



International Energy Conservation Code Consensus Committee-Commercial

Meeting Agenda (Draft 6/15)

June 22, 2022

2:00 PM Eastern to 5:00 PM Eastern (3 hours)

[Webex Link](#)

Committee Chair: Duane Jonlin
Committee Vice Chair: Emily Hoffman

1. Call to order.
2. Meeting Conduct. Staff
 - a. Identification of Representation/Conflict of Interest
 - b. ICC [Council Policy 7](#) Committees: Section 5.1.10 Representation of Interests
 - c. ICC [Code of Ethics](#): ICC advocates commitment to a standard of professional behavior that exemplifies the highest ideals and principles of ethical conduct which include integrity, honesty, and fairness. As part of this commitment it is expected that participants shall act with courtesy, competence and respect for others.
 - d. ICC [Antitrust Compliance Guideline](#)
3. Roll Call – Hoffman
4. Approval of Agenda
5. Approval of Minutes
6. Action Items.
 - a. Code Change Proposals
 - CEPI-75-21 (Data Centers) (Elec approve 16-0)
 - CEPI-257-21 (Glide Path) (Modeling as modified 13-0-1)
 - CEPI-255-21 Part I (Above Code Appendix) (Modeling disapprove 12-1-1)
7. Administrative issues.
 - a. Staff presentation on balloting process
8. Subcommittee & Temporary Work Group reports
 - a. Envelope and Embodied Energy- Culp
 - b. Electrical Power, Lighting, and Renewables-Jouaneh
 - c. HVACR & Water Heating-Shelide
 - d. Modeling, Whole-Building Metrics, Zero Energy-Eades
9. Other business.

a. Public comment on any matters discussed at the meeting (Please limit comments to 2 minutes. Further comments can be directed to the Secretariat following the meeting to be considered at a future meeting.)

10. "3 Minutes of Fame." Speakers TBD

11. Upcoming meetings. June 22, 2022 2:00 Eastern

12. Adjourn.

FOR FURTHER INFORMATION BE SURE TO VISIT THE ICC WEBSITE:

IECC Commercial Consensus Committee Webpage

<https://www.iccsafe.org/products-and-services/i-codes/code-development/cs/iecc-commercial-consensus-committee/>

ICC Energy webpage

<https://www.iccsafe.org/products-and-services/codes-standards/energy/>

Code Change Proposal Submittals

<https://energy.cdpass.com/login/>

Energy Complete Monograph

[Monograph](#)

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Kristopher Stenger, AIA, Director of Energy Programs

International Code Council

kstenger@iccsafe.org



International Energy Conservation Code Code Change Proposal Tracking Sheet

Proposal #	CEPI-075-21 Data Centers
CDP ID #	64
Code	IECC CE
Code Section(s)	C403.1.2, TABLE C403.1.2(1), TABLE C403.1.2(2) New Section n
Location	base
Proponent	Nicholas O'Neil noneil@energy350.com
Proposal Status	SC rev
Subcommittee	CE Elec, Light
Subcommittee Notes	Reason: Supports greater efficiency in data centers by following the latest (2022) updates in a national standard (90.4).
Recommendation	APPROVE AS SUBMITTED
Vote	16 - 0 - 1
Recommendation Date	April 25, 2022
Next Step	To Subcommittee _____ <u>Mechanical</u> _____ To Advisory Group _____ To Consensus Committee _____
Consensus Committee	
Committee Response	
Vote	Affirmative _____ Negative _____ Table _____ To Subcommittee _____
Date	



International Energy Conservation Code Code Change Proposal Tracking Sheet

Proposal #	CEPI-257-21 Glide Path
CDP ID #	541
Code	IECC CE
Code Section(s)	X New Section y
Location	glide
Proponent	Duane Jonlin duane.jonlin@seattle.gov
Proposal Status	SC rev
Subcommittee	CE Model, Metrics
Subcommittee Notes	This proposed appendix establishes a pathway to net-zero energy consumption by 2030
Recommendation	Approve as modified. (see attached)
Vote	Approve – 13, Disapprove – 0, Abstain – 1
Recommendation Date	6/6/22
Next Step	To Subcommittee _____ To Advisory Group _____ To Consensus Committee _____ ✓ _____
Consensus Committee	
Committee Response	
Vote	Affirmative _____ Negative _____ Table _____ To Subcommittee _____
Date	

CEPI-257-21 The Glide Path Appendix ~~6/7/22 Revision strikeout and underline text~~

X.1 Prescriptive compliance.

