DOCKETED	
Docket Number:	22-BSTD-01
Project Title:	2025 Energy Code Pre-Rulemaking
TN #:	252152
Document Title:	August 29, 2023 - 2025 Pre-Rulemaking Staff Workshop Presentation
Description:	Presentation from August 29, 2023, 2025 Energy Code staff pre-rulemaking workshop on nonresidential HVAC efficiency requirements, and field verification and diagnostic testing administrative regulations.
Filer:	Javier Perez
Organization:	California Energy Commission
Submitter Role:	Energy Commission
Submission Date:	9/6/2023 11:50:00 AM
Docketed Date:	9/6/2023

Good morning and thank you for joining us.

The workshop will begin shortly.

Housekeeping Rules

Public Comments

Zoom App/Online

- Click “raise hand”

Telephone

- Press *9 to raise hand
- Press *6 to Mute/Unmute

When called upon

- CEC will open your line
- Unmute on your end
- Spell name and state affiliation, if any
- 2 minutes or less per speaker, 1 speaker per entity

Today's Agenda

	Topics	Presenter
1	Introduction	Javier Perez
2	Nonresidential HVAC Efficiency – Hydronic Space Heating	Bach Tsan
3	Field Verification and Diagnostic Testing Administrative Regulations	Joe Loyer
4	Adjourn	

2025 Energy Code – Pre-Rulemaking

Energy Code Authority, Drivers and Themes, Metrics, and Timeline

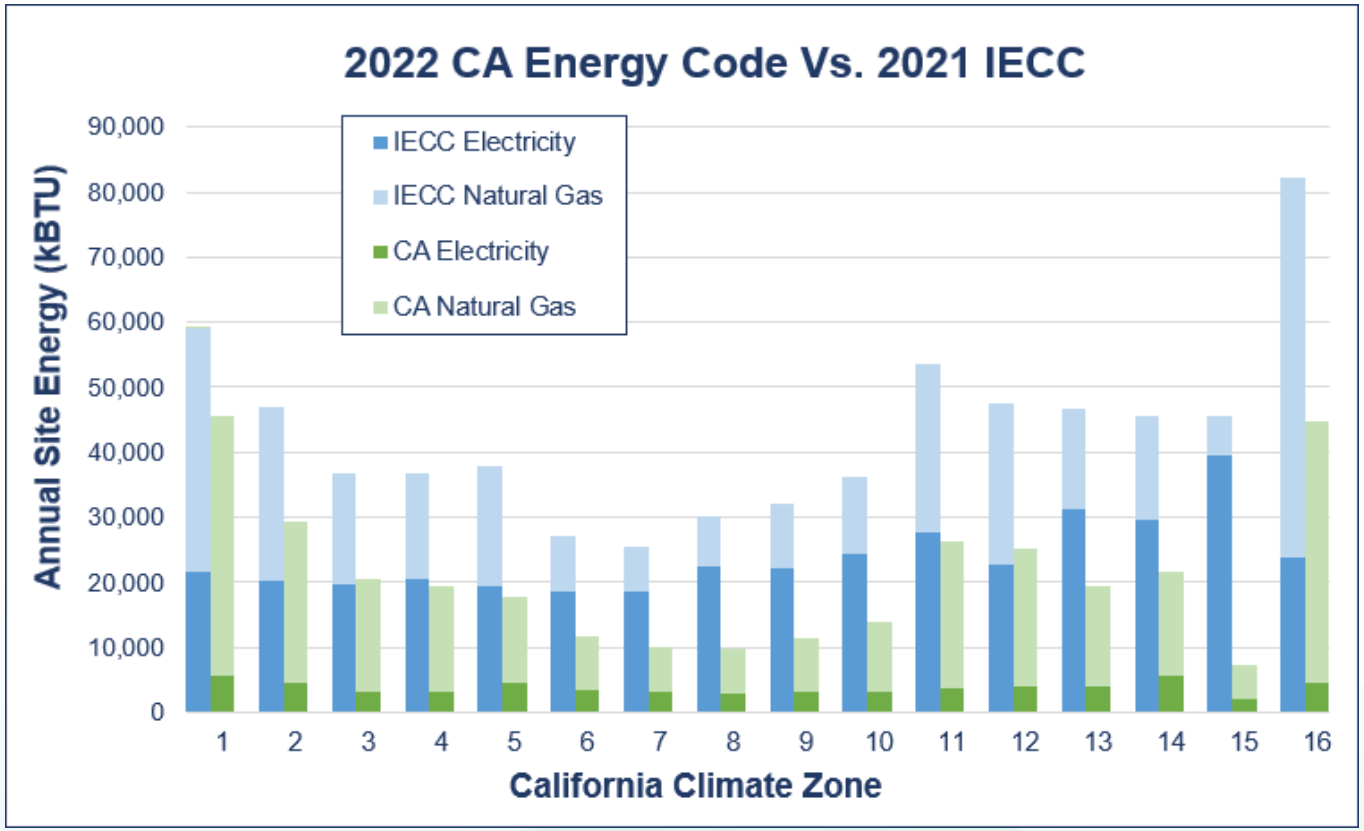
Javier Perez, Project Manager – 2025 Energy Code

