

Commissioning Summit

California Commissioning Collaborative

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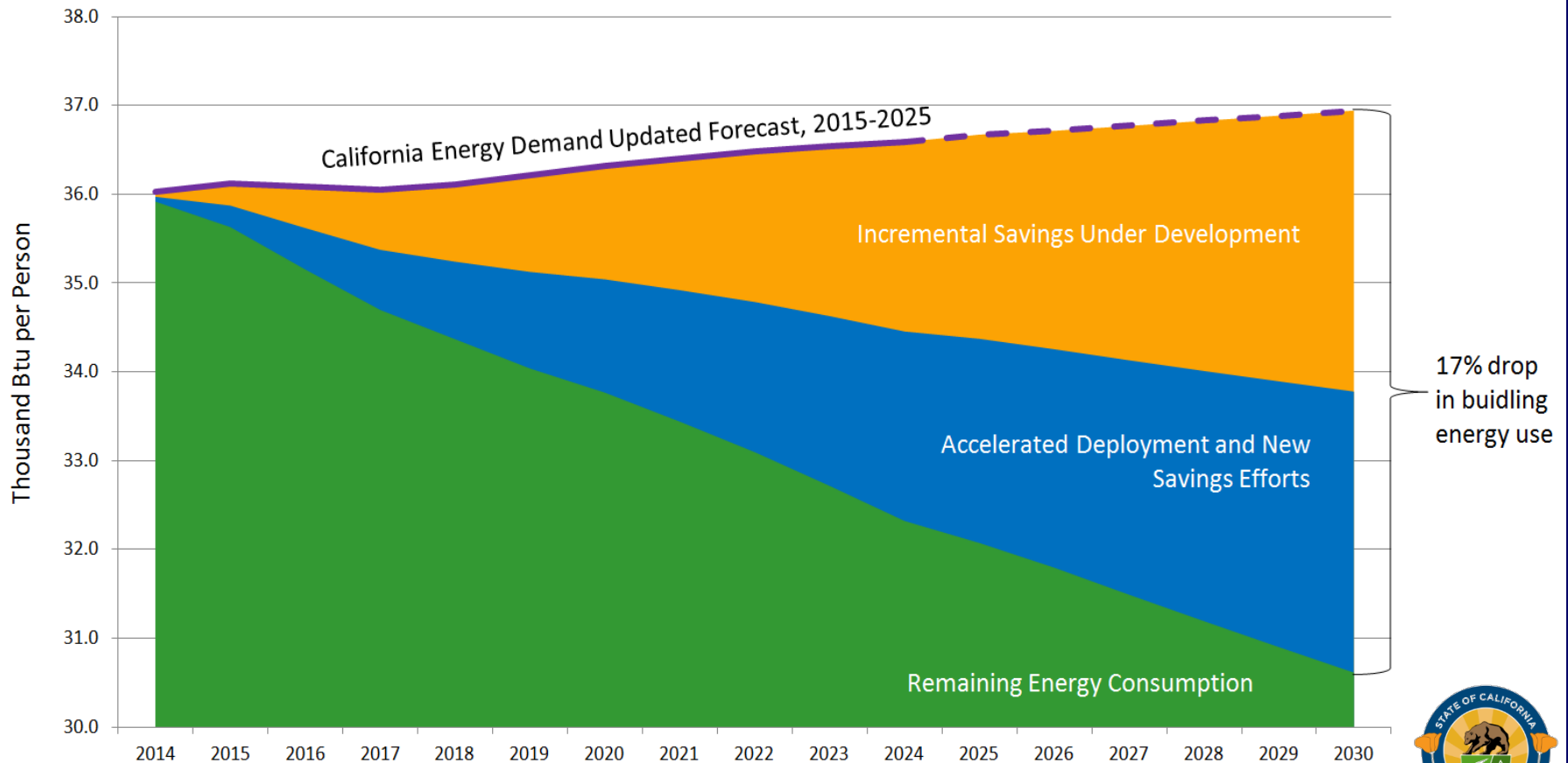
California's 2030 Energy Goals

- Governor Brown's inaugural address, January 2015. By 2030:
 - 50% of electricity from renewable sources
 - Cut petroleum use by vehicles in half
 - Double EE savings in buildings; cleaner heating fuels
- Ensure CA trajectory for its long term climate goals
 - Reduce GHG emissions to 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050
- Necessitates additional focus on existing buildings in order to achieve this level of energy savings



Reduced Energy Consumption by Doubling Energy Savings

Reduction in Building Energy Consumption per Capita



Source: CEC Existing Buildings Energy Efficiency Action Plan, March 2015 draft



Existing Building EE Action Plan

- Current efficiency savings trajectory is insufficient to achieve CA's clean energy and emissions reduction goals
- Unlocking EE potential of existing buildings requires market focused solutions
 - Data analytics to support consumer decisions
 - Research to better predict behavior and pricing impacts
 - Goals are too large for just ratepayer & taxpayer funding
 - Leveraging private capital will be required



Existing Building EE Action Plan

- Plan focuses on foundational efforts to ensure a credible environment for implementation of energy efficiency at scale
- Success = EE consideration and action embedded into all energy decisions



Vision and Goals Framework

VISION

Robust, sustainable efficiency marketplaces that deliver multiple benefits to building owners and occupants through improvements, investments and operation of existing homes, businesses, and public buildings.

