New Construction – Commercial Savings By Design Subprogram

	Mission
SW Program: **New Construction**	The New Construction Program is a statewide program that will continue the transformation process of California's residential and nonresidential new construction markets consistent with the vision of the California Long Term Energy Efficiency Strategic Plan (CEESP) and a more sustainable energy efficient future, through four sub programs: Savings By Design (SBD), California Advanced Homes Program (CAHP), Zero Net Energy Homes (ZNEH), and Energy Star Manufactured Housing.
SW Sub-program: **Savings By Design**	Savings By Design (SBD) is an energy efficiency program developed for the nonresidential new construction industry. Since 1999, SBD has provided statewide consistency, program stability, and savings. SBD seeks to protect and preserve natural resources by advancing the design and construction of sustainable communities and promoting green building practices. The program is designed to overcome customer and market barriers to designing and building high performance facilities. SBD provides the nonresidential new construction industry with a broad palette of technical and financial resources to aid the design of new facilities in the most cost- effective energy and resource efficiency standards. The program will incorporate new approaches for 2009 - 11 to advance integrated design and green building certification in support of the CLTEESP. *(CEESP Section 3 – Goal 1)* *The Strategic Plan spells out a variety of strategies to address energy reduction in California for homes, offices, factories, and farms. SBD advances CLTEESP's comprehensive energy efficiency goals with:* *o Integrated design approach* *o Support of commissioning and M&V* *o Support training activities* *Nonresidential new construction will be progressively more efficient and include clean, on-site distributed generation, moving towards Zero Net Energy (ZNE) by 2030*

CA EESP Goals/Strategies Addressed by SW Sub-program:	**CA EESP Ref. pp. #**	**IOU Recommendations and Comments**
CA EE SP Goal (1): New construction will increasingly zero net energy performance (including clean, distributed generation), reaching 100 percent	AL/SP	

penetration of new starts in 2030. Goal Results: An increasing percentage of the 50-120 million sq.ft. per year of new commercial construction will be progressively more efficient and all new construction will be zero net energy by 2030.		
CA EE SP Strategy 1-6: Develop a multi- pronged approach to advance the practice of integrated design.	AL/SP	Comment: Define integrated design

Short-term (2010-2012) "SMART" Sub-program Objectives:	**Source (SP, AL, DR, PIP, or Staff)***	**IOU Recommendations and Comments**
By 2012, have at least 3 examples of net zero energy buildings committed statewide targeting diversified building types (and when feasible, different climate zones).	Staff/SP	Revise to: By 2012, have at least 3 examples (statewide) of committed net zero energy buildings targeting diversified building types (and when feasible, different climate zones).
	ZNE Goal, p 28 of PG&E PIP	Comments: Objective deleted per ED and IOU discussion
Distribution of Statewide committed IOU participant whole building projects that exceed T24 by 2012 75%: 10% - 19% above 2008 T24, 20%: 20% - 30% above 2008 T24, 5%: 40 % above 2008 T24	Source IOUs DR	Revise to: Distribution of Statewide committed IOU participant projects (whole building only) that exceed T24 (2008) by 2012 75%: 10% - 19% above 2008 T24, 20%: 20% - 29% above 2008 T24, 5%: 30+ % above 2008 T24 Comments: Top end is now 30+%
By 2012, Integrate best practices in lighting advanced technologies in SBD program offerings/packages to reduce LPD from standard practice by building type.	Staff/SP	Comments: If there are best practices in marketplace we are not using, we should integrate them.
By 2012, Integrate (A) best practices through kicker incentives in 5% of new construction for HVAC technologies and practices such as radiant cooling, ductless systems, ground source heat pumps etc. IOU: Program is technology neutral (.	(Derived from SP p. 63)	Revise to: By 2012, track penetration of cost-effective best practices for innovative HVAC technologies and practices adopted in participating SBD projects.

		Comments: CLTEESP's goals for NC/ZNE conflict with its HVAC strategy of promoting particular technologies. Diverting funding to selected technologies at the expense of others will result in lower savings and additional opportunity costs. The program is technology neutral. Kickers for particular technologies go against the WBA/integrated program design for SBD. SBD will track installations of innovative HVAC technologies and practices (jointly developed list with HVAC SW team) in participant projects.
For SW SBD projects that receive committed "Whole Building" incentives by 2012: 2010: 20%; 2011: 20%; 2012: 20%	(PG&E PIP page 8)	Revise to: For SW SBD committed SA or WBA projects that qualify for "Whole Building" approach by 2012: 2010: 20%; 2011: 25%; 2012: 30%
For SW SBD using Whole Building Approach, projects where the Design Team receives the Integrated Design Team Stipend: 2010 - 10% of WBA projects, (DR: 5%); 2011 - 15% of WBA projects (DR: 10%); and 2012 - 15% of WBA projects of DTI projects.	(Source IOUs DR & PG&E PIP p.8)	Revise to: Statewide SBD projects using Whole Building Approach, where the Design Team receives the Integrated Design Team Charrette Stipend: 2010 – 5% of WBA projects, (DR: 5%); 2011 - 10% of WBA projects (DR: 10%); and 2012 - 15% of WBA projects of DTI projects. Comments: Just to verify, this is for the Charrette stipend and not the Design Team Incentive.
Percentage of SW SBD projects that receive new 2010-12 kicker incentives 2010 - 5% of WBA projects ,	(Source IOUs DR)	

2011 - 10% of WBA projects, 2012 - 15% of WBA projects.		

