



WELCOME

Draft Action Plan Comprehensive Energy Efficiency Program for Existing Buildings Public Workshop

Friday, June 28, 2013
Los Angeles



Welcome and Agenda

Dave Ashuckian

Deputy Director
Efficiency and Renewable Energy Division
California Energy Commission



On-Site Housekeeping

- Restrooms
- Emergency Exits
- Food



Workshop Agenda

**Monday
June 24
San
Francisco**

- Data Reporting and Management
- Foundational ME&O
- Foundational Workforce Resources
- Financing Mechanisms

**Tuesday
June 25
Fresno**

- Residential Upgrades
- Energy Efficiency in Property Valuation
- Potential Mandatory Ratings and Basic Upgrades
- Standards Compliance and Enforcement

**Friday
June 28
Los
Angeles**

- Nonresidential Standardized Tools
- Small/Medium Commercial Building Upgrades
- Public Sector Leadership
- Potential Mandatory Statewide Energy Use Disclosure for Largest Commercial and Public Buildings



Next steps

- Last Draft Action Plan Workshop – Friday, June 28
- Public Comment Period Ends – Friday, July 12
- Revise Draft Action Plan – July/August
- Potentially Hold Workshop Action Plan Gaps – July/August
- Potentially Hold Workshop Final Action Plan – August
- Adopt Final Action Plan – Fall 2013



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Opening Comments

Robert Weisenmiller, Chair
California Energy Commission



Opening Comments

Andrew McAllister, Commissioner
California Energy Commission



Opening Comments

Simon Baker
California Public Utilities Commission



Energy Commission-Identified Action Plan Gaps

- Program Funding
- Multifamily Programs
- Low-Income Programs
- Plug Loads
- Cost-Effectiveness



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COMPREHENSIVE ENERGY EFFICIENCY PROGRAM FOR EXISTING BUILDINGS

DRAFT ACTION PLAN OVERVIEW

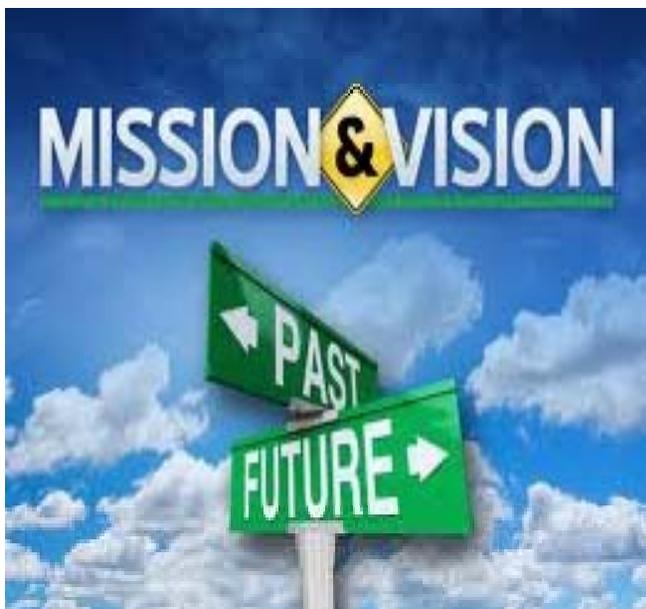
Christine Collopy
California Energy Commission



What is the Comprehensive Energy Efficiency Program for Existing Buildings?