Where compliance is demonstrated using the Prescriptive Compliance option in Section C401.2.1, the ~~number of~~ additional efficiency credits required by Section C406.1 shall be ~~XX, rather than 10~~ 83%* higher than that required by Table C406.1.1.

**NOTE: This number of credits to be finalized when the energy use reduction of the 2024 IECC base code can be estimated, so that it results in a net ~~10%~~ 13% energy cost reduction compared with the 2021 IECC. This 83% figure assumes 8% base code progress and 6.5% overall savings from the energy credit system, leaving 5% to be made up with additional efficiency credits.*

X.2 Total Building Performance compliance.

Where compliance is demonstrated using the Total Building Performance option of Section C401.2.1, the PAEC (percentage of annual energy cost, applied to standard reference design) referenced in Equation 4-23 shall be multiplied by 0.95** ~~Item 2 in Section C407.2 shall require the proposed design energy cost to be XX percent rather than 80 percent of the standard reference design energy cost.~~

***NOTE: This percentage to be finalized when the energy use reduction of the 2024 IECC base code can be estimated, so that it results in roughly a net ~~10%~~ 13% energy cost reduction compared with the 2021 IECC. This 0.95 figure assumes 8% base code progress and 6.5% overall savings from the energy credit system, leaving 5% to be made up through the energy modeling process.*

X.3 On-site renewable electricity systems ~~Renewable energy.~~

~~In addition to any renewable energy required or provided to comply with other sections of this code, 2.4 watts of on-site renewable energy per square foot of conditioned space, and 0.8 watts of on-site renewable energy per square foot of semi-heated or unconditioned space, shall be provided.~~

~~X3.1 Site-recovered energy. Waste energy recovered on site is permitted to substitute for all or part of the renewable energy required by Section X.3. Waste energy consists of thermal energy that would otherwise be lost to the ground, atmosphere, or sewer.~~

Buildings shall install equipment for on-site renewable electricity generation with a direct current (DC) nameplate capacity rating of not less than that computed using Equation X-2:

$$AA = CA + SNA/3 \quad \text{Equation X-1}$$

Where:

AA = Adjusted area, in ft² (m²)

CA = Conditioned area, in ft² (m²)

SNA = Semi-heated and nonconditioned area, in ft² (m²)

$$REQ = AA \times CF \quad \text{Equation X-2}$$

Where:

REQ = Required on-site capacity, in DC watts

AA = Adjusted area from Equation X-1, in ft² (m²)

CF = Capacity factor from Table X-3, in watts/ft² (m²)

Exceptions. 1. Any required renewable electricity generation capacity in excess of 10 W/ft² (108 W/m²) of net available roof area is permitted to be provided using an off-site renewable energy system in accordance with Section X.4. For the purposes of this section, net available roof area is the gross roof area minus the roof area occupied by any combination of skylights, mechanical equipment, vegetated space, required access pathways, vehicle parking, and occupied roof terrace area.

2. The following buildings are permitted to provide off-site renewable energy generation in accordance with Section X.4 in lieu of all or part of the on-site renewable energy generation capacity required by Section X.3.

- a. Any building where more than 50% of roof area would be shaded from direct-beam sunlight by existing natural objects or by structures that are not part of the building for more than 2500 annual hours between 8:00 a.m. and 4:00 p.m.
- b. A building with gross conditioned floor area less than 1,000 square feet (93 m²).
- c. A building whose primary roof slope is greater than 2 in 12.

3. Alternate forms of on-site *renewable energy generation capacity* are permitted where the annual energy generation is calculated using an *approved* methodology to be no less than that produced by the required solar capacity.

4. All or part of the required *renewable energy generation capacity* is permitted to be replaced by other efficiency measures projected to reduce the annual energy consumption of the building by an amount no less than that which would otherwise be produced annually by the required renewable energy capacity, as calculated using the total building performance compliance path in Section C407 and *approved* methodologies for solar production.

Table X.3 On-site renewable electricity

Climate Zone	Capacity Factor
1A, 2B, 3B, 3C, 4B, and 5B	2.0 W/ft ² (22 W/m ²)
0A, 0B, 1B, 2A, 3A, and 6B	2.3 W/ft ² (25 W/m ²)
4A, 4C, 5A, 5C, 6A, and 7	2.6 W/ft ² (29 W/m ²)

X.4 Off-site renewable energy.

