consumption by at least 3% per year and carbon emissions by at least 40% by 2030 (relative to 2001)"

Mission

We seek to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

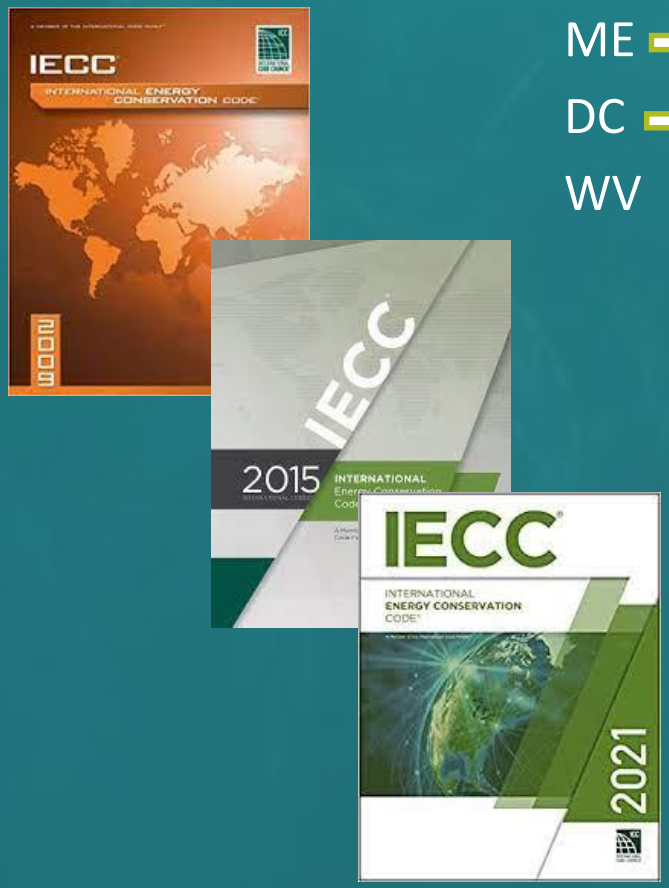
Vision

We envision the region's homes, buildings, and communities transformed into efficient, affordable, low-carbon, resilient places to live, work, and play.

Approach

Drive market transformation regionally by fostering collaboration and innovation, developing tools, and disseminating knowledge

NEEP Region Building Energy Code Adoption



2015

ME → 2021*

DC → 2021*

WV

2018

MA → 2021*

NY → 2024*

MD → 2021

VT → 2021*

DE → 2021*

RI → 2021*

PA → 2021

NH

2021

CT

NJ

*Updating/creating stretch codes

Disclaimer

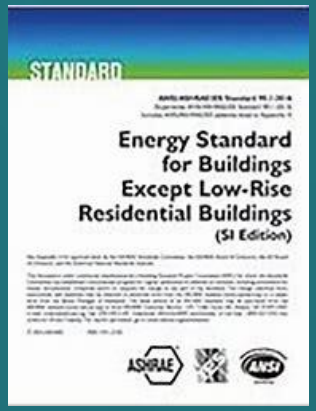
The following information is based on the current drafts of the 2024 IECC. What is included in the final draft is subject to change based on public comments and changes implemented by the Consensus Committees.

