Building Decarbonization Code

To meet a 1.5 degree C target as outlined in the Paris Agreement, all new construction must be all-electric by 2025. The Decarbonization Overlay is a necessary tool for cities and states that adopt the I-Codes. Where adopted, the overlay will future proof new construction projects making them zero-carbon ready and creating buildings that can effectively interact with a fully renewable and clean electric grid.

Why Electrify?

Building electrification and decarbonization policies are being discussed by states and cities across the country. These policies address the transition away from onsite fossil fuel combustion in buildings, as the electricity grid (including renewable energy sources) move towards 100 percent carbon-free. Many of these jurisdictions have climate-related goals that require electrification of the building stock: over 200 cities have made pledges to achieve 100 percent clean energy or "net zero" emissions. Ensuring that new buildings emit little—or no—carbon is the foundational component of meeting these goals.

Learn more:

newbuildings.org/resource/building-decarbonization-code

codesforclimate.org

The Decarbonization Code supports the goals of the Codes for Climate Initiative.

For questions, technical assistance, and more information:

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How the Overlay works

Code language is presented wholistically as an overlay to the 2021 IECC and ASHRAE 90.1-2019 in two options for jurisdictions

1

ALL-ELECTRIC

These provisions provide a building that operates only on electric power (with limited exceptions for hard-to-electrify end uses).

2

MIXED-FUEL

These provisions provide electric-ready construction that allows for simple, low-cost all-electric appliance and equipment replacement in the future.

Jurisdictions may use any section of the overlay in its entirety or use portions of these sections to amend the 2021 IECC and/or ASHRAE 90.1 to a code that is right for adoption to meet the needs of their communities and supports their climate goals, including selecting to focus on priority areas (those using the most fossil fuels) of space and water heating in the near term to gain the necessary momentum needed to fully remove fossil fuels from their buildings.

1 **Heating system.** Where unitized gas heating is installed, provide a dedicated electrical circuit, panel space, and location for condensate drainage for future heat pump installations. Where central gas heating is installed, branch circuits are installed and required to be sized based on appliance input.

2 **Water heating system.** Where unitized gas water heating is installed, a dedicated circuit, panel space, location for condensate drainage, physical space and air flow for heat pump replacement is provided. Where central water heating is installed, branch circuits are installed and required to be sized based on appliance input.

Responsive Water Heating Controls. Water heaters are required to have controls meeting CTA 2045B to receive and respond to signals from the electric grid operators that can preheat water during peak renewable production times, making every water heater an energy storage device.

3 **On-Site Renewable Energy.** Each building is required to install on-site renewable energy systems to meet a rated capacity of 0.25 W/sf multiplied by the gross conditioned floor area of the three largest floors. RECs are required to be retained or retired by owner.

4 **Electric Vehicle Charging.** Parking facilities are required to provide EVSE, EV Ready and EV Capable spaces based on building type. For an office, a minimum of 15% spaces are EVSE, 40% are EV Capable.

5 **Responsive Thermostat controls.** Thermostats are required to be capable of increasing or decreasing set point by 4 degrees F with a demand signal from the utility, enabling every building to be a grid asset.

6 **Cooking.** Where light- and/or medium-duty gas cooking equipment is installed in a non-commercial kitchen, a dedicated circuit and panel space for electric replacement is provided. Where restaurants and other commercial cooking establishments have gas equipment installed, branch circuits are installed and required to be sized based on appliance input.

7 **Energy Storage Ready.** Buildings are provided with and identify physical space to install a future energy storage system, along with necessary electric infrastructure to accommodate the addition.