



# 2013 Building Energy Efficiency Standards Staff Workshop

Mazi Shirakh, P.E.

Project Manager, Building Energy Efficiency  
Standards

High Performance Buildings and Standards  
Development Office

California Energy Commission

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## Policy Goals

- The following policy documents establish the goal for new building standards to achieve "net zero energy" levels by 2020 for residences and by 2030 for nonresidential buildings
  - 2008 CPUC/CEC Energy Action Plan
  - 2008 CARB Climate Change Scoping Plan
  - 2008 CPUC California Long Term Energy Efficiency Strategic Plan
  - 2007 CEC Integrated Energy Policy Report (IEPR)
- A 2005 Governor's Executive Order established GHG reduction goals for California for 2020 and 2050. 2006 AB 32 codified the 2020 GHG emission reduction target into law.



## Policy Goals

- The Green Building Standards Code published in July 2008 and updated for publication in 2010, codifies voluntary "reach" standards for energy efficiency, as compared with the base Standards
- Governor Jerry Brown's "Clean Energy Jobs Plan" vision the zero net energy goals
  - [http://www.jerrybrown.org/sites/default/files/6-15%20Clean\\_Energy%20Plan.pdf](http://www.jerrybrown.org/sites/default/files/6-15%20Clean_Energy%20Plan.pdf)



