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<td>Presentation - Title 24 Part 11 - California Green Building Standards</td>
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<td>Presentation by Ingrid Neumann, made at the 8-30-17 Staff Workshop.</td>
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<td><strong>Filer:</strong></td>
<td>Adrian Ownby</td>
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<td><strong>Organization:</strong></td>
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Title 24 Part 11
California Green Building Standards

Ingrid Neumann
Building Standards Office
Efficiency Division

Pre Rulemaking Workshop
Rosenfeld Hearing Room
August 30, 2017
California Green Building Standards

Purpose

• To improve public health, safety and general welfare
• Reduced negative / increase positive environmental impact
• Encouraging sustainable construction practices in:
  – 1. Planning and design
  – 2. Energy efficiency
  – 3. Water efficiency and conservation
  – 4. Material conservation and resource efficiency
  – 5. Environmental quality
California Green Building Standards

History

• **2008 California Green Building Standards Code**
  – effective August 2009
  – composed entirely of voluntary measures
  – Preview of what may become mandatory

• **2010 California Green Building Standards Code (CALGreen)**
  – Team effort: CBSC, HCD, DSA, OSHPD, ARB, DGS, CalRecycle, DWR, CEC etc.
  – Mandatory measures in addition to voluntary tiers

• **2013, 2016, and now 2019 CALGreen**
California Green Building Standards

CHAPTER 1 - ADMINISTRATION
CHAPTER 2 - DEFINITIONS
CHAPTER 3 - GREEN BUILDING (Scope)
CHAPTER 4 - RESIDENTIAL MANDATORY MEASURES
CHAPTER 5 - NONRESIDENTIAL MANDATORY MEASURES
CHAPTER 6 - REFERENCED ORGANIZATIONS AND STANDARDS
CHAPTER 7 - INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS
CHAPTER 8 - COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL
APPENDIX A4 - RESIDENTIAL VOLUNTARY MEASURES
APPENDIX A5 - NONRESIDENTIAL VOLUNTARY MEASURES
APPENDIX A6.1 - VOLUNTARY STANDARDS FOR HEALTH FACILITIES [OSHPD 1, 2 & 4]

Mandatory Energy Efficiency Targets
Title 24 Part 6

Voluntary Energy Efficiency Targets
Title 24 Part 11
Appendix A4–*Residential Voluntary Measures*

- Section A4.203, Performance Approach for Newly Constructed
  - based on *target Energy Design Rating (EDR) scores* (no longer “Percent better than” mandatory Part 6)

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Efficiency Target</th>
<th>PV Target</th>
<th>Tier 1 Target</th>
<th>Tier 2 (ZNE) Target</th>
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<tr>
<td>2016</td>
<td>EDR = 43</td>
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<td></td>
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<tr>
<td>2019</td>
<td>EDR = 25</td>
<td>EDR = 14</td>
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*Example for CZ 12*
Appendix A4—Residential Voluntary Measures

• Section A4.203, Performance Approach for Newly Constructed
  – based on target EDR scores
  (no longer “Percent better than” mandatory Part 6)

Mandatory Energy Efficiency Targets
Title 24 Part 6

Voluntary Energy Efficiency Targets
Title 24 Part 11
Appendix A4—Residential Voluntary Measures

• Section A4.203, Performance Approach for Newly Constructed
  – based on target EDR scores
  (no longer “Percent better than” mandatory Part 6 )

Mandatory Title 24 Part 6  Voluntary Part 11

2016 Energy Efficiency Target 2019 Energy Efficiency Target PV Target Tier 1 Target Tier 2 (ZNE) Target
Local Jurisdictions submit an Application to the Energy Commission

- A copy of the ordinance.
- A study or analysis showing the expected energy savings and the cost effectiveness of the ordinance.
- The date the ordinance, energy savings and cost-effectiveness study were presented to and adopted by the Council/Board in a Publicly Noticed Meeting.
- A letter to the Executive Director
  - A statement/finding that the ordinance will require buildings to be “designed to save energy when compared to levels permitted by Title 24 Part 6.”
  - Evidence of CEQA compliance.

Title 24 Section 10-106
Appendix A4– Residential Voluntary Measures

• A4.203.1.2.1 Tier 1.

➢ meet a target Energy Design Rating (EDR) **X% below** or **X points lower** than compliance EDR

➢ Measures considered:
  • energy efficiency measures (e.g. triple pane windows)
  • Demand Management (e.g. load following)
  • on-site battery or thermal storage
Appendix A4– Residential Voluntary Measures

• A4.203.1.2.2 Tier 2.
  ➢ achieve Energy Design Rating 0
    (equivalent to “Zero Net Energy design”)
  ➢ Paths considered:
    • electrifying space and water heating
    • advanced electric battery controls
    • modest oversizing of the photovoltaic system
Appendix A4– Residential Voluntary Measures

Items in Part 6 as Prescriptive requirements also suggested as Prerequisites:

• A4.203.1.1.1 Quality Insulation Installation (QII)

• A4.203.1.1.2 High Performance Walls (HPW)

• A4.203.1.1.3 High Performance Attics (HPA)
Appendix A4—Residential Voluntary Measures

New Prerequisites:

- A4.203.1.1.4 (CHWDS-H)
  HERS-Verified Compact Hot Water Distribution System

- A4.203.1.1.5 (DWHR-H)
  HERS-Verified Drain Water Heat Recovery
Appendix A4– Residential Voluntary Measures

• Section A4.204, Performance Approach for Additions
  ➢ meet a **target Energy Design Rating** (EDR)
  ➢ Target will continue to vary depending on the number of mechanical systems added
Appendix A5– Nonresidential Voluntary Measures

• Section A5.203, Performance Approach

  ➢ Retain the “Percent better than” mandatory language
  ➢ Target Percentages continue to vary depending on whether lighting and/or mechanical systems are included
Appendix A5– Nonresidential Voluntary Measures

New Prerequisites:

• **A5.203.1.1.1 Outdoor lighting.** Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power, and shall have a color temperature no higher than 3000K.
Appendix A5– Nonresidential Voluntary Measures

• **A5.203.1.1.3**
  Warehouse Dock Seal Doors

• **A5.203.1.1.4**
  **Daylight Redirecting Devices** shall be installed for indoor lighting systems with automatic daylighting controls.

• **A5.203.1.1.5**
  **Exhaust Air Heat Recovery** updates to increase the energy recovery ratio and establish sensible heat energy-only type devices.
Appendix A5– Nonresidential Voluntary Measures

• **A5.203.1.1.6**
  *Automatically Closing Fume Hood Sashes in Laboratories* for variable air volume fume hoods.

• **A5.203.1.1.7**
  *Combustion Air Requirements* Air for combustion, ventilation, and dilution of flue gases for space or water heating appliances shall not be obtained from the conditioned indoor air supply.
Questions?

Building Energy Efficiency Program
http://www.energy.ca.gov/title24/

Comments to be submitted to

2019 Title 24 Utility-Sponsored Stakeholder
http://title24stakeholders.com/

Contact Information
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916-651-1461