REACH CODE NEWS BRIEF: MARCH 2022

DRAFT RESULTS AVAILABLE SOON FOR COST-EFFECTIVENESS ANALYSES FOR UPCOMING 2022 STANDARDS CYCLE



With intense activity preparing Cost-Effectiveness analyses for the upcoming 2022 Building Standards cycle, the statewide reach codes team is hard at work to deliver the analysis results as requested by local jurisdictions in the recent survey discussed in the November issue.

The reach codes team is pleased to announce that draft results will be available in April for Single Family New Construction and Nonresidential New Construction. The team will be sharing these results in two webinars being scheduled for early May.

The Single Family results will be presented in a webinar scheduled for Tuesday, May 3, from 10-11:30 am. Details and registration information is available here.

The Nonresidential New Construction results will be presented a week later in a webinar scheduled for Wednesday May 11, also from 10-11:30 am. Details and registration information for this webinar are available here. Completed reports are anticipated to be available during Q2 2022.

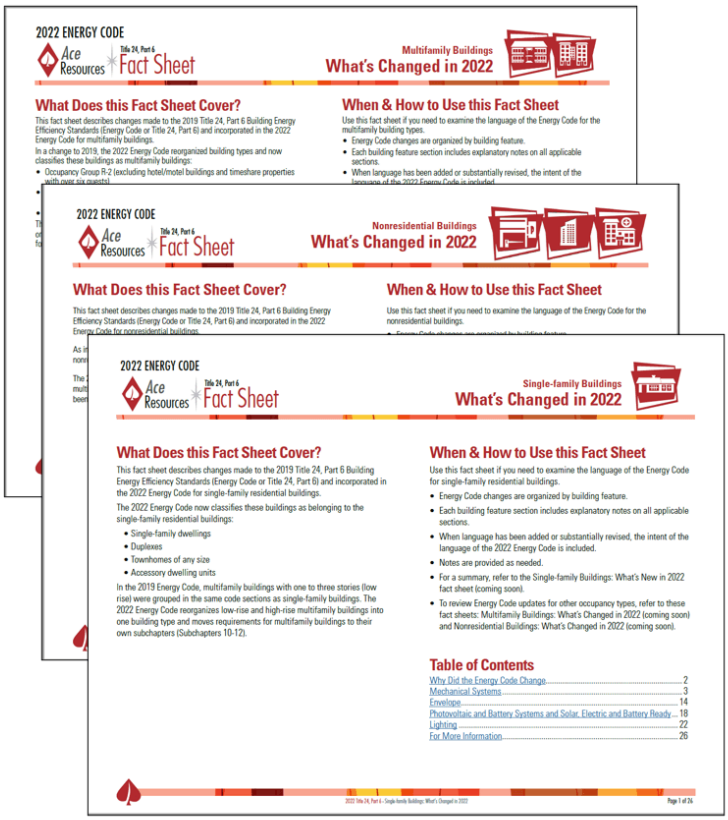
The technical teams are also continuing work on Multifamily New Construction and Electric Pool Heating analysis.

Visit our website to download the newest Cost Effectiveness reports and materials.

Looking for resources to help understand the changes in the 2022 Building Energy Efficiency Standards?

The statewide Codes and Standards Energy Code Ace program has just published What's Changed in 2022 Fact Sheets for Multifamily, Single Family and Nonresidential Buildings.

Download these no-cost references here!



UPCOMING EVENTS

April

April 5: 3C-REN Webinar: The Value of Becoming a Certified Energy Analyst (CEA)

April 11-14: CA-NV Section, American Water Works Association Spring Conference, "Sustainable Water through the Millennium: Leading, Education, Serving"

April 12: Building Decarbonization Coalition: New York Policy Call

April 13: Energy Commission Monthly Business Meeting.

April 14: BayREN Training: Navigating the Energy Code

April 26: Reach Code Newcomers Series, Session 4: Reach code ordinance options

April 27: BayREN Training: Residential Additions



Be sure to follow us on Twitter for the latest news and information!

NEW THIS MONTH!



REACH CODES CORNER: A FOCUS ON COST-EFFECTIVENESS

This column is a monthly feature focusing on specific topics of interest to newcomers to the reach code development community.

As we discussed a couple months ago, energy reach codes are amendments to the California Energy Code and as such, must satisfy specific requirements. One of these is the requirement that the local jurisdiction establish an official determination that the proposed measures will be cost-effective and will result in less energy consumption than the state requirements. In other words, the jurisdiction must demonstrate that the value of benefits to be realized with the adoption of a reach code will exceed the costs of any investments required by such a measure.

The Energy Commission does not specify a method for determining cost effectiveness, nor do they review a public agency’s findings for accuracy. They do require that the evidence used by the local jurisdiction to make its cost effectiveness findings be submitted to the Energy Commission as part of the application package for reach code approval.

