REACH CODE NEWS BRIEF: SEPTEMBER 2021

SANTA BARBARA ADVANCES CARBON NEUTRALITY GOALS BY PASSING ELECTRIFICATION REACH CODE

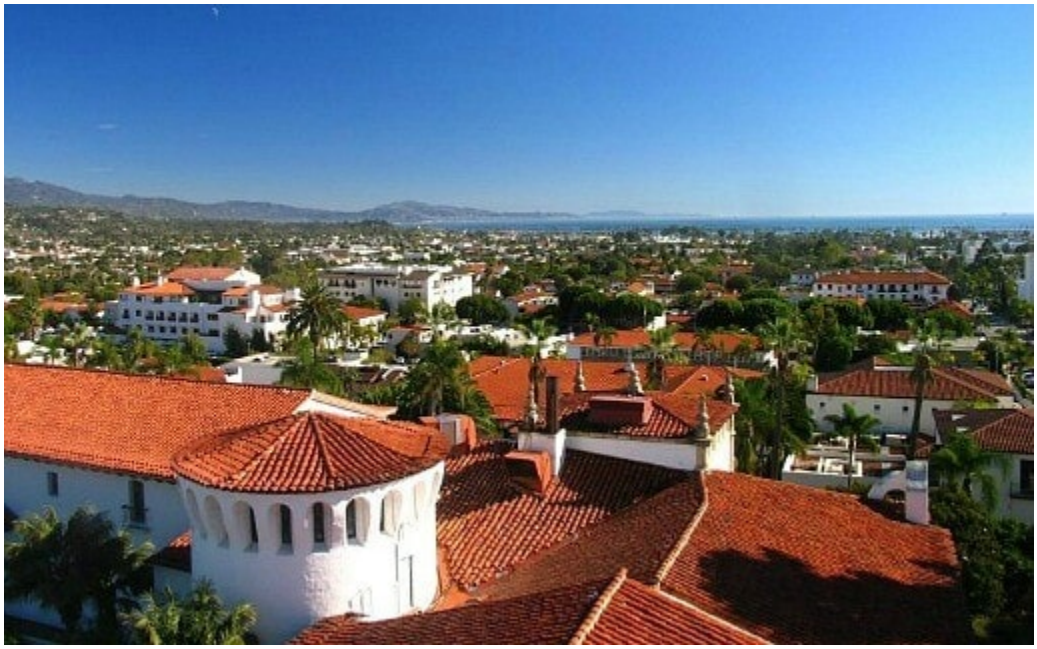


Photo and graphic courtesy of City of Santa Barbara.

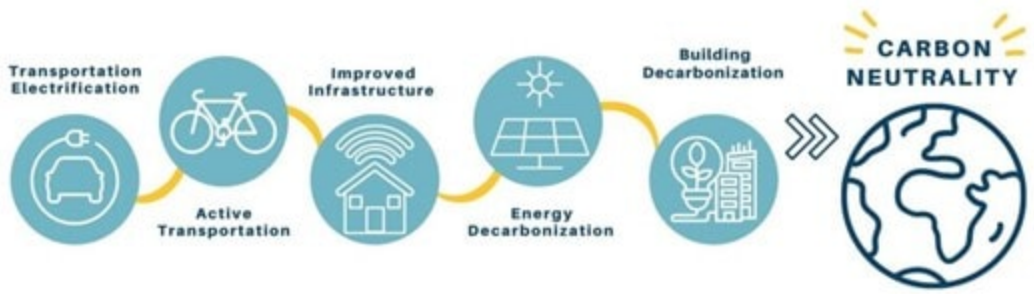
In 1969, a massive oil spill off the coast of Santa Barbara helped give rise to the modern environmental movement. One year later, a group of local leaders penned the “Santa Barbara Declaration of Environmental Rights” to acknowledge human-caused environmental harms and our enormous powers to alter the world. It called for an “ecological consciousness” that recognizes people as part of a community of living things sharing a fragile earth and called upon individuals and governments to take responsibility for its preservation.

