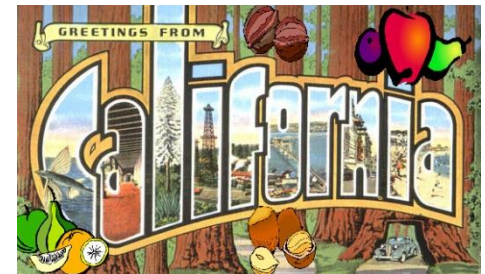




Utility Credit for Advancing Building Energy Codes – Recent Updates from Practice; Perspectives from the Golden State

Randall Higa
*Codes and Standards Program Manager
Southern California Edison*



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About Southern California Edison

- ❖ **One of the Country's Largest Investor-Owned Utilities**
 - 50,000 square miles
 - 14 million residents

- ❖ **Environmental Leadership**
 - **2007 – 11 EE Results**
 - ✓ More than 8.6 billion kWh— Enough to power over 1.2 million homes for an entire year
 - ✓ Resultant greenhouse gas emission reduction = 3.9 million metric tons -- Equivalent of taking 750,000 cars off the road

- ❖ **A National Leader in Energy Efficiency**
 - 1st or 2nd in the nation for electric energy savings in each of the last 12 years
 - 11 National US EPA ENERGY STAR® Awards



✓ **Leading U.S. purchaser of renewable energy**

✓ **Largest DR portfolio in California**

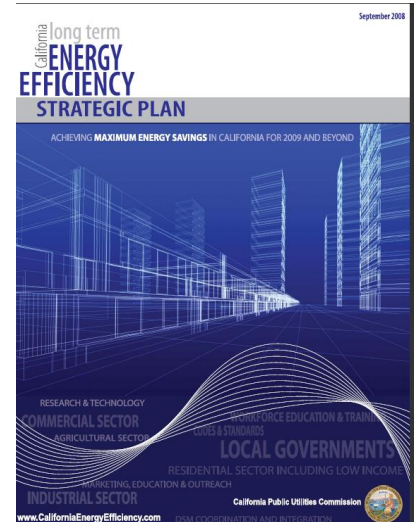
✓ **Edison SmartConnect™ installing 5 million smart meters**

California Long Term Energy Efficiency Strategic Plan

7. CODES AND STANDARDS

7.1 VISION

A broad range of aggressive and continually improving minimum and higher voluntary sets of energy codes and standards will be adopted to greatly accelerate the widespread deployment of zero-net energy and highly efficient buildings and equipment. The effectiveness of codes and standards will be enhanced by improved code compliance as well as coordinated voluntary efficiency activities.



California Statewide Codes and Standards Program for 2013-2014

Five Subprograms

❖ Resource

- Building Codes: CASE Studies and Advocacy
- Appliance Standards – State and Federal
- Compliance Improvement
- Reach Codes: Local Government Ordinances

❖ Non-Resource

- Planning and Coordination (New!)



