**A Meeting of the**

**Illinois Energy Conservation Advisory Council**

**Commercial Subcommittee**

**is being held March 25, 2025, 12:00 p.m. – 2:00 p.m.**

**Via Webex (login info below)**

1. Call to Order
	1. Roll Call of Members
	2. Confirmation of a Quorum
	3. Webex recording
2. Updates
3. Base Code Topics (Proposals are attached at the end of this agenda)
	1. Approval of 2/11/25 and 3/11/25 meeting minutes.
	2. Scott Farbman will present Proposal #1 to add passive house compliance options. Possible motion to approve.
	3. Robert Coslow will present Proposal #2 to add an exception to C405.4 Horticultural Lighting. Possible motion to approve.
	4. Robert Coslow will present Proposal #3 to add C402.5.1.3 Fenestration Orientation. Possible motion to approve.
	5. Robert Coslow will present Proposal #4 to add C101.4 (5) which covers acceptable documentation for C407 and C410. Possible motion to approve.
	6. Michelle Sablack will present Proposal #5 for Limited Electric Readiness. Possible motion to approve.
	7. Possible motion to approve the Commercial Provisions of the 2024 Illinois Energy Conservation Code Draft 3-18-25 incorporating approved proposals from this meeting.
4. Stretch Code Topics
	1. None.
5. Public comment
6. Motion to Adjourn

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###### **Proposal #1: PHI/PHIUS Compliance Language.**

**Synopsis**

This proposal allows PHI and PHIUS compliance.

**C401.2 Application.** *Commercial buildings* shall comply with Section C401.2.1, ~~or~~ C401.2.2, or C401.2.3.

**C401.2.3 Passive building compliance option.** The Passive building compliance option requires compliance with Section C410.

**SECTION C410-PASSIVE BUILDING COMPLIANCE OPTION**

**C410.1 Phius standard compliance.** Compliance based on the Phius CORE 2024 of Phius ZERO 2024 (or later) Standard will include performance calculations by Phius-approved software or the use of the Phius Prescriptive Path.

**C410.1.1 Phius documentation.** Prior to the issuance of a building permit, a Phius Design Certification letter must be provided to the code official.

**C410.1.2 Project certificate.** Prior to the issuance of a certificate of occupancy, a Phius 2024 (or later) Final certificate must be provided to the code official.

**C410.2 PHI standard compliance.** Compliance based on the most recent PHI standards using PHPP v.10 or later, shall be shown via Low Energy Building, Classic, Plus, or Premium certification by PHI.

**C410.2.1 PHI documentation.** Prior to the issuance of a buildingpermit, a signed Design Stage Conditional Assurance Letter from a PHI-accredited Passive House Certifier confirming intent to certify the building must be provided to the code official.

**C410.2.2 Project certificate.** Prior to the issuance of a certificate of occupancy, a copy of either a Certifiers Assurance Letter by an approved PHI-accredited Certifier or a final PHI Certificate to document compliance with Passive House Standards must be provided to the code official.

###### **Proposal #2: Horticultural lighting.**

**(from the current 2024 IECC and Base code)**

**C405.4 Horticultural lighting.** Permanently installed luminaires shall have a *photosynthetic photon efficacy* of not less than 1.7 micromoles per joule (mol/J) for *horticultural lighting* in greenhouses and not less than 1.9 mol/J for all other *horticultural lighting*. Luminaires for *horticultural lighting* in greenhouses shall be controlled by a device that automatically turns off the luminaire when sufficient daylight is available. Luminaires for *horticultural lighting* shall be controlled by a device that automatically turns off the luminaire at specific programmed times.

 Exception: The following buildings are exempt:

1. *Indoor grow buildings* with less than 40 *kW* of connected load for *horticultural lighting* shall have a *PPE* of at least 1.7 μmol/J for integrated, nonserviceable luminaires, or a *PPE* of at least 1.7 μmol/J for lampsin luminaireswith removable or serviceable lamps.
2. Cannabis facilities subject to 410 ILCS 705/10-45, the Cannabis Regulation and Tax Act.

The 2021 Base Code has an exception for buildings less than 40kW of horticultural lighting, to match ASHRAE 90.1. Without the exception these buildings would have to use 1.9 PPE lighting vs 1.7 PPE lighting.

The 2021 Base Code also had an exception for Cannabis Facilities. However, these facilities are held to a higher 2.2 PPE standard than the Base Code so I don’t think there is a conflict. However if the Cannabis Act changed to be less stringent, there could be a conflict.