Santa Barbara continued this environmental leadership on July 27th, 2021, when the City Council adopted an Ordinance that prohibits the installation of natural gas infrastructure in newly constructed buildings as part of its efforts to achieve carbon neutrality by 2035.

However, this time the City also based their actions on health and safety, economic grounds, and proven cost-effectiveness. This Ordinance applies to building permits submitted after January 1, 2022, for newly constructed buildings as defined in the

ordinance (i.e., it doesn't apply to existing buildings or even most renovations). Exemptions are allowed for restaurants, clean rooms, laboratories, and projects where electrification is not feasible.

To Santa Barbara leaders, it was a simple decision. They were concerned after watching wildfires, sea level rise, and floods destroy parts of their region in recent years, and they wanted to protect their vulnerable residents including low-income residents from harmful indoor and outdoor natural gas emissions.



They also want carbon-free energy content by 2045 and realized that the electric grid was becoming less carbon-intensive through the integration of renewable sources. They knew that in October 2021, Santa Barbara Clean Energy (SBCE), the City's new Community Choice Energy entity, would begin procuring 100-percent carbon-free energy for the community, essentially eliminating electricity-related emissions. They also understood that all-electric buildings are cost-effective in Santa Barbara.

The City wanted to send a clear signal to industry and consumers to invest in electric technologies, so they organized numerous public hearings during Covid-19. They also described their reach code on their Climate Actions webpage and presented several webinars. During a public hearing in January 2021, Alelia Parenteau, the City's Energy and Climate Manager, commented on the proposed code as it related to other jurisdictions that had a code in place at the time, stating "It is probably the most assertive…but not as aggressive as you could go."

Public hearings showed City staff and Council members that their reach code will help with California's affordable housing crisis, since all-electric new construction was proven to be cost-effective and near or lower than the cost a home powered with traditional natural gas.

This is not Santa Barbara's first venture into reach codes. The City Council adopted a reach code amending the 2005 Energy Code in 2008. Among other requirements, it mandated a 20% improvement over the 2005 energy code for low-rise residential new construction and 10% better for non-residential new construction. Since Santa Barbara is enacting this new reach code based on health and safety reasons first (e.g., climate

change adaptation and air quality concerns) and does not amend the Energy Code, this new 2021 reach code did not need to go through the formal CEC process. Instead, it was reviewed and approved by the California Building Standards Commission.

On June 7th, 2017, the Santa Barbara City Council adopted a hugely ambitious goal of 100% renewable electricity for the entire community by 2030 and an interim goal of 50% renewable electricity for municipal facilities by 2020. The City's 2019 Strategic Energy Plan (SEP) presents a flexible pathway to achieving a 100% renewable electricity supply by 2030 through a combination of strategic policy and program options focused on developing local renewable energy resources and bolstering local reliability and resilience. Importantly, the City mentioned exploring Title 24 building code improvements through reach codes and electrifying appliances as important potential policy and programs in the SEP.

The Statewide Codes and Standards Program provided valuable cost-effectiveness information and other information prior to public hearings. Furthermore, the City works closely with Southern California Edison (SCE) on grid reliability, building decarbonization, and transportation electrification issues. The City's pathways to carbon neutrality graphic (below) actually mirrors SCE's Pathways 2045.

Santa Barbara's environmental leadership from 1969 is alive and well in 2021.

UPCOMING EVENTS

October

October 6: Energy Efficiency Day

October 13: Energy Commission Business Meeting

October 20: BayREN training: Nonresidential Lighting

October 25-28: VERGE Climate Tech

October 27-29: Getting to Zero Forum



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

NEW THIS MONTH!



A CLOSER LOOK AT THE 2022 BUILDING ENERGY EFFICIENCY STANDARDS

This is the second of a two-part series on the new 2022 Building Energy Efficiency Standards adopted by the Energy Commission on August 11, 2021.

