

Developers Face New Climate Change Initiatives to Decarbonize Buildings

*Peter Hsiao, Ilana Saltzbart, Les Oakes, and Brandon Mullings-Whitaker**

The California Energy Commission recently released its Integrated Energy Policy Report emphasizing the reduction of carbon emissions from homes and commercial buildings. California is one of several states pursuing this evolution in energy efficiency by accentuating building “decarbonization” — the process of removing energy sources that emit carbon pollution. The authors of this article explain the report and advise real estate stakeholders to closely track its implementation for its effects on state and municipal building codes.

Developers and landlords faced the first generation of “green building” initiatives with LEED (Leadership in Energy and Environmental Design) certification and Environmental Protection Agency’s (“EPA”) Energy Star programs. Now, the states are ready to embark on new initiatives to address the impact of buildings on climate change. The California Energy Commission (the “Commission”) recently released its new Integrated Energy Policy Report (“IEPR”) emphasizing the reduction of carbon emissions from homes and commercial buildings. California is one of several states pursuing this evolution in energy efficiency by accentuating building “decarbonization” — the process of removing energy sources that emit carbon pollution.

Nationwide Decarbonization Initiatives

Buildings use about 40 percent of the energy produced in the United States and are responsible for about 30 percent of the nation’s carbon dioxide emissions, making carbon emissions from buildings a priority for reduction. In the absence of federal actions to address climate change, the states are implementing laws and policies aimed at decarbonization. These multifaceted initiatives will pose sweeping implications for real estate developers, operators, and investors.

Integrated Energy Policy Report

The IEPR is released biennially and guides California’s energy policy agenda, responding to the direction set by the state legislature.

*Peter Hsiao (phsiao@kslaw.com) is a partner at King & Spalding LLP, where he leads the firm’s West Coast U.S. Environmental, Health & Safety Practice, handling environmental, natural resources, and toxic tort law matters. Ilana Saltzbart (isaltzbart@kslaw.com) is a partner at the firm defending companies in governmental investigations and enforcement actions regarding environmental issues. Les Oakes (loakes@kslaw.com) is a partner at the firm working with clients on negotiations, litigation, permits, and compliance concerns in a variety of environmental matters, including transactions. Brandon Mullings-Whitaker (bmullings-whitaker@kslaw.com) is an associate at the firm focusing on environmental and safety compliance for heavily-regulated businesses.

While California has some of the country's most aggressive policies aimed at reducing greenhouse gas emissions, fossil fuel-borne emissions from buildings received little attention until the 2018 IEPR update. The new initiative is the "canary in the mine," foretelling new and similar requirements in other states and major urban areas that traditionally follow California's leadership role.

Zero-Net-Energy to Zero-Emissions Buildings

In the 2018 IEPR update, the Commission identifies the need to shift from "zero-net-energy" to "zero-emissions buildings." This is an important distinction because zero-net-energy buildings still emit carbon, whereas zero-emissions buildings do not. California already requires all new single-family homes and low-rise apartment buildings to use a combination of energy efficient materials and design, and solar panels so that they use no more energy than the panels generate. The next step is to address greenhouse gas emissions from gas-fired space and water heaters.

Achieving Decarbonization through Electrification

The report cites a growing consensus that electrification — replacing fossil fuel-based heating and cooling systems with grid-based systems — is the most viable and predictable path to zero-emissions buildings. As the IEPR points out, this consensus is due to the availability of efficient electric technologies and the continued reduction of emission intensities in the electricity sector. California is at the forefront of electrifying buildings, but other states are increasingly implementing electrification programs.

The report states that heat pump technology is central to the transition from zero-net-energy to zero-emissions buildings. Heat pumps function like air conditioners in reverse and use three to five times less energy than gas-burning furnaces and conventional electric resistance heaters. Notably, the California Public Utilities Commission is planning to push heat pumps and other low-emissions technologies as part of its decarbonization efforts. Other possible steps include solar thermal heating and batteries for solar energy storage, reducing emissions from refrigerants, reassessing utility rates for buildings that electrify, and replacing fossil gas with renewable gas, such as gas generated from organic waste.

Decarbonization Opportunities for New Buildings

The life expectancy for new buildings ranges between 50 and 87 years, such that new residential and commercial buildings are likely to remain in use well beyond 2050. California is now recognizing that the heating technology choices that developers and operators make today may lock in decades of emissions. Accordingly, the Commission found that near-term developer action is necessary to prevent lock-in of building stock that produces significant carbon emissions.

First, new buildings increasingly look to LEED and EPA's Energy Star programs, the two leading voluntary standards for "green buildings." Cities are increasingly adopting LEED as a mandatory requirement for new buildings. Last year, the U.S. Green Building Council launched LEED Zero, a program that rewards zero-net-energy operations and resources in buildings.

Second, LEED will likely follow the current

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shift in energy efficiency priorities and align its rating system with the new zero-emission initiative's goals. The rating system already advances decarbonization by addressing building life cycle assessment, transportation, and the water-energy nexus.

Further, the growing emphasis on zero-emissions buildings in California and other states means that reducing the carbon footprint

of buildings is fast becoming a critical business issue for real estate developers, operators, and investors. This year alone, two California jurisdictions implemented building electrification into their California Environmental Quality Act documentation. Real estate stakeholders should closely track the 2018 IEPR Update and its implementation for its effects on state and municipal building codes.