IECC 2024

Background

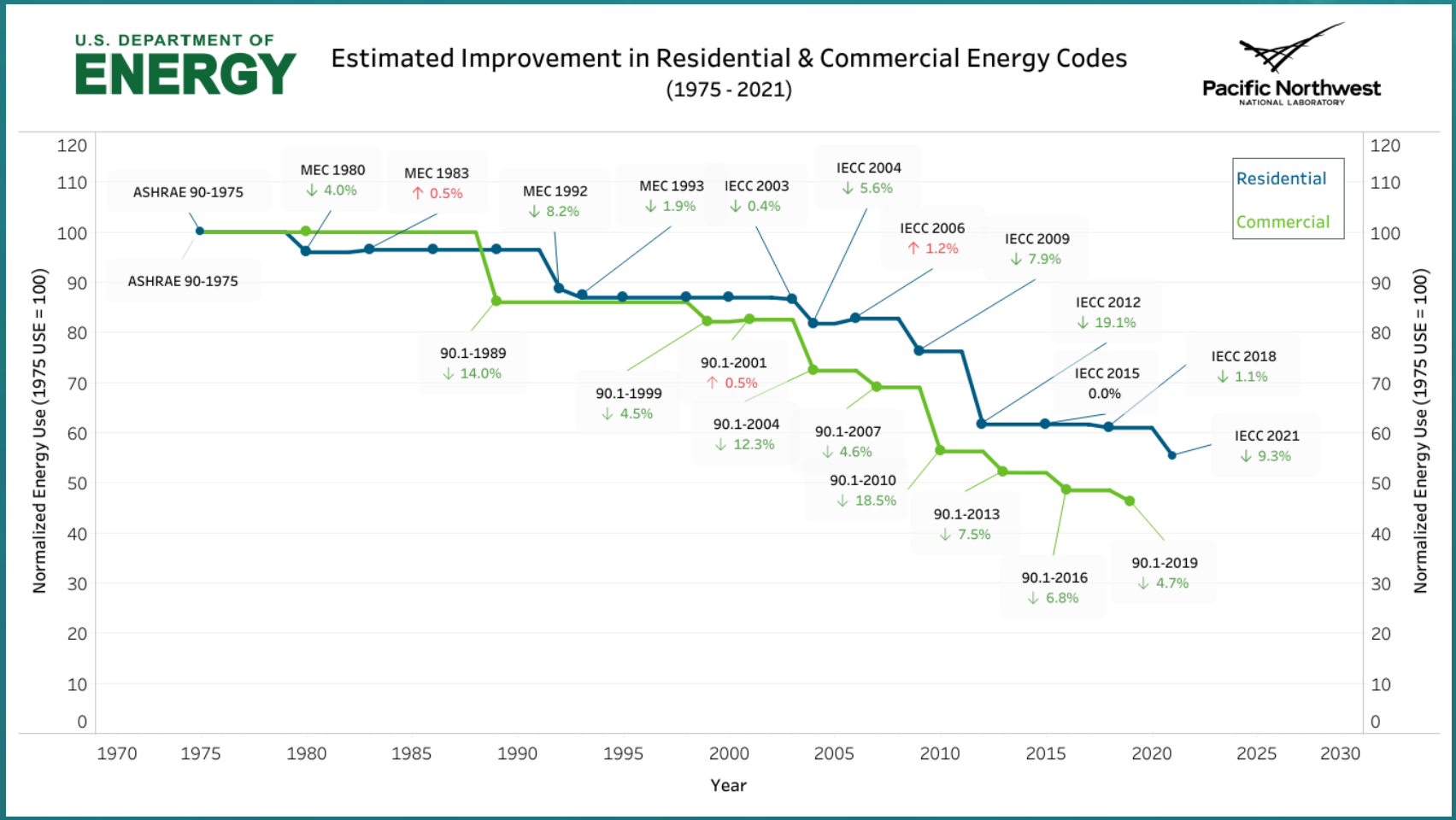
- The International Energy Conservation Code (IECC) is developed by the International Codes Council (ICC)
  - IECC has provisions for both Residential and Commercial Buildings

- One of two (IECC, ASHRAE 90.1) predominant energy codes adopted by states in the Northeast and Mid Atlantic



