

Codes and Standards Statewide Program

	Mission
SW Program: Codes and Standards	<p>The Codes and Standards (C&S) Program saves energy on behalf of ratepayers by directly influencing standards and code-setting bodies to strengthen energy efficiency regulations, by improving compliance with existing codes and standards, and working with local governments to develop ordinances that exceed statewide minimum requirements.</p> <p>Subprograms include:</p> <ul style="list-style-type: none"> (1) Building Codes: Advocacy, Extension of Advocacy (EOA) and CASE Studies (2) Appliance Standards: Advocacy, Extension of Advocacy (EOA) and CASE Studies (3) Compliance Enhancement (CE): Measure-Based & Holistic (4) Reach Codes
	<p>SW Program Goal (1) The C&S Program will provide a direct response to the CPUC’s first goal by specifically addressing each near-term strategy in the Strategic Plan. Through the advocacy activities, the program will:</p> <ul style="list-style-type: none"> • Continue to expand Title 24 Building and Title 20 Appliance Efficiency Regulations through improved research to identify current code and compliance shortcomings, new technologies and processes, and latest thinking on breadth (scope) and depth (stringency) of possible standards • Develop aggressive proposals to accelerate regulations for both Title 20 appliance efficiency standards and Title 24 building standards • Support leading activities such as statewide reach standards (e.g., codes that include California Green Building Standard) and the coordinated development and adoption of advanced local government ordinances. • Coordinate with both internal and external organizations on an ongoing basis, including voluntary programs and national standards organizations <p>(Ref: AL)</p>
	<p>SW Program Goal (2) To address goal 2, C&S will expand Extension of Advocacy activities and launch the new Compliance Enhancement (CE) subprogram. The Program will leverage existing, and develop new education and outreach activities to equip both building and appliance industry market actors with the knowledge and tools needed to comply with Title 24 building energy efficiency standards and Title 20 appliance efficiency regulations. Expanding the Program to include CE will help ensure that the full potential of the state’s codes and standards efforts are realized, and results in a comprehensive C&S Program.</p> <p>(Ref: AL)</p>

CA EESP Goals/Strategies Addressed by C&S Program:	CA EESP
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	Ref. pp. #
CA EE SP Goal (1) Continually strengthen and expand building and appliance codes and standards as market experience reveals greater efficiency opportunities and compelling economic benefits Goal Results: California's codes and standards will support this Plan's residential, commercial, and HVAC sector goals	AL
CA EE SP Strategy 1-1 Develop a phased and accelerated approach to more stringent codes and standards CA EE SP Strategy 1-2 Expand Titles 24 and 20 to address all significant energy end uses CA EE SP Strategy 1-3 Improve code research and analysis CA EE SP Strategy 1-4 Improve coordination of State energy codes and standards with other state and Federal regulations CA EE SP Strategy 1-5 Improve coordination of energy codes and standards with utility programs	AL
CA EE SP Goal (2) Dramatically improve code compliance and enforcement Results: Energy savings from codes and standards will be fully realized	AL
CA EE SP Strategy 2-1 Improve code compliance and enforcement	AL
CA EE SP Strategy 3-4 Continuously strengthen standards, including the expansion of both T 24 and T 20 to codify advanced in plug loads management	Staff/ SP page 22

Long-Term (2013-2020) Objectives:	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
1. By 2020, Title 24 will require ZNE for Residential Buildings.	Staff/SP page 68	Revise to: By 2020, Title 24 will require ZNE for Residential Buildings.
2. By 2030, Title 24 will require ZNE for Commercial Buildings.	Staff/SP page 68	Revise to: By 2030, Title 24 will require ZNE for Commercial Buildings.
		Delete Comments: HVAC strategy from Strategic Plan specific to direct incentive programs; not relevant to C&S
3. By 2015 incorporate mandatory onboard diagnostic system in equipment standards.	Staff/SP page 66	