■ Calls for:

- A comprehensive program to achieve energy savings in CA's existing building stock
- A complimentary portfolio of techniques, applications, and practices
- CEC to develop and implement program in collaboration with all CPUC and other stakeholders
- Authorizes CEC to implement regulations



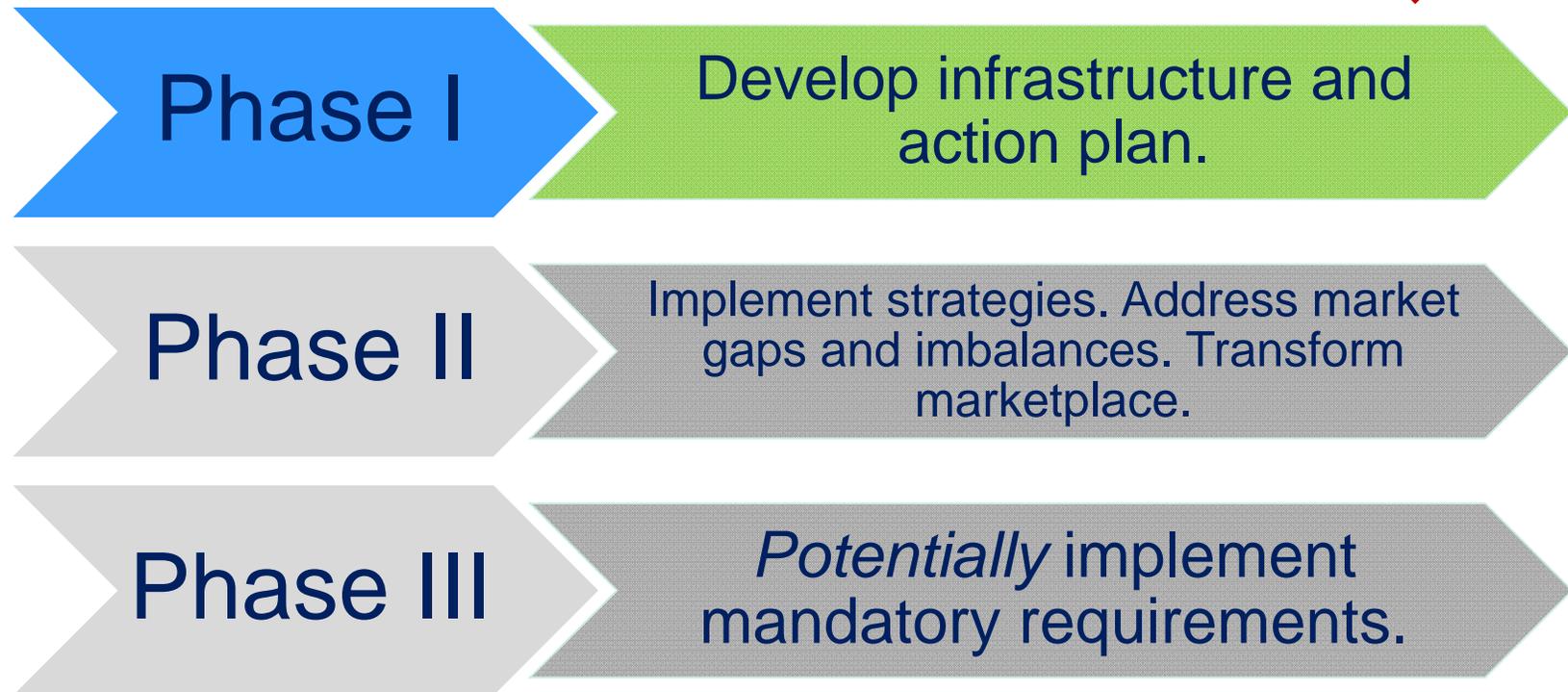


Comprehensive Program Elements

- Long-term, statewide approaches to achieve energy efficiency for all existing buildings
- Cost-Effective Energy Efficiency improvements
- Public/Private Financing Options
- Public outreach and education
- Green Workforce Training
- Broad range of energy assessments, benchmarking and ratings



Program Phases





**PHASE I
ARRA
PROGRAMS
AB 758
PILOTS**





Action Plan Strategies

No Regrets

No Regrets strategies will provide the necessary foundation to support and secure the benefits of future energy efficiency programs and efforts for existing buildings

Voluntary Pathways

Voluntary Pathways are market support activities that build on past efforts

Potential Mandatory Approaches

Potential Mandatory Approaches could make the market more transparent and move mature measures into wider use



