Welcome!

Chula Vista's Building Ordinances - Bringing Energy Savings to Existing Buildings

Thursday, July 1 | 2 - 3 PM

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Keep yourself **muted** so that we can hear our speakers clearly

Use the **Q&A** function to send questions throughout webinar
Our Network of Leaders

LGSEC.org
Our Speakers

**Moderator**

**Paul Mathew**  
Energy/Environmental Policy  
Staff Scientist/Engineer  
Lawrence Berkeley National Laboratory

**Barbara Locci**  
Conservation Specialist  
City of Chula Vista

**Cory Downs**  
Sustainability Specialist  
City of Chula Vista

**Eric Engelman**  
Climate Policy Consultant  
Energy Policy Consultants (EPC)
MULTIFAMILY AND COMMERCIAL ENERGY BENCHMARKING AND CONSERVATION ORDINANCE

Barbara Locci
City of Chula Vista
2017 CHULA VISTA CLIMATE ACTION PLAN

- Approved by Sustainability Commission
- Adopted by City Council
- Calls for “building performance reporting and public disclosure” policies
- Directed city staff to “develop a Residential and Commercial Energy Conservation Ordinance for City Council consideration.”
- Set a target of retrofitting 20% of multifamily and commercial space to achieve 50% savings by 2035
BENCHMARKING AND DISCLOSURE

- Process of measuring a building’s energy consumption
- Rating the building’s performance
- Comparing performance with similar buildings
- Tracking progress over time
- Disclose energy performance rating to public
- Average building sees 2-3% improvement

**Philosophy:** Measurement + Transparency = Energy Efficiency
HOW TO BENCHMARK

• Register buildings in ENERGY STAR Portfolio Manager

• Import energy bills electronically from SDG&E

• Portfolio Manager calculates an ENERGY STAR Score between 1 and 100

• Click Chula Vista’s reporting link to electronically submit building data each year starting 2021
ENERGY CONSERVATION / BUILDING PERFORMANCE ORDINANCES

- Improves on Benchmarking-only policies
- Additional requirements if sufficient progress is not made
- Audits – Prioritize the energy efficiency investments with the best ROI
- Retro-commissioning – Low cost, immediate results
- Performance standards – Assure follow-up on audits
• Have been adopted by more than 30 major US cities

• California AB802 already requires Benchmarking
<table>
<thead>
<tr>
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<tbody>
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<td>New York City</td>
<td>2009; 2019</td>
<td>✓</td>
<td>25,000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>San Francisco</td>
<td>2011</td>
<td></td>
<td>10,000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Washington DC</td>
<td>2012; 2018</td>
<td>✓</td>
<td>10,000</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>State of California</td>
<td>2015</td>
<td>✓</td>
<td>50,000</td>
<td>✓</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Los Angeles</td>
<td>2015</td>
<td>✓</td>
<td>20,000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>St. Louis</td>
<td>2017; 2020</td>
<td>✓</td>
<td>50,000</td>
<td>✓</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>San Jose</td>
<td>2018</td>
<td>✓</td>
<td>20,000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Chula Vista</td>
<td>2021</td>
<td>✓</td>
<td>20,000</td>
<td>✓</td>
<td></td>
<td>✓</td>
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</tbody>
</table>
CHULA VISTA PROGRAM DESIGN

Benchmark and Disclose Annually

> All Buildings > 20,000 sqft

Audit (after 5 years)

> Buildings that have improved 10-30% after 5 years and score < 80

Improve (after 10 years)

> Buildings with score below 65

Only when cost-effective
MULTIFAMILY BUILDINGS

Benchmark and Disclose Annually

> All Buildings > 20,000 sqft

Tenant Spaces
(built pre-2006)

- Install cost-effective one-time prescriptive upgrades where applicable
  - LED Lighting
  - Low-Flow Water Fixtures
  - Duct Sealing
  - Attic Insulation

Common Areas
(if building has with significant common load)

Audit (after 5 years)

> Buildings that have improved 10-30% after 5 years and score < 80

Improve (after 10 years)