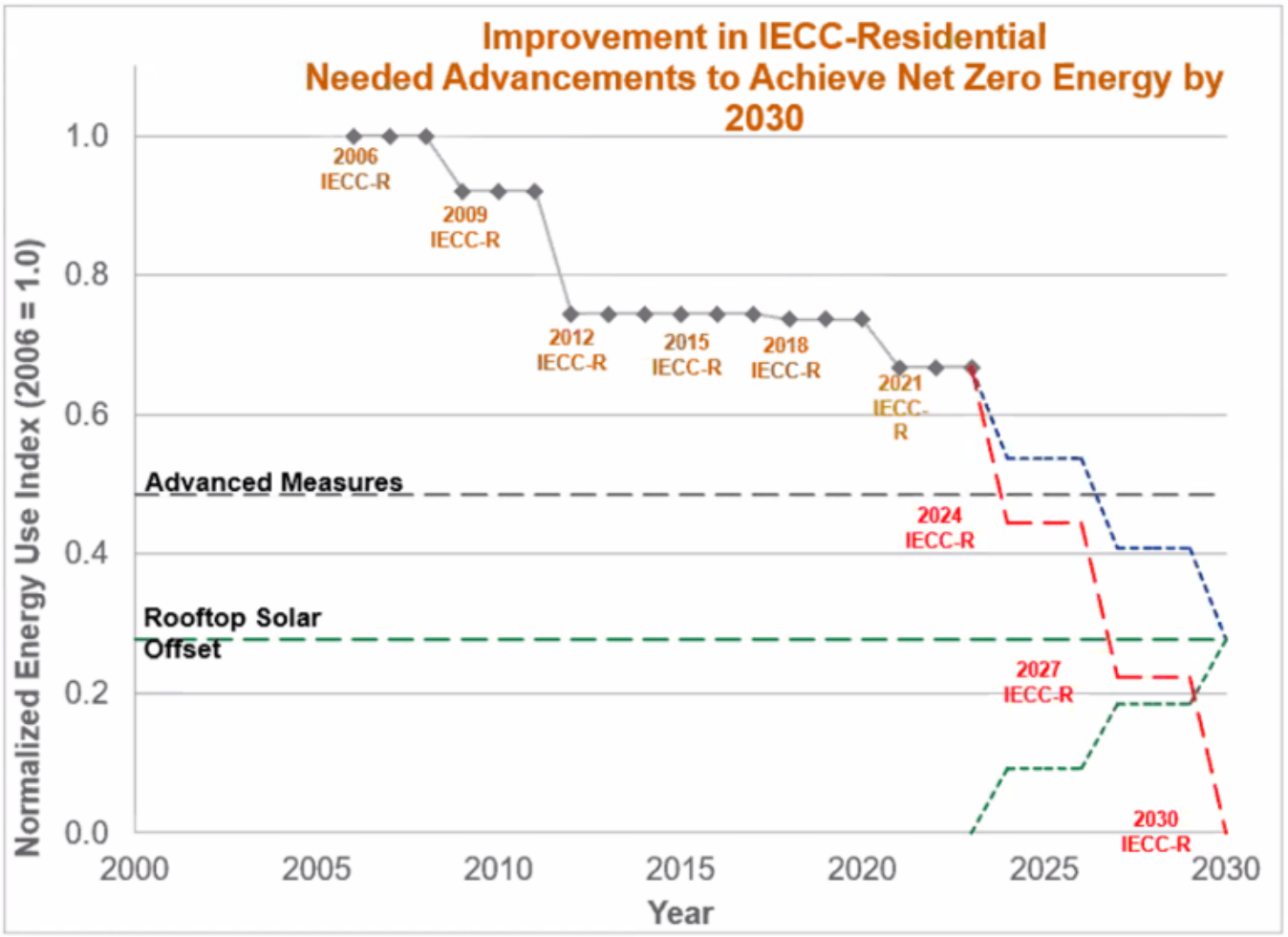
- States can choose to adopt IECC for both Residential and Commercial buildings.

Energy Codes (IECC & ASHRAE)



