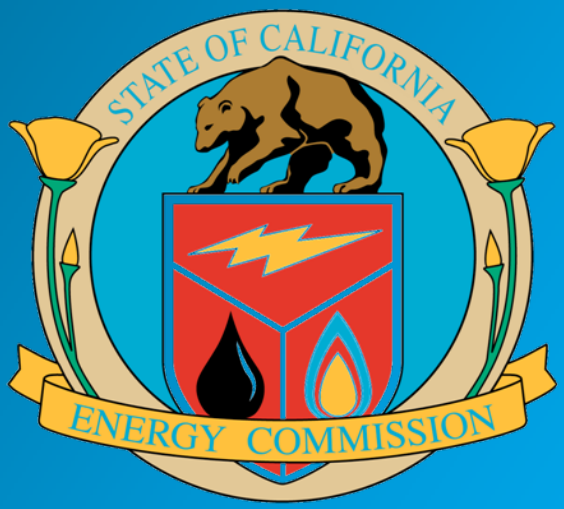
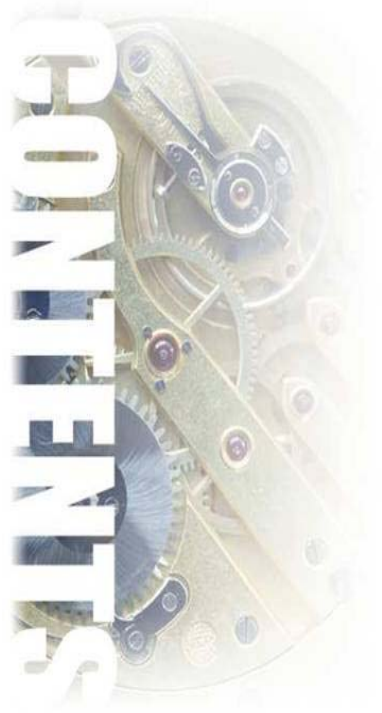


Title 24
2013 Standards

Building Efficiency Standards

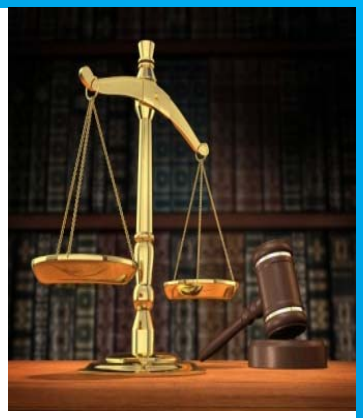
February 15, 2012

Contents



- Authority & Background
- Historical Impacts
- Standards Development Process
- Policy Drivers
- 2013 Standards Update Schedule
- 2013 Standards Highlights
- Reach Standards
- Stakeholder Feedback

Authority & Background



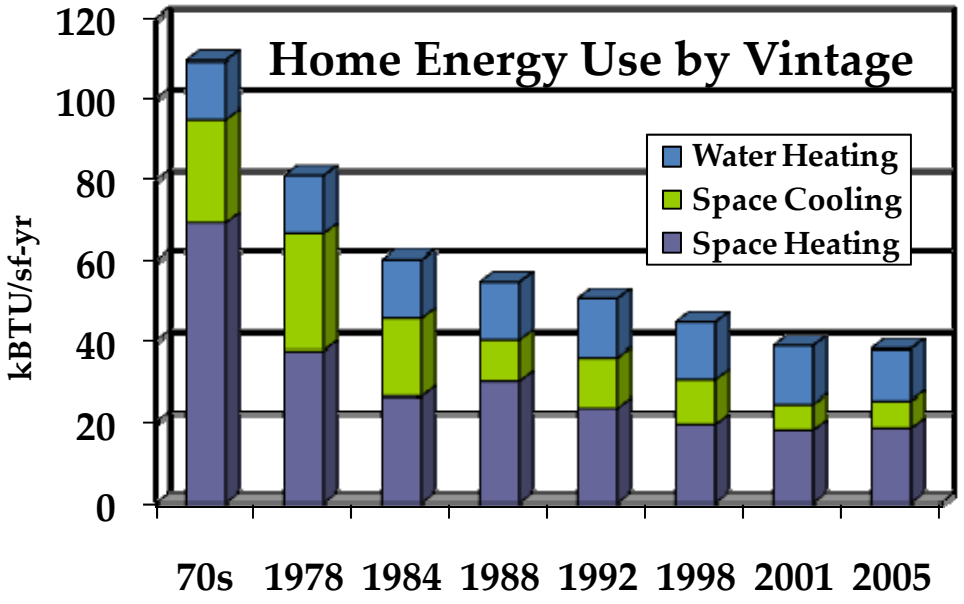
Public Resources Code (PRC 25402):
Reduction of wasteful, uneconomic, inefficient or unnecessary consumption of energy