Draft Action Plan Overview

No Regrets Strategies

1. Data Reporting & Management
2. Standards Compliance & Enforcement
3. ME&O Resources
4. Workforce Resources



Draft Action Plan Overview

Voluntary Pathways

1. Residential Upgrades
2. Tools for Benchmarking, Auditing, and Retrocommissioning of Nonresidential Buildings
3. Upgrades for Small and Medium Commercial Buildings
4. Public Sector Leadership
5. Energy Efficiency in Property Valuation
6. Financing Upgrades



Draft Action Plan Overview

Potential Mandatory Approaches

1. Statewide Energy Use Disclosure for the Largest Commercial and Public Buildings
2. Disclosure of Ratings and Basic Level Energy Upgrades

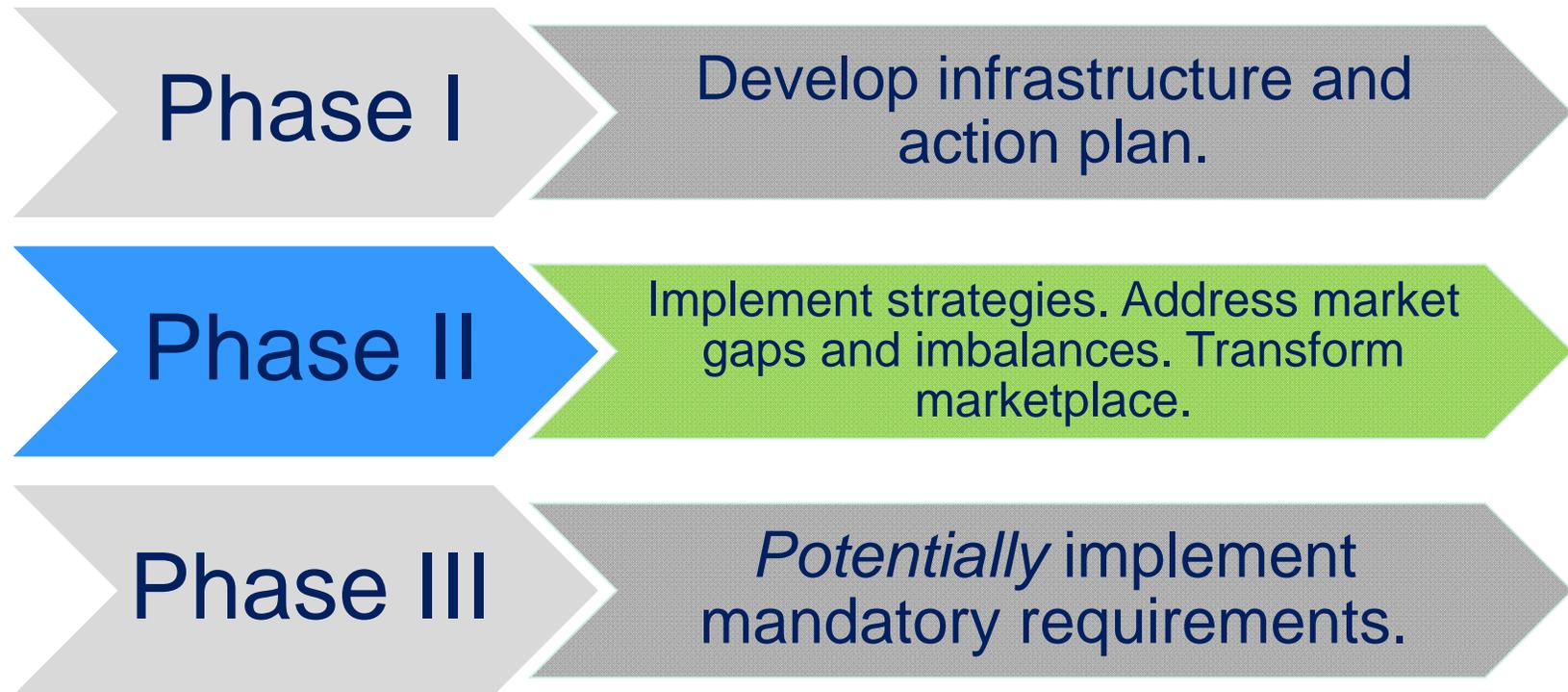


Energy Commission-Identified Action Plan Gaps

- Program Funding
- Multifamily Programs
- Low-Income Programs
- Plug Loads
- Cost-Effectiveness



