Unpacking the 2024 IECC Residential Draft

Today’s speakers

Lauren Urbanek
Deputy Director, Clean Buildings (NRDC)

Mark Lyles
Senior Project Manager (NBI)
About NRDC
(Natural Resources Defense Council)

NRDC works to safeguard the earth—its people, its plants and animals, and the natural systems on which all life depends.

About New Buildings Institute (NBI)

We push for better buildings that achieve zero energy, zero carbon, and beyond—through research, policy, guidance, and market transformation—to protect people and the planet.

NBI's work targets the aspects of the built environment that can make the greatest impact for the climate.
Agenda

• Overview of residential buildings and code impacts
• IECC overview and 2024 development process
• Key advancements of Public comment draft #1
• How to comment/participate
• Questions

Sources of Global Greenhouse Gas Emissions

39% of global GHG emissions come from buildings

Residential buildings

- Space heating and water heating account for 62% of energy load
- Air conditioning loads continue to increase
- Lighting load reduction has been driven by market adoption of CFL and LED bulbs
- “Other” includes most appliances and miscellaneous uses

Code Trajectory

Graphic Source: US Department of Energy (DOE) Building Energy Codes Program. https://www.energycodes.gov/infographics (Figure 1, accessed 09/2022)
IECC Overview

- The International Energy Conservation Code (IECC) is the model energy code adopted by the vast majority of the US.

- The IECC is updated every 3 years

- Provide an adoptable set of provisions to achieve net-zero energy by 2030

- 1977 to 2021 IECC: Vote by governmental voting members

- 2024 IECC: Consensus Committee Process

2024 IECC Process

- **OCTOBER 12, 2021**
  Proposals for the 2024 IECC due

- **JULY 2022**
  Committee Action Report (CAR) released

- **SEPTEMBER 2022**
  Two-thirds of the full committee meeting members approve the CAR

- **NOVEMBER 1, 2022**
  Public Comment Draft #1 of the Residential 2024 IECC released

- **DECEMBER 16, 2022**
  Deadline to submit comments

Residential consensus committees and subcommittee meetings
2024 IECC Process

All Proposals voted on by Subcommittees and Consensus Committee

- Proposals meeting simple majority

Published in Committee Action Report (CAR)

- Balloting period: Proposals meeting 2/3rds majority

Public Comment Draft #1

- Public comments need 2/3rds majority to be accepted

Final IECC 2024 Code

Balloting process: Omnibus proposal

Advancements

- EV charging infrastructure for single and multifamily homes
- Solar readiness
- Electric readiness for gas fired water heaters, cooking equipment and clothes dyers

Compromises

- Ceiling insulation and wall insulation in CZ 4&5
- Weakening of several efficiency proposals
- Several proposals moved to R408/Appendix
Omnibus advancements

Public Comment Draft: Electrification

• Electric readiness required for the following systems that use fossil fuels:
  • Water heaters
  • Cooking products
  • Clothes dryers

• All-electric Appendix:
  • Includes all-electric building definition
  • Allows for all three compliance paths

Source: NYSERDA
Public Comment Draft: EV charging infrastructure

• EV charging infrastructure required for single family buildings
• R-2 occupancies to provide EV charging infrastructure for 40% of dwelling units or parking spaces
• Can be EV-capable, EV-ready or EVSE installed

Public Comment Draft: Solar readiness

• Solar readiness required for one and two family dwellings with a solar-ready roof zone greater 250 sq ft
• Includes reserved electrical space at the panel and installed junction box and conduit or wire from panel to solar ready zone
• Exceptions for poor solar orientation, shading and smaller homes
The best of the rest

Public Comment Draft: Envelope

• Better windows
• Slab F-factors
• Lower air leakage rate in colder climates (omnibus)
• Ceiling and wall insulation tradeoff (omnibus)
• Cool roof option in R408 (omnibus)
Public Comment Draft: HVAC, and hot water