Resulting In: Doubling of energy savings from building energy efficiency projects in California. This is equivalent to a 17% reduction of statewide building energy use from 2014 levels by 2030.

GUIDING PRINCIPLES



10-YEAR GOALS



PRIMARY STRATEGIES

- 1.1 State and School Buildings
- 1.2 Benchmarking and Disclosure
- 1.3 Building Performance Assessment Tools
- 1.4 Energy Asset Ratings
- 1.5 Building Energy Efficiency Standards
- 1.6 Plug Load Efficiency
- 1.7 Local Government Leadership
- 1.8 Efficiency as a Clean Energy Resource
- 1.9 Existing Building Efficiency Collaborative

- 2.1 Data for Improved Decisions
- 2.2 Customer Focused Energy Efficiency

- 3.1 Streamlined and Profitable Industry
- 3.2 Performance Driven Value
- 3.3 High Performance Workforce and Education
- 3.4 Zero Net Energy Retrofits

- 4.1 Real Estate Value
- 4.2 Marketing, Education and Outreach

- 5.1 Foster Private Capital Market
- 5.2 Asset Based Financing
- 5.3 Borrower-Based Financing
- 5.4 Integrated Delivery of Efficiency Solutions, Finance & Utility Incentives
- 5.5 Government Building Finance Mechanisms
- 5.6 Leveled Tax Playing Field
- 5.7 Deeper Subsidies for Low Income Households

Goal 1 - Proactive and Informed Government Leadership in EE

Objective: Policies, initiatives and programs lead a long-term commitment to achieve EE at scale

- Government Leadership by Example
 - Local Government Challenge Program
- Nonresidential Energy Benchmarking and Disclosure
 - Large, nonresidential buildings initially
- Modernize Assessments, Asset Ratings and Labels

Goal 1 - Proactive and Informed Government Leadership in EE

Objective: Policies, initiatives and programs lead a long-term commitment to achieve EE at scale

- Codes and Compliance
 - Assess complexity of code
 - Clarify for existing buildings including multifamily properties
 - Strategies to improve code compliance levels
 - Number of compliance forms
- Collaborative body to lead and coordinate progress toward energy efficiency across the energy agencies

Goal 2 - Data Drives Informed Decisions

Objective: Building owners and residents expect EE services informed by the full range of relevant information

- Increased accessibility and availability of energy use data is foundational to improving existing buildings
 - Data analytics rapidly evolving
 - Customer specific insight
 - Monitoring and persistence of savings
 - Standardized protocols and data interchange
 - Energy use baselines for policy

Goal 3 - Building Industry Delivers Innovation and Performance

Objective: A robust and sustainable building industry drives and satisfies demand

- Performance-driven industry and programs
 - Industry Partners Programs
 - Performance Assurance
 - Incentives tied to Performance
- High-performance workforce, education and training
- Explore and encourage zero net energy retrofits

Goal 4 - Californians Recognize and Benefit from the Value of Efficiency Upgrades

Objective: Building values reflect energy performance and associated benefits

- Adopt property asset-related energy characteristics in building valuation
 - Introduce uniform property valuation approaches
 - Evaluate Appraisal Institute's Green Addenda
 - Support development and deployment of Green Leases
- Energy performance information included in property listings
- Develop best practices for targeted ME&O

Goal 5 - Solutions are Accessible and Affordable for all Californians

- *Objective: Efficiency is an integral part of routine transactions and readily financed*
- Database of finance payment and project performance informs capital markets for risks & returns
- Ensure availability of financing matched to building trigger points
- Incorporate EE into the mortgage valuation and underwriting process
- Leverage PACE programs as appropriate

Goal 5 - Solutions are Accessible and Affordable for all Californians

- *Objective: Efficiency is an integral part of routine transactions and readily financed*
- Encourage new investment cost recovery mechanisms to combat split incentive problem (e.g. tenant meter-based, green leases).
- Expand funding options for local and state governments, and schools
- Expand funding resources for revolving funds
- Promote expanded use of energy service agreements

Thoughts for Commissioning stakeholder engagement

- RCx includes data collection, baselining and savings attribution processes that are the same/similar to those needed to implement performance-based efficiency programs (e.g. meter-based savings approaches)
- Cx in code includes efficiency documentation processes that could be considered a compliance option (instead of separate compliance forms)

Thoughts for Commissioning stakeholder engagement

- RCx investigations could be required as part of benchmarking & audit ordinances, project financing qualifications
- RCx investigations could be used in energy asset rating processes to determine asset improvement potential (e.g. “your score is **X** now but it could be **Y** with RCx”)

Discussion

Thank You

