

Current Status of the 2021 IECC

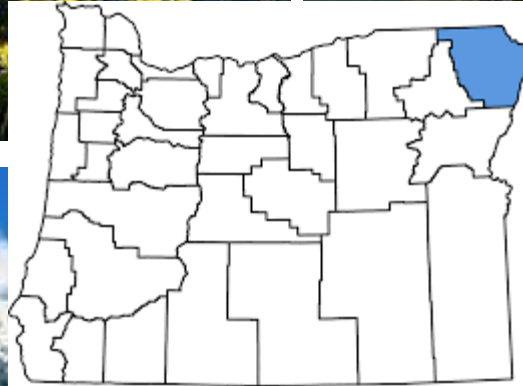


2021 IECC

Eric Makela

Director of Codes

New Buildings Institute



Flexibility for the Future

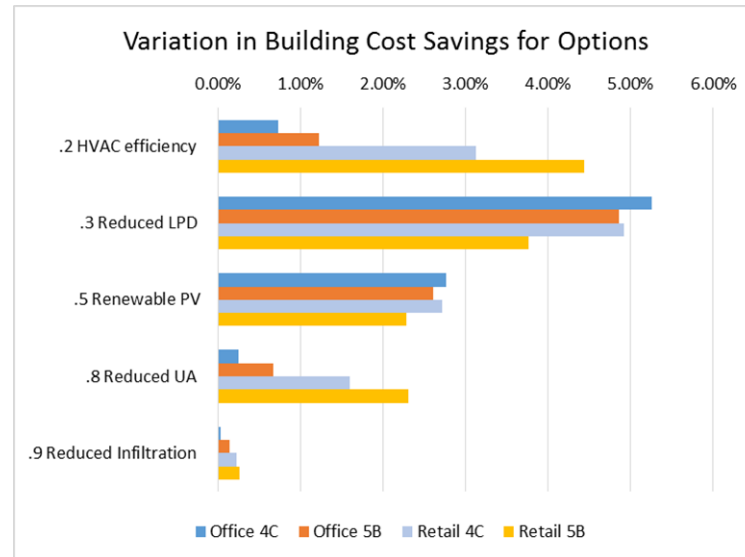
- Commercial >>> “Points Options”
- Residential >>> “Flex Points”

Commercial Options for Section C 406

Existing Section C 406 Options
1. Efficient HVAC Equipment
2. Reduce Lighting Power Density
3. Renewable Energy
4. Dedicated Outdoor Air System
5. Service Water Heating
6. Efficient Fossil Fuel Water Heating
7. Enhanced Envelope Performance
8. Reduced Air Infiltration

C406 Points Option

- Current C406 Point Options savings inequality



Proposal CE 218

Points Option for Section C 406

- Goes from “pick one” to “achieve 10 points”
- Each point worth 0.25% savings
 - >>> Total of 2.5% savings
- Modeling done by Pacific Northwest National Labs
- Points for a particular option are in look up tables by building type and climate zone

Commercial Points Table in CE 218

Table C406.1(4)
Additional Energy Efficiency Credit for Group M Occupancies

Sub-section / Climate Zone:	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
C406.2.1: 5% Heating	NA	NA	NA	NA	1	1	NA	1	1	2	2	2	2	3	2	3	4
C406.2.2: 5% Cooling	5	6	4	4	3	3	1	2	2	1	1	2	NA	1	1	1	NA
C406.2.3: 10% Heating	NA	NA	NA	1	1	1	1	2	2	4	3	4	5	5	3	6	8
C406.2.4: 10% Cooling	9	12	9	8	6	6	3	4	4	1	2	3	NA	2	2	2	1
C406.3.1: 10% LPA	13	13	15	14	16	14	17	15	1	14	2	14	14	16	16	14	12
C406.5: Renewable	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	6
C406.6: DOAS	3	4	3	3	3	3	1	3	2	2	2	3	2	4	3	4	4
C406.7.1: SWH HR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C406.7.2: SWH NG eff	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C406.7.3: SWH HP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C406.8: 85% UA	4	6	3	4	3	3	1	6	4	4	4	5	4	6	5	8	9
C406.9: Low Leak Eny.	1	1	1	2	1	1	NA	3	1	1	3	2	1	7	3	6	3