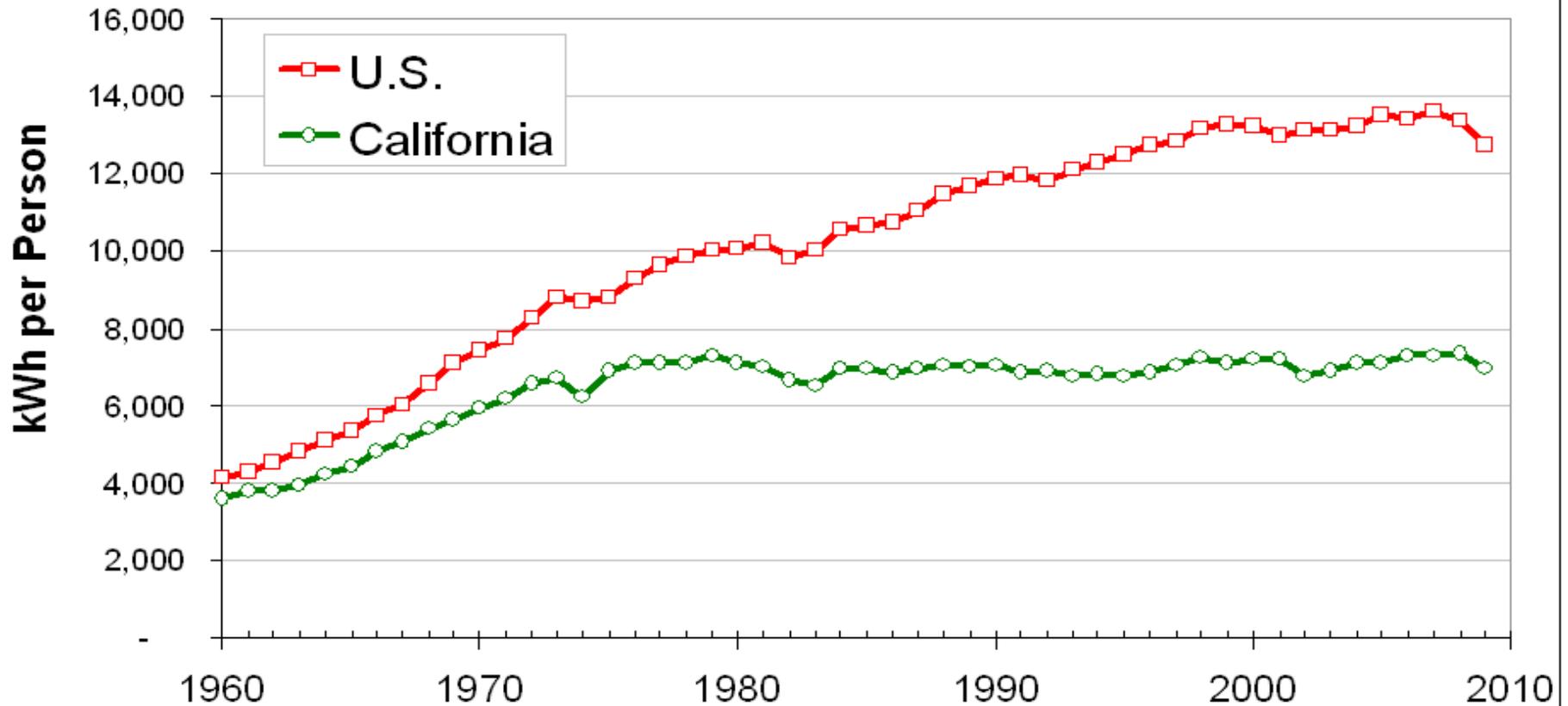
## Major Collaborators

- PGC-funded Codes and Standards
  - CASE Initiatives by PG&E, SCE, SDG&E, and SCG.
- PIER Focused Research
  - Views Standards as a primary delivery mechanism
  - Substantial Research for 2013 Standards
- Public process with active stakeholder input



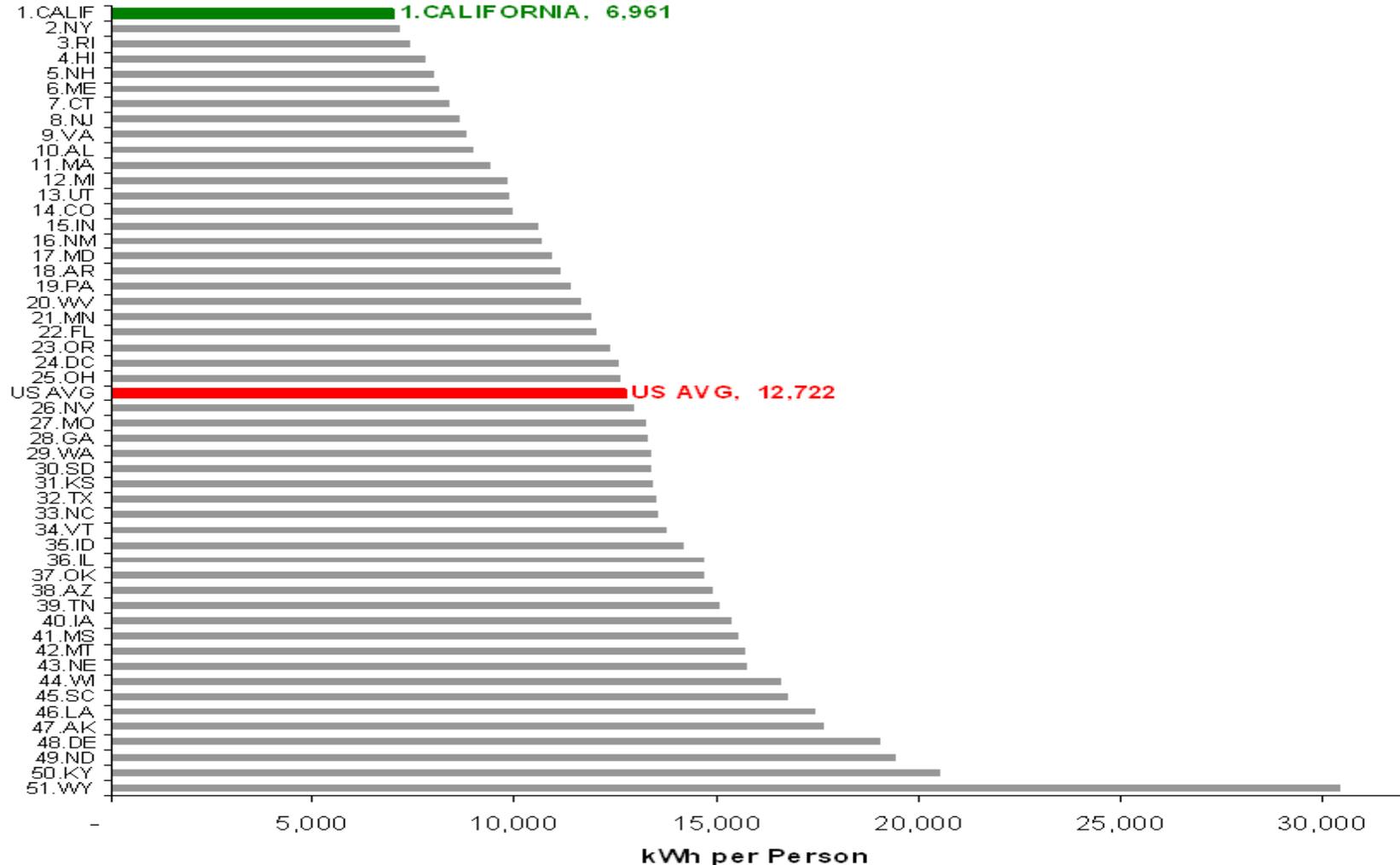
Building and Appliance Standards have contributed to relatively flat per capita electricity consumption in California since 1974. Source: US Energy Information Administration (EIA)