4. By 2020 incorporate mandatory onboard diagnostic system in buildings codes.	Staff/SP page 66	
5. By 2015, 80% of transactions that trigger T24 requirements for existing homes will comply with all applicable requirements.	Staff/SP, page 21	
6. By 2016, current non-compliance rates with C&S is halved & by 2020, full compliance with most up to date C&S.	Staff/SP page 90	
7. HVAC in commercial buildings: a. By 2015, 50% of HVAC installation in commercial sector comply with codes via permits b. By 2020, 90% of HVAC systems are installed to code and optimally maintained for systems' useful life. c. By 2020, 100% of HVAC systems are installed to quality standards.	Staff/SP page 38 & page 60	
8. Code Compliance: a. By 2015, investigate tools, software programs, "incentives" and policies to simplify and streamline permit process. b. By 2015, apply feasible mechanisms to prove code compliance as a pre-requisite for partnership funding or incentives from the IOUs.	Staff/SP page 69	
9. Advanced Voluntary Standards: a. In 2017, advanced voluntary standards towards Residential ZNE incorporated in T24. b.	Staff/SP page 17	Delete paragraph b
10. Increase in regional consistency of Reach Codes (countywide or geographically contiguous jurisdictions) in jurisdiction in the IOUs service territories.	Staff/PGE PIP (page 83)	Revise to: Increase in regional consistency of Reach Codes (countywide or geographically contiguous jurisdictions) in jurisdiction in the IOUs service territories.

*SP=Strategic Plan, AL=Advice Letter, DR=Data Request Response, PIP=program plans, Staff=ED proposed. [Include page reference when applicable.]

Long-Term MT Indicators:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (3)**	Baseline Study Required (Y/N)	OU Recommendations and Comments
1. % of buildings in California (a) Residential (b) Commercial that are built to comply with code targeting ZNE technologies, practices and design	Staff	3	N	OK
2. Number of utility incentivized EE measures that become part of the following code cycle (e.g. measures incentivized in 2006-2008 would be part of 2011 or 2014 code) targeting the following: a. advanced climate-appropriate HVAC technologies (equipment controls, including system diagnostics) b. Whole Building approaches in Commercial buildings c. Whole House approaches in Residential homes d. Advanced Lighting e. High efficient peak reduction technologies including plug loads f. Other categories	Staff	3	N	OK
3. Compliance rates of T24 in (a) existing homes and (b) commercial buildings in California.	Staff	3	N	OK
4. Compliance rates of T24 in (a) new homes (b) new commercial buildings in California.	Staff	3	N	OK
5. % of building departments (jurisdictions) that adopt and use tools identified as industry best practices to improve permit application, tracking, and inspection processes and increase regional consistency.	Staff	3	Y (Need to identify existing practice as baseline)	OK
6. Number of measures from Voluntary beyond code standards and rating systems (LEED, CHPS, 189) that are incorporated into mandatory T24 Standards in the Residential and Commercial Sectors. (a) In 2017, advanced voluntary standards towards Residential ZNE incorporated in T24.	Staff	3	N	Comments: Explain origin and purpose of this indicator

7. Number of Jurisdictions in California implementing Reach Codes in the Residential and Commercial Buildings.	Staff	3	N	OK
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**Metric type: 3 = data collection, tracking, and reporting [by IOUs, CPUC staff, and/or other entities] to be determined later.

Codes & Standards – Building Standards Advocacy Subprogram

	Mission
SW Program: Codes & Standards	<p>The C&S Program conducts advocacy activities to improve building efficiency regulations. The principal audience is the California Energy Commission (CEC) which conducts periodic rulemakings, usually on a three-year cycle (for building regulations).</p> <p>Codes And Standards Enhancement (CASE) studies, focused on energy efficiency improvements, are developed for promising design practices and technologies and presented to standards- and code-setting bodies. Advocacy also includes affirmative expert testimony at public workshops and hearings, participation in stakeholder meetings, ongoing communications with industry, and a variety of other support activities.</p> <p>Extension of advocacy activities, in particular, include compliance improvement efforts carried out as continuing advocacy for codes or standards adopted as a result of the Program. Following adoption, C&S supports compliance improvement with both Title 24 building codes.</p>
SW Sub-program: Building Standards Advocacy	