From ASHRAE 90.1-2022

**9.4.4 Horticultural Lighting.** *Greenhouse horticultural lighting* shall follow the requirements of Section

9.4.4.1. *Indoor grow horticultural lighting* shall follow the requirements of Section 9.4.4.2.

**9.4.4.1** *Luminaires* in *greenhouse buildings* with at least 40 *kW* of connected load for *horticultural lighting*

shall have a *photosynthetic photon efficacy* (*PPE*) of at least 1.7 μmol/J for integrated, nonserviceable

*luminaires*, or a *PPE* of at least 1.7 μmol/J for *lamps* in *luminaires* with removable or serviceable *lamps*.

*Horticultural lighting* in *greenhouse spaces* shall be controlled by a device that *automatically* turns off the

*horticultural lighting* at specific programmed times.

**9.4.4.2** *Luminaires* in *indoor grow spaces* used for *horticultural lighting* shall have a *PPE* of at least

1.9 μmol/J for integrated, nonserviceable *luminaires*, or a *PPE* of at least 1.9 μmol/J for *lamps* in *luminaires*

with removable or serviceable *lamps*. *Horticultural lighting* in *indoor grow spaces* shall be controlled

by a device that *automatically* turns off the *horticultural lighting* at specific programmed times.

**Exception to 9.4.4.2:** *Indoor grow buildings* with less than 40 *kW* of connected load for *horticultural*

*lighting* shall have a *PPE* of at least 1.7 μmol/J for integrated, nonserviceable *luminaires*, or a *PPE*

of at least 1.7 μmol/J for *lamps* in *luminaires* with removable or serviceable *lamps*.

###### **Proposal #3: Fenestration Orientation.**

This amendment is in the 2021 Base Code and matches ASHRAE 90.1-2022.

**C402.5.1.3 Fenestration orientation.** The vertical *fenestration* shall comply with either Equation a or b:

1. AW ≤ (AT)/4 and AE ≤ (AT)/4
2. AW × SHGCW ≤ (AT × SHGCC)/5 and AE × SHGCE ≤ (AT × SHGCC)/5

where:

AW = West-oriented *vertical fenestration area* (oriented within 45 degrees of true west tothe south and within 22.5

 degrees of truewest to the north in the NorthernHemisphere).

AE = East-oriented *vertical fenestration area* (oriented within 45 degrees of true east tothe south and within 22.5

 degrees of trueeast to the north in the NorthernHemisphere).

AT= Total vertical fenestration area.

SHGCC = SHGC criteria in Table C402.5.

SHGCE = SHGC for east-oriented fenestration.

SHGCW = SHGC for west-oriented fenestration.

**Exceptions:**

1. Buildings with shade on 75 percent of the east-oriented and west-oriented vertical fenestration areas from permanent projections, existing buildings, existing permanent infrastructure or topography at 9:00 a.m. and 3:00 p.m., respectively, on the summer solstice (June 21).
2. Alterations and additions with no increase in vertical fenestration area.
3. Buildings where the east-oriented and west-oriented vertical fenestration area does not exceed 20 percent of the gross wall area for each of those facades, and SHGC on those facades is no greater than 90 percent of the criteria in Table C402.5.

###### **Proposal #4: C407 and C410 documentation.**

**C101.4 Compliance.** *Commercial buildings* shall meet the provisions of the *Illinois Energy Conservation Code* covered by 71 Ill. Adm. Code 600.Subpart C. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance forms published in the ASHRAE 90.1 User's Manual; or
2. Compliance Certificates generated by the U.S. Department of Energy’s COMcheck™ Code compliance tool; or
3. Other comparable compliance materials that meet or exceed, as determined by the AHJ, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck™ Code compliance tool; or
4. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325]~~.~~; or
5. Other compliance materials required by C407 Simulated Building Performance or C410 Passive Building Compliance Option shall be provided when those respective compliance paths are utilized.

###### **Proposal #5: Limited Electric Readiness.**

**Limited Electric Readiness Amendment to 2024 Illinois Base Energy Code - Proposal**

**March 19, 2025**

*Add new section C105.2.2, reflecting mandatory provisions from the Illinois 2023 Commercial Stretch Energy Code.*

**C105.2.2 Electrification system.** The construction documents shall provide details for additional electric infrastructure, including branch circuits, conduit, pre-wiring, panel capacity, and electrical service capacity, as well as interior and exterior spaces designated for future electric equipment, in compliance with the provisions of this code.

*Add new definitions to C202.*

**COMMERCIAL COOKING APPLIANCES.** Commercial cooking appliances used in a commercial food service establishment for heating or cooking food and which produce grease vapors, steam, fumes, smoke or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers, upright broilers, griddles, broilers, steam-jacketed kettles, hot-top ranges, under-fired broilers (charbroilers), ovens, barbecues, rotisseries and similar appliances.