Program Phases





Property Owners, Tenants and Other Energy Efficiency Investment Decision Makers

**Collaboration,
Partnerships
and
Engagement**

**Federal / State / Local /
Regional Governments and
Building Officials**

Utilities

**Building
Industry
Professionals**

**Real Estate
Industry
Professionals**

**Financing
Entities**

**Workforce /
Trainers / QA
Agents**

**Advocacy
Groups**



Program Phases

Phase I

Develop infrastructure and action plan.

Phase II

Implement strategies. Address market gaps and imbalances. Transform marketplace.

Phase III

Potentially implement mandatory requirements.



Potential Mandatory Requirements

- **PUBLICLY DISCLOSE** energy use for largest commercial and public buildings
- **DISCLOSE** energy performance **RATINGS**
- **COMPLETE** basic level energy efficiency **UPGRADES**



Comprehensive Program Oversight

- Oversight Body of Key Policy Makers and Stakeholders
 - State and Public Agencies
 - Utilities
 - Program Implementers and Administrators
 - Local and Regional Governments
 - Industry Leaders and Representatives
 - Legislative Leaders
 - Consumer Advocates
- Meet regularly to review progress and provide input
- Seek input from established groups and committees, and groups conducting research and evaluations
- Receive public input



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COMMENTS

OVERVIEW

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BREAK



VOLUNTARY PATHWAY 2

Standardized Tools for Benchmarking, Auditing, and Retrocommissioning for Nonresidential Buildings

Martha Brook
California Energy Commission



OVERVIEW

- Benchmarking building energy use against relevant baselines is a great place to start when identifying energy efficiency opportunities
- Multiple benchmarking baselines are relevant:
 - Peer group comparisons (fire stations compared to other fire stations in same region)
 - National distributions of energy use by building size and business type
 - State energy code
 - Best practices



OVERVIEW

- Once a benchmarking process has identified the high level opportunity for improvements, building owners and their agents need help prioritizing their investments
- For CA to achieve 5-10x scale increases in efficiency retrofits, audit processes and commissioning investigations need to be tuned for specific business segments
 - Need to prioritize public assistance on underserved (e.g. small) buildings/businesses
 - These are also the market segments where there are currently gaps in available & appropriate tools
- 5-10x scale increases will also require innovation in use of data and technology to significantly bring down the costs of retrofit measure prioritization



KEY STRATEGIES

- **VP 2.1:** Develop benchmarking approaches that enable targeting of high-opportunity buildings for audits, retrocommissioning, and other upgrades.
- **VP 2.2:** Promote standard tools and quality assurance for application of those tools to increase user confidence.



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VP 2.1: Develop benchmarking approaches that enable targeting of high-opportunity buildings for audits, retrocommissioning, and other upgrades.

Key Initiatives

1. Develop benchmarking tool(s) that are appropriate for the various segments of the commercial and public building markets (for example, large offices, small offices, restaurants, and retail).
2. Identify the segments of the commercial and public building markets with the highest opportunity for cost-effective, energy efficient improvements and ensure that tools are adapted for these segments.
3. Design and implement a plan for widespread delivery of tools that considers the special business needs and communication channels within each high-opportunity market segment and identifies auditing and retrocommissioning improvement opportunities.



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VP 2.2: Promote standard tools and quality assurance for application of those tools to increase user confidence.

