



CALIFORNIA ENERGY COMMISSION

California Energy Efficiency Building Standards

2019 Demand Response Proposal



April 24, 2018



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Energy Efficiency Division
California Energy Commission



Goals for Today

- Background & History
- Proposed Changes
- Open ADR Specification
- Schedule





1974 & 1975: The Warren Alquist Act

Prescribe, by regulation, lighting, insulation climate control system, and other building design and construction standards that increase the efficiency in the use of energy...





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California Energy Commission

- Energy Policy
- Power Plant Permitting
- Research & Development
- Emergency Planning
- Transportation
- Renewable Energy
- **Energy Efficiency**

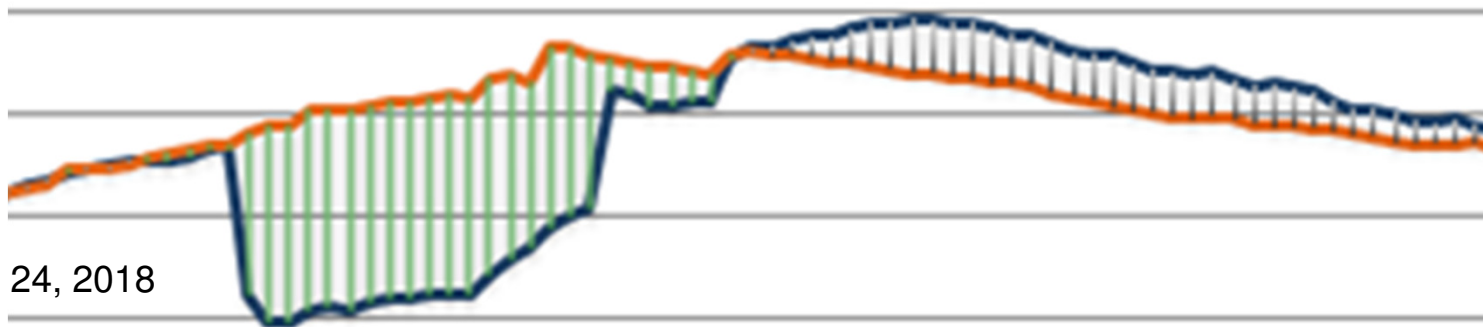


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Why is DR in the Building Standards?

- Enable Cost Effective Actions
- Information, Motivation, & Tools
- Building Owner / Operator Centric



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California Code of Regulations, Title 24 (Building Standards) Part 6 (Energy Code)





Title 24, Part 6: Building Energy Efficiency Standards

- §100 Scope & Definitions
- §110 Systems & Equipment
- §120 Design & Installation
- §130 Lighting & Electrical
- §140 Performance & Prescriptive
- §141 Additions & Alterations





Title 24, Part 6: Building Energy Efficiency Standards

§100 Scope & Definitions

§110 **Systems & Equipment**

§120 Design & Installation

§130 Lighting & Electrical

§140 Performance & Prescriptive

§141 Additions & Alterations





Summary of Proposal

- Proposed Cleanup
 - Consolidate all DR language
 - New Section 110.12
- Proposed Standards Changes
 - New Definitions
 - Revise Joint Appendix 5 (JA-5)
 - Specify OpenADR Protocol





Summary of Proposal

- Proposed Cleanup
 - Consolidate all DR language
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DR Cleanup: Consolidation (§110.12)

- **HVAC Controls (§120.2)**
- **Lighting & Electrical Power (§130.0)**
- **Lighting Controls (§130.1)**
- **Sign Lighting Controls (§130.3)**
- **Electrical Power Distribution (§130.5)**
- **Thermostatic Controls (§150.0)**
- **Low-rise Residential Additions and Alterations (§150.2)**



DR Cleanup: Consolidation (§110.12)

- All Demand Response Requirements
 - New Section 110.12
- Clarify & Simplify

No requirement changes



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DR Standards Change: New Definitions (§100.1)

- Demand Responsive Control
- Energy Management Control System
 - EMCS
- OpenADR 2.0a and 2.0b
- Virtual End Node (VEN)



DR Standards Change: Joint Appendix 5 (JA5)

- Occupant Controlled Smart Thermostats (OCST)
- Rewrite for Clarity
- Separate DR from Thermostat Specs



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DR Standards Change: OpenADR (§110.12)

- Require OpenADR for
“Demand Responsive Controls”



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DR Standards Change: OpenADR (§110.12)

DEMAND RESPONSIVE CONTROL is an automatic control that is capable of receiving and automatically responding to a demand response signal.



DR Standards Change: OpenADR (§110.12)

- (a) **Demand responsive controls.**
1. All demand responsive controls shall be either:
 - A. A certified OpenADR 2.0a or OpenADR 2.0b Virtual End Node (VEN), as specified under Clause 11, Conformance, in the applicable OpenADR 2.0 Specification; or
 - B. Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls.



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Schedule: 2019 Title 24 Standards

2016

Research & Outreach

2017

Pre-Rulemaking

2018

Rulemaking

2020

2019 Standards Effective January 1, 2020



Schedule: 2019 Title 24 Standards

2016

Research & Outreach

2017

Pre-Rulemaking

2018

Rulemaking

2020

2019 Standards Effective January 1, 2020



Schedule: **2022** Title 24 Standards

2018

Research & Outreach

2020

Pre-Rulemaking

2021

Rulemaking

2023

2022 Standards Effective January 1, 2023

April 24, 2018



Home » title24 » 2019standards

2019 Building Energy Efficiency Standards

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 Standards will continue to improve upon the 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 Standards will go into effect on January 1, 2020.

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Discussion & Questions



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