> Buildings with score below 65

Only when cost-effective
# FEES AND FINES

<table>
<thead>
<tr>
<th>City</th>
<th>Annual Benchmarking Fee</th>
<th>Audit/Performance Req. Fee (5 year)</th>
<th>Penalties and Fines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>$64.66</td>
<td>$183</td>
<td>$202-$505 plus interest. Potential financing and transaction complications.</td>
</tr>
<tr>
<td>San Francisco</td>
<td>none</td>
<td>none</td>
<td>Up to $1,250-$2,500</td>
</tr>
<tr>
<td>Berkeley</td>
<td>none</td>
<td>$240</td>
<td>Up to $1,000</td>
</tr>
<tr>
<td>San Jose</td>
<td>none</td>
<td>none</td>
<td>Subject to general penalties for city code violation</td>
</tr>
<tr>
<td>San Diego</td>
<td>none</td>
<td>none</td>
<td>Possible misdemeanor citation</td>
</tr>
<tr>
<td>Requirements</td>
<td>Who</td>
<td>What</td>
<td>When</td>
</tr>
<tr>
<td>--------------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Benchmark</td>
<td>All</td>
<td>Submit energy data</td>
<td>Annually from 2022</td>
</tr>
<tr>
<td>Disclose</td>
<td>All</td>
<td>Provide benchmarking report to current and prospective owners and tenants</td>
<td>Starting 2022</td>
</tr>
<tr>
<td>Audit</td>
<td>Buildings with ENERGY STAR score below 80 that do not meet performance targets after 5 years of benchmarking (10-30% energy use reduction)</td>
<td>Conduct an ASHRAE Level I Audit (including retro-commissioning where appropriate)</td>
<td>Every 5 years, beginning 2023 through 2028</td>
</tr>
<tr>
<td>Improve</td>
<td>Building with ENERGY STAR score below 65 that do not meet minimum improvement requirements after 10 years of benchmarking (10-15% energy use reduction)</td>
<td>Implement cost-effective measures identified in the audit in order to reduce energy consumption at least 10-15%</td>
<td>Every 10 years, beginning 2028-2032</td>
</tr>
</tbody>
</table>
Questions?

Barbara Locci
Conservation Specialist
blocci@chulavistaca.gov
Bringing Energy Efficiency to Existing Residential Buildings

Cory Downs
7/1/21
Background
Voluntary Actions
Existing Home Sustainability Ordinance
Next Steps
Background

- Growing community
- Previous cycle reach codes
Voluntary Actions

- Home Energy & Water Check-Ups
- Sustainable Home Toolkit at Library
- Chula Vista Climate Action Challenge

Compliment but do not replace mandatory action
Existing Home Sustainability Ordinance

Require homes built before 2006 that are performing additions or major remodels to also perform energy efficiency upgrades in existing portion of the home.
Existing Home Sustainability Ordinance

<table>
<thead>
<tr>
<th>Location</th>
<th>Year Home Was Built</th>
<th>Energy Efficiency Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Chula Vista zip codes</td>
<td>2006 or later</td>
<td>0</td>
</tr>
<tr>
<td>All zip codes except 91914</td>
<td>2005 to 1979</td>
<td>2</td>
</tr>
<tr>
<td>All zip codes except 91914</td>
<td>1978 or older</td>
<td>3</td>
</tr>
<tr>
<td>91914</td>
<td>2005 or older</td>
<td>4</td>
</tr>
</tbody>
</table>

Changes were made during ordinance development based on stakeholder feedback

Projects that trigger this requirement:
- Adding square footage
- Moving interior walls or other structural elements
- Adding or moving windows and doors

Projects that do NOT trigger this requirement:
- Adding new tile or flooring
- Bathroom fixtures
- Lighting fixtures
- Appliances
- Adding or moving a kitchen island
- Adding or changing counters
- Patio or landscaping
- Adding an Accessory Dwelling Unit (ADU/JADU)
- Projects that are medically necessary
- Repairing, without moving, structural elements
Prescriptive Measures

- LED Lighting
- Water Heating Package
- Attic Insulation
- Duct Sealing
- Air Sealing
- Cool Roof
- High Efficiency Windows*
- High Efficiency Water Heaters*
- High Efficiency Air Conditioning*