August 29, 2023

California Energy Commission's Authority and Process

California's Warren Alquist Act Signed into law in 1974

- Reduction of wasteful, uneconomic, inefficient, or unnecessary consumption of energy as it relates to buildings
- Residential Chart Details:
  - Blue bars: Site energy of a single-family building built to 2021 International Energy Conservation Code (IECC)
  - Green bars: Site energy of a single-family building built to 2022 California Energy Code
- For more on how the 2022 Energy Code compares to federal standards, see our 2022 Impact Analysis at: https://www.energy.ca.gov/publications/2023/impact-analysis-2022-update-california-energy-code



2025 Energy Code Drivers and Themes

State Goals

- Increase building energy efficiency cost-effectively
- Contribute to the state's GHG reduction goals

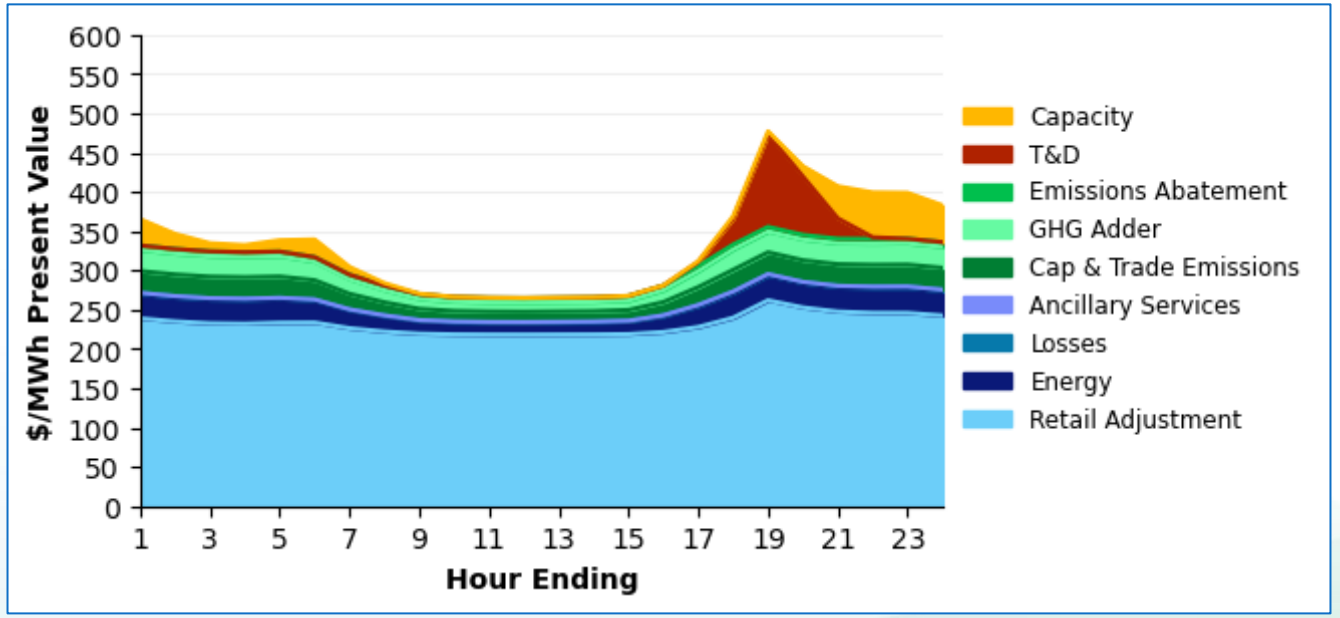
2025 Energy Code Strategies

- Heat pump baselines
- Promote demand flexibility, Solar PV generation and energy storage
- Covered process loads
- Equity & affordable new housing program integration
- Additions, alterations, and smaller homes (e.g., ADUs)
- Electric vehicle readiness support
- Interagency coordination

Long-Term System Cost

Long-term System Cost (LSC) Hourly factors are used to convert predicted site energy use to long-term dollar costs to CA's energy system.

Since the *time* that energy is used is as important as the *amount* of energy used, these factors are generated on an hourly basis for a representative year and created for each of CA's diverse climate zones.



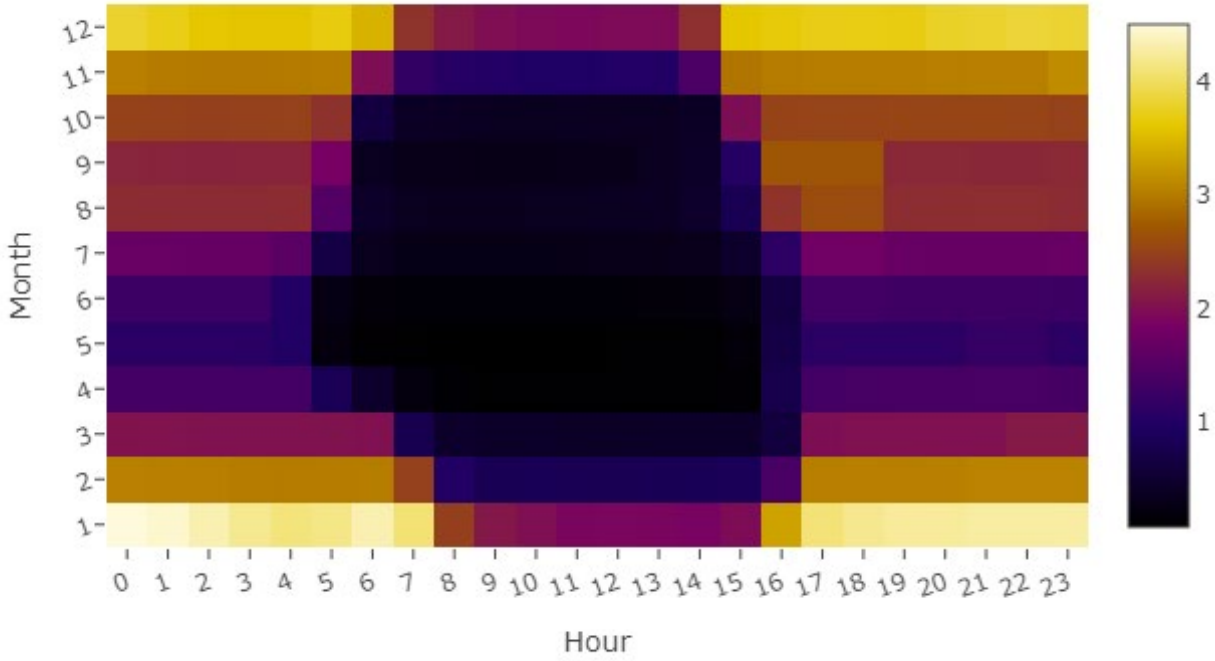
Sample LSC shape by component, average day, levelized 30-year residential, climate zone 12