2024 IECC estimated to be 10% better than 2021 IECC

ICC Goal of Net Zero By 2030

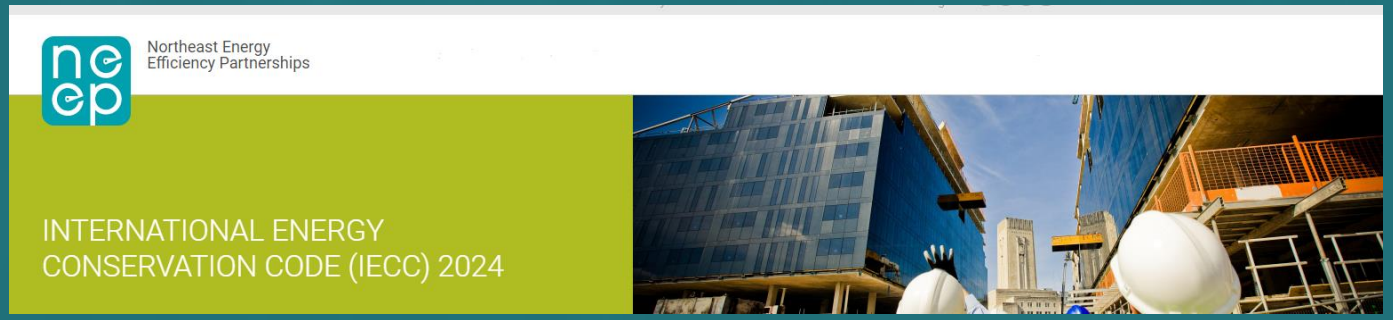


Source: Pacific Northwest National Laboratory

IECC 2024

Overview

- The IECC is updated every 3 years
- New Process for IECC 2024: ICC convened Residential and Commercial Committees utilizing the ANSI code development process to develop the content to included in the 2024 IECC.
  - For more information about the 2024 IECC, please visit NEEP's 2024 IECC Webpage



IECC 2024

How to Submit a Public Comment

- **Two Public Comment Periods**:
  - 1st draft of the Commercial closed on October 21
  - 1st draft of the Residential is open until December 16
    - The 2nd draft of both will become available in early 2023 for the second public comment period.

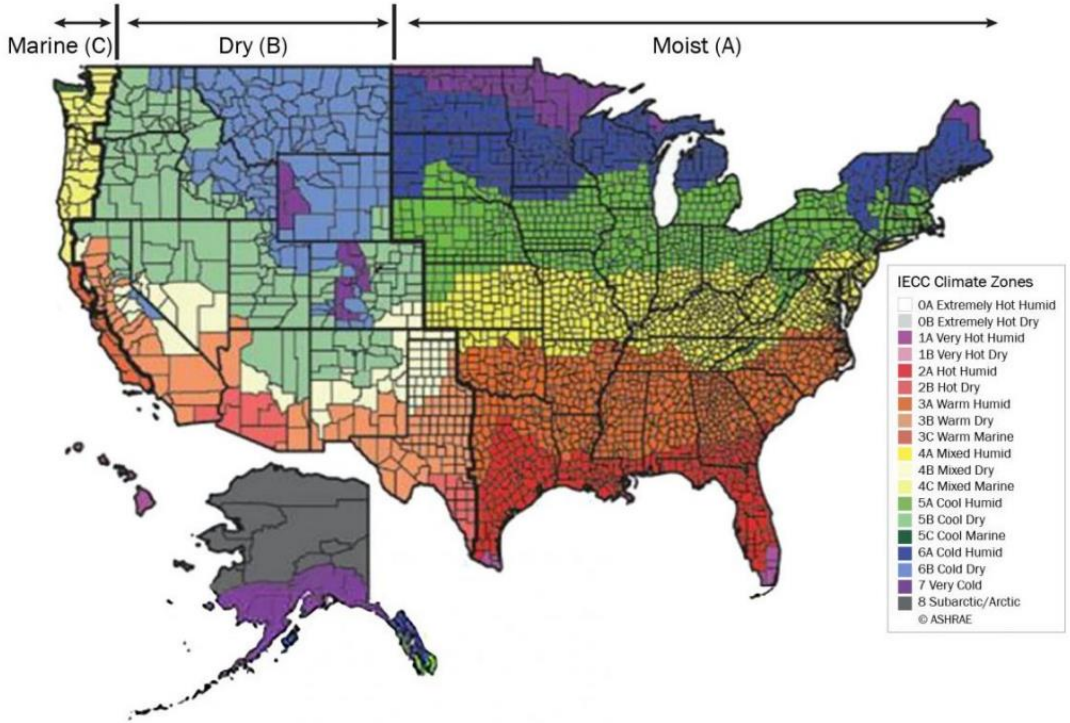
- For step-by-step guidance on how to submit a public comment via ICC CDP Access, please watch this webinar from the ICC: https://www.youtube.com/watch?v=e9PeqZJqeps

- If you'd like to make a public comment on the Residential IECC 2024 Draft before December 16, please visit: https://energy.cdpaccess.com./login/

NEEP is expecting the final language for the 2024 IECC to become available in 2023.