### California and US per Capita Electricity Consumption





### 2009 Electricity Consumption per Capita by State





## 2013 Title 24 (Part 6) Update: Policy Objectives

- Achieve big step towards Zero Net Energy codes in 2020 (res) & 2030 (nonres) - 15-25% improvement in Standards
- Include CEC Approved Reach Standards - propose for Energy Chapter of Title 24, Part 11 (GBSC)
- Align with CBSC triennial code update



## 2013 Title 24 (Part 6) Update:

- Address compliance & enforcement issues
  - ✓ Simplify Standards
    - Migrate some prescriptive measures to mandatory, such as duct sealing, refrigerant charge, airflow measurement
    - Review & reduce exceptions
    - User-friendly compliance forms; create online interactive forms
    - Simplify performance software interface for alterations projects
  - ✓ Improve / increase third party field verification & acceptance requirements
- Improved electronic record keeping, CEC central document repository for residential and nonres buildings
- Consider measures that integrate efficiency with demand response (e.g., controllable ballasts)



## 2013 Title 24 (Part 6) Priorities

- Include non-energy related GHG costs/benefits in cost effectiveness analysis
  - ✓ Equivalent GHG emission reduction impacts of cool roof materials (benefits of reflecting short wave radiation, which avoids atmospheric capture)
  - ✓ Direct GHG emissions from refrigerant leakage in large refrigeration systems
- Water saving measures & water costs for power production
- Consider roof deck insulation in residential buildings
- Encourage proper building orientation
- Consider how PV systems should be included – Report to Legislature required by SB1



## 2013 Title 24 (Part 6) Update Schedule

<p><b>Solicitation/Procurement</b> Complete RFQ &amp; contract procurement for 2011 Standards Technical Support; develop measure templates for 2011 Standards to document the benefits and the impacts of the proposed measures</p>	Nov 2008 - Feb 2010
<p><b>Pre-Rulemaking Activities: Phase 1</b>  <b>Phase 1A</b> - Begin CASE Studies: Prioritize topic areas that contribute most to project goals and complete initial measure analysis  <b>Phase 1B</b> – Foundational work (TDV, LCC, Weather) and initial software development  <b>Phase 1C</b> - 2008 Standards Cleanup – Identify Standards and reference document sections that need clarification or revision and prepare initial mark-ups</p>	Nov 2009 - Oct 2010
<p><b>Pre-Rulemaking Activities: Phase 2 - CASE Studies Phase 2</b>  1. First staff workshop - present info on weather data, TDV and cost effectiveness methodology  2. Stakeholder meetings – conduct as necessary to obtain comment on specific topic areas of proposed changes</p>	Oct 2010 - Dec 2010
<p><b>Pre-Rulemaking Activities:</b>  <b>Phase 3A - Draft Standards and Rulemaking Documents</b>  Reconcile comments in preparation for draft regulation workshops, including analysis rework and markup of the Standards documents;  <b>Phase 3B</b> - Conduct workshops for presentation of proposed draft revisions to Standards documents, incorporate the comments from the workshops into the proposed <b>first draft Standards</b> documents;  <b>Phase 3C</b> – Prepare the second draft language; draft rulemaking documents; close pre-rulemaking Docket.</p>	Feb - Apr 2011 Apr - Jul 2011 Jul - Sep 2011
<p><b>Rulemaking Activities: Phase 4 – Adopt Standards and Associated Documents</b>  Open Rulemaking Docket; file Rulemaking documents with CBSC; develop <b>45-Day and 15-Day Language Standards documents</b>; develop and complete Administrative Procedures Act process requirements for rulemaking proceeding; complete and file Fiscal and Economic Impact Analysis and Environmental Analysis documents with required agencies</p>	Sep 2011 - Mar 2012
<p><b>Adoption</b> - CEC adoption of 45-Day or 15-Day Standards and associated regulations; close Rulemaking Docket</p>	<b>March 1, 2012</b>
<p><b>Post adoption Activities</b>  Prepare and develop Final Statement of Reasons and other rulemaking documentation for CBSC approval</p>	Feb 2012 - May 2012
<p><b>Compliance Manuals and Software Development</b>  Develop and finalize the Compliance manuals  review and finalize performance approach software</p>	Mar 2012 - Dec 2012 Jun 2011 - Dec 2012
<p><b>CBSC Publication Process – All T24 Parts</b>  Publication preparation  180 day statutory waiting period</p>	Feb 2013 - <b>July 2013</b> July 2013 - Jan 2014
<p><b>Effective Date</b></p>	<b>January 2014</b>



