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BLUEPRINT

CALIFORNIA ENERGY COMMISSION

EFFICIENCY DIVISION

IN THIS ISSUE

For additional help with the Energy Code see Energy Code Ace's **online offerings** of trainings, tools, and resources.

2022 Energy Code: Nonresidential Summary

One of the significant changes in the *2022 Building Energy Efficiency Standards* (Energy Code) for nonresidential, hotel and motel buildings is the newly added prescriptive requirement for photovoltaic (PV). This and other changes include:

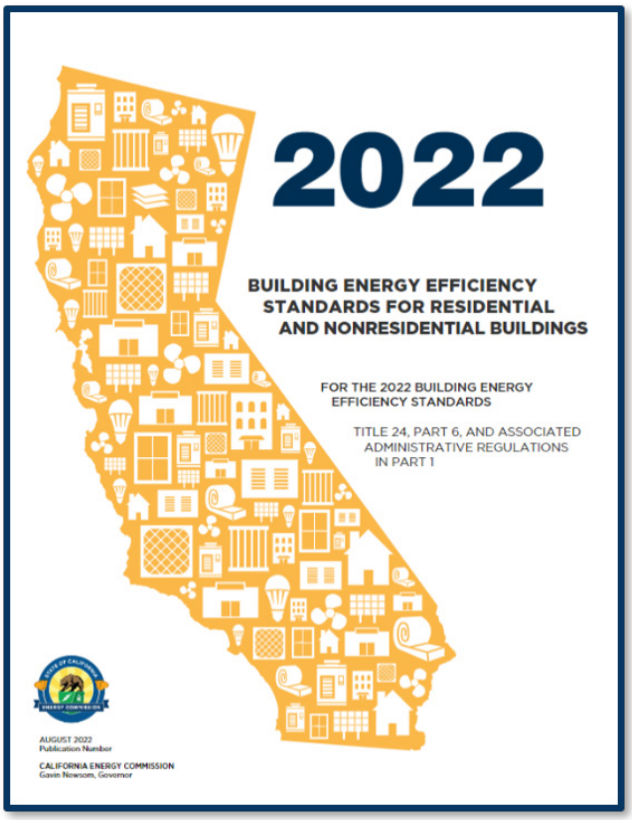

Figure 1: 2022 Energy Code

PV and Energy Storage

- New prescriptive requirements for PV and energy storage systems (ESS) for specific nonresidential occupancies, hotel and motel buildings per Section 140.10.
- California Energy Commission (CEC) approved community shared solar PV system, or other shared renewable electric generation system, and shared energy storage system may be used to meet the PV or ESS requirements using the performance compliance method per Section 10-115.

Envelope

- Cool roof prescriptive requirement updates in Section 140.3(a)1A.
- Air barrier prescriptive requirement updates in Section 140.3(a)9 and Table 140.3-A.
- Prescriptive Table 140.3-B updates for metal-framed wall U-factors; adds climate zones for fenestration values.

Indoor Lighting

- Mandatory occupant sensing controls for office spaces greater than 250 square feet per Section 130.1(c)5-6.
- Automatic daylighting controls for secondary sidelit daylit zones become mandatory; automatic daylighting controls must reduce controlled lighting power to 10 percent or less when adequate daylighting is available per Section 130.1(d).
- Power adjustment factor updates in Table 140.6-A for daylight continuous dimming plus OFF controls, occupant sensing controls in offices larger than 250 square feet, and demand responsive lighting controls.
- Combines lighting power allowances in the area category method for greater flexibility in Table-140.6-C.
- Lighting power density allowance updates in Table 140.6-B, Table 140.6-C, Table 140.6-D, and Table 140.6-G.
- Adds additional testing method for partial daylighting acceptance testing in Reference Appendix Nonresidential NA7.6.

Outdoor Lighting

- Lighting zones 1-3 definition updates according to U.S. Census designations for rural, urban cluster, and urban areas in Table 10-114-A (Figure 2).
- Lighting power allowance updates for general hardscape lighting in Table 140.7-A.
- Updates to specific applications in Table 140.7-B, addition of security camera application.
- The term cutoff has been replaced with the term shielding, since these both refer to the same luminaire distribution features.

Mechanical

- HVAC efficiency updates in Table 110.2-A through Table 110.2-N.
- Mandatory requirement updates for ventilation and indoor air quality; revised requirements for demand control ventilation in Section 120.1.
- Expands mandatory occupant sensor ventilation control (occupied-standby) to large office spaces in Section 120.2.
- Duct leakage testing requirements become mandatory per Section 120.4.

