REACH CODE NEWS BRIEF: DECEMBER 2021

ANNUAL ROUNDUP: A LOOK AT REACH CODES IN 2021



Many local jurisdictions statewide continued to make progress on reach code development and adoption in 2021. While many jurisdictions undertook codes linked to the Building Energy Efficiency Standards, others pursued measures based on the jurisdiction's health and safety powers. Other jurisdictions continue to develop measures and packages with the expectation of adoption in early 2022. Here is a brief recap of the reach code activities from the Cities of:

- Alameda: All-electric for new construction; PV for new high-rise residential and nonresidential buildings
- Albany: Meet or exceed specific EDR Margins based on project's all-electric or mixed fuel design
- Campbell: Eletric space and water heating for residential new construction
- Chula Vista: Energy efficiency improvements for residential retrofits
- Daly City: All-electric for new construction; PV for new high-rise residential and nonresidential buildings

- Emeryville: All-electric for new construction; PV for new high-rise residential and nonresidential buildings
- Encinitas: All-electric for new construction; PV systems for new multi-family and nonresidential construction; energy efficiency requirements for residential retrofits
- Fairfax: All-electric for all types of new construction
- Los Altos: All-electric for new construction
- Millbrae: All-electric for new construction; PV for new high-rise residential and nonresidential buildings
- Petaluma: All-electric for new construction; specific additions/alterations
- Piedmont: All-electric for new low-rise residential; energy efficiency improvements for residential retrofits
- Richmond: All-electric for all types of new construction
- Sacramento: All-electric for all types of new construction with staggered effective dates through 2028
- San Carlos: All-electric for new construction
- Santa Barbara: All-electric for new construction
- Santa Clara: All-electric for new construction and specific additions/alterations
- Solana Beach: All-electric for new construction and PV for new high-rise residential and nonresidential buildings
- South San Francisco: All-electric for new low-rise and high-rise residential construction; specific additions/alterations (SF, low-rise and MF residential)
- Sunnyvale: All-electric for new construction and substantial renovations and additions; PV for new buildings

The reach codes team maintains a continually updated interactive map on its website, as well as a downloadable list of adopted ordinances. The interactive map provides links to jurisdiction staff reports as well as the ordinances. The downloadable list also provides links to each jurisdiction's ordinances.

UPCOMING EVENTS

January 20: Reach Codes Program: Webinar on Cost-Effectiveness Explorer

January 26: Energy Commission Business Meeting

January 29-Feb 2: ASHRAE Winter Conference



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

NEW THIS MONTH!



REACH CODES NEWCOMERS CORNER

This new column will be a dedicated monthly feature focusing on specific topics of interest to newcomers to the reach code development community.

As cities and counties prepare for the 2022 code cycle, many jurisdictions are considering reach codes for the first time. To support these efforts, the Reach Codes Team is focusing on the basics of the process. This month, we're focusing on some basic definitions, starting with what exactly a reach code is, and how it differs from other types of local ordinances. The term reach code typically refers to a local government law (ordinance) requiring buildings to meet energy standards that are more stringent than the California Energy Code. While local governments are required by law to adopt and enforce state energy standards within their jurisdiction, they have authority to establish additional energy conservation requirements that **reach beyond** statewide minimum standards; hence, the name "reach code."

Building Energy Efficiency Standards Measures

If the jurisdiction is developing an ordinance linked to the statewide Building Energy Efficiency Standards (Title 24, Part 6), state law requires this type of reach code to meet certain conditions. For instance, it must result in lower energy consumption than the statewide provision does, and it must be cost-effective. These types of reach

codes must also be approved by the Energy Commission and filed with the California Building Standards Commission (CBSC) before they may be enforced locally. Some examples of these types of ordinances that have been enacted during 2021 (see feature article above) include the City of Albany, Daly City, and Encinitas.