**COMMERCIAL CLOTHES DRYING APPLIANCES.** Clothes drying appliances meeting the International Fuel Gas Code definition of a Type 2 appliance, or tested in accordance with UL 2158 or UL 1240 and installed in a commercial laundry establishment.

*Add new section C405.17, reflecting mandatory provisions from the Illinois 2023 Commercial Stretch Energy Code.*

***Notes***

1. *The entire section below is noted as new text. However, compared to the Illinois 2023 stretch code text, there are the following differences:*
	1. *In addition to R-2, occupancy groups A-1, A-2, A-3, B, E, M, and additional R occupancies are covered. This follows discussion between Ryan Siegel at SEDAC and interested council members regarding occupancy groups for which these provisions may be feasible. Because only low-capacity systems are covered, the below provisions may be considered applicable to “residential-sized” units when they are used in such occupancy groups, most likely in small buildings.*
	2. *High-capacity space and water heating systems are not covered. This follows input from multiple council members indicating concern regarding the cost of designing alternative high-capacity systems and the loss of utility from foregoing the design process.*
	3. *Commercial clothes drying is not covered. This follows council members’ expressions of concern that, for commercial clothes drying facilities, electric ready infrastructure could be a proportionately large addition to construction cost.*

**C405.17 Electric infrastructure.** New group A-1, A-2, A-3, B, E, M, and R occupancies that use fossil fuels for low-capacity space heating, low-capacity service water heating, non-commercial cooking, or non-commercial clothes drying shall install electric infrastructure in accordance with Sections C405.17.1 through C405.17.5 and C105.2.2.

**C405.17.1 Low-capacity space heating.** Locations of fossil fuel warm-air furnaces with capacity less than 225,000 Btu/hr (65.9kW) and boilers with a capacity less than 300,000 Btu/hr (88kW) shall be provided with an individual branch circuit in accordance with all of the following:

1. The branch circuit conductors shall terminate within 6 ft (2 m) of the location of the space heating equipment and shall be in a location with ready access.

2. The branch circuit shall be sized to serve heat pump space heating equipment sized in accordance with the requirements of Section C403.1.1, and

3. The branch circuit overcurrent device and the termination of the branch circuit shall be labeled “For future heat pump space heating equipment.”

**Exception:** Where a branch circuit exists for space cooling equipment with the capacity to serve heat pump space heating equipment sized in accordance with the requirements of Section C403.1.1.

**C405.17.2 Low-capacity water heating.** Locations of fossil fuel water heaters with an input rating of less than 300,000 Btu/hr (88kW) shall comply with all of the following:

1. An individual 30 ampere, 208/240-volt branch circuit shall be provided and terminate within 6 ft (2 m) of the water heater and shall be in a location with ready access.

2. The branch circuit overcurrent protection device and the termination of the branch circuit shall be labeled "For future electric water heater".

3. The space for containing the future water heater shall have a height of not less than 7 ft (2 m), a width of not less than 3 ft (1 m), a depth of not less than 3ft (1 m) and with a volume of not less than 700 ft3 (20 m3).

**Exception:** Where the space containing the water heater provides for air circulation sufficient for the operation of a heat pump water heater, the minimum room volume shall not be required.

**C405.17.3 Non-commercial cooking.** Locations of fossil fuel ranges, cooktops and ovens that are not commercial cooking appliances shall be provided with a dedicated individual branch circuit in accordance with all of the following:

1. The branch circuit shall be rated for 208/240-volts and not less than 50 amps.

2. The branch circuit shall terminate within 3 ft (1 m) of the appliance and shall be in a location with ready access.

3. The point of origin and termination of the branch circuit shall be labeled “For future electric cooking appliance”.

**C405.17.4 Non-commercial clothes drying.** Locations of fossil fuel clothes drying appliances that are not commercial clothes drying appliances shall be provided with a dedicated individual branch circuit in accordance with all of the following:

1. The branch circuit shall be rated for 208/240-volts and not less than 30 amps.

2. The branch circuit shall terminate within 3 ft (1 m) of the appliance and shall be in a location with ready access.

3. The point of origin and termination of the branch circuit shall be labeled “For future electric clothes drying appliance”.

**C405.17.5 Onsite Transformers.** Enclosed spaces and underground vaults containing onsite electric transformers on the building side of the electric utility meter shall have sufficient space to accommodate transformers sized to serve the additional electric loads identified in C405.17.1, C405.17.2, C405.17.3 and C405.17.4.