INSTRUCTIONS

1. Find appropriate table based on occupancy type
2. Select measure
3. Find climate zone
4. Look up points
5. Ensure points add up to 10 total

CE 218 vote support AMC

2021 IECC

Commercial Options for Section C 406

Existing Section C 406 Options	New CE 218 Options Proposed
1. Efficient HVAC Equipment	CE 226: Dwelling/Sleeping Unit Lighting
2. Reduce Lighting Power Density	CE 240: Additional Kitchen Equipment
3. Renewable Energy	
4. Dedicated Outdoor Air System	
5. Service Water Heating	
6. Efficient Fossil Fuel Water Heating	
7. Enhanced Envelope Performance	
8. Reduced Air Infiltration	

CE 218 vote in support of AMC, CE 226 vote in support of AMPC, CE240 vote in support of AMPC

Residential Flex Points

RE 209 – Flex points

- Packages instead of individual energy savings measures
- 5 points are required
- Each point represents 1% savings
 - >>> 5% savings

Efficiency Proposals

Pushing the Building “Envelope” in Commercial

Proposal Number(s)	How does it push the building envelope?
CE 35, CE61, CE63, CE64, CE66, CE68, CE69, CE 73 & CE 75	Improves insulation requirements
CE96, CE97 & CE99	Requires air leakage testing and commissioning of air barrier

Providing Data and Improving Building Operations

Proposal Number	How?
CE 111	Provides data to improve building operations – fault detection and diagnostics
CE 215	Adds energy monitoring system
CE 216	Allows for control of plug load receptacles

Better Mechanical Systems

Proposal Number	How?
CE 113	Ensures highest efficiency equipment in code
CE 140	Requires efficient ventilation fans in multifamily buildings



Addressing Residential Lighting Energy Use in Multifamily Buildings

- **CE 162** - Clarifies and improves lighting for apartments and condos



Closing the Loophole for Indoor Agriculture Lighting

- **CE 209** - Improves efficiency of lighting for plants
- In many areas, indoor agriculture is fastest growing load on the grid
- Metric developed in collaboration with the American Society of Agricultural and Biological Engineers
- Estimated to save 78% over high pressure sodium lamps!

Improving Residential Building Efficiency

Proposal Number(s)	How does it improve residential building efficiency?
RE29, RE32, RE33, RE34, RE36	Improves insulation requirements
RE35, RE37	Improves window performance to reduce heat loss and reduce cooling
RE112	Eliminates leaky ducts
RE139	Requires efficient ventilation systems
RE7, RE148	Increases efficiency of interior and exterior lights
RE182, RE184, RE192	Increases the efficiency of building when using Energy Rating Index (i.e. HERS) approach

Electrification in Codes

Beneficial Electrification

- **RE 126** encourages higher efficiency water heating sources and requires lower efficiency water heater types to be installed with renewables
- **RE 147** - Requires electric circuits and receptacles near gas- and propane-fired equipment