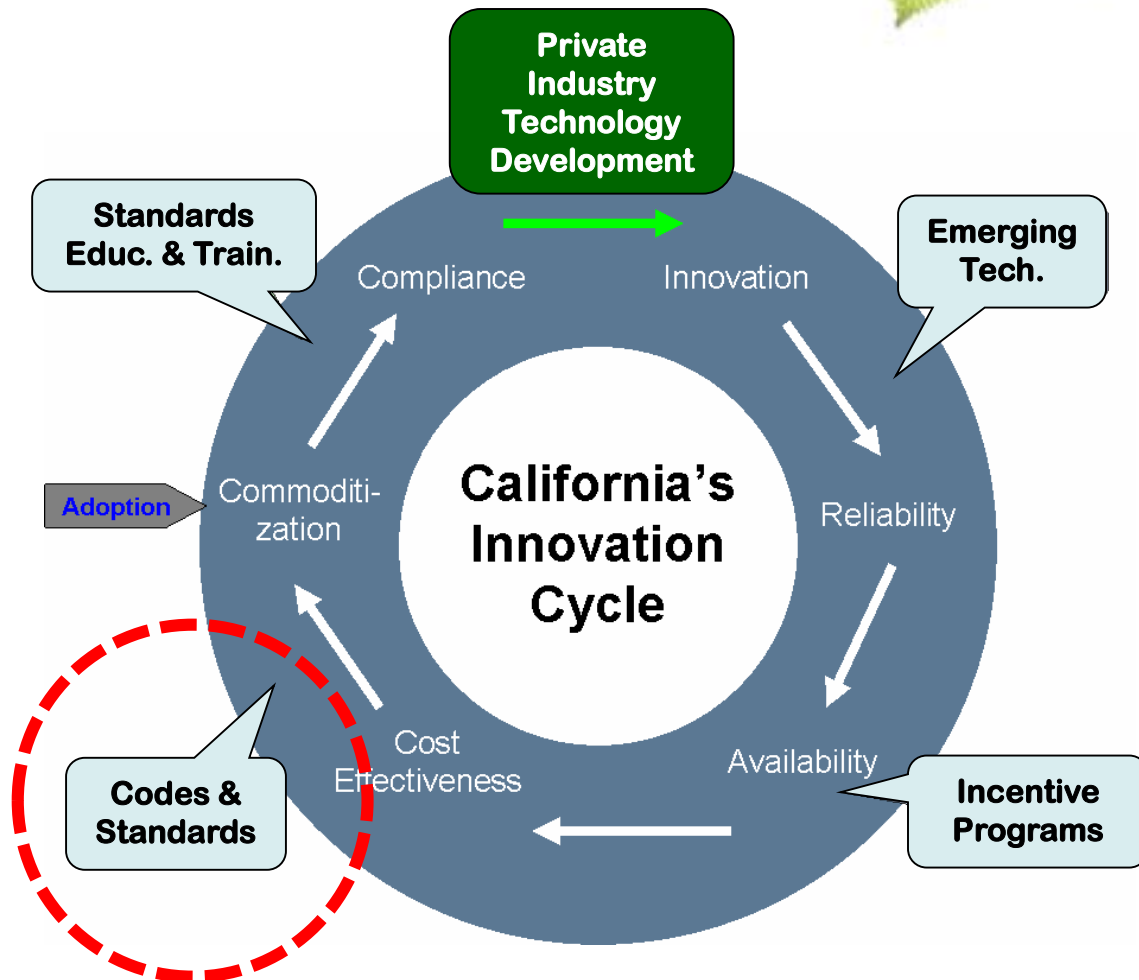
Advocacy and Compliance Improvement

<p>California</p>	<p>1. California Building Codes (Title 24) First building codes were adopted in 1978</p> <ul style="list-style-type: none"> ▪ Updated every 3 to 4 years <p>Recent code activities:</p> <ul style="list-style-type: none"> ▪ Time Dependent Valuation (higher energy value for peak hours) ▪ 2013 Title 24 adopted (effective 1/1/2014); 2016 in development
	<p>2. California Appliance Regulations (Title 20) First appliance efficiency regulations were adopted in 1976</p> <ul style="list-style-type: none"> ▪ Updated periodically; 10 CASE currently in development <p>Recent code adoptions</p> <ul style="list-style-type: none"> ▪ Televisions, battery chargers, walk-in coolers and freezers
<p>Federal</p>	<p>3. Federal Appliance Regulations Federal appliance efficiency regulations are developed by the US DOE and preempt California Title 20 regulations</p> <ul style="list-style-type: none"> ▪ HVAC, commercial refrigeration, lighting, labeling, white goods, electronics, etc.

80% of savings from C&S

Overview of California Codes & Standards

- ❖ California has aggressive building codes and appliance efficiency standards
- ❖ Utility EE programs provide technical assistance to State agency consideration of next-generation codes and standards
- ❖ Utilities do not enforce C&S, however they aggressively support “culture of compliance” through various efforts





Advocacy – Building and Appliance Codes

- ❖ **Title 24:** Develop Codes And Standards Enhancement (CASE) studies to document cost effectiveness and feasibility arguments
 - Support public process by responding to CEC and industry questions
 - Support post-adoption activities such as Compliance Manual development, Acceptance Testing and code language clarification
- ❖ **Title 20:** Develop CASE studies, support public process and post adoption activities, similar to Title 24
- ❖ **US DOE:** Review and analyze US DOE public documents, conduct research, coordinate with other advocates, and develop comments



