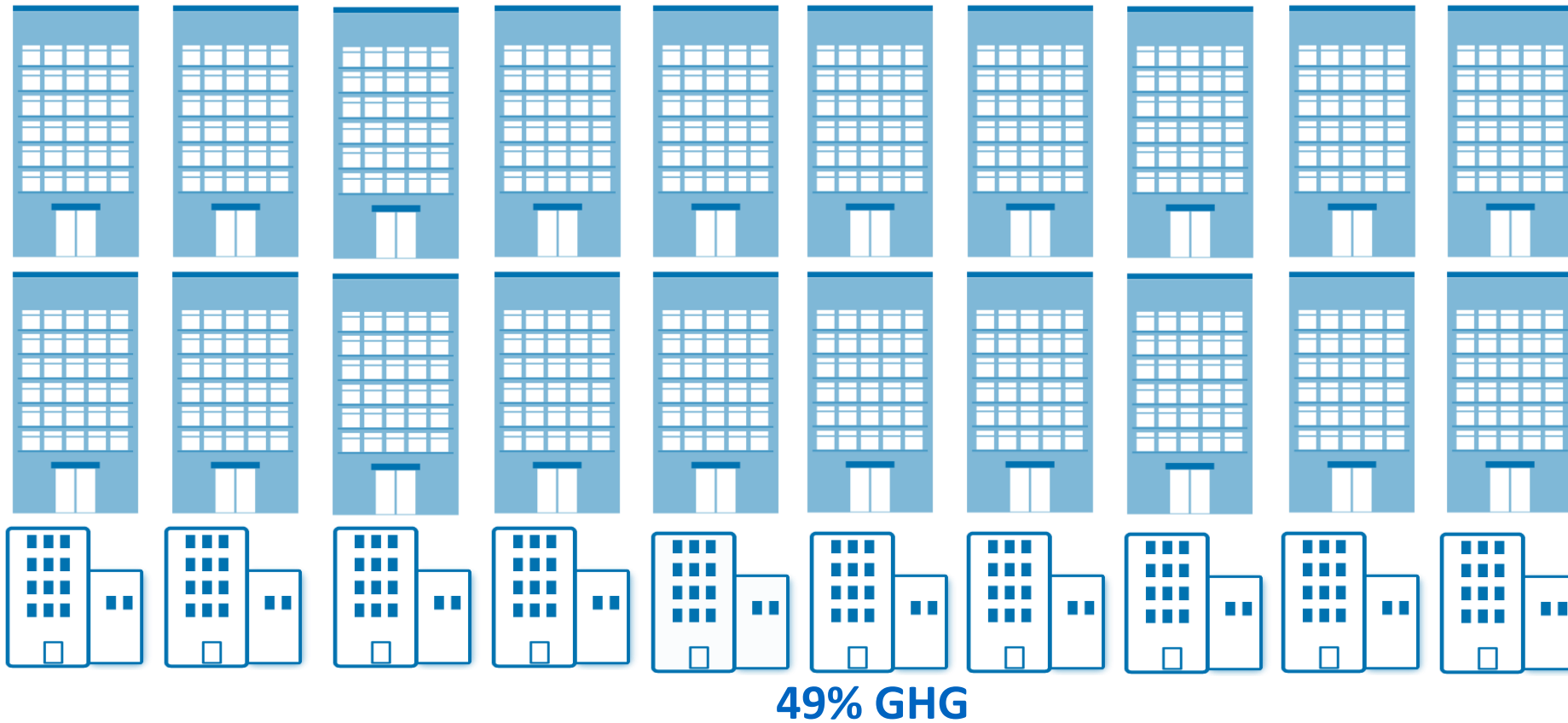




NZE Buildings Work Update

High Performance Buildings & Homes

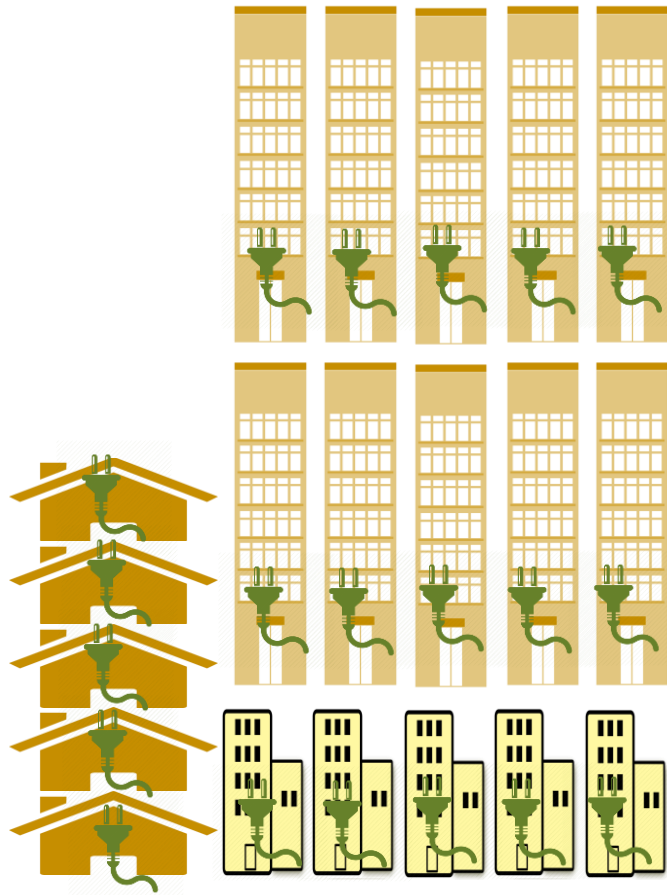
Commercial and Multifamily Buildings Account for 49% of Denver's GHG Emissions



- >25,000 sq ft:
- 82% of square footage
 - **3,000** buildings

- <25,000 sq ft:
- 18% of square footage
 - **14,000** buildings

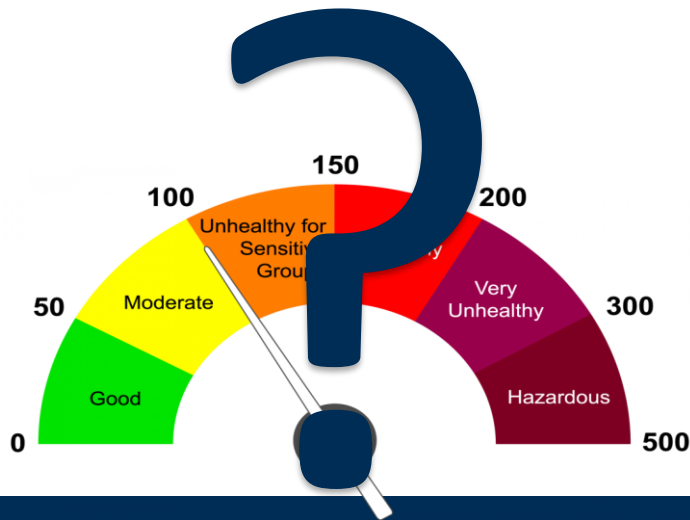
By 2050, ~40% of our building stock will be “new” construction



Denver Goal:
Net Zero Energy (NZE)
New Buildings by 2030

Health Impacts of Gas Combustion

- Indoor Air quality is largely unregulated and often worse than outdoor air quality. We spend 90% of our lives indoors.
- People of color are the least likely to have carbon monoxide detectors in their home.
- Children are particularly vulnerable to pollution from gas appliances. Kids growing up in a household with a gas stove are at a 42% increased risk of developing asthma



The transition to renewable electric heat is possible today

- Heat pumps are 200-300% efficient
- Heat pumps provide heating and cooling
- Like your refrigerator, heat pumps use electricity to move heat.



Example rooftop heat pump from Daikin.

Energize Denver Task Force

Charge: Help the City design a building performance policy for existing buildings that:

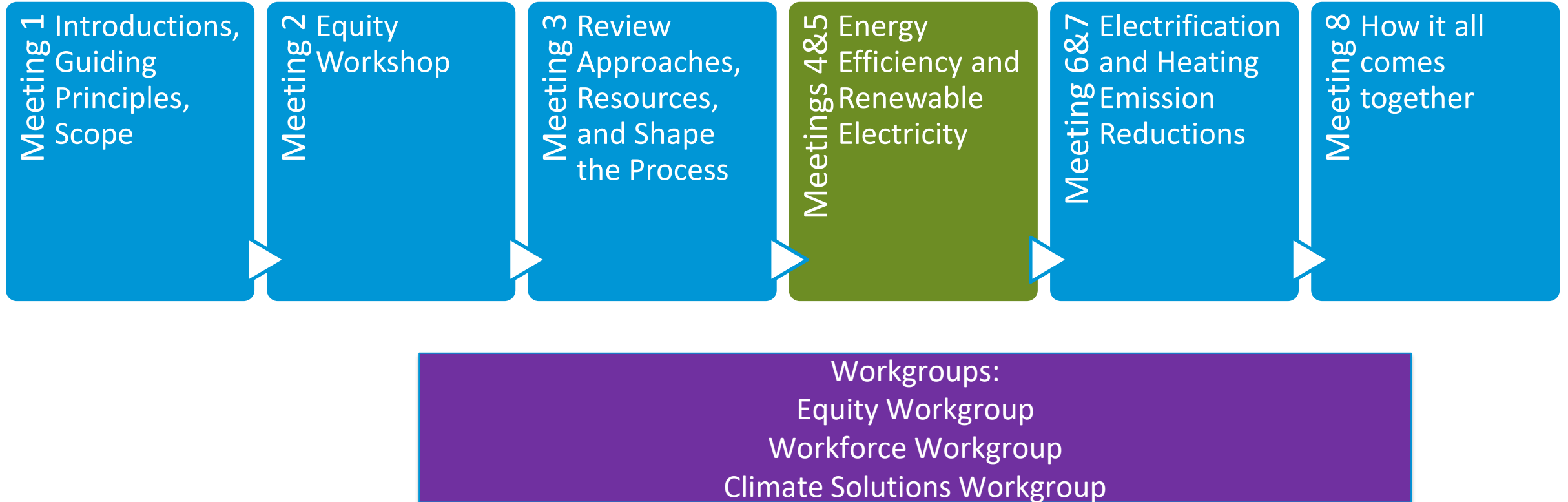
- *Improves Health and Equity*
- *Creates Jobs*
- *Drives Climate Solutions in Existing Buildings that Achieve Net Zero Energy by 2040*

The Energize Denver Task Force is focused on existing commercial and multifamily buildings

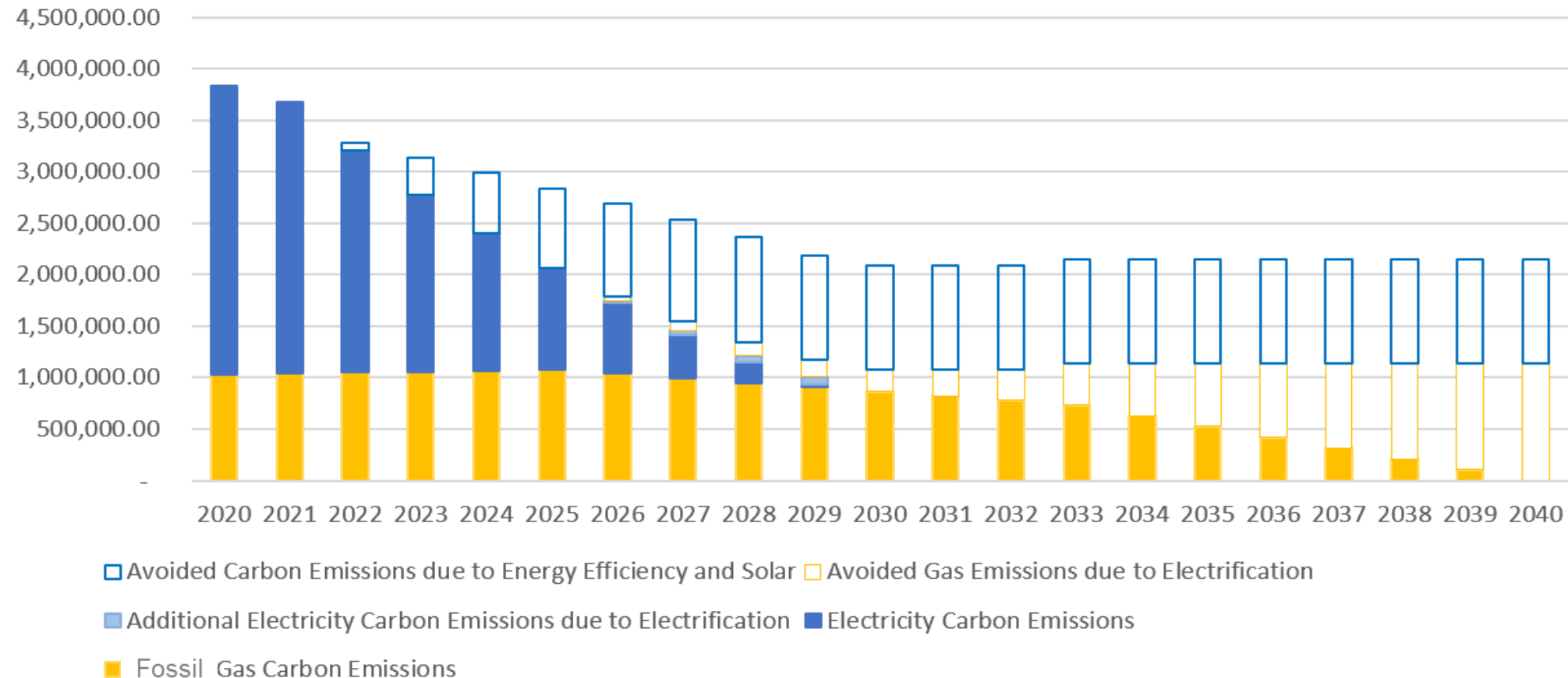


Not single-family homes

Task Force Draft Schedule



Goal of the Task Force: NZE by 2040



Energy Management in Buildings

Ongoing Operations

Energy Efficiency: Tune-up's, Lighting upgrades, Fan and Motor upgrades

Renewables: Solar

Periodic Equipment Replacement

Furnaces: Every ~20 years

Hot Water Heaters: Every ~15 years

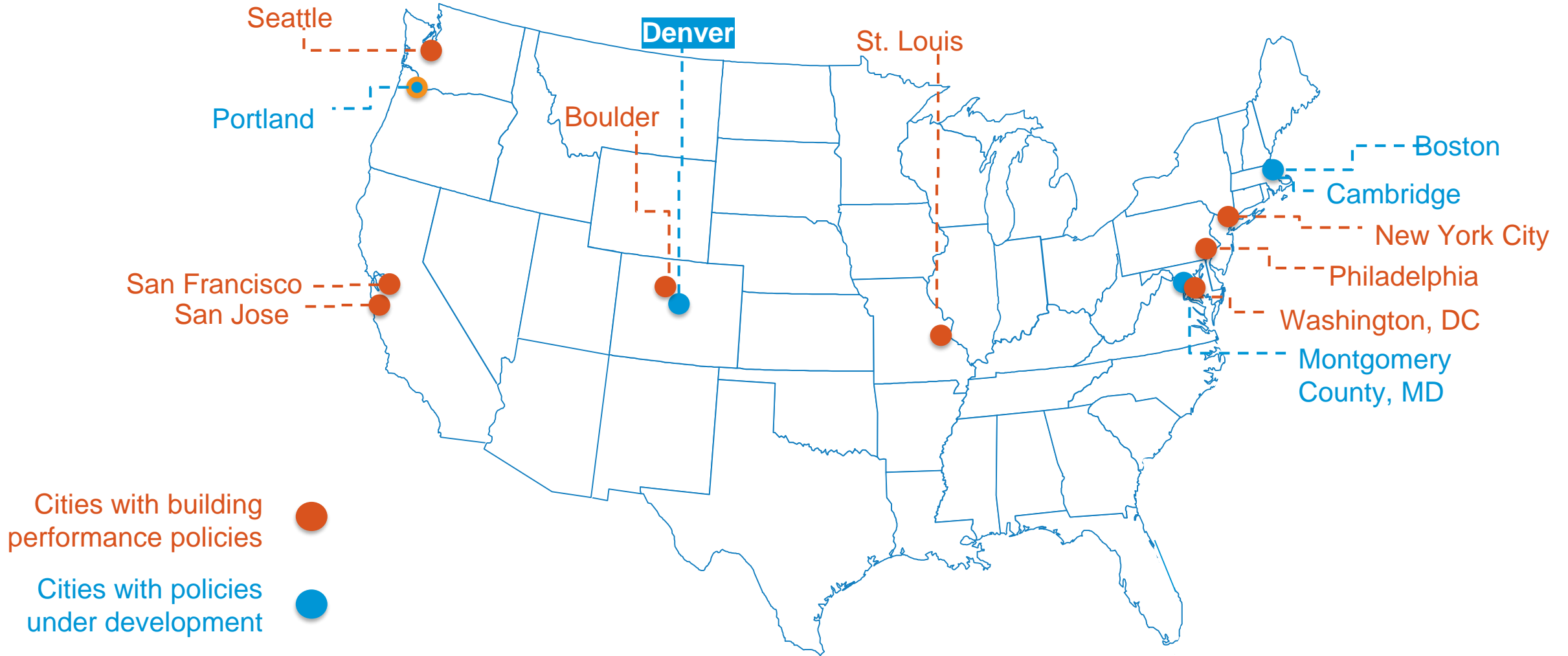


2021

2030

2040

Building Performance Policies in Other Cities

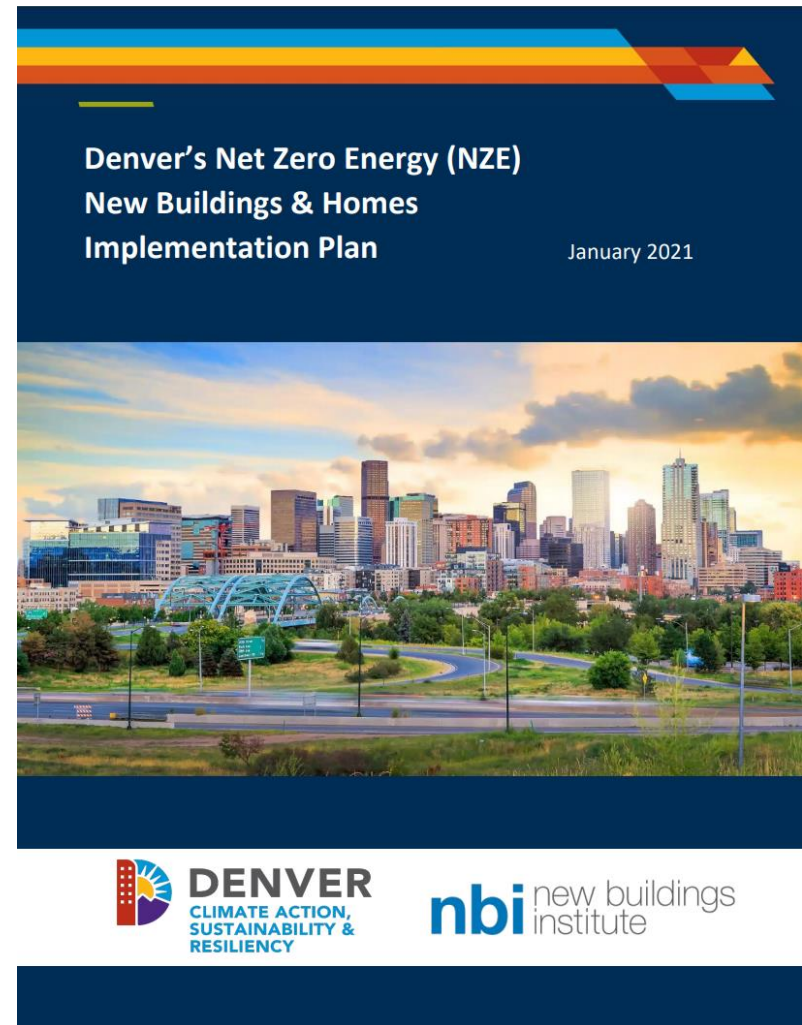


Net Zero Energy New Buildings

2021 Code Update

Net Zero Energy (NZE) New Buildings & Homes Implementation Plan

Released January 2021