## How Standards are Updated

- Life cycle costing (LCC) for adopted measures based on; LCC reports presented in the November 16, 2010 staff Workshop:
  - Updated weather files
  - Updated Time Dependent Valuation (TDV) values for Base and Reach Standards
  - Updated LCC methodology
- Before the 2013 Cycle – Staff held public 15-20 days of public workshops and received input from the stakeholders; all the vetting happened at the workshops



## 2013 Standards Update

### IOUs Support and the Stakeholder Meetings

- The 2013 Standards process is different
- The Statewide IOUs (PG&E, SCE, SDG&E, and SCG) have been holding stakeholder meetings throughout the state since Spring of 2010 in support of the 2013 Standards update. This will result in the first 2013 Draft Standards
- Staff will hold 10 or 11 days of workshops in Spring of 2011 to present the draft Standards at the conclusion of the IOUs' stakeholder meeting process.



## 2013 Standards Update Staff Workshops

- April 4, 2011 - Res and Nonres Lighting
- April 11, 2011 – Nonres ventilation; boilers and data centers
- April 18, 2011 – Nonres Acceptance testing; design phase commissioning; refrigerated warehouses; super market refrigeration; solar ready buildings; and solar water heating
- April 27, 2011 – Nonres HVAC, cooling towers; VAV systems; EMCS; reheat systems; and air compressors
- May 24, 2011 – Nonres water and space heating; radiant cooling; nonres envelope measures including roofs, walls, and fenestration topics; **res DHW**
- **May 31, 2011** - Res infiltration and testing; windows and overhangs; mandatory airflow; return duct sizing; duct sealing; night ventilation; nonres radiant cooling and evap cooling



## 2013 Standards Update Staff Workshops

- **June 9, 2011** – Res; upgradable setback thermostats; DHW distribution and showerheads; DWH standby loss and WH ready measure; nonres fenestration update.
- **June 10, 2011** – Res cool roofs and roof deck insulation; nonres envelope air leakage; wall insulation and mass; aged reflectance formula; cool roofs and insulation; roofs for unconditioned buildings
- **June 14, 2011** – Cancelled
- **June 21, 2011**– Res and nonres ACM Manual updates
- **July 12 or 15 2011** - Res alternative component packages; zone air conditioning; higher mandatory measures for ceilings, walls, and roofs; advanced envelope assemblies; HVAC refrigerant charge; Nonres hotel guest room controls; Res and nonres changes to Administrative Regulations.
- **July 21-22, 2011**– Res and nonres Reach Standards



## Software Development Objectives

- Collaborative development – use of Program Advisory Committee to build consensus, make joint recommendations to CEC
  - Open source software license agreements
  - QA procedures for software development, testing, documentation
  - Software and data available on “the cloud”
- Get compliance software completed as close to the March 2012 adoption date as possible



## Software Development Schedule

RFQ Pre-bid Conference	March 24, 2011
RFQ Proposals Due	April 18, 2011
RFQ NOPAs	May 6, 2011
Contract(s) Start Date	July 1, 2011
Software Requirements	November 2011
Compliance Software – test version	March 2012
Simplified Compliance Tool – test version	August 2012
Compliance Software – for distribution	December 2012
Simplified Compliance Tool – for distribution	December 2012



## 2013 Standards Update

Send lighting related comments by June 7, 2011 to:

Mazi Shirakh

California Energy Commission

1516 Ninth Street, Mail Stop 37

Sacramento, CA 95814

916-654-3839 Phone

[mshirakh@energy.state.ca.us](mailto:mshirakh@energy.state.ca.us)