What's in the Commercial Draft of the 2024 IECC?

Background

After a year of numerous ICC 2024 IECC Consensus Committee meetings, the ICC published the first draft of the 2024 International Energy Conservation Code (IECC) for Commercial Buildings on September 9, 2022. The 2024 IECC Commercial code public comment period was open until October 21, 2022. See NEEP's 2024 IECC website for additional information and how to participate in current and future second round commercial and residential comments opportunities.

National groups, such as the American Council for an Energy-Efficient Economy (ACEEE), estimate that the 2024 Commercial IECC would reduce energy use intensity by 8-12% compared to the 2021 IECC.

Key Takeaways

- **Building Envelope Requirements (C402)**
  - **C402.1.3 Increased Insulation Requirements**: Updates the insulation R-Value requirements for metal and wood framed exterior walls.
  - ***NEW* C402.7 Guidance on Thermal Bridging in Exterior Walls**: A thermal bridge is a component of the building thermal envelope that transfers heat through the assembly by way of construction materials (such as steel). This new language intends to reduce thermal bridges, which will mitigate heat loss through the building's envelope.
- **Building Mechanical Systems (C403)**
  - ***NEW* C403.4.6-C403.4.8 Demand Responsive Controls for HVAC Systems**: These controls respond to occupant needs and will adjust the temperature based on the number of occupants present at a given time.
  - ***NEW* C403.7.8 Occupant Sensors for Ventilation**: These sensors will respond to movement, which will reduce the system's energy consumption when the building is unoccupied.
- **Electrical Power and Lighting Systems (C405)**
  - **C405.2.3 Lighting Dimmer Controls and Demand Responsive Controls**: These controls will adjust the lighting intensity based on occupant needs, which will reduce lighting loads when there is less demand.
  - ***NEW* C405.14 Electric Vehicle Charging Infrastructure**: New buildings are required to have a certain number of spaces dedicated to electric vehicles, depending on the type of building and use. The number of required spaces has increased from the previous version of the 2021 IECC.
  - ***NEW* C405.15 Mandatory Requirements for On-Site Renewable Energy Generation**: New buildings are required to generate renewable energy (such as solar) on site, with options for off-site generation if on-site is not possible.
  - ***NEW* C405.16 Mandatory Requirements for On-Site Energy Storage Systems**: New buildings need to either store electricity on site or have the infrastructure in place for future capability.

- **Additional Efficiency, Renewable, and Load Management Requirements (C406)**
    - This section builds on a point system created for the 2021 IECC, requiring a certain number of energy efficiency "credits" to comply with the code. In addition to requiring more credits, this updated version provides a wider range of efficiency measures that are eligible to earn credits, giving builders more opportunity for tradeoffs and flexibility/choice in design.
- ***NEW*** **Calculation of HVAC Total System Performance Ratio (C409)**
    - This section establishes a computer-based model on HVAC total system performance, which factors in all parts of the HVAC design plan instead of modeling the system as individual parts. This allows for better understanding of how effective an HVAC system may be; based on equipment efficiency, type, insulation, design loads, etc.

Appendices

- **Appendix CC: Zero Energy Commercial Buildings Provisions**: This Appendix was included in the 2021 IECC but has been updated to reflect higher prescriptive renewable energy requirements with an updated table with more building types and changing the units from one thousand British thermal units (kBtu) to kilowatt hours (kWh).
    - ***NEW*** **Appendix CD: The 2030 Glide Path**: This new Appendix in the 2024 IECC is used to scale up efficiency measures for states to meet their emissions reduction goals by 2030. It specifically requires the number of efficiency credits to increase by 50 percent for Prescriptive Compliance; the percentage of annual energy costs used in the standard reference design to decrease by two percent for Total Building Performance Compliance; or installing additional on-site or off-site renewable electricity systems in addition to what was previously required for compliance with energy efficiency credits.
    - ***NEW*** **Appendix CE: Required HVAC TSPR**: This new Appendix is used for jurisdictions that want to adopt a stretch code or HVAC incentive system, so it amends the section relating to Building Mechanical Systems with stricter requirements that provide an additional five percent reduction in HVAC energy use.
    - ***NEW*** **Appendix CF: Energy Credits:** This new Appendix pushes for an advanced energy credit package, and increases the number of energy credit requirements for all building types.

Proposals Not Accepted in Current Draft Subject to Public Comments:

- **Electrification Readiness**
- **All-Electric Appendix**
- **Electrification Incentive**
- **Multifamily Alignment for Lighting and Envelope**
- **Cool Roof Requirements**
- **Dedicated Outdoor Air Systems (DOAS)**
- **Commercial Decarbonization**
- **Testing of Gas Piping in Alterations**
- **Lighting Control Upgrades in Alterations**

Disclaimer**:** *The information presented in this document is subject to change based on the public comment period and further committee updates. A final draft of the 2024 IECC is expected to be published in June 2023.*

Updated 10/21/22

Sources

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- https://codes.iccsafe.org/content/IECC2021P2
- https://www.iccsafe.org/wp-content/uploads/IECC2024P1CE_2022-09-07-ce-reduced.pdf
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