Short-term (2010-2012) “SMART” Sub-program Objectives:

	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
1. By 2012, X CASE Studies targeting ZNE technologies, practices and design including high efficiency plug loads, in Residential that are presented to and Y studies adopted by the CEC.	Staff/SP Strategies 1-2, page 17	Revise to: By End of 2012, develop at least 20 draft Residential CASE studies targeting efficient technologies practices and design in the areas of: lighting; HVAC; envelope; water heating; and cross-cutting measures in support of ZNE goals, with the IOU anticipation that 12 studies would be adopted, subject to CEC discretion. Drafted CASE Studies may be consolidated during the process, or may be moved from Title 24 Part 6 (base code) to Part 11 (reach code), thereby reducing the final number of CASE studies. Adoption is defined as approval by a majority of CEC commissioners during a business meeting at the end of the hearing process. Numbers of draft and adopted CASE studies provided are Statewide IOU C&S Program objectives.
2. By 2012, X CASE Studies targeting ZNE technologies, practices and design in Commercial that are presented to and Y studies	Staff/(a)SP Stratgeies1-2,	Revise to: By 2012, develop at least 33 draft Commercial

- adopted by the CEC, including the following:
- a. Integrated design in Commercial Buildings including: metering and data management; automated diagnostic systems; and sub-metering of tenant-occupied spaces.
 - b. Whole Building approaches in Commercial Buildings including HVAC aspects.

page 34 & (b)
SP Strategies 3-2, page 63

CASE studies targeting efficient technologies practices and design in the areas of: lighting; HVAC; envelope; water heating; and crosscutting measures in support of ZNE goals, with the IOU anticipation that 21 studies would be adopted, subject to CEC's discretion. Drafted CASE studies may be consolidated during the process or may be moved from Title 24 Part 6 (base code) to Part 11 (reach code), thereby reducing the final number of CASE studies. Adoption is defined as approval by a majority of CEC commissioners during a business meeting at the end of the hearing process. Numbers of draft and adopted CASE studies provided are Statewide IOU C&S Program objectives. CASE Studies will support:

- a. Integrated design in Commercial Buildings. *[Sub metering is not on the list of mutually agreed upon studies by CEC & IOUs; however, sub metering is being researched as part of the ZNE Action Plan.]*
- b. HVAC program objectives for Whole Building approaches in Commercial Buildings.

3. By 2012, adopt ANSI standards into T24 to replace current T24 optional quality control requirements with mandatory requirements (ANSI QI/QM).

Staff/SP page 60

Revise to:
By end of 2012, support the HVAC program and industry in developing future standards for QI related to ACCA/ANSI standards to replace current T24 optional quality control requirements with mandatory requirements.

Short-term Sub-program PPMs:

Source (SP, AL, DR, PIP, or Staff)*	Metric Type (2a or c)	Baseline Study Requirement (Y/N)	IOU Recommendations and Comments
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2b)**

<p>1. Number of CASE Study proposals developed contingent upon CEC and IOU approval to address significant energy savings to the CEC docket, within authorized budget)</p>	<p>AEO based on AL</p>	<p>2a</p>	<p>N</p>	<p>Revise to: Number of draft Residential and Commercial CASE Studies, as defined in Building Standards Objectives 1 & 2, developed to target efficient technologies, practices, and design in the areas of: lighting; HVAC; envelope; water heating; and/or crosscutting measures in support of ZNE goals within authorized budget.</p>
<p>2. Number of CASE studies that are adopted by the CEC Rule-making (as the result of program advocacy) that address each of the following: (a) Whole Building and Integrated Design, including metering and data management, automated diagnostic systems, and sub-metering of tenant-occupied spaces Sector, with emphasis on HVAC aspects of Whole Building (b) ZNE technologies, practices, and design in Residential Sector (c) Peak efficient technologies including plug loads and HVAC technologies (d) Advanced Lighting Technologies</p>	<p>AEO based on SP</p>	<p>2b</p>	<p>N</p>	<p>Revise to: Number of Residential and Commercial CASE studies submitted for consideration targeting efficient technologies practices and design in each of the following areas: lighting; HVAC; envelope; water heating; and cross-cutting measures in support of the following: (a) Integrated Design, including data management and automated diagnostic systems, with emphasis on HVAC aspects of Whole Building (b) ZNE technologies, practices, and design in Residential Sector (c) Peak efficient technologies including plug loads and HVAC technologies (d) Advanced Lighting Technologies</p>