Key Initiatives

1. Identify, develop, or modify energy benchmarking, auditing, and retrocommissioning methods that are suitable and scalable for a wide range of segments. Methods should include both energy and nonenergy benefits in situations when nonenergy benefits can be quantified and monetized.
2. Identify, develop, or modify savings calculation methods that provide consistent and reliable energy, demand, and cost-saving estimates, using actuarial data to the extent possible to test the accuracy of calculation methods.
3. Establish an actuarial basis for validating the costs and savings used for energy measure incentive program calculations, and ensure that tools used are consistent across utility and municipality jurisdictions.
4. Identify critical decision-making factors for high-opportunity sectors to implement benchmarking, audits, retrocommissioning, and energy efficiency upgrades. Use existing or develop new tools that address those factors while encouraging upgrades that support zero net energy goals.
5. Pilot tools through regional energy networks and local governments to determine the most effective platforms and approaches to reach utility customers in targeted building sectors.



COMMENTS

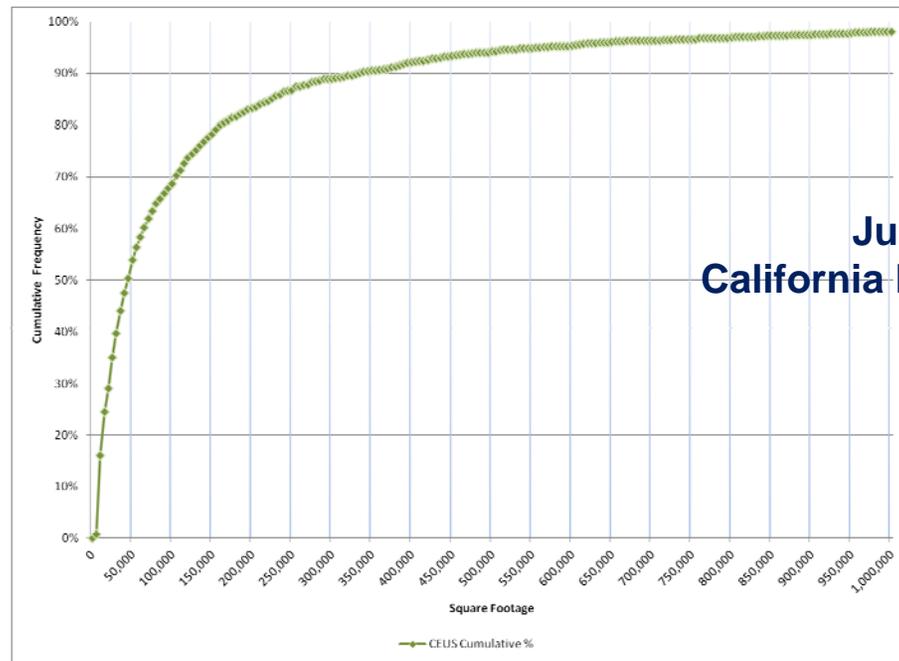
Standardized Tools for Benchmarking, Auditing, and Retrocommissioning for Nonresidential Buildings

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VOLUNTARY PATHWAY 3

UPGRADES FOR SMALL AND MEDIUM COMMERCIAL BUILDINGS



Justin Regnier
California Energy Commission



GOAL STATEMENT

Identify and implement strategies for achieving all energy efficiency upgrades in small and medium nonresidential buildings that are cost-effective for the decision maker, regardless of their market segment or tenancy structure.



OVERVIEW

- Success of AB 758 depends on reaching a large number of existing buildings
- Small to Medium Buildings comprise the majority of Commercial Buildings
- These buildings and their decision makers have been successfully reached by well targeted approaches



KEY STRATEGIES

- **VP 3.1:** Survey workforce development programs, utilities, local governments, and regional energy networks to establish baseline energy use and performance levels for small and medium commercial buildings.
- **VP 3.2:** Develop a cost-effective energy audit protocol for small and medium commercial buildings.