Source Energy Metric

Long run marginal source energy is defined as the source energy of fossil fuels following the long-term effects of any associated changes in resource procurement.

Source Energy focuses specifically on the amount of fossil fuels that are combusted in association with demand-side energy consumption and assists in aligning our standards with the CA's environmental goals.

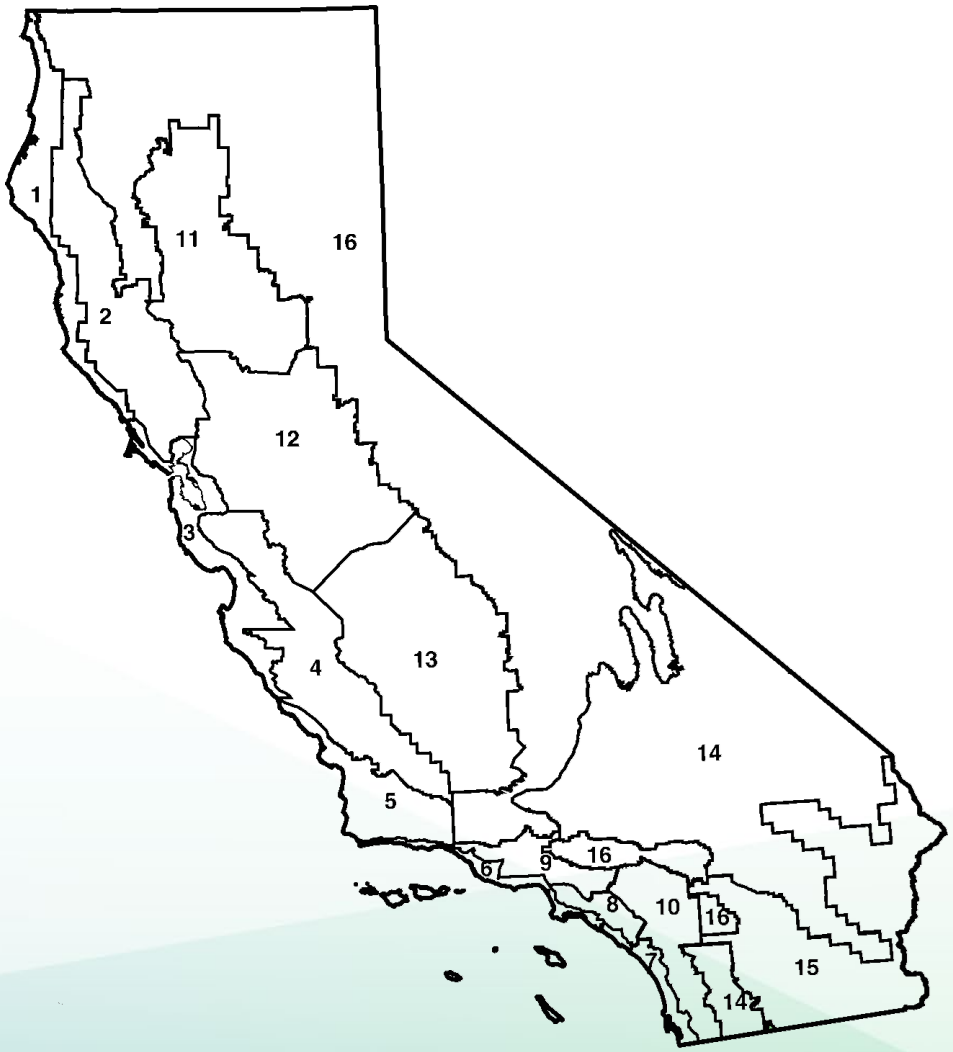
5-Month Average of electricity long run marginal source energy for 2025 Energy Code



California Climate Zones

California has 16 climate zones

- Climate Zones allow software to more accurately simulate variances weather, and as a result, energy consumption of buildings
- A measure's cost effectiveness can vary as a result of weather differences
- Energy Code requirements vary by climate zone as a result



More on 2025 Energy Accounting Metrics

For more on the 2025 Energy Code metrics:

- July 18th, 2022, workshop page, including slides and recording
  - https://www.energy.ca.gov/event/workshop/2022-07/staff-workshop-energy-accounting-2025-building-energy-efficiency-standards
- November 10th, 2022, workshop page, including slides and recording
  - https://www.energy.ca.gov/event/workshop/2022-11/final-staff-workshop-energy-accounting-2025-building-energy-efficiency