Last month, we looked at the major focuses of the new statewide Building Energy Standards. This month, we will explore more specific provisions the new Standards have incorporated to achieve the overarching state goals.

Multi-family Provisions

The requirements for dwelling units and common areas in multifamily buildings of all sizes were consolidated into three new chapters (mandatory, prescriptive, and additions and alterations requirements). These establish unified requirements for roofs, walls, and windows across all multifamily buildings, dependent on assembly type and fire rating. New multifamily measures include prescriptive heat or energy recovery on balanced ventilation systems in Climate Zones 1, 2 and 11 through 16, mandatory central ventilation shaft sealing and testing, mandatory kitchen ventilation capture efficiency, mandatory increased pipe insulation for domestic hot water

systems, a compliance pathway for central heat pump water heating, and prescriptive heat pump requirements for all multifamily HVAC systems serving individual dwelling units.

Single-Family Provisions

For single family new construction, the prescriptive baseline was revised to include either a space heating heat pump or heat pump water heater (HPWH) and expanded electric-ready measures. Another change was to add a mandatory roof deck insulation requirement for Climate Zones 4 and 8 through 16. New provisions in the requirements for single family additions and alterations include the expansion of cool roof requirements to additional climate zones, added roof insulation requirements for low-slope roofs at reroof, reduced duct leakage target for existing ducts from 15% to 10%, and attic insulation and air sealing requirements for altered ceilings in vented attics.

Nonresidential Building Provisions

New and revised provisions for these buildings include:

- Envelope: high performance windows, cool roofs in steep-sloped buildings, air leakage and leakage testing, and insulation for roof recovers and roof recovers.
- Lighting: refinements to indoor lighting power density requirements, updates to daylighting control requirements (requiring dimming to 10% full lighting power instead of 35%), update outdoor lighting zones (rural areas reclassified as lighting zone 1), and reduce outdoor lighting power allowances to match the updated Illuminating Engineering Society recommended illuminance levels for parking lots.
- HVAC & Water Heating: add prescriptive requirements for dedicated outdoor air systems when used as the primary source of ventilation, add a prescriptive requirement that high capacity space heating gas boiler systems and service water heating systems achieve 90% thermal efficiency, add a prescriptive requirement for exhaust air heat recovery systems in certain building types and climate zones, expand prescriptive economizer requirements, and simplify minimum airflow requirements for variable air volume; add prescriptive requirements for heat pump space heating for certain building types
- Solar photovoltaic and battery storage systems required for certain building/space types.

Note that the building owner may choose the performance compliance pathway that allows them not to use certain prescriptive requirements such as heat pump systems, but the project must install additional efficiency measures to overcome the resulting compliance penalty.

In addition to these changes, the Commission focused on achieving savings from commercial process-specific energy use that accounts for significant statewide energy consumption and GHG emissions. These include data centers, commercial kitchens, commercial refrigeration, or other similar tasks.

Significant provisions include:

- Controlled environment horticulture (CEH): Added new horticultural lighting minimum efficacy requirements for indoor growing spaces and greenhouses, minimum efficacy requirements for dehumidification systems in indoor grow facilities, and specified greenhouse envelope requirements.
- Steam trap fault detection diagnostics: steam traps in new facilities must have fault detection to assist facility managers in identifying and replacing failed traps.
- Compressed Air: expand existing requirements for compressed air systems to include requirements for pipe sizing, leak testing, and leak monitoring.
- Refrigeration systems: expand existing requirements to include minimum design and control requirements for carbon dioxide (CO2) transcritical refrigeration systems for both refrigerated warehouses and commercial refrigeration systems. Automatic door closers will also be required for refrigerated spaces over 3,000 square feet.

Our sister program, Energy Code Ace, is developing new training programs and resources focusing on the changes and compliance requirements of the 2022 Standards. Find out more here.



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