Compliance Improvement

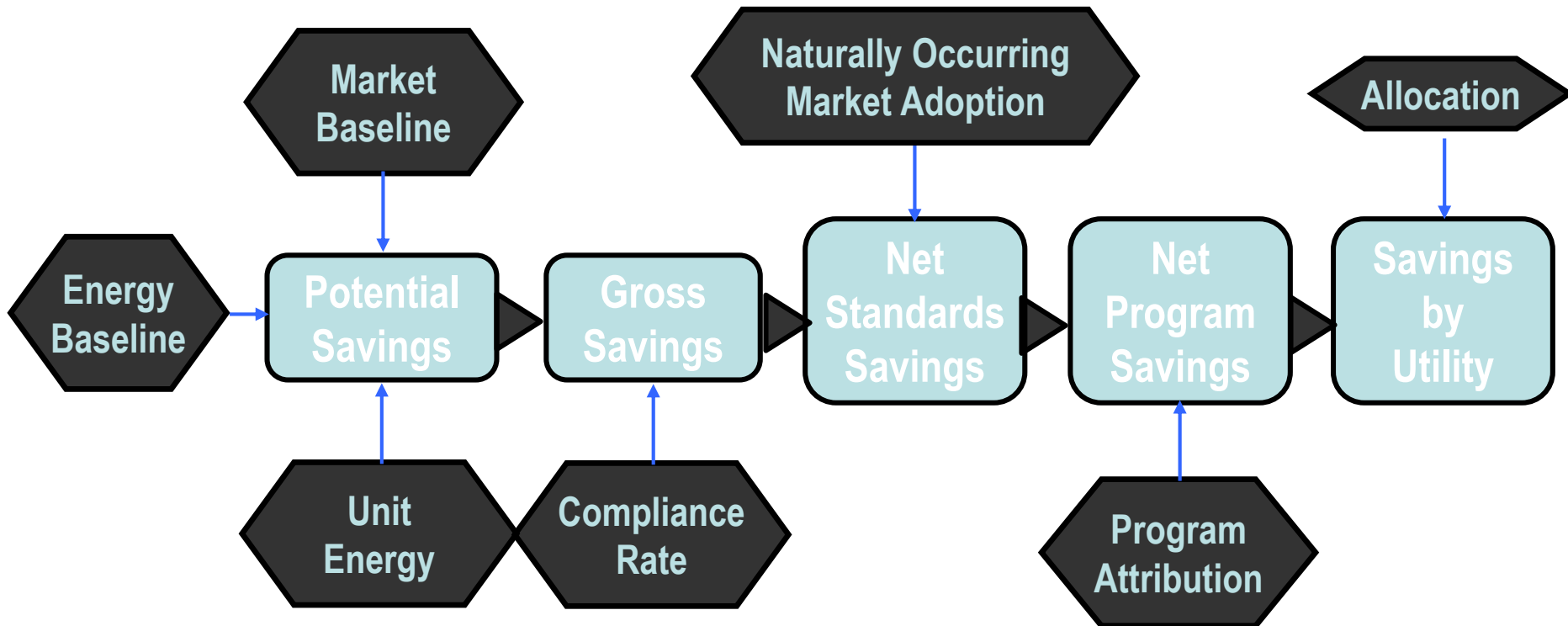
- ❖ Outreach, education and training to industry groups engaged in compliance with building and appliance regulations
- ❖ Major Activities include training and support for building officials; develop building department best practices; establish certification programs for energy analysts and electrical contractors
- ❖ Extension of Advocacy: Increases savings from building and appliance standards subprograms as utilities are credited with “verified” savings for adopted codes that they influence
 - CASE
 - Composite for Remainder
- ❖ Utilities will remain outside of enforcement role, but continue to encourage culture of compliance through EE program activities



Reach Codes

- ❖ Develop cost-effectiveness analyses in support of local government adoption of ordinances beyond Title 24 and support CEC approval
- ❖ Credit only given to codes that are enforceable by law; “voluntary” programs such as LEED, CHPS, Energy Star, etc., do not qualify
- ❖ Customers are still eligible for incentive programs (using the Title 24 baseline) if subject to a reach code
- ❖ Utilities are credited with “verified” savings for adopted reach codes that they influence

Codes and Standards Program Energy Savings M&V Methodology



Challenges and Opportunities

❖ Measurement and Evaluation

- Compliance baselines, sample sizes, access to building department records
- Influence by utilities (Codes and Standards program and incentive programs)
- Existing buildings

❖ Compliance Improvement and Reach Codes

- Evaluation for energy savings TBD

❖ Incentives for Code Compliance

- Exploring the use of incentives to augment code compliance (*CPUC D. 12-05-015, 2013-2014 Program Cycle*)

❖ Title 24 Registry and Repository

- All compliance forms to be submitted to centralized repository
- May provide access to compliance documentation for program evaluation

❖ Planning and Coordination Subprogram

- Opportunity to better coordinate energy efficiency portfolio with a better hand-off from incentive programs to codes

Parting Thought – Perspective from 20 Years Ago

“An interesting consequence of the synergy between DSM and standards is that, over the long run, it may be impossible for program evaluators to establish what fraction of the efficiency potential was realized through DSM and what fraction through building codes. For example, if a DSM program achieves a steadily increasing market share over a 3-year cycle, allowing standards to be promulgated at that level in the fourth year, can the savings from the standard be attributed to the DSM program?”

“The potential savings from DSM, as distinguished from other policy mechanisms, can therefore never be pinned down, either prospectively or after they have occurred. Program planners must be satisfied with the understanding that DSM can be part of a coordinated energy policy that can define and achieve the technical potentials.”



Thank You!!

More detail on energy savings from Codes and Standards programs: www.calmac.org; search on “codes and standards”

Randall Higa
Codes and Standards Program Manager

Southern California Edison
randall.higa@sce.com