TABLE 10-114-A LIGHTING ZONE CHARACTERISTICS AND RULES FOR AMENDMENTS BY LOCAL JURISDICTIONS

Zone	Ambient Illumination	State wide Default Location	Moving Up to Higher Zones	Moving Down to Lower Zones
LZ0	Very Low	Undeveloped areas of government designated parks, recreation areas, and wildlife preserves.	Undeveloped areas of government designated parks, recreation areas, and wildlife preserves can be designated as LZ1 or LZ2 if they are contained within such a zone.	Not applicable
LZ1	Low	Rural areas, as defined by the 2010 U.S. Census. These areas include: single or dual family residential areas, parks, and agricultural zone districts, developed portion of government designated parks, recreation areas, and wildlife preserves. Those that are wholly contained within a higher lighting zone may be considered by the local government as part of that lighting zone.	Developed portion of a government designated park, recreation area, or wildlife preserve, can be designated as LZ2 or LZ3 if they are contained within such a zone. Retail stores, located in a residential neighborhood, and rural town centers, as defined by the 2010 U.S. Census, can be designated as LZ2 if the business operates during hours of darkness.	Not applicable.
LZ2	Moderate	Urban clusters, as defined by the 2010 U.S. Census. The following building types may occur here: multifamily housing, mixed use residential neighborhoods, religious facilities, schools, and light commercial business districts or industrial zoning districts.	Special districts within a default LZ2 zone may be designated as LZ3 or LZ4 by a local jurisdiction. Examples include special commercial districts or areas with special security considerations located within a mixed-use residential area or city center.	Special districts may be designated as LZ1 by the local jurisdiction, without any size limits.
LZ3	Moderately High	Urban areas, as defined by the 2010 U.S. Census. The following building types may occur here: high intensity commercial corridors, entertainment centers, and heavy industrial or manufacturing zone districts.	Special districts within a default LZ3 may be designated as a LZ4 by local jurisdiction for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels.	Special districts may be designated as LZ1 or LZ2 by the local jurisdiction, without any size limits.
LZ4	High	None.	Not applicable.	Not applicable.

Figure 2: Table 10-114-A Lighting Zone Characteristics

- Adds heat pump space heating prescriptive requirements for certain occupancies per Section 140.4(a).
- Fan power prescriptive requirement updates to Section 140.4(c).
- New economizer exceptions for certain dedicated outside air systems (DOAS) configurations in Section 140.4(e).
- Adds prescriptive requirements for DOAS in Section 140.4(p).
- Adds prescriptive requirements for exhaust air heat recovery in Section 140.4(q).

Electrical Power Distribution

- Demand responsive controls for controlled receptacles added to Section 110.12.

Covered Processes

- Adds mandatory requirements for transcritical carbon dioxide (CO_2) refrigeration systems in Section 120.6(a-b).
- Adds mandatory requirements for compressed air systems in Section 120.6(e).
- Adds mandatory requirements for controlled environmental horticulture systems in Section 120.6(h).
- Adds mandatory requirements for steam traps in Section 120.6(i).
- Adds mandatory requirements for computer rooms, including uninterruptible power supplies in Section 120.6(j).
- Revisions to prescriptive requirements for computer rooms in Section 140.9(a).
- Adds prescriptive requirements for laboratory and factory exhaust systems Section 140.9(c).

Significant changes for multifamily and single-family residential summaries will be highlighted in future Blueprints. Download final documents on the **2022 Energy Code webpage**.

2019 Compliance Software Updates

Updated versions of EnergyPro 8.3 and Integrated Environmental Solutions Virtual Environment Title 24 2019 (IES VE T24 2019) Version 1.1 are approved for demonstrating performance compliance with the 2019 Energy Code. Permit applications made on or after January 1, 2022, must use the newest versions. More information is available on the **2019 approved computer compliance programs webpage**.

All previous software versions expired December 31, 2021. Please see all of the CBECC and third-party **residential software expiration dates** and **nonresidential software expirations dates.**

ENERGY STANDARDS HOTLINE

Available to help with Energy Code (Title 24, Part 6) questions.

EMAIL
title24@energy.ca.gov

CALL
800-772-3300 Toll free in CA
916-654-5106 Outside CA

HOURS 8 a.m.–12 p.m. and 1 p.m.–4:30 p.m.

New Resources

The *2019 Significant Changes to the California Energy Code, 2019 Edition* is available on the **overview webpage** of the Online Resource Center. The guidebook was developed by the International Code Council (ICC) in partnership with the CEC and the California Building Officials (CALBO).

ATTCP Frequently Asked Questions

The **Acceptance Test Technician Certification Provider Program FAQs webpage** has been updated to include which 2019 Energy Code forms must be recorded with an ATTCP for compliance.

Q&A

Solar PV for Nonresidential Buildings

Do newly constructed unconditioned warehouses need to have PV and energy storage under the 2022 Energy Code?

No. The prescriptive requirements for PV and energy storage apply to conditioned warehouses depending on climate zone.

Do alterations to existing nonresidential buildings trigger PV and energy storage requirements under the 2022 Energy Code?

No. The prescriptive requirements for PV and energy storage only apply to newly constructed buildings.

Nonresidential Indoor Lighting Alterations

Does removing walls and rewiring the lighting controls for a tenant improvement trigger the 2019 Energy Code for the controls?

Yes. Section 141.0(b)2I states that alterations to lighting wiring are considered alterations to the lighting system. This project will trigger the mandatory lighting control requirements in Sections 110.9 and 130.1 for the controls being rewired.

Does rewiring lighting controls require the existing luminaires to meet the 2019 Energy Code if they are not being altered?

No. Per Section 141.0(b)2I, if fewer than 10 percent of luminaires are altered (relocated, replaced, modified, or added), the existing luminaries are not required to meet the 2019 Energy Code.

FOR MORE INFORMATION

Online Resource Center (ORC): www.energy.ca.gov/orc

Home Energy Rating System (HERS): www.energy.ca.gov/HERS

Acceptance Test Technician Certification Provider Program (ATTCP): www.energy.ca.gov/ATTCP

2019 Approved Compliance Software: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency-2

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The CEC welcomes feedback on Blueprint. Please contact the editor at **Title24@energy.ca.gov.**

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Blueprint newsletter serves as a resource to assist stakeholders in complying with the Energy Code. It does not provide legal advice. Please refer to California Code of Regulations, Title 24, Parts 1 and 6 for specific requirements.

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