IECC 2024 Residential Draft

IECC Climate Zone Map



Climate Zone 4A:
D.C., DE, MD, NY, NJ, PA, WV

Climate Zone 5A:
CT, MA, MD, NH, NJ, NY, PA, RI, WV

Climate Zone 6A:
ME, NH, NY, VT

Climate Zone 7A:
ME

NEEP Region:
Climate Zones 4 through 7

Snapshot of 2024 Residential IECC Draft

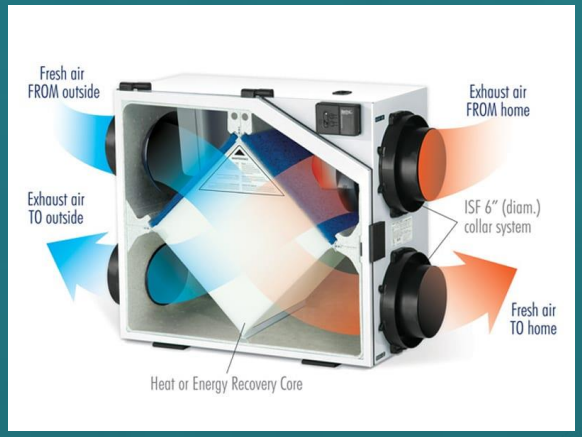
- Building Thermal Envelope (R402)
- Systems (R403)
- Electrification (R404)
- Simulated Building Performance (R405)
- Energy Rating Index (ERI) (R406)
- Additional Efficiency Requirements (R408)
- Appendices:
  - Zero Net Energy Residential Buildings
  - *NEW* Electric Energy Storage System
  - *NEW* All-Electric Residential Buildings
  - *NEW* Alternative Building Thermal Envelope Insulation R-Value Options

Building Thermal Envelope (R402)

- Air Tightness: from 3 Air Changes per Hour (ACH50) to 2.5 ACH50 in Climate Zones 6-8
- *NEW* Improves Insulation at Attic Knee Walls
- Improves Window and Skylight U-Factors
- **Reduced** Ceiling Insulation Requirements
- *NEW* Requires Radiant Barriers
- Improves Insulation Installation Criteria

Systems (R403)

- *NEW* Demand Responsive Water Heating
- Energy/Heat Recovery Ventilators (ERV/HRV) Required in Climate Zone 6
- Total Duct Leakage Update



Electrification (R404)

- *NEW* Electric Readiness
- *NEW* Solar Ready Zones
- *NEW* Electric Vehicle (EV) Infrastructure

Simulated Building Performance (R405)

Energy cost analysis report that demonstrates that the proposed design (as built) is more efficient than the standard reference design home

- This section has been significantly overhauled
- The most quickly growing compliance path nationwide
- Analysis of heating, cooling, mechanical ventilation and service water heating only
- Must follow some mandatory requirements as noted in *Table R405.2*
- **It now allows for a weaker envelope and for equipment efficiency to be traded off for envelope, includes an envelope backstop**

Energy Rating Index (ERI) (R406)

Table R406.5 Maximum Energy Rating Index

Climate Zone	Energy Rating Index Not Including OPP	Energy Rating Index With OPP
0-1	51	40
2	51	40
3	50	40
4	53	40
5	54	40
6	53	40
7	52	40
8	52	40

*OPP: On-Site Power Production

Additional Efficiency Requirements (R408)