*Not found to be cost effective
Exemptions

- Similar measures have already been completed
- Similar measures will be incorporated
- High performing home (Home Energy Score)
- Fully solar powered
- Low income
- Project value cutoff
- Technical infeasibility
- Homeowner association
- Medically necessary or repair
- Can pre-certify a home

Development Services staff was not able to review exemptions so Conservation staff will do that
Promotion

- Website - [www.chulavistaca.gov/departments/clean/retrofit](http://www.chulavistaca.gov/departments/clean/retrofit)
- Flyer
- Press release - dual focus with Benchmarking
- Presentation - staff and public
- Email to known contractors
Next Steps

- Adopted but not currently enforced
- Promote EHSO & energy efficiency broadly
- Track implementation
- Support inspection staff
- Re-evaluate ADU exemption
- Re-evaluate number of measure required
- How to support equity in home retrofits?
- Evaluate if water saving measures be added?
Thank you!!

Cory Downs
Sustainability Specialist

Cdowns@chulavistaca.gov

www.chulavistaca.gov/clean
Cost-Effectiveness Explorer

explorer.localenergycodes.com
Reach Code Basics

Process Overview

- Local amendment to the California Building Energy Efficiency Standards (Title 24 parts 6 and 11)
- Primary legal mechanism among growing suite
- Must reduce building energy consumption
- Local government must make a finding that requirements are cost-effective
- California Energy Codes and Standards Program provides resources including cost-effectiveness studies to support local govs
- After local adoption apply for CEC approval & file with BSC
My last decade in local energy policy

2 years
Local government policy making
My last decade in local energy policy

8 years
Supporting local gov policy making process

2 years
Local government policy making
Cost-Effectiveness Explorer
explorer.localenergycodes.com

- Web-based software for California local government energy policy makers
- Designed to help accelerate reach code adoption and support data-driven decision making
- Launched in late 2020
- Aggregates findings from 4 state-wide cost-effectiveness studies
- Estimates residential building stock for each of 500+ California cities and counties
- Helps users evaluate and develop cost-effective policy options
Cost-Effectiveness Explorer

Demonstration

Study Results
Building Stock Data
Building a Policy
Sharing a Policy
Managing Policies
Comparing Policies
Cost-Effectiveness Explorer

Demonstration

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Upcoming Features

- Nonresidential building stock data
- Future construction forecasts
- Flexible policy options
- Ordinance drafting
- Additional Studies
Thank you.

Try the Cost-effectiveness Explorer as [explorer.LocalEnergyCodes.com](explorer.LocalEnergyCodes.com) and share your feedback.

Get in touch with me at [eric.engelman@gmail.com](eric.engelman@gmail.com) with feedback, questions, ideas.

Contact [info@localenergycodes.com](info@localenergycodes.com) for no-charge assistance from expert Reach Code advisors.
Technical Support for Building Performance Standards

Paul Mathew
Building Performance Standards (BPS) are expanding

Cities and states setting efficiency requirements for existing buildings.

Grappling with policy design questions:
- What metrics? Site EUI? GHG?
- What targets?
- How should electrification be addressed?
- What are the impacts of timing?
- Should smaller buildings be exempt?
- Should some building types be exempt?

and several other considering….
Technical support to inform policy-making

- Driven by policy-analysis questions
- Focus on analysis to support decision-making
- Working with the data we have vs. the data we’d like to have

Strong Federal interest in supporting cities/states to be successful
Quantify impact of requiring buildings to meet certain %ile of ENERGY STAR score

Data sources: Tax data, Benchmarking data, BPD, DCSEU projects

Vast majority of reductions from buildings > 50ksf

Large variation in costs. But median payback ~3yrs

Seattle

- Scenario-based analysis of GHG reduction requirement.
  - Includes WA state site EUI requirement
  - Includes electrification scenarios
- Analyzed 2020-2050 cumulative emissions.
- Including smaller buildings has significant impact.
- Timing matters. 5 year delay has more impact than setting higher target

BPS Session Topics

- BPS 101
- Analysis and goal setting
- Model policy and core components
- Compliance and Implementation
- Engaging stakeholders for equitable outcomes
Thank you

Paul Mathew
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