Off-site renewable energy is permitted to be substituted where the off-site renewable energy production is 1.25 times the required amount of on-site renewable energy production and the renewable energy is located in the same US EPA eGRID subregion as the project.

Buildings that qualify for one or more of the exceptions to Section X.3 and do not fully comply with Section X.3 with the on-site renewable energy system, shall procure off-site renewable electrical energy, in accordance with Sections X.4.1, X.4.2 and X.4.3, that shall not be less than the total off-site renewable electrical energy determined in accordance with Equation X-4.

$$\text{DEF} = \text{REQ} - \text{INSTL} \quad \text{Equation X-3}$$

Where:

DEF = Renewable capacity deficit, in DC watts

REQ = Required on-site capacity in DC watts, from Equation X-2

INSTL = Installed on-site capacity, in DC watts

OFF = 4.4 x DEF Equation X-4

Where:

OFF = Off-site renewable energy to be procured, in kWh/year

~~X.4.1 Documentation requirements for off-site renewable energy systems.~~

~~Off-site renewable energy delivered or credited to the building project shall be subject to a legally binding contract to procure qualifying off-site renewable energy. Qualifying off-site renewable energy shall meet the following requirements:~~

- ~~1. Documentation of off-site renewable energy procurement shall be submitted to the code official.~~
- ~~2. The purchase contract shall have a duration of not less than 15 years. The contract shall be structured to survive a partial or full transfer of ownership of the building property.~~
- ~~3. Records on renewable power purchased by the building owner from the off-site renewable energy generator that specifically assign the RECs to the building owner shall be retained or retired by the building owner on behalf of the entity demonstrating financial or operational control over the building seeking compliance to this standard and made available for inspection by the code official upon request.~~
- ~~4. Where multiple buildings in a building project are allocated energy procured by a contract subject to this section, the owner shall allocate for not less than 15 years the energy procured by the contract to the buildings in the building project. A plan on operation shall be developed which shall indicate how renewable energy produced from on-site or off-site systems that is not allocated before issuance of the certificate of occupancy will be allocated to new or existing buildings included in the building project.~~
- ~~5. The plan shall include provisions to use a REC tracking system that meets the requirements of Section V.B of the Green-e Framework for Renewable Energy Certification. The plan shall describe how the building owner will procure alternative qualifying renewable energy in the case that the renewable energy producer ceases operation.~~

X.4.1 Off site procurement. The building owner as defined in the International Building Code shall procure and be credited for the total amount of off-site renewable electrical energy, not less than required in accordance with Equation X-1, with one of the following:

1. Community renewables energy facility
2. Financial renewable energy power purchase agreement
3. Physical renewable energy power purchase agreement
4. Direct ownership
5. Renewable Energy Investment Fund

X.4.2 Off-site contract. The renewable energy shall be delivered or credited to the building site under an energy contract with a duration of not less than 10 years. The contract shall be structured to survive a partial or full transfer of ownership of the building property. The total required off-site renewable electrical energy shall be procured in equal installments over the duration of the off-site contract.

X.4.3 Renewable energy certificate (REC) documentation. The property owner or owner's authorized agent shall demonstrate that where RECs are associated with on-site and off-site renewable energy production required by Sections X.3 and X.4, all of the following criteria for RECs shall be met:

1. They are retained and retired by or on behalf of the property owner or tenant for a period of not less than 10 years or the duration of the contract in X.4.2, whichever is less;
2. They are created within a 12-month period of the use of the REC; and
3. They represent a generating asset constructed no more than 5 years before the issuance of the certificate of occupancy.



International Energy Conservation Code Code Change Proposal Tracking Sheet

Proposal #	CEPI-255-21 Part I Above Base Energy Code Appendix
CDP ID #	470
Code	IECC CE
Code Section(s)	X New Section y
Location	appendix
Proponent	Hope Medina hmedina@coloradocode.net
Proposal Status	SC rev
Subcommittee	CE Model, Metrics
Subcommittee Notes	Proposed appendix to exceed base IECC requirements. Projects that comply with the IgCC or achieve a LEED silver rating will also be in compliance with the proposed appendix. Specific requirements describe continuous air barriers, air leakage testing, outdoor heating and swimming pools. Several SC members expressed concern that the number of proposed appendices could be confusing, that many provisions, e.g., air barriers and leakage, and the proposed Appendix CD – Energy Credits, are already addressed elsewhere in the code
Recommendation	Disapprove as modified. (see attached)
Vote	1 – Approve, 12- Disapprove, 1- Abstain
Recommendation Date	6/6/22
Next Step	To Subcommittee _____ To Advisory Group _____ To Consensus Committee _____ ✓ _____
Consensus Committee	
Committee Response	
Vote	Affirmative _____ Negative _____ Table _____ To Subcommittee _____

Date	
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CEPI-255 – modified Above Base Energy Code Provisions

X101.1 Scope.