2025 Energy Code Work To Date

Milestones	Timelines
Codes & Standards Enhancement (CASE) Team Requested & Received 2025 Measure Proposal Ideas	June 2021 – May 2022
CEC Updated Weather Data, LSC, and Source Energy Metrics	March - November 2022
CASE Team Held Welcome Webinars on 2025 Measures & Work To Come	October 2022
CASE Team Held Stakeholder Workshops on 2025 Proposals	January – May 2023
Energy Commission Worked Feverishly on 2025 Heat Pump and PV System Measures	November 2022 - Now
CASE Team Published Draft Measure Proposal Reports* + Comment Period	May – July 2023

*To view CASE team draft measure proposal reports, and upcoming final reports, visit https://title24stakeholders.com/2025-cycle-case-reports/

2025 Energy Code Work To Come

Milestones	Timelines
CASE Team Publishes Final Measure Proposal Reports	July – August 2023
CEC 2025 Prerulemaking Workshops	July – August 2023
CEC Publishes 2025 Energy Code Draft Updates (Draft Express Terms)	October 2023
CEC Rulemaking for 2025 Energy Code	January 2023 – June 2024
2025 Energy Code Business Meeting Adoption	June 2024
Building Standards Commission Approval of 2025 Energy Code	December 2024
2025 Energy Code Effective Date	January 2026

2025 Energy Code Senior Staff Contacts

- **Javier Perez** – Project Manager
- **Payam Bozorgchami** – Technical Lead, Envelope, Additions and Alterations, ADUs
- **Haile Bucaneg** – Covered Process, Demand Response, Nonresidential and Residential ACM
- **Muhammad Saeed** – Solar Photovoltaic and Energy Storage Systems
- **Bach Tsan** – HVAC Systems, Refrigeration
- **Email Convention at the Energy Commission:** firstname.lastname@energy.ca.gov

2025 Energy Code Pre-rulemaking

NR HVAC Hydronic Space Heating

Bach Tsan, P.E., Senior Mechanical Engineer

August 29, 2023

Agenda

- Hot Water Supply Temperature Limits
- Mechanical Heat Recovery
- Electric Resistance Heat – Proposed, not proceeding to 2025 rulemaking
- Thermal Energy Storage – Proposed, not proceeding to 2025 rulemaking

Hot Water Supply Temperature Limits

New 2025 Proposed Requirements

HWST Limits

- Add new mandatory requirements for zones using hot water for space heating will be limited to 130°F
- Applies to all newly constructed nonresidential buildings including additions and alterations

Key Assumptions

HWST Limits

- Analysis focused on buildings that utilize hydronic heating
- Energy savings are from reduced pipe distribution losses
- Spreadsheet post processing used due to CBECC limitations of piping losses
- UC Berkeley Center for the Built Environment (CBE) study found that hot water runtime was longer in actual occupied buildings than what CBECC assumes and is included in the baseline analysis

Key Assumptions continued

HWST Limits

Parameter	Heat Pump Baseline	Heat Pump Proposed
Equipment Type and Efficiency	AWHP, 2.31 COP	AWHP, 2.54 COP
HWST (°F)	140	130
dT (°F)	30	25
VAV Box	Standard 2-row	Standard 2-row
Operating Hours Criteria	OAT<65 °F and building is occupied	OAT<65°F and building is occupied

HWST – Hot Water Supply Temperature
AWHP – Air to Water Heat Pump
COP- Coefficient of Performance
OAT- Outdoor Air Temperature
VAV- Variable Air Volume
dT- Delta Temperature

Software Used & Prototypes

HWST Limits

- Post processing to analyze hot water piping losses

- Building Prototypes Used in this analysis:
  - Medium Office
  - Large Office
  - Large School
  - Highrise Mixed use
  - Hotel
  - Hospital

First-Year Savings

HWST Limits

New Construction and Additions

Climate Zone	Statewide New Construction & Additions Impacted by Proposal (ft^2)	First-Year Electricity Savings (GWh)	Peak Electrical Demand Reduction (MW)	Natural Gas Savings (Million Therms)	Source Energy Savings (Million kBtu)
1	60,179	0.01	0.00	0	0.02
2	291,757	0.05	0.01	0	0.10
3	2,067,536	0.27	0.04	0	0.59
4	1,050,299	0.14	0.02	0	0.31
5	176,736	0.02	0.00	0	0.05
6	1,161,103	0.09	0.01	0	0.19
7	928,157	0.09	0.01	0	0.21
8	1,711,890	0.12	0.02	0	0.29
9	3,032,086	0.22	0.04	0	0.53
10	1,090,449	0.12	0.02	0	0.28
11	291,877	0.04	0.01	0	0.09
12	1,779,149	0.23	0.04	0	0.54
13	494,165	0.06	0.01	0	0.14
14	284,605	0.03	0.01	0	0.09
15	175,835	0.01	0.00	0	0.03
16	89,188	0.01	0.00	0	0.03

First-Year Savings (continued)