- Ductwork reorganization and testing clarification
- Expand HRV/ERV requirement to climate zone 6 (omnibus)
- Limits on electric resistance heating in CZ 4-8
- Clarification on hot water pipe insulation and water volume determination

Public Comment Draft: Lighting

- Clarification of lighting power requirements for interior lighting
- Clarification of lighting power requirements for exterior lighting for multifamily buildings
- Reorganization and expansion of interior and exterior lighting control requirements
Public Comment Draft: R408 Credits

- Expand R408 additional efficient requirements to be credit based
- Range of options: envelope, HVAC equipment, hot water, efficient appliance and installed renewables
- Each option calibrated to provide a certain level of energy savings by climate zone
- Projects must select at least 2 measures and a total of 10 credits

Public Comment Draft: Grid responsiveness

- Demand responsive controls for electric storage water heaters
- Demand responsive thermostat control option in R408 (omnibus)
- Electric energy storage provisions in Appendix RD (omnibus)
Public Comment Draft: Existing buildings

- Additions must obtain additional efficiency credits based on R408
- Expanded requirements for building alterations including:
  - Envelope alterations
  - Newly installed ducts
  - HVAC controls
  - Additional efficiency credits

Energy modeling compliance

- Consistent envelope multiplier based on prescriptive reference design (omnibus)
- R405: 15% or 20% better than standard reference design depending on space heating or water heating fuel source (omnibus)
- R405: Duct location credit (omnibus)
- R406: ERI with and without on-site power production (OPP)
- Zero Energy Appendix: ERI of 0 including adjusted OPP
How to Submit Public Comment

Four Levels of Engagement

1. **Low**: Sign on to a general sign-on letter
2. **Medium**: Become a co-proponent on a specific proposal
3. **High**: Comment on a specific section
4. **Very High**: Suggest changes to specific code language with reason and cost statement

- **Bonus**: Sign up to attend committee meetings and speak in favor of proposal (amplifies all of 1-4 above)
Low 1: Sign on to a Letter

- Current letters:
  - General Sign-on
  - Building Electrification
- Fill out [survey](mailto:markl@newbuildings.org) or send an email to markl@newbuildings.org with name, title and organization by Friday December 2nd

Medium 1: Become a Co-proponent on a Proposal

- Let NBI know to which proposals you would like to be added to by filling out this [survey](mailto:markl@newbuildings.org).
Medium 2: Create an Account

- Create an Account: [https://energy.cdpaccess.com/register](https://energy.cdpaccess.com/register)

Medium 3: Accept Invitations

- Once you have created an account, let proposal owners know
- Owners of the proposal will push invitations to join
- You will see invitation in the upper right
Medium 4: Become a Co-Proponent on a Proposal

- Release copyright by
  - Going to Copyright tab
  - Click “Sign New Form”
  - Check checkboxes
  - Click “Sign Copyright Form”

High, Very High and Bonus

- Step-by-step instructions for these steps are here
- For detailed instructions via video follow these links for:
  - 10-minute CDP access tutorial
  - 30-minute webinar
- **Bonus:** Each proposal will be heard at least once by a subcommittee and once by a full committee. These meetings can be 2-3 hours. Voicing support at these meetings is the most impactful action and amplifies any of the other actions you take.
Next Steps

• Fill out this survey now to let NBI know how you intend to comment by Friday December 2nd, 2022
• If needed, download suggested public comment and instructions for how to comment on the 2024 IECC here
• Subscribe to the Codes for Climate Newsletter
• NRDC blog forthcoming
• Questions? markl@newbuildings.org and lurbanek@nrdc.org

Questions?
Connect with NBI on social media for additional news on the 2024 IECC

ZeroEnergyBuildings  @newbldgsinst  New Buildings Institute  NewBuildingsInstitute

Thank you for joining us today!
Please take a moment to answer the survey, let us know how we can help you with more information on the 2024 IECC comment process.