

California's Statewide Nonresidential New Construction Program: Measuring Market Transformation Effects

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Introduction

The statewide Savings By Design (SBD) Program, currently implemented by the three California electric investor-owned utilities (IOUs) PG&E, SCE and SDG&E, is designed to transform energy-efficiency investment behavior in the nonresidential new construction (NRNC) market. As part of the statewide MA&E efforts, the Market Characterization and Program Activity Tracking (MCPAT) Study was commissioned to track trends in the NRNC market, as well as participation in the SBD Program.

Research Question

To capture the effect of the SBD Program on the design practice of construction professionals in California, the California Public Utilities Commission established a statewide program milestone for 2000, requiring *a minimum increase of 2% (3% for full credit) in the market share of new nonresidential building designs that exceed the 1998 Title 24 standards by at least 10%*. The SBD Program had to meet the milestone in both the new construction and the remodel and renovation (R&R) nonresidential markets. At the end of 2000, the achievement of the SBD market change/effect milestone was evaluated within the MCPAT Study.

Research Methodology

Electronic Title 24 documents were collected from statewide samples of projects permitted in 1999 and 2000. For each project collected, the percentage by which the project exceeds Title 24 requirements was determined by calculating the ratio between proposed and standard Code budgets.

For *performance* projects, the proposed-to-standard ratio was calculated using the building-level annual energy use budget (kBtu/sqft-yr) reported in the Title 24 documentation.

For *prescriptive lighting* projects, the proposed-to-standard ratio was calculated using the lighting power density (W/sqft) specified in the Title 24 documentation.

For *prescriptive mechanical* projects, the proposed-to-standard ratio was calculated using the efficiency of cooling equipment for HVAC jobs, and the fan power index for all specified fans.

The market share of designs that exceed the 1998 Title 24 standard by at least 10% was calculated as the projects with a proposed-to-standard ratio of 0.9 or lower, divided by all the projects examined.

Research Results

Results indicate that the market share of nonresidential new construction projects that exceed the 1998 Title 24 standards by at least 10% has increased from 28.7% in 1999 to 33% in 2000, i.e. by 4.3%. Similarly, the market share of efficient remodel and renovation projects has increased from 31.5% in 1999 to 35.1% in 2000, i.e. by 3.6%. Both these market share increases exceed the 3.0% increase required, and indicate that the California IOUs have met the Savings By Design Program milestone.