KEY STRATEGIES

- **VP 3.3:** Conduct various energy efficiency upgrade pilots in small and medium commercial buildings to better understand energy-saving potential, the level of specific support needed by building owners and tenants, and the level and quality of work conducted by specialty trade contractors.
- **VP 3.4:** Promote voluntary certifications for trade contractors who specialize in small and medium commercial buildings to improve quality installations and increase consumer confidence.



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VP 3.1: Survey workforce development programs, utilities, local governments, and regional energy networks to establish baseline energy use and performance levels for small and medium commercial buildings.

Key Initiatives

1. Leverage benchmarking to target small and medium commercial buildings most likely to benefit from a preliminary audit to determine efficiency potential and identify buildings that will be best served by a more detailed audit.
2. Determine the energy use features and equipment that can be deployed in “direct install” programs for different market segments at the time of initial customer engagement.
3. Use in-person visits to obtain access to energy use data (through customer release) and building characteristics for nonintrusive assessments in the future.
4. Identify and communicate financing and rebate opportunities available to building owners as part of customer engagement.



VP 3.2: Develop a cost-effective energy audit protocol for small and medium commercial buildings.

Key Initiatives

1. Leverage existing audit protocols from California utility incentive programs and those being developed by other organizations, using smart meter data as appropriate.
2. Establish audit protocols that are cost-effective for small and medium buildings, including envelope improvements, equipment upgrades, equipment repairs and tuning, and system control improvements in the scope of the audit protocols to create a plan toward deeper energy upgrades.
3. Identify key opportunities or “trigger points” – such as financial transactions that result in change of ownership, occupancy, or financing; replacement of major equipment; or building remodeling or renovation – to conduct audits and upgrades.



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VP 3.3: Conduct various energy efficiency upgrade pilots in small and medium commercial buildings to better understand energy-saving potential, the level of specific support needed by building owners and tenants, and the level and quality of work conducted by specialty trade contractors.

Key Initiatives

1. Pilot the audit protocols developed in key initiative VP3.2.
2. Partner with existing stakeholders to design and support a statewide upgrade program focusing on repairs to existing economizers (devices on air-conditioning units that can provide significant energy savings) in small and medium commercial buildings.
3. Assess opportunities to extend and enhance solutions for retrocommissioning small and medium commercial buildings that are being explored within the 2013-2014 statewide IOU Commercial Advisor Energy program.
4. Assess opportunities to extend and enhance the utilities' HVAC quality maintenance and quality installation programs.



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VP 3.3: Conduct various energy efficiency upgrade pilots in small and medium commercial buildings to better understand energy-saving potential, the level of specific support needed by building owners and tenants, and the level and quality of work conducted by specialty trade contractors.

Key Initiatives, Continued:

5. Pilot bundled measure upgrade programs as first step to deeper or whole building upgrades, building on work currently underway in the Calculated Incentives Program.
6. Use lessons learned and best practices from municipal building job order contracting to standardize upgrade costs, financing, project management, and engineering services.
7. Conduct pilots that provide information to decision makers and test delivery mechanisms.
8. Identify opportunities to extend, enhance and leverage utility marketing and outreach budgets and activities for small and medium commercial buildings.
9. Identify key opportunities or “trigger points” in the life of small and medium commercial buildings – such as financial transactions that result in change of ownership, occupancy, or financing; replacement of major equipment; or building remodeling or renovation – to make efficiency upgrades, and pilot programs (including demand-side management) that can take advantage of these key opportunities.



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VP 3.4: Promote voluntary certifications for trade contractors who specialize in small and medium commercial buildings to improve quality installations and increase consumer confidence.

Key Initiatives

1. Identify existing or new certifications specific to classes of energy efficiency and integrated demand-side management measures such as lighting controls, HVAC tune-ups, HVAC equipment replacements, and energy management control systems installations.
2. Support utility programs that incentivize, require, and promote the use of contractors with appropriate certifications.