HWST Limits

Alterations

Climate Zone	Statewide New Construction & Additions Impacted by Proposal (ft^2)	First-Year Electricity Savings (GWh)	Peak Electrical Demand Reduction (MW)	Natural Gas Savings (Million Therms)	Source Energy Savings (Million kBtu)
1	79,033	0.02	0.00	0	0.03
2	637,273	0.10	0.02	0	0.22
3	3,498,777	0.48	0.08	0	1.04
4	1,779,944	0.24	0.04	0	0.54
5	272,913	0.04	0.01	0	0.09
6	2,344,761	0.20	0.03	0	0.43
7	1,989,454	0.16	0.02	0	0.41
8	3,473,858	0.29	0.05	0	0.67
9	5,989,659	0.51	0.09	0	1.19
10	2,578,865	0.25	0.04	0	0.57
11	480,103	0.07	0.01	0	0.17
12	3,274,236	0.45	0.08	0	1.03
13	964,319	0.13	0.02	0	0.31
14	624,722	0.08	0.01	0	0.19
15	332,171	0.02	0.00	0	0.06
16	179,894	0.03	0.00	0	0.06

30-Year Savings

HWST Limits

Electric Baseline LSC Savings (2026 PV$)

Climate Zone	New Construction and Additions ($/ft²)	Alterations ($/ft²)
1	1.05	1.25
2	0.83	0.97
3	0.7	0.85
4	0.67	0.81
5	0.74	0.88
6	0.37	0.5
7	0.49	0.55
8	0.34	0.5
9	0.38	0.52
10	0.57	0.59
11	0.56	0.93
12	0.64	0.83
13	0.53	0.84
14	0.62	0.75
15	0.46	0.46
16	0.8	1.01

Incremental Costs

HWST Limits

- Piping cost data provided by surveys of Bay Area mechanical contractors
- Publicly available hot water pipe sizing tool used to determine optimal sizing based on cost of piping, pump energy, noise, erosion
- Analyzed medium and large office buildings to determine a normalized $/ft^2 piping cost to apply to CBECC prototypes
- To be conservative peak loads derived from CBECC models were doubled and new gpm for each building was based on estimated peak loads
- Pump cost data from Bay Area pump representatives estimated incremental cost of $80/gpm

Cost Effectiveness

HWST Limits

New Construction/Additions per ft²

Climate Zone	Benefits LSC Savings + Other PV Savings (2026 PV$)	Costs Total Incremental PV Costs (2026 PV$)	Benefit-to-Cost Ratio
1	1.1	0.1	10.87
2	0.96	0.1	9.51
3	0.82	0.1	8.04
4	0.78	0.1	7.56
5	0.78	0.1	7.7
6	0.44	0.1	4.55
7	0.61	0.1	6.33
8	0.43	0.1	4.36
9	0.45	0.1	4.52
10	0.69	0.1	6.86
11	0.8	0.11	7.55
12	0.78	0.1	7.52
13	0.73	0.1	7.03
14	0.75	0.1	7.23
15	0.51	0.1	5.05
16	0.99	0.1	9.4

Alterations per ft²

Climate Zone	Benefits LSC Savings + Other PV Savings (2026 PV$)	Costs Total Incremental PV Costs (2026 PV$)	Benefit-to-Cost Ratio
1	1.25	0.1	12.51
2	0.97	0.1	9.49
3	0.85	0.1	8.35
4	0.81	0.1	7.86
5	0.88	0.1	8.7
6	0.5	0.1	5.18
7	0.55	0.1	5.72
8	0.5	0.1	5.11
9	0.52	0.1	5.24
10	0.59	0.1	5.85
11	0.93	0.11	8.87
12	0.83	0.1	8
13	0.84	0.1	8.2
14	0.75	0.1	7.22
15	0.46	0.1	4.5
16	1.01	0.1	9.7

Questions

- Any questions?

Mechanical Heat Recovery

New 2025 Proposed Requirements

Mechanical Heat Recovery

- Add new prescriptive heat recovery requirements to nonresidential newly constructed large buildings with large simultaneous heating and cooling loads
- Add new prescriptive requirements for heat recovery use for service hot water end-uses when above a certain threshold of service hot water capacity
- Exceptions:
  - Labs with heat recovery
  - CZ 15 with < 600 kBtuh
  - Computer rooms with heat recovery providing greater than 25% of SWHcap + Heatingcap.

New 2025 Proposed Requirements continued - Mechanical Heat Recovery

Threshold Triggers:

- Scenario A (CoolingHL + 0.1*CoolingLL ≥ 200 tons and SWHcap + Heatingcap ≥ 2200 kBtuh)
- Scenario B (Coolingcap ≥ 300 tons and SWHcap + 0.1*Heatingcap ≥ 700 kBtuh).
- SWHcap ≥ 500 kBtuh

Terminology:

CoolingHL = Cooling High Load; coincident peak cooling load of all spaces with a design equipment

CoolingLL = Coolingcap - CoolingHL; Cooling Low Load; if the design includes capacity for future cooling systems, then assume 20% of future systems serve high load spaces

Coolingcap = Cooling capacity; design capacity of all mechanical cooling systems

Heatingcap = Heating Capacity; design capacity of all space heating systems

SWH = Service Water Heating

SWHcap = SHW capacity

Key Assumptions

Mechanical Heat Recovery

Hospital prototype:

- Baseline - AWHP for heating loads
- 50% of AWHP water cooled chillers replaced with heat recovery (HR) chillers
- Water cooled chillers downsized
- 130°F HWST, 25°F dT(temperature differential) across coils
- Airside economizer disabled so that recoverable heat was available for space heating/SHW loads
- Spreadsheet analysis used to optimize load triggers & amount of heat recovery required
- Does not account for cooling energy savings, only heating

Key Assumptions continued

Mechanical Heat Recovery

Large Office and Large School Prototype:

- Baseline - four pipe fan coil with AWHP
- Airside economizer disabled in CBECC to determine available heat for recovery for space heating and/ or supply hot water loads
- Post-processed to add process loads (data center for example)
- 4-pipe AWHP with water-to-water heat recovery chiller COP of 4.5
- Does not account for cooling energy savings, only heating

Software Used & Prototypes

Mechanical Heat Recovery

- CBECC and Excel post-processing
- Building Prototypes:
  - Hospital
  - Large Office
  - Large School (still in ongoing)

	Simultaneous Mechanical Heat Recovery Scenario A	Simultaneous Mechanical Heat Recovery Scenario B	Mechanical Heat Recovery – Service Water Heating
Hospital	X	X	
Large Office	X	X	X
Large School			X

Simultaneous Condenser Heat Recovery Scenario A

- CoolingHL + 0.1*CoolingLL ≥ 200 tons and SHWcap + Heatingcap ≥ 2000 kBtuh
  - Large office
  - Heat Pump Baseline - four pipe fan coil
  - No service hot water heat recovery; SHWcap = 0 kBtuh
  - Load Assumptions;
    - CoolingHL = 180 tons
    - CoolingHL + 0.1*CoolingLL ~ 200 tons
    - SHWcap + Heatingcap ~ 2000 kBtuh
  - Heat recovery chiller sized per measure 50%
  - Average water to water heating COP: 4.5
  - Air economizer is throttled to make chilled water load match heating hot water load, when possible

Simultaneous Condenser Heat Recovery Scenario B

Coolingcap ≥ 300 tons and SHWcap + 0.1*Heatingcap ≥ 600 kBtuh

- Large office
- Heat Pump Baseline – four pipe fan coil
- Load Assumptions:
  - CoolingHL = 0 tons
  - CoolingHL + 0.1*CoolingLL ~ 300 tons
  - SHWcap = 320 kBtuh
  - SHWcap + Heatingcap ~ 600 kBtuh
- HR chiller sized per measure 50%
- SHW HX sized per measure 30%
- Average water to water heat pump heating COP: 4.5
- Air economizer is throttled to make chilled water load match heating hot water+SHW load, if possible

Incremental Costs – Heat Recovery Chiller

- 30 year analysis
- Incremental cost for heat recovery: $565/ton
  - Costs Include:
    - 2-pipe to 4-pipe AWHP
    - Equipment
    - Extra piping
    - Maintenance
    - Replacement at 20 years

Incremental Costs – Service Hot Water Heat Recovery

- 30-year analysis
- Incremental Cost of Heat Recovery capacity: $143/kBtuh
  - Costs include:
    - Heat Exchanger
    - Piping costs
    - Installation
    - Maintenance

Cost Effectiveness – Hospital

Mechanical Heat Recovery

Climate Zone	Life Cycle Energy Cost Savings + Other PV Savings (2026 PV$)	Total Incremental PV Costs (2026 PV$)	Benefit-to-Cost Ratio
1	$5.96	$0.41	14.4
2	$5.77	$0.41	13.9
3	$4.69	$0.41	11.3
4	$5.97	$0.41	14.4
5	$5.28	$0.41	12.7
6	$4.62	$0.41	11.2
7	$3.93	$0.41	9.5
8	$4.56	$0.41	11.0
9	$4.54	$0.41	11.0
10	$4.52	$0.41	10.9
11	$4.56	$0.41	11.0
12	$5.09	$0.41	12.3
13	$4.25	$0.41	10.3
14	$5.91	$0.41	14.3
15	$3.42	$0.41	8.3
16	$7.15	$0.41	17.3

Cost Effectiveness – Large Office

Mechanical Heat Recovery

Climate Zone	Life Cycle Energy Cost Savings + Other PV Savings (2026 PV$)	Total Incremental PV Costs (2026 PV$) Units in $/sf	Benefit-to-Cost Ratio
1	0.96	0.37	2.60
2	0.95	0.42	2.26
3	0.94	0.39	2.42
4	0.85	0.45	1.88
5	0.93	0.38	2.45
6	1.24	0.22	5.62
7	1.30	0.22	5.92
8	1.27	0.23	5.50
9	1.18	0.24	4.90
10	0.92	0.35	2.62
11	0.70	0.47	1.48
12	0.76	0.44	1.74
13	0.69	0.43	1.61
14	0.54	0.42	1.28
15	0.94	0.41	2.29
16	0.65	0.35	1.86

Questions

Mechanical Heat Recovery

- Any questions?

Other Topics

- Electric Resistance Heat – Proposed, not proceeding to 2025 rulemaking
  - Negative energy savings in the analysis

- Thermal Energy Storage – Proposed, not proceeding to 2025 rulemaking
  - Performance Credit being evaluated
  - Coordinating software development`

Comments

Comments on today's workshop due

September 15, 2023, by 5:00 PM

Submit comments to CEC Docket 22-BSTD-01
https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=22-BSTD-01

Contact: bach.tsan@energy.ca.gov
ronald.balneg@energy.ca.gov

2025 Energy Code – Pre-Rulemaking

Field Verification and Diagnostic Testing – Administrative Code

Joe Loyer, Senior Mechanical Engineer

August 29, 2023

Acronyms Used

Acronym	Definition
HERS	Home Energy Rating System
Energy Code	California Building Energy Efficiency Standards (Title 24, Part 1 and Part 6)
HERS Regs	HERS Regulations (Title 20, section 1670-1675)
Whole House Rating	Voluntary rating process regulated by the HERS Regs
FV&DT	Field Verification and Diagnostic Testing, mandatory, regulated by the Energy Code
OII	Order Instituting Investigation
ECC	Energy Code Compliance