*SP=Strategic Plan, AL=Advice Letter, DR=Data Request Response, PIP=program plans, Staff=ED proposed. [Include page reference when applicable.]

**Metric type: 2a = reported annually, 2b = reported by end of cycle.

Long-Term (2013-2020) "SMART" Sub-program Objectives:	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
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None proposed.		
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Long-Term Sub-program MT Indicators:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (3)**	Baseline Study Required (Y/N)	IOU Recommendations and Comments
None proposed.				

Codes & Standards – Appliance Standards Advocacy Subprogram

	Mission
SW Program: Codes & Standards	<p>This sub-program conducts advocacy activities to improve appliance efficiency regulations. The principal audience is the California Energy Commission (CEC) which conducts periodic rulemakings, usually on a three-year cycle (for building regulations), to update appliance energy efficiency regulations.</p> <p>Codes And Standards Enhancement (CASE) studies, focused on energy efficiency improvements, are developed for promising design practices and technologies and presented to standards- and code-setting bodies. Advocacy also includes affirmative expert testimony at public workshops and hearings, participation in stakeholder meetings, ongoing communications with industry, and a variety of other support activities.</p> <p>Extension of advocacy activities, in particular, include compliance improvement efforts carried out as continuing advocacy for codes or standards adopted as a result of the Program. Following adoption, C&S supports compliance improvement with Title 20 appliance standards.</p> <p>The sub-program participates in DOE proceedings and legislative negotiations leading to federal regulations that are passed through to California; in particular, Title 20 appliance efficiency regulations that are the same as Federal regulations.</p>
SW Sub-program: Appliance Standards Advocacy	

Short-term (2010-2012) “SMART” Sub-program Objectives:

1. By 2012, X CASE Studies targeting plug loads, HVAC technologies, and advanced lighting that are presented to the DOE.

**Source
(SP, AL,
DR, PIP,
or Staff)*
AEO/SP**

IOU Recommendations and Comments

Revise to:
By end of 2012, develop at least 11 Title 20 CASE Studies (contingent upon CEC and IOU approval) in support of plug loads, refrigeration, advanced lighting, and other technologies with the IOU anticipation that 1 proposal would be adopted, subject to CEC discretion. Additionally, drafted CASE Studies may be consolidated during the process, thereby reducing the final number of CASE studies. Adoption is defined as approval by a majority of CEC commissioners during a business meeting at the end of the hearing process. Numbers of draft and adopted CASE studies provided are Statewide IOU

Program objectives.

2. By 2012, submit xx proposals to federal standards proceedings to address high efficient plug loads

AEO derived from AL & SP

Revise to:
Submit comment letters as necessary to USDOE that propose improvements to standards or test procedures in support of plug loads, HVAC technologies, refrigeration, advanced lighting, and other technologies.

Short-term <u>Sub-program</u> PPMs:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (2a or 2b)**	Baseline Study Required (Y/N)	IOU Recommendations and Comments
1. Number of CA T20 Standards adopted into DOE Ruling (as the result of program advocacy) that address : (a) Plug loads (such as copy machines, printers, battery charges etc.) (b) Advanced Lighting Technologies (c) New climate appropriate HVAC technologies (equipment and controls, including systems diagnostics).	AEO based on SP	2b	N	Revise to: Number of <i>draft</i> CASE Studies, as defined in Appliance Standards Objective 1, developed as mutually agreed upon by the CEC and IOUs in support of plug loads, refrigeration, advanced lighting, and/or other technologies that are adopted by the CEC, within authorized budget.
		2a	N	Revise to: Number of U.S. DOE rulemakings supported by IOU's Codes and Standards Program [through advocacy activities such as letters, comments, laboratory testing, and other technical research and analysis] in support of plug loads, HVAC, advanced lighting, and other technologies, subject to DOE discretion.