- *Only* applies if following the prescriptive path to code compliance
  - 10 Credits are Required
- Credits are weighted based on overall impact, and can be earned by improving efficiency in the following areas:
  - Insulation
  - Windows
  - HVAC Equipment
  - Water Heating
  - Air Sealing/Improved Air Tightness
  - Ventilation
  - Ductwork/Improved Duct Leakage
  - Appliances
  - Renewable Energy Generation
  - Demand Responsive Thermostat

- Existing Building Alterations can choose a path noted in R408 (R506)

Appendices

- Zero Net Energy Residential Buildings
- *NEW* Electric Energy Storage System
- *NEW* All-Electric Residential Buildings
- *NEW* Alternative Building Thermal Envelope Insulation R-Value Options

IECC Residential

The Residential Public Comment Period Ends on December 16th

How to Make a Public Comment
Where to Make a Public Comment

IECC Residential-committee webpage link

Tuesday, Dec 20 at 2 pm Eastern
IECC Residential Consensus meeting. Virtual meeting link

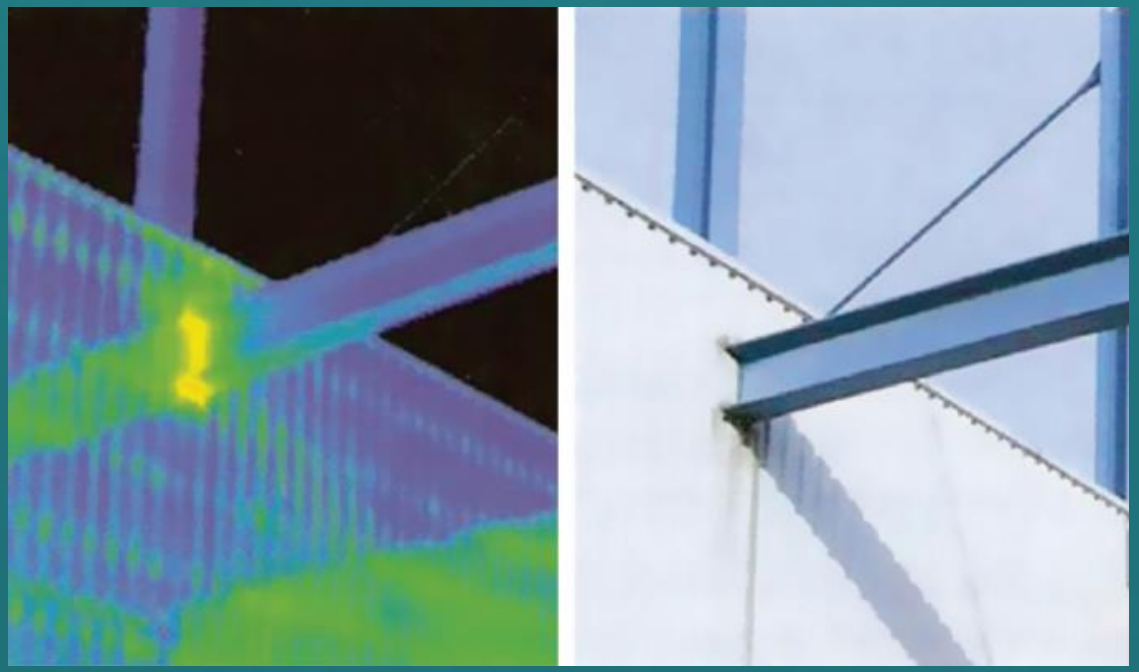
IECC 2024 Commercial Draft

Snapshot of 2024 Commercial IECC Draft

- Building Envelope (C402)
- Building Mechanical Systems (C403)
- Electrical Power and Lighting Systems (C405)
- Additional Efficiency Requirements (C406)
- *NEW* Calculation of HVAC Total System Performance (C409)
- Appendices:
  - Zero Energy Commercial Building Provisions
  - *NEW* The 2030 Glide Path
  - *NEW* Required HVAC Total System Performance Ratio (TSPR)
  - *NEW* Energy Credits

Building Envelope (C402)

- Increased Insulation Requirements
- *NEW* Thermal Bridging



Building Mechanical Systems (C403)