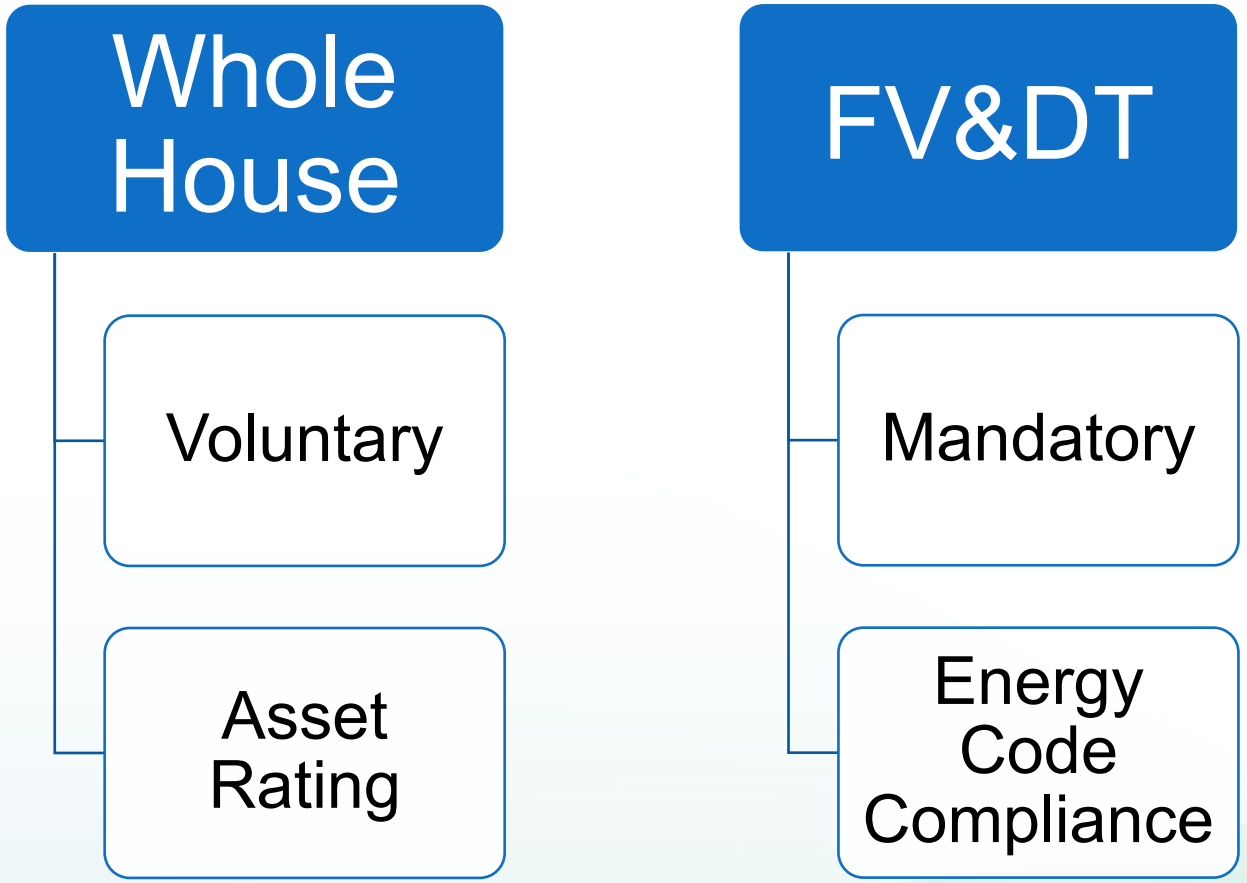
Presentation Overview

- HERS and FV&DT Program Background
- Rulemaking Status and Schedule
- Existing Code Requirements
- 2025 Proposed Requirements
- Objectives of the Proposed Changes
- Challenges Being Addressed
- Incremental Costs
- Details of Proposed Changes
- Issues Out of Scope
- Questions

HERS Program Background

- Warren-Alquist Act – Energy Code
- 1980's: Poor installation of air ducts and conditioning equipment
- Energy Code verification of installations to address code compliance
- 1999: Home Energy Rating System regulations
  - FV&DT
  - Whole House Rating
- Energy Code Compliance – California GHG reduction goals
  - California goal of installing six million heat pumps in buildings by 2030

Two Separate HERS Programs



Rulemaking Status and Schedule

HERS Regulations (Title 20)

Pre-Rulemaking	May 11, 2022
1st Workshop	Nov 15, 2022
2nd Workshop	Jan 30, 2023
Rulemaking (45-Day Comment)	Feb 10, 2023
Public Hearing	Mar 28, 2023
15-Day Comment	Jun 1, 2023
Adopted by Energy Commission	**Aug 9, 2023**

FV&DT Regulations (Title 24)

Pre-Rulemaking	May 11, 2022
1st Workshop	Nov 15, 2022
2nd Workshop	Jan 26, 2023
3rd Workshop	June 9, 2023
Title 24 Workshop	**Aug 29, 2023**
Formal 2025 Energy Code Rulemaking	Jan-Jun 2024
Adoption of 2025 Energy Code	June 12, 2024