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**Metric type: 2a = reported annually, 2b = reported by end of cycle.

Long-Term (2013-2020) "SMART" Sub-program Objectives:	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
None proposed.		

Long-Term Sub-program MT Indicators:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (3)**	Baseline Study Required (Y/N)	IOU Recommendations and Comments
None proposed.				

Codes & Standards – Compliance Enhancement Subprogram

	Mission
SW Program: Codes & Standards	Compliance Enhancement (CE) subprogram activities – in that, these are not carried out as Extension of advocacy – include two elements based on the CPUC’s Evaluator’s Protocol for Code Compliance Enhancement Programs: 1) the measure-based element is aimed at codes or standards not adopted as a result of the Program, similar to extension of advocacy efforts, and 2) the holistic compliance enhancement subprogram seeks to improve building department energy code enforcement processes from beginning to end. Compliance improvement responds to the CPUC’s interest in robust implementation of existing standards and support for the California Long Term Energy Efficiency Strategic Plan’s HVAC Big Bold strategies.
SW <u>Sub-program</u> : Compliance Enhancement	

Short-term (2010-2012) “SMART” Sub-program Objectives:

Source
(SP, AL,
DR, PIP,
or
Staff)*
Staff/SP
p. 21

IOU Recommendations and Comments

Revise to:
By 2012, support the CEC and government partnerships in increasing compliance with residential and nonresidential building energy standards by:

1. Developing a compliance improvement advisory group (which will include the HVAC compliance committee), and
2. Implementing a building department best practices program, in collaboration with IOU energy training centers, incentive programs, and other stakeholders.

The compliance improvement advisory group will identify:

1. Issues that affect compliance from many different perspectives, including builders, installers, designers, and building department enforcement staff and

2. Opportunities for mitigating barriers to Title 24 compliance.

Staff/SP
p. 38

Delete

Revise to:
By 2012, provide 60+ (SCE? Sempra?) role-based, Title 24, training sessions, in cooperation with energy training centers and other EE programs, targeting building departments, energy consultants, and contractors. Based on a future needs assessment, develop and implement outreach plan for Title 20 appliance standards that targets designers, contractors, retailers, manufacturers, and distributors.

1. ~~IOU PROPOSED: By 2012, distribute results of best practice studies to XX local governments for Residential and Commercial buildings.~~
2. By the end of 2012, develop a report that identifies best practices and/or tools to support enforcement of energy efficiency codes and standards. Distribute report to 100% of local governments included in Government Partnership Programs.-

Delete

Staff/PG
&E PIP
p. 88

Revise to:
By the end of 2012, develop a report that identifies best practices and/or tools to support enforcement of energy efficiency codes and standards. Distribute report to 100% of local governments included in Government Partnership Programs.-

Short-term Sub-program PPMs:

	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (2a or 2b)**	Baselin e Study Require d (Y/N)	IOU Recommendations and Comments
				Delete
Reported easier enforcement of T24 and T20 in IOUs service territories as a result of IOU training and (Tools) as compared to 2008.	Staff/SP	2b	N	Revise to: Number of role based, Title 24, training sessions delivered.
2		2b	N	Delete

3. Number of local governments that received best practices report	2b	N	<p>Comments: Delete this metric because a "plan" is no longer mentioned in the revised objectives. Moreover, a "plan" is an output metric and the goal of the PPM process is to identify "outcome" metrics.</p> <p>Revise to: Number of local governments that received best practices report.</p>
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Long-Term (2013-2020) "SMART" Sub-program Objectives:	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
None proposed.		