COMMENTS

UPGRADES FOR SMALL AND MEDIUM COMMERCIAL BUILDINGS

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LUNCH



VOLUNTARY PATHWAY 4

PUBLIC SECTOR LEADERSHIP

Keith Roberts
California Energy Commission



OVERVIEW

- State and Local Governments can Lead By Example... and Help Each Other
 - Local Innovation Provides Lessons for Potential Use Across the State
 - Provide Standardized Tools That Local Governments Might Use
- Succeed With Public Buildings, Expand to Private Buildings



KEY STRATEGIES

- **VP 4.1:** Work with state, regional, and local governments to improve the energy performance of public buildings and encourage upgrades of privately owned buildings.



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VP 4.1: Work with state, regional, and local governments to improve the energy performance of public buildings and encourage upgrades of privately owned buildings.

Key Initiatives

1. Develop energy use information for public buildings by working with workforce, education, and training entities; regional energy networks; state, regional, and local building owners; and school districts to collect baseline data on public building energy performance.
2. Develop a statewide web-based municipal building benchmarking application for use by regional energy networks; state, regional, and local governments; and school districts to prioritize and track efficiency upgrade projects.



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VP 4.1: Work with state, regional, and local governments to improve the energy performance of public buildings and encourage upgrades of privately owned buildings.

Key Initiatives, Continued

3. Develop a municipal building job order contracting process similar to the model developed by the San Francisco Public Utilities Commission.
4. Develop and promote the use of one or more model green lease ordinances.
5. Develop a comprehensive and expandable benchmarking and disclosure database that is web accessible and better informs the public of the energy use of state-owned buildings.



COMMENTS

PUBLIC SECTOR LEADERSHIP

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POTENTIAL MANDATORY APPROACH 1

Mandatory Statewide Energy Use Disclosure Program for Largest Commercial and Public Buildings

Martha Brook
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OVERVIEW

- Public disclosure of building energy use has been implemented in many countries and cities around the globe, including 7 U.S. cities
- Energy use disclosure creates transparency in the marketplace, facilitating the market demand for energy efficient leased space
- Energy use disclosure of municipal buildings provides information to the public about the performance of the buildings they visit and do business in, and implements the “lead by example” policy for public agency energy efficiency



OVERVIEW

In 2012, a U.S. EPA analysis of 35,000 benchmarked buildings found:

- On average, these buildings realize over 2% annual energy savings
- Buildings that benchmarked for three years realize an average energy savings of 7%

Source: *How Benchmarking Makes Cities Smarter*, Caroline Keicher, BuildingRatings.org



KEY STRATEGY

- **PMA 1.1:** Evaluate the need for and feasibility of a statewide energy use disclosure program for the largest commercial and municipal buildings in California.



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PMA 1.1: Evaluate the need for and feasibility of a statewide energy use disclosure program for the largest commercial and municipal buildings in California.

Key Initiatives

1. If mandatory approaches are deemed necessary and feasible, conduct a public workshop to evaluate the pros and cons of energy use disclosure for large public and private buildings. Highlight and discuss lessons learned and best practices from experience in leadership cities with local disclosure programs.
2. Develop and track key metrics on the readiness of the market to evaluate the need for and timing of a mandatory disclosure program.
3. Collaborate with state agencies to encourage public buildings to be early leaders and potentially disclose their energy usage on a public website.
4. If findings from initiative 1 support mandatory disclosure, conduct a public rulemaking with participation from all affected stakeholders to establish future requirements for public disclosure of annual energy use and related energy performance benchmarks for large public and private buildings.
5. Investigate resources needed to establish a publicly accessible website to publish building energy use and energy performance benchmarks and the possible use of U.S. DOE's Standard Energy Efficiency Database.



COMMENTS

Mandatory Statewide Energy Use Disclosure Program for Largest Commercial and Public Buildings

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BREAK



Day 3

General Questions & Discussion



Day 3 Closing Remarks & Wrap-Up



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THANK YOU
FOR YOUR PARTICIPATION