These types of reach codes are linked to the current version of the statewide Building Energy Efficiency Standards and must be updated with each new building code cycle (every three years). When the California Building Code (including the Energy Code) is superseded by a new version, as will occur when the new 2022 Standard becomes effective in January 2023, these local ordinances will expire unless superseded by new local ordinances (reach codes).

Health and Safety Measures

The local jurisdiction may also enact a reach code that emanates from the jurisdiction's police powers; that is, the power it exercises to protect and preserve the health and safety of its citizens. A local ordinance enacted pursuant to these powers may also be referred to as a reach code, but does not usually require an increase in performance beyond a state minimum. Instead, a municipal ordinance may restrict the materials used in new construction to require all-electric buildings or to prohibit the installation of gas infrastructure. Because these types of measures emanate from a different source of jurisdictional authority, these do not require approval by the Energy Commission for local enforcement, nor must they satisfy the cost-effectiveness requirement. They must, however, satisfy a showing of necessity that the measure is needed to combat the specific health and safety risk identified by the jurisdiction. Some examples of these types of ordinances enacted during 2021 (see feature article above) include Santa Barbara and Petaluma.

These types of ordinances may be immediately enforceable by the local jurisdiction and will only expire or be superseded by measures enacted by that local jurisdiction.

Want to Learn More?

The Reach Codes Team in collaboration with BayREN, Building Decarbonization Coalition and California Climate and Energy Collaborative (CCEC) is kicking off a Reach Codes Newcomers group with a webinar series in early 2022.

To find out more, please email info@localenergycodes.com and watch for upcoming announcements.



NOW AVAILABLE! COST-EFFECTIVENESS STUDY ON BATTERY STORAGE FOR SINGLE-FAMILY HOMES

The Reach Codes Team is pleased to announce the publication of its Cost-Effectiveness Study on Battery Storage for Single-Family Homes. The report documents cost-effective combinations of adding battery storage capacity to PV systems already required in new single family homes, and of installing a combined PV and storage system in existing homes. While there are PV requirements in the 2019 Title 24 code, there are no mandatory or prescriptive requirements for battery systems. There is a performance compliance credit for battery systems that meet minimum performance criteria.

The focus of this study is on battery storage systems in single family residential buildings. The study objective was to identify cost-effective storage system measure combinations in new and existing single family homes that meet the requirements to support adoption of a reach code. The analysis evaluates “behind-the-meter” battery systems coupled with a PV solar system in both new construction and existing homes (the study does not analyze stand-alone battery systems). "Behind-the-meter" systems are installed on-site, on the customer side of the meter.

The new study provides cost-effectiveness analysis for all 16 California climate zones (CZs). The Reach Codes Team compared energy impacts in a two-story, 2,700 square foot new construction home and a one-story 2,100 square foot new construction home

and found that cost effectiveness did not vary substantially. Therefore, the analysis presented in this report is based on one new construction prototype, the two-story 2,700 square foot home, and one existing building prototype, a one-story 1,665 square foot home.

Battery storage systems are beneficial to the occupant and the utility grid by serving the primary functions of daily cycling for load shifting, which maximizes solar self-utilization and grid harmonization. Residential occupants purchase battery storage systems for a variety of reasons, including, but not limited to, increasing PV self-consumption, resiliency backup power of critical loads during scheduled or unscheduled grid outages or brown-outs, and avoiding electricity purchases during higher priced time-of-use periods. While residential battery storage remains an emerging market, interest is quickly growing both from consumers and regulators as battery costs decline and the need for grid resiliency becomes more pronounced.

Demand flexibility measures, including battery storage, are increasingly important for California to integrate buildings with a changing electrical grid. Increasing PV supply, both distributed and utility-scale, and wind generation coupled with building demand patterns on the grid has created challenges during late afternoon and early evening hours during certain times of the year when the grid must rapidly ramp up to meet customer demand as the sun sets. Technologies that effectively shift load or store electricity for off-peak period consumption contribute to increased grid resilience and minimize the likelihood of renewable generation curtailment.

The study can be downloaded from the LocalEnergyCodes.com website here.

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