Long-Term Sub-program MT Indicators:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (3)**	Baseline Study Required (Y/N)	IOU Recommendations and Comments
<p>1. Compliance rates after building departments adopt improved compliance tools (resulting from IOUs training) in existing buildings (retrofits) and new construction.</p> <p>IOU PROPOSED: X recommendations and/or develop at least one tool from best practices study.</p>	Staff/PIP	2b	Y	Delete

Codes & Standards – Reach Codes Subprogram

	Mission
SW Program: Codes & Standards	This sub-program advocates for the development and implementation of “reach codes” that exceed minimum state code requirements and may be adopted by local jurisdictions or agencies. The Program monitors and/or participates in a wide range of activities or proceedings that have direct or indirect impacts on California regulations including, but not limited to American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), international activities including Europe, Asia, Canada, and Australia, voluntary standards such as green building codes, and ratings organizations such as the Cool Roof Rating Council (CRRC), National Fenestration Rating Council (NFRC), and the United States Green Building Council (USGBC).
SW <u>Sub-program</u> : Reach Codes	

Short-term (2010-2012) “SMART” <u>Sub-program</u> Objectives:	Source (SP, AL, DR, PIP, or Staff)*	IOU Recommendations and Comments
1.	Staff/SP 21	Delete
	Staff/PGE PIP page 83	Revise to: By the end of 2012, C&S develops new construction model reach code language to streamline reach code adoption. Coordinate with compliance improvement sub program efforts.
	Staff/ (C&S PIP p.29).	Revise to: By the end of 2012, produce a package of reach code documentation for each climate zone that is applicable to existing homes.
2. By 2012, with the support of C&S program, CEC develops pre-approved model reach codes so as to eliminate duplicative LG development costs and facilitate subsequent adoption of code	Staff/ (C&S PIP p.29).	Delete
IOU PROPOSED: By 2012, in cooperation with the CEC, the C&S program develops templates for reach codes so as to reduce duplicative LG development costs and facilitate subsequent adoption of code.		Comments: Deleted because it is covered in #2 above
	Staff/PG&E PIP page 87	Revise to: By end of 2012, IOUs conduct outreach to 20% of local governments (or 100% of local jurisdictions

included in Government Partnership Program) by providing 90 advocacy sessions (statewide), to recognize benefits and support activities to optimize compliance with existing codes

3. By 2012, develop 8 CASE Studies in support of Title 24, Part 11 voluntary standards for Commercial Buildings. Subject to CEC discretion, CASE Studies may be moved from Title 24 Part 11 (reach code) to Part 6 (base code), thereby reducing the final number of CASE studies.

Staff/SP p34

Revise to:
By 2012, develop 8 CASE Studies in support of Title 24, Part 11 voluntary standards for Commercial Buildings. Subject to CEC discretion, CASE Studies may be moved from Title 24 Part 11 (reach code) to Part 6 (base code), thereby reducing the final number of CASE studies.

Ken Keating

Deleted

Short-term <u>Sub-program</u> PPMs:	Source (SP, AL, DR, PIP, or Staff)*	Metric Type (2a or 2b)**	Baseline Study Required (Y/N)	IOU Recommendations and Comments
1. Number of jurisdictions in IOU Service territories implementing Reach Codes in residential and/or commercial sectors as a result of the RC sub-program activities.	Staff	2b	N	Revise to: Number of jurisdictions in IOU Service territories implementing Reach Codes in residential and/or commercial sectors as a result of the RC sub-program activities.

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**Metric type: 2a = reported annually, 2b = reported by end of cycle.

Long-Term (2013-2020) “SMART” Sub-program Objectives:
None proposed.

Source (SP, AL, DR, PIP, or Staff)*

IOU Recommendations and Comments

Long-Term Sub-program MT Indicators:	Source (SP, AL,	Metric Type	Baseline Study	IOU Recommendations and Comments
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	DR, PIP, (3)** or Staff)*	(3)**	Required (Y/N)	
None proposed.				