> (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…

- Residential and Nonresidential Building Standards first adopted in 1978 and updated every three years
- The Standards are demonstrated to be cost effective
- The Standards are developed in an open public process

Historical Impact of Title 24, Part 6

- Ratepayers have save more than $65 billion in electricity and natural gas savings since mid-70s
- Californians pay 20 percent less on residential electricity bills than the average U.S. household
- Energy savings avoided the need to build 8 (500 MW) power plants since the mid-70s
- Reduced more than 250 million metric tons of GHG emissions (equal to removing 37 million cars from roads)



Impact of Title 24, Part 6 - 2013 Update

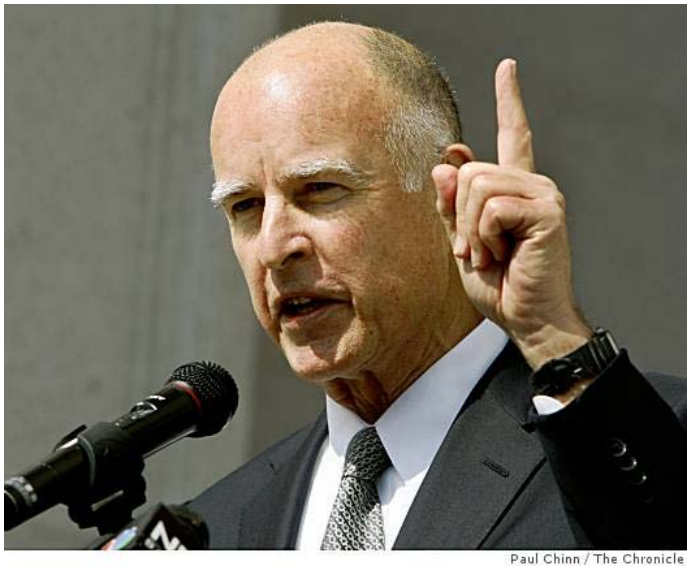
- New building standards projected to save home-owners and business owners an additional $1.68 billion over 30 years
- Avoid the need to construct at least 8 new power plants
- Save 200 Million Gallons of Water per year
- Avoid the release of more than 163 thousand metric tons of greenhouse gas emissions per year

Development Process - Title 24, Part 6

- Convened more than 45 Industry stakeholder groups over the last year
- Held 15 Workshops
- Responded to more than 1,000 public comments
- 45-day language submitted to CBSC
- 15-day language to be submitted to CBSC
- CBSC adopts entire Title 24 update
- Goes into effect one year later

Policy Drivers

- 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
- SB 1 Goals: 3,000 MW of solar PVs statewide and PVs on 50% of new homes