Short-term Sub-program PPMs:	**Source (SP, AL, DR, PIP, or Staff)***	**Metric Type (2a or 2b)****	**Baseline Study Required (Y/N)**	**IOU Recommendations and Comments**
Average site energy post-install ex-ante (kWh/sq ft &) (IOU: prefer kBtu/sqft) and demand (kW/sq ft) for participating CNC by building type.	Staff	2b	N	Revise to: Average site energy install, ex-ante (kBtu/sqft-yr and demand (kW/sq ft) for participating CNC by building type and climate zone. Comments: Ok if kbtu/sf-yr. Verify that site energy is T24 loads only.
Percentage of committed participating Whole Building that are expected to reach a minimum of 40% less energy than 2008 T24 codes requirements.	PIP (PG&E page 28)	2b	N	Revise to: Percentage of committed participating Whole Building Approach projects that are expected to reach a minimum of 40% less energy than 2008 T24 codes requirements. Comments: Committed and WBA only.

**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**
By 2020, have at least *10* examples of net zero energy buildings for each building type.	Staff/SP	Revise to: By 2020, have at least *2* examples of net zero energy buildings for each appropriate building type across entire state. Comments: There are 21 building types in the E3 (we track 35) - this is 210 ZNE buildings in less than 10 years. Some building types may never get to ZNE (e.g.,

		quick service restaurants, hospitals).
By 2030 100% of CNC will be designed to be ZNE	Staff/SP	Comments: This will need mandatory code to be realistic.
An increasing percentage of the 50-120 million sq ft/year of new commercial construction will be progressively more efficient and all new construction will be ZNE by 2030	Staff/(SP p.31)	Revise to: An increasing percentage of the 50-120 million sq ft/year of new commercial construction will be progressively more efficient.
Meet the examples of LPD targets of the LMT Strategic Plan by 2020 by building and space type	Best practices p23 of SP Lighting	Comments: This will need mandatory code to be realistic.
By 2015, include standard program offerings that emphasize HVAC related elements to WB approaches into 25% of new and existing construction.	Staff/SP 63	Revise to: Programs should emphasize HVAC measures as part of an integrated WB strategy. By 2015, show that at least 25% of WBA recommendations include targeted HVAC. Comments: SBD's approach of integrating whole-building systems conflicts with the objective to emphasize HVAC elements to the disadvantage of other systems. We will promote advanced technologies where appropriate.
By 2020, incorporate radiant cooling, ductless systems, ground pumps etc. into 50% of new and existing construction.	Staff/SP 63	Revise to: Track penetration of cost-effective best practices for innovative HVAC technologies and practices adopted by participating SBD projects. Comments: CLTEESP's goals for NC/ZNE conflict with its HVAC strategy of promoting particular technologies. Diverting funding to selected technologies at expense of others will result in lower savings and additional opportunity costs. The program is technology neutral. Kickers for particular technologies go against the WBA/integrated program design for SBD.

		SBD will track installations of innovative HVAC technologies and practices (jointly developed list with HVAC SW team) in participant projects.
By 2015, increased penetration of high efficiency projects in the market that implement Integrated Design/Whole Building by xx% over 2008 baseline.	Staff	Revise to: By 2015, increase market penetration (participants and non-participants) of high efficiency projects that implement Integrated Design/Whole Building Approach over 2008 baseline in California.
By 2020, all CNC in California's market implement Integrated Design and Whole Building. Note – might need mandatory code for this to be realistic, agree this is the way to go	Staff	Revise to: By 2020, all CNC in California implements Integrated Design/Whole Building Approaches Comments: This will need mandatory code to be realistic; agree this is the way to go.

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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)**	
Percentage decrease in average site energy use (kBtu/sq ft &) and demand reduction (kBtu/sq ft) for CNC by building type in California.	Staff	3	Y	Revise to: Percentage decrease in average site energy use (kBtu/sq ft-yr) and demand reduction (kW/sq ft) for CNC by building type in California. Comments: Definition of site use is important; building site energy comprises T24-regulated loads only/ Total site energy comprises building site energy *and* exterior lighting, architectural lighting/signage, all non-building energy use (fountains, irrigation, vehicle charging stations) non-occupied space (garages, walkways), and building end-uses unregulated by T24 (plug loads, process loads, appliances,

				occupancy, etc).
Percentage of CNC buildings implementing: (a) Integrated Design/Whole Building approaches (NEED TO DEFINE, prior to 50% design development) (b) Systems projects (past 50% design development), in California ACTION ITEM – IOUs define Integrated Design/WB Notes : Whole Building and Integrated are the same, Integrated WB design (?) - If project is already designed it is called Systems project too late for ID - Whole building model is still done for systems projects - Whole building approach looks at interactive affects, day lighting - 50% design develop, not going to get WB incentive, too far along	staff	3	Y	Revise to: Percentage of completed CNC buildings California-wide implementing Integrated Design/Whole Building approaches. Comments: Whole Building and Integrated Design are synonymous, as used by SBD program: - If project is >50% Design Development, it is too late for WBA/ID: then becomes a Systems project in SBD. - A complete building model is still done for systems projects - A complete building model looks at interactive affects, day lighting, etc. Most likely non-participant WB/ID will be identified by % > T24. For example, if project is 15% > T24, project most likely utilized WB/ID.

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***Metric type: 3 = data collection, tracking, and reporting [by IOUs, CPUC staff, and/or other entities] to be determined later.*