- *NEW* Smart Thermostats and Demand Responsive Controls for HVAC Systems
- *NEW* Occupant Sensors for Ventilation
- *NEW* HVAC Total System Performance Ratio (TSPR) Compliance Option Added

Electrical Power and Lighting Systems (C405)

- Lighting Dimmer Controls, Demand Responsive Controls, and Reduced Lighting Power Density (LPD)
- *NEW* Electric Vehicle (EV) Charging Infrastructure
- *NEW* On-Site Renewable Energy Generation
- *NEW* On-Site Energy Storage System

Additional Efficiency Requirements (C406)

- Developed in 2021 IECC, but expanded to include more energy “credit” measures in Draft 2024 IECC
- 5% additional efficiency compared to 2021 IECC
- Similar system to R408 in Residential
- Number of required credits depend on building type
- More opportunity for tradeoffs and flexibility in the choice for builders and design professionals
- Existing Buildings:
  - Large additions must achieve 50% of points required for new construction (C502)
  - Substantial alterations must achieve 10% of points required for new construction (C503)

NEW Calculation of HVAC Total System Performance Ratio (C409)

- Establishes a calculation for the HVAC Total System Performance Ratio (HVAC TSPR)
- Computer based software that simulates the performance of the HVAC system design as a whole, instead of as individual components

HVAC TSPR = Heating and Cooling Load/Building HVAC System Energy

Appendices

- Zero Energy Commercial Building Provisions
- *NEW* The 2030 Glide Path
- *NEW* Required HVAC Total System Performance Ratio (TSPR)
- *NEW* Energy Credits

Public Comments: Commercial Draft

- 209 Code Change Proposals
- 19 Public Comments
- Proposals that warrant further discussion:
  - Including language for Hydrocarbons
  - EV Charging
  - Energy Storage Systems
  - Exterior Demand Lighting Response Systems
  - Thermal Bridging
  - Air Barrier Construction
  - Consistency with ASHRAE 90.1 language
  - Demand Response Controls
  - HVAC TSPR
  - C406 Additional Efficiency, Renewable, and Load Management Requirements

IECC Commercial Meetings

IECC Commercial -agendas posted on the committee webpage link once available

Wednesday, Nov 30 at 2 pm Eastern
IECC Commercial Consensus meeting. Virtual meeting link

Thursday, Dec 1 at 11 am Eastern
IECC-C Envelope and Embodied Energy Subcommittee meeting. Virtual meeting link

Thursday, Dec 1 at 2 pm Eastern
IECC-C HVACR Subcommittee meeting. Virtual meeting link

Monday, Dec 5 at 11 am Eastern
IECC-C Electrical Power, Lighting, and Renewables Subcommittee meeting. Meeting link

Monday, Dec 5 at 2 pm Eastern
IECC-C Modeling, Metrics Subcommittee meeting. Virtual meeting link

Tuesday, Dec 6 at 11 am Eastern
IECC-C Administration and Integration Subcommittee meeting. Virtual meeting link

Q&A/Discussion

Next Steps

- Residential Public Comment Period Ends December 16, 2022
- 2nd Draft of Residential and Commercial Published in March 2023
- 2nd Public Comment Period
  - The final language of the 2024 IECC is expected to become available in 2023
- 2023/2024 and Beyond: State Consideration and Adoption

Get Involved:

- Here are some links with more information and ways to get involved:
  - NEEP's Summary of the Commercial Draft of the 2024 IECC
  - How to Make a Public Comment
  - Where to Make a Public Comment
  - Attend a Committee Hearing
    - Commercial Committee is meeting at 2 PM today
  - Keep up to date with the latest developments

Other Resources:

Links to additional information about public comments:

- https://www.imt.org/news/public-comments-critical-for-the-residential-energy-code/
- https://newbuildings.org/code_policy/how-to-comment-on-the-2024-residential-iecc/

NEEP Contacts:

Andrea Krim
akrim@Neep.org

Darren Port
dport@Neep.org

Michael Rossi
mrossi@neep.org

Thank You!