In any case, the analysis must incorporate costs and benefits for the types of buildings a proposed measure is focusing on. To estimate these, a model building is used that reasonably represents typical buildings. The measure installation costs are typically

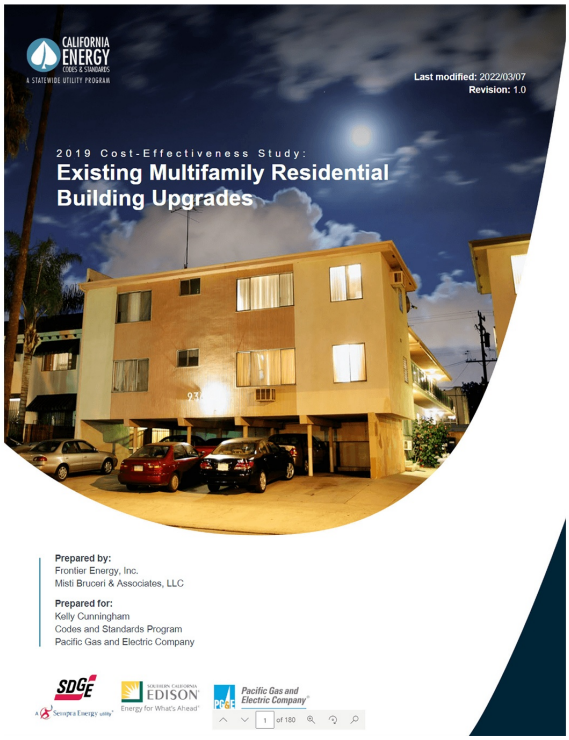
estimated by surveying building contractors. And the savings estimates can be derived using energy modeling software, such as California Building Energy Code Compliance (CBECC) which is the open source software maintained by the Energy Commission.

Often, two different savings metrics are used in the analysis: On-Bill, which looks at costs from the customer's perspective, considering actual energy costs from utilities' published tariff rates. The other metric takes a broader, societal perspective, considering overall societal benefits, including factors like the value of emissions reductions and energy grid impacts. This is called Time Dependent Valuation (TDV), and in fact, is the metric used by the Energy Commission in evaluating cost effectiveness for efficiency measures in Title 24, Part 6. The analysis also takes into account other factors, such as weather and building vintage. A finding of cost-effectiveness can be made on any of the following bases:

- Simple payback: How many years will it take to recoup incremental capital costs?
- Benefit-to-cost ratios: Do the benefits exceed the costs? Net present value (NPV) of benefits divided by costs (must be >1.0)
- Net present value: Do the benefits exceed the costs? NPV of benefits minus costs (must be positive value)

While there are different approaches a local jurisdiction may take to arrive at a cost-effectiveness determination, such as contracting with an expert to conduct a study or conducting the cost-effectiveness analysis in-house, many jurisdictions have utilized the work done by the statewide reach codes team in developing a wide range of cost-effectiveness studies. These include findings for all 16 Climate Zones across the state so they will be applicable to any jurisdiction and are available at no cost to any jurisdiction.

The materials on Session 3 of the Reach Codes Newcomers Series, focusing on cost effectiveness, are also available here.



NEW COST-EFFECTIVENESS STUDY ON EXISTING LOW-RISE MULTIFAMILY BUILDINGS NOW AVAILABLE

The statewide reach codes program has just published a new Cost-Effectiveness Study on Existing Low-Rise Multifamily Buildings that documents cost-effective combinations of measures that exceed the minimum state requirements, both for the current 2019 Building Energy Efficiency Standards, effective January 1, 2020, and the upcoming 2022 Building Energy Efficiency Standards, effective January 1, 2023 (the latter will include a memo from the technical team that conducted the analysis).

This study will support the design of local ordinances requiring upgrades, which may be triggered by different events, such as at the time of a significant remodel or addition.

The focus of this study is on existing low-rise multifamily buildings and expands on a similar analysis completed for single family buildings. The analysis includes scenarios of individual measures, as well as package upgrades, and identifies cost-effective options based on the existing conditions of buildings in all 16 Climate Zones (CZs). For this analysis, an 8-unit, 2-story, garden-style multifamily prototype was used. This prototype is estimated to be representative of 40 percent of the existing multifamily building stock. It is a 6,960 square foot building with slab-on-grade foundation, wood framed wall construction and a sloped roof. Three building vintages were evaluated: pre-1978, 1978-1991, and 1992-2010.

Building envelope measures that were examined included:

- R-49 Attic insulation
- Air sealing
- Duct sealing
- New ducts
- Cool roof
- Wall insulation
- Floor insulation
- Window replacement

In addition, the following measures were explored:

- Water heating: Water heater blanket; Hot water pipe insulation; Low-flow fixtures
- Lighting Measures: LED Lamps, Exterior Photocontrol
- PV and Batteries: Stand-alone PV system and PV with Battery Equipment Fuel Substitution Measures: Standard or High Efficiency Heat Pump at HVAC or DHW replacement, standalone or with PV system

The study is available at no cost here. The results will be incorporated into the Cost Effectiveness Explorer soon to assist in policy design.



This program is funded by California utility customers and administered by Pacific Gas and Electric Company, San Diego Gas & Electric Company (SDG&E®) and Southern California Edison Company under the auspices of the California Public Utilities Commission and in support of the California Energy Commission.

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OTHER REACH CODE NEWS BRIEFS

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Archives