Challenges Being Addressed by both Rulemakings

- Implementing the OII Proceeding
  - Program Issues and Performance
  - Workshops and Webinars
  - Consumer, Provider, and Rater Complaints
- Effectiveness of FV&DT on Reducing HVAC Defects
- Consumer Complaints Against Providers and Raters
- Data Errors and Falsification
- Quality Assurance Program

Adopted Changes to the Whole-House Regulations (T20)

- Overall administrative structure is unchanged
- Removes any provisions relevant to the FV&DT program
- Retains basic provisions necessary to implement a voluntary Whole-House Ratings Program
- Minor changes through Title 20, section 1670-1675 (Adopted August 9, 2023)

Proposed Changes to the FV&DT Regulations (T24)

Sections RA1, RA2, RA3, RA4, NA1, and NA2:

- Adding procedures for “onsite” and “shadow audits” for the new quality assurance requirements.
- NA1.1 – removal of the special inspector designation.
- Updates to other sections as needed for additions of defined terms.

Section 10-103.3 – Outline:

(a) Scope

(b) General Provision

(c) ECC Provider Approval

(d) ECC Provider Responsibilities

(e) ECC Rater Certification and Responsibilities

(f) ECC Rater Company Certification and Responsibilities

(g) Prohibition from Practice and Re-Entry

(h) Appeal to the Commission

Summary of Changes in FV&DT Proposed Regulations (T24)

- General Requirements
- Progressive Discipline
- Rater Companies
- Raters
- Providers

General Requirements

Conflict of Interest

- Rater and Rater Companies are independent from Providers
- Raters, Rater Companies, and Providers are independent from builders, designers, and installing contractors

General Prohibition for Conflict of Interest

- Direct or indirect investment worth $2,000
- FV&DT Testing services prohibited for close family relatives

Specific Prohibitions for Conflict of Interest

Raters Prohibitions

- May not sign the CF1R as the “Responsible Person” while also acting as the Rater on the project.

Rater and Rater Company Prohibitions

- May not perform construction activities on the project site
- Must provide a form for the homeowner or project owner outlining the FV&DT Program and complaint process
- Must provide a summary report to the home or project owner that is separate from the documents provided by the contractor.
- Once a Rater registers a failed FV&DT, that Rater becomes the Rater of Record (may be replaced by a Rater within the same Rater Company.

Conflicted Data

Any data collected by a Rater when they have a conflict of interest, regardless of its accuracy, shall be considered conflicted data.

1. Providers shall not knowingly accept or store, conflicted data on their systems.
2. Providers shall take all reasonable steps to detect, deter, isolate, and remove conflicted data from their systems.
3. Providers shall inform all the following stakeholders of conflicted data removal: Rater, Rater Company, Authority having jurisdiction, and Commission.

Progressive Discipline

- Applies to Provider, Raters, and Rater Companies
- Implemented by the CEC for Providers
- Implemented by Providers for Raters and Rater Companies

Progressive Discipline Steps

- Notice of Violation
- Probation
- Suspension
- Decertification
- Appeal to the Energy Commission

Rater Companies – New Requirements

- Minimum Qualifications
- Training and Certification provided by the Provider
- Services and Restrictions
- Responsibilities and Reporting Requirements

Changes Affecting Raters

- Restrictions
- Responsibilities
- Document Registration Limitation

Changes Affecting Providers

- Application Approval Procedures
- Training Requirements
- Testing Requirements
- Quality Assurance Alternatives
- Conflicted Data
- Reporting Requirements

Benefits of Proposed Changes

- Improve Administration/Updating of FV&DT Regulations in Title 24
- Address Role of ECC-Rater Companies
- Eliminate Special Inspector Status to Remove Restrictions
- Clarify Conflict of Interest Protections
- Address Conflicted Data
- Appropriate Actions for Corresponding Noncompliance
- Strengthen Quality Assurance
- Increase Consistency for Training, Testing, and Reporting

Initial Incremental Costs

Costs to Affected Party	Description of Cost	Estimated Incremental Cost
ECC Rater	No Change to Costs	$0
ECC Rater Company	ECC Rater Certification Required Training Reporting	$300 or $2,500 $90 $2,200
ECC Provider	Progressive Discipline Quality Assurance Training Reporting	$17,000 $11,000 $11,000 - $80,000 $5,300

Ongoing Incremental Costs

Costs to Affected Party	Description of Cost	Estimated Ongoing Cost
ECC Rater	No Change to Costs	$0
ECC Rater Company	ECC Rater Certification Required Training Reporting	$300 or $2,500 $90 if required $2,200
ECC Provider	Progressive Discipline Quality Assurance Training Reporting	$21,000 ($1.8 - $2.0 Million) $1,500 - $12,000 $5,300

Questions

- Other Program Issues
- Alternative Remedies to Program Issues
- Better Estimated Costs of Implementation
- Impacts not Considered

Comments

Comments on today's workshop due

September 15, 2023, by 5:00 PM

Submit comments to CEC Docket 22-BSTD-01
https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=22-BSTD-01

Contact: joe.loyer@energy.ca.gov

Thank You!

Comments

- **Comments on Todays Workshop**
- **Due Date: September 15, 2023, by 5:00 PM**

- **Comments to be submitted to: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=22-BSTD-01**

- Thank you for participating!

Next Workshop

Upcoming 2025 Energy Code Pre-Rulemaking Workshop:

- Wednesday, August 30, from 9am to 3pm
- Topics covered will include:
  - Commercial Kitchens
  - Laboratories
  - Nonresidential Envelope
  - Lighting Requirements

Thank you for participating in today's workshop!

The CNRA building is being evacuated.