The provisions of this appendix shall apply to new construction.

X101.1 New construction shall comply with the requirements of ~~the this code~~ and one of the following:

1. This appendix.
2. The International Green Construction Code.
3. The National Green Building Standard, at a silver, gold, or emerald level of certification

~~for new construction and shall comply with the provisions of this appendix. Alternatively, new Construction shall comply with this appendix, the International Green Construction Code, or the IGC-700 National Green Building Standard at a silver, gold, or emerald certification.~~

Exception: Projects that comply with the International Green Construction Code ~~or obtain a silver certification from~~ the National Green Building Standard shall be deemed to comply with the provisions of this appendix.

X102.1 Air barriers leakage.

~~Air barrier~~Where ~~an air barrier is~~ not required by section C402.5.1, a A continuous *air barrier* shall be provided throughout the *building thermal envelope*. The continuous air barriers shall be located on the inside or outside of the *building thermal envelope*, located within the assemblies composing the *building thermal envelope*, or any combination thereof. The air barrier shall comply with Sections C402.5.1.1, and ~~/or~~ C402.5.1.2.

X102.1.1 Air barrier verification.

All air barriers components and systems shall be verified in accordance with Section C402.5.1.5C402.5.2.

X102.1.1.1 Testing

The building, dwelling, or sleeping unit shall be tested for air leakage in accordance with Sections C402.5.2 or C402.5.3. Where required by the code official, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

1. Buildings or portions of buildings, including Group R and I occupancies, shall meet the provisions of Section C402.5.2.

~~2. Buildings or portions of buildings other than Group R and I occupancies shall meet the provisions of Section C402.5.3.~~

~~X103.1 Heating outside uses.~~

~~Mechanical systems providing a heat source outside of the thermal envelope of a building shall comply with Sections X103.1.1 through X103.1.3~~

~~X103.1.1 Snow and ice melt systems.~~

~~Snow and ice melt systems shall install a minimum R-10 insulation located below the tubing and or piping utilized in the heating system for snow and ice melt systems.~~

~~Exception: snow and ice melt systems located on roof when the location of the thermal envelope is not located at the roof, but at the ceiling.~~

~~**Snow and ice melt systems shall install have insulation of not less than a minimum R-10 insulation located below tubing and or thermal elements or piping utilized in the heating system. for snow and ice melt systems.**~~

~~**Exception:** Snow and ice melt systems located on roofs when the location of outside of the thermal envelope. is not located at the roof, but at the ceiling.~~

~~X103.1.2 Swimming pools and spas.~~

~~Permanent swimming pools and spas shall have insulation on the sides and bottom surfaces located on the exterior. The type of insulation shall be impermeable and impervious to water logging or saturation and unaffected by water, mold, mildew, and have capability to resist compression. The insulation value shall be a minimum of R-15.~~

~~X103.1.3 Automatic Covers.~~

~~Permanent swimming pools and spas shall have insulation on the sides and bottom surfaces located on the exterior. The type of insulation shall be impermeable and impervious to water logging or saturation and unaffected by water, mold, mildew, and have capability to resist compression. The insulation value shall be a minimum of R-15.~~

~~Automatic covers. Swimming pools and spas located inground shall have an automatic motorized non-permeable pool cover that covers the entire pool surface.~~

~~X104.1 Appliances.~~

~~The following appliances shall meet ENERGY STAR performance criteria or equivalent.~~

- ~~1. Water coolers~~
- ~~2. Commercial Fryer~~
- ~~3. Commercial hot food holding cabinets~~
- ~~4. Commercial steam cookers~~
- ~~5. Commercial dishwashers~~

6. Commercial Griddles

7. Commercial ovens

8. Commercial refrigerator and/or freezers

X105.1 Additional efficiency package options.

Projects complying with this appendix shall be required to achieve an additional 5 credits for a total of 15 points from Tables C406.1(1) through C406.1(5).

Add new standard(s) as follows:

ICC

International Code Council, Inc.

500 New Jersey Avenue NW 6th Floor

Washington, DC 20001

IgCC - ~~2024~~ 2021 International Green Construction Code

700-2020 National Green Building Standard