

# 2016 Building Energy Efficiency Standards

# 2016 Standards Staff Workshop

Mazi Shirakh, PE  
Project Manager, Building Energy  
Efficiency Standards

June 24, 2014

# Content

1. Authority and Standards Update Policy Drivers
2. 2016 Standards Update Schedule
3. Standards Update Process
4. Life Cycle Costing (LCC) and Time Dependent Valuation (TDV)

Title 24  
2016  
Standards



# Authority & Process

**Public Resources Code (PRC 25402):** Reduction of wasteful, uneconomic, inefficient or unnecessary consumption of energy

- (a)(1) Prescribe, by regulation, lighting, insulation climate control system, and other building design and construction standards that increase the efficiency in the use of energy and water...
- Warren Alquist Act Signed into law in 1974 by Governor Ronald Reagan



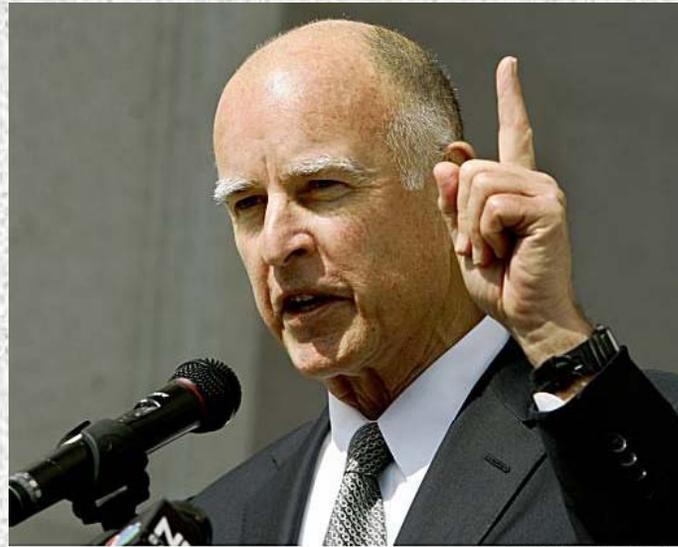
- Residential and Nonresidential Building Standards first adopted in 1978 and updated every 3-4 years
- The Standards are required to be cost effective
- The Standards include mandatory and prescriptive requirements, as well as performance approach
- The Standards are developed in an open public process

Title 24  
2016  
Standards



# Policy Drivers For Building Standards

- Governor's "Clean Energy Jobs Plan"
- Zero Net Energy: Residential by 2020 and Nonresidential by 2030
- CARB Climate Change Scoping Plan
- California Long Term Energy Efficiency Strategic Plan



Paul Chinn / The Chronicle

Title 24  
2016  
Standards



## More Efficient Buildings Also Result In:

- Green Job Creation
- Higher Paying Jobs
- Investment By Entrepreneurs
- Global Competitiveness



Require the manufacturing, design, installation, monitoring and maintenance of efficient systems and technologies, resulting in:

**“Most new jobs should and will be created in the private sector, but government can play an important role in establishing a favorable climate for job creation.”** *Governor Jerry Brown*

## Goals For Efficiency Standards for New Buildings:

- Establish a plan and timeline to make new homes and commercial buildings “Zero Net Energy”
- Highly efficient structures that use onsite renewable energy for all their electricity and natural gas needs
- Design new more efficient buildings that use half the energy they compared to the 2008 Standards home

**“Energy Efficiency is the cheapest, fastest, and most reliable way to create jobs, save consumers money and cut pollution from the power sector.”** *Governor Jerry Brown*



# Standards Development Public Review

## For 2013 Standards:

- An open and public process
- Convened more than 45 Industry stakeholder groups over several months to inform them of potential changes to the standards and to consider their input
- Held 15 Staff Workshops
- Responded to more than 2,000 public comments

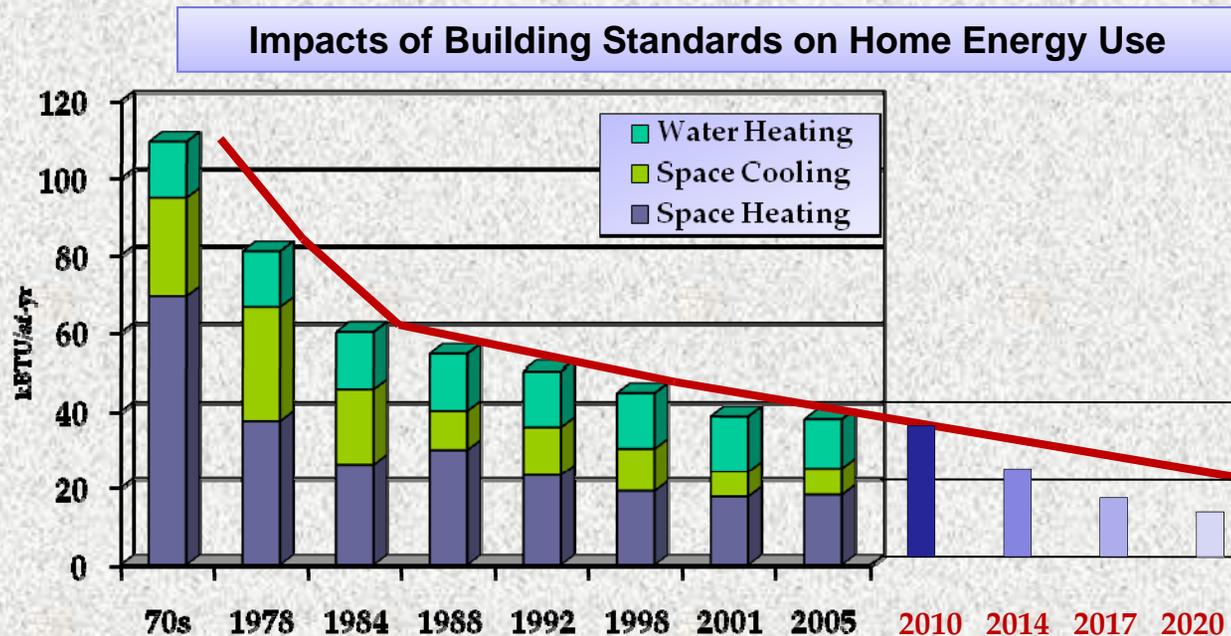


Title 24  
2016  
Standards



# Zero Net Energy Standards

- Achieve additional energy savings from building components regulated under Title-24 to reach ZNE goals
- Integrate onsite generation into building code to accomplish ZNE



Title 24  
2016  
Standards



## 2016 Standards Update Schedule

April 4, 2014	CBIA/CEC Standards Forum
May 2014	IOU CASE Stakeholder Meetings
June – Aug 2014	CEC Staff Public Workshops
November 2014	Draft 2016 Standards
January 2015	Release 45-day Language
April 2015	Release 15-Day Language
May 2015	Adoption at Business Meeting
January 1, 2017	Effective Date of the Standards

Title 24  
2016  
Standards



Dates in blue indicate the calendar week targeted - the event is not scheduled for this particular date

# 2016 Standards Staff Workshop Schedule

Staff Workshops	April 29 10:00 Hearing Room A	June 12 9:00 Hearing Room B	June 24 9:00 Hearing Room A	July 9 (NOTE: This is a Commissioner Workshop) 09:00 Hearing Room A	July 21 10:00 Hearing Room A	July 23 10:00 Hearing Room B (This may become a PM meeting)	August 6 10:00 Hearing Room A
Measures	TDV LCC	Opaque envelope U-factors HVAC and WH Equipment Efficiency Thermally Driven Cooling Door and Windows Switch Controls Fan efficiency Direct digital Controls HVAC Economizer Modifications Elevator Lighting and HVAC Controls Escalator and Moving Walkway Speed Controls	Residential Lighting Nonresidential Indoor Lighting Power LPDs Nonresidential Lighting Control and Partial On Occupancy Sensors Outdoor lighting LPAs Outdoor lighting controls, Including Bi-level controls	TDV LCC	HPAD/DCS Minimize Duct Losses Residential High Performance Walls Tankless Water Heaters Res HVAC Field Verification and Diagnosis	Residential ACM Nonresidential ACM PV Credit Whole House Fan Credit	CalGREEN

Title 24  
2016  
Standards



Dates in blue indicate the calendar week targeted - the event is not scheduled for this particular date

# 2016 Standards Update Process

## Standards Update Includes the Following Phases:

### Pre-Rulemaking

1. Stakeholder Meetings - IOU/POU CASE Teams
2. Staff Workshops – Draft Standards

### Rulemaking:

1. 45-day language
2. 15-Day language
3. Adoption Business Meeting



# 2016 Standards Update Process

## Pre-Rulemaking

### Stakeholder Meetings - IOU/POU CASE Teams

1. Held throughout the state by the utilities
2. Invite diverse group of stakeholders
3. One or two meetings per topic area
4. Present the CASE measure and seek comments
5. Consider the comments and modify the CASE reports
6. Submit all CASE reports to the Commission for staff workshops
7. The utility sponsors include, PG&E, SCE, SDG&E, So Cal Gas, SMUD, and LADWP



Title 24  
2016  
Standards



# 2016 Standards Update Process

## Pre-Rulemaking - Continued

### Staff Workshops

1. Held by staff at the Energy Commission
2. Open to the public
3. Generally one workshop per measure, sometimes two
4. Invite diverse group of stakeholders
5. Seek public comment on measures
6. The result will be the 2016 draft Standards



# 2016 Standards Update Process

## **Rulemaking :**

Presided Over By The Lead Commissioner

1. 45-day language hearing
2. 15-day language hearing

Adoption Business Meeting – Entire Energy Commission



# 2016 Standards – Life Cycle Costing

## Standards measures must be cost effective

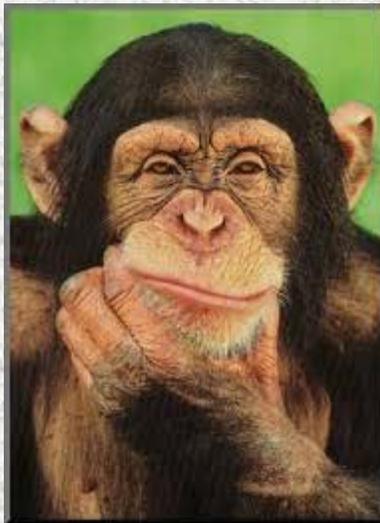
1. Using Life Cycle Costing Methodology (LCC)
  - i. Discounted cash flows for costs and benefits
  - ii. Accounts for maintenance costs/benefits
  - iii. Appropriate discount rates and life of measures - 30 years for residential measures
  
2. Time Dependent Valuation (TDV)
  - i. Value of gas and electricity changes depending on the season and the time of day
  - ii. 8,760 TDV multipliers for each hour of the year
  - iii. Favors measures that save energy during high demand periods



Title 24  
2016  
Standards



# Questions?



Title 24  
2016  
Standards

