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California became the first US state to mandate Embodied Carbon Emission Control on August 2, 2023, days after its hottest month. This shift aims to address greenhouse gas emissions from building materials and construction activities, which account for about 13% of global CO2 emissions annually. Buildings can take decades (20-80 years) to recoup their embodied carbon impacts through operational savings. California's climate goals include a 40% carbon reduction by 2030 and neutrality by 2045. The new measures are part of the 2024 CALGreen updates, targeting nonresidential projects over 100,000 square feet and school projects above 50,000 square feet. These will have to choose from three pathways: building reuse (using at least 45% of an existing structure), a lifecycle assessment for 10% lower emissions, or using materials with environmental product declarations below a specified threshold. California is focusing on embodied carbon after leading in energy reduction through its code; the change aims to reduce greenhouse gas pollution and support its climate goals. The importance of considering embodied carbon in building design lies not only in its quantifiable impact on greenhouse gas emissions but also in shifting cultural attitudes towards sustainability. The Buy Clean California Act and voluntary standards like LEED have taken initial steps, but broader applicability is needed to drive real change. By developing a flexible set of easy-to-comply-with standards for large projects, California aims to make considering embodied emissions the new normal. For example, energy performance modeling has become standard practice in building design, driving significant environmental benefits. Similarly, incorporating both operational and embodied greenhouse gas emissions into building design will be crucial for achieving California's climate objectives. These measures apply to commercial buildings over 50,000 square feet, school projects of similar size, and certain state healthcare facilities. However, they do not currently cover residential occupancies or hospitals subject to different regulatory authorities. The approach does not involve banning specific materials but rather promotes more sustainable choices through the Prescriptive path, which limits material selection to those with lower global warming potential. The Performance compliance path allows for balancing poor-performing materials with better alternatives. Additionally, a weighted average approach has been implemented for concrete use. Most building reuse and retrofit projects are expected to meet the 45% standard, making it likely that many will comply without significant disruptions or increased costs. New California Green Building Standards Aim to Reduce Carbon Footprint While Preserving Compliance Options Several new regulations have been introduced to promote sustainable building practices in California, while ensuring compliance with existing standards. The new measures include the use of Life Cycle Assessment (LCA) and Environmental Product Declarations (EPD), which aim to reduce the carbon footprint of buildings. The new Prescriptive method allows for the use of products with higher greenhouse gas emission impacts, but only a small number of highly polluting products will be restricted. The multiple compliance paths enable project proponents to choose the path with the smallest impact, which is expected to have minimal cost and feasibility impacts on the building industry. The AIA California has submitted a proposal for the HCD to adopt the measures outlined in the Preservation Green Lab, aiming for the 2025 code to be effective from January 1, 2026. The California Building Standards Commission has been a pioneer in developing sustainable building codes since 2009. They received two awards, the Green Technology's Pioneer Award and the USGBC's Policy Leadership Award, recognizing their efforts in creating mandatory embodied carbon reduction standards in CALGreen, which will take effect on July 1, 2024.

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