Electric Vehicles

2021 **IECC**

CE 217 Part 1 – Commercial Code
CE 217 Part 2 - Residential Code

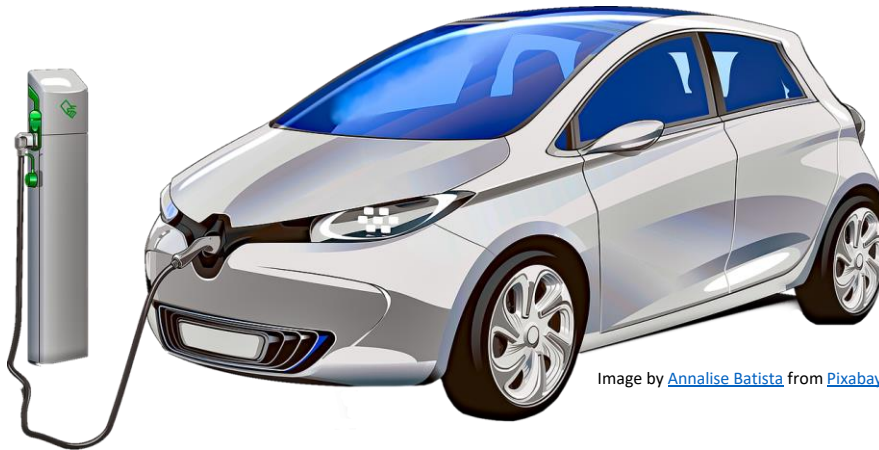


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SWEEP
SOUTHWEST ENERGY
EFFICIENCY PROJECT

nbi new buildings
institute

Renewables

- **RE 223** Zero Energy Ready Appendix
 - OPTIONAL provision for advanced jurisdictions
 - Requires renewables in a way that aligns with rest of the code
- **CE 21** - updates the definitions of biomass-related renewable energy so virgin material cannot be used



RESOURCES

Voters Guides and Resources

2021 **IECC**

1. Energy Efficient Codes Coalition's (EECC's) Top Proposals Quick Voters Guide
2. EECC Voters Guide
3. NBI's "Top Proposals Explained" fact sheet

Top Proposal Quick Voters Guide

Code Change
Proposal and Vote Brief Residential Proposal Description


<input type="checkbox"/> RE7	AMPC1	Increases lighting efficiency
<input type="checkbox"/> RE10	D	Adds definition for sampling
<input type="checkbox"/> RE20	AMPC1	Provides more information about code edition and compliance path
<input type="checkbox"/> RE21	AS	Requires certificates include heating, cooling equipment sizing and Energy Rating Index scores
<input type="checkbox"/> RE29	AS	Improves wall insulation in Climate Zones 4 and 5
<input type="checkbox"/> RE32	AS	Adds slab insulation in Climate Zones 3, improves performance in Climate Zones 4 and 5
<input type="checkbox"/> RE33	AS	Improves ceiling insulation in Climate Zones 2 and 3
<input type="checkbox"/> RE34	AM	Eliminates floor insulation loophole in Climate Zones 5, 6, 7, and 8
<input type="checkbox"/> RE35	AMPC1	Improves window efficiency in Climate Zones 3 and 4
<input type="checkbox"/> RE36	AS	Improves ceiling insulation in Climate Zones 4 - 8
<input type="checkbox"/> RE37	AS	Improves window thermal performance in Climate Zone 5
<input type="checkbox"/> RE40	D	Weakens wall insulation based on framing factor

Energy Efficiency Codes Coalition (EECC)

Voters Guide

Technical Committee includes:

- EECC
- New Buildings Institute
- Natural Resources Defense Council
- Institute for Market Transformation

 ENERGY-EFFICIENT CODES COALITION			Summary of IECC RE (Residential) Proposals, Public Comment Modifications and Recommendations		
Public Comment Hearing Version #1 Will be replaced by Voting Guide at conclusion of hearing			This summary has been prepared by the EECC to provide a brief outline of the RE Proposals subject to review and individual consideration, and EECC's current voting recommendations on those proposals and related public comment modifications that will be considered at the October 2019 Public Comment Hearings. The summaries and recommendations below reflect careful consideration by the EECC Technical Committee and, as such, represent the EECC's views at this time. Included for many of the proposals is a brief analysis and support for EECC's recommendations (in many cases, EECC has also submitted public comments that more fully explain its views on a particular proposal). This document, and specifically EECC's recommendations, are subject to change as the process moves forward. This document is not intended as a substitute for reviewing and assessing the actual proposals and public comments as published by ICC, and we encourage a full review. EECC makes no representations or warranties as to this document or its use. See also EECC's separate summary for certain CE proposals that will also be addressed at the Public Comment Hearing.		
Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE2	D	NR	Requires construction documents to include vapor management strategy.	PC1: Deletes some details from vapor management declaration.	
RE7	AS	AS	Improves lighting efficacy requirements to 65 lumens/watt for lamps and 45 lumens/watt for luminaires; renames <i>high-efficacy lamps</i> as <i>high-efficacy light sources</i> .	PC1 (Moore): Excludes kitchen appliance lighting fixtures from high-efficacy requirements. PC2 (Rosenstock): Reduces lamp efficacy from 65 to 61 lumens/watt and increases luminaire efficacy from 45 to 50 lumens/watt and bases efficiency on initial light output to be consistent with Energy Star.	The original proposal provides substantial energy savings and the modifications proposed in the two public comments are unnecessary. See also RE145.
RE10	AS	D	Adds new definition of <i>sampling</i> , a process where <100% of units are randomly inspected and/or tested to code requirements.	PC1 (Schwarz): Revises definition of sampling to include dwellings or dwelling units, rather than sleeping units.	By definition, sampling a few homes for compliance does not guarantee that every home complies with the IECC. Sampling results should not be allowed to demonstrate code compliance. See also PC2 for a more detailed discussion of problems with this proposal.
RE14	D	NR	Requires insulation to be installed as Grade 1 per RESNET/ICC 301.	PC1 (Makela): Clarifies that insulation shall meet Grade 1 requirements, but that materials, systems and equipment shall be installed per manufacturer's instructions.	

Top Proposals Explained

For those who want to know more about the top proposals under consideration.

- Subset of proposals on the IECC voters guide
- Includes:
 - Description
 - Discussion of impacts
 - Estimated energy savings
 - Cost impacts



Top Proposals Explained

This Top Proposals Explained Guide provides more information on the most important proposals that will be voted on in the 2021 IECC update. New Buildings Institute has attempted to provide a non-technical description of what the proposal does, the intended impact or reason for the proposed change, an estimate of energy savings and costs when known.

If passed by validated Governmental Member Voting Representatives, these proposals are estimated to improve the energy code by 10-15% over the 2018 version of the IECC. They are listed in numerical order, with commercial first and residential second. A glossary can be found at the end to assist potential voters with unfamiliar terms.

Residential Proposals

Code Change Proposal Number	Vote	Proposal Description	Intended Impact / Reason for Change	Estimated Energy Savings	Cost / Cost Effectiveness
RE 7		Increases the installed lighting efficacy requirements to 65 lumens/watt for lamps and 45 lumens/watt for luminaires.	This proposal recognizes the market shift to LED lighting and away from compact fluorescent lights.	Residential LEDs, especially ENERGY STAR rated products, use at least 75% less energy, and last 25 times longer, than incandescent lighting, according to the U.S. Department of Energy.	Over its lifetime, a single 15,000-hour ENERGY STAR® certified LED bulb would save about \$80 compared to a CFL. The cost of LEDs has been steadily declining over the last several years and is expected to continue to decline. A spot check of Home Depot in early 2019 at the time this proposal was written showed that a warm white, 60W equivalent A-lamp is as low as \$1.24 for both CFL and LED when purchased in packs.
RE 29		Results in better wall insulation in cold climates (Climate Zones 4 and 5) by requiring cavity and continuous insulation.	Continuous insulation is an important component of a high-performance building. Placing insulation on the face of wall studs is the most effective insulation practice for reducing heat loss in cold climates. It also reduces moisture issues in wall cavities that can lead to durability issues and mold growth.	In Climate Zone 4, energy model results suggest savings of 5.7%. In Climate Zone 5 this savings is estimated to be 4.3%.	Continuous insulation may have increased first costs. However, continuous insulation can be "traded off" by using the other compliance approaches, which increase efficiencies in other building areas or systems that may be less expensive than installing continuous insulation.

Websites for More Information

- NBI – https://newbuildings.org/code_policy/2021-iecc-base-codes/
- EECC - <https://energyefficientcodes.org/>
- ICC - <https://www.iccsafe.org/>
- CDP Access - <https://www.cdpassess.com/login/>

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