Paul Chinn / The Chronicle

Title 24
2013
Standards

JERRY BROWN Clean Energy Jobs Plan

More Efficient Buildings…

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

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

"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*

Title 24
2013
Standards

Clean Energy Jobs Plan

New Efficiency Standards for New Buildings

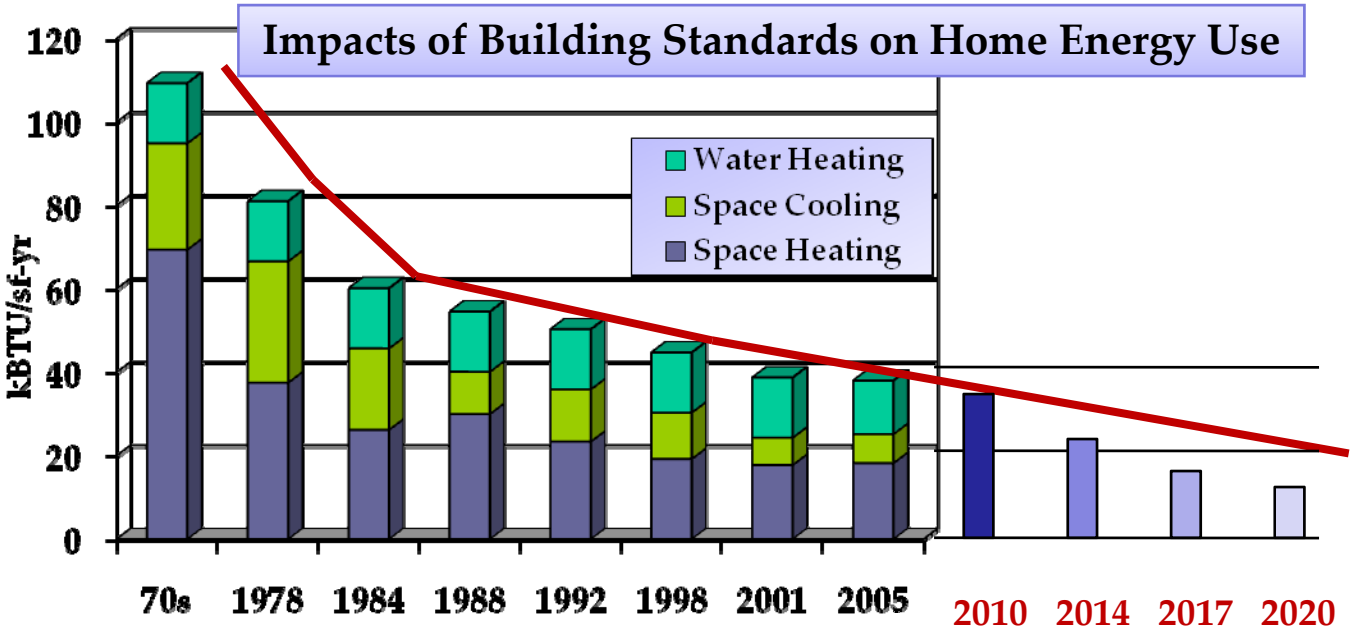
- Design new more efficient buildings that use half the energy they use today
- Establish a plan and timeline to make new homes and commercial buildings "Zero Net Energy"
- Highly efficient structures that use onsite renewables to "get to zero"

"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

Title 24
2013
Standards

Zero Net Energy Standards

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



Title 24
2013
Standards

2013 Standards Update Schedule

Feb 24, 2012	Publish Proposed Standards (45 day language)
Mar 12 and 13, 2012	Efficiency Committee Hearing(s)
Apr 11, 2012	Business Meeting – 45 day Language Status
Apr 23, 2012	Publish 15 day language
May 9, 2012	CEC Business Meeting – Adoption
October, 2012	CBSC Adoption of Full Title 24 2013 Update
Jan 1, 2014	2013 Update Becomes Effective

2013 Standards Highlights

- 30% on Residential & Nonresidential efficiency improvements compared to 2008
- First update to address Zero Net Energy goals
- Photovoltaics in code for the first time as compliance option and "Solar-ready" requirements
- Process energy in Supermarkets, Parking Garages, Commercial Kitchens, Data Centers, and Laboratory Hoods covered for the first time
- Largest water savings in any code cycle
- Simplification and streamlining of compliance documentation

2013 Standards Highlights

Cost of Residential Measures

- Average costs per home range from $2,100 to $4,300 depending on climate zone
- Statewide costs of $3,200, total life cycle cost savings of $8,554 for a net savings of $5,354 for a residential building over the 30 year life of the building
  - Statewide levelized life cycle costs of $15 and savings of $36 for a "typical" residential unit per month

Cost of Non-residential Measures

- All measures are cost-effective using Life Cycle Cost

Reach Standards for Title 24

- Voluntary energy efficiency standards beyond mandatory levels – will be included in California Green Building Standards
- More advanced standards developed to facilitate the transition to Zero Net Energy buildings
- Signal to the market how building standards will advance over time, allowing the industry to adapt and innovate to meet future requirements
- Consistent with the reduction targets for future Title 24 updates
- Can be adopted by local jurisdictions

Reach Standards for Title 24

Part 11 – Residential Voluntary

- Tier I: 15% beyond Title 24, Part 6
- Tier II: 30% beyond Title 24, Part 6
- Prerequisites:
  - HERS "Design Rating" - whole building HERS rating without all requirements of HERS Whole House rating (for existing homes)
  - Quality Insulation Inspection
  - High Efficacy lighting – with hard wired lighting & occupancy controls in all functional areas, plus *ENERGY STAR* light kits in all ceiling fans
- Energy budget cap for electricity consumption equivalent to 10,000 kWh/yr

Part 11 – Nonresidential Voluntary

- Tier I: 10% beyond Title 24, Part 6
- Tier II: 20% beyond Title 24, Part 6

Stakeholder Feedback

- Residential Standards – CBIA
  - Higher first costs than previous standards cycles during down economy
- Residential roof deck insulation
  - Change in building construction practice
- Residential wall insulation - CBIA
  - Change in building construction practice
- Residential hot water pipe insulation
  - Change in construction practice
- Nonresidential cool roof requirements - ARMA
  - Continued increases in cool roof requirements without sufficient time for roofing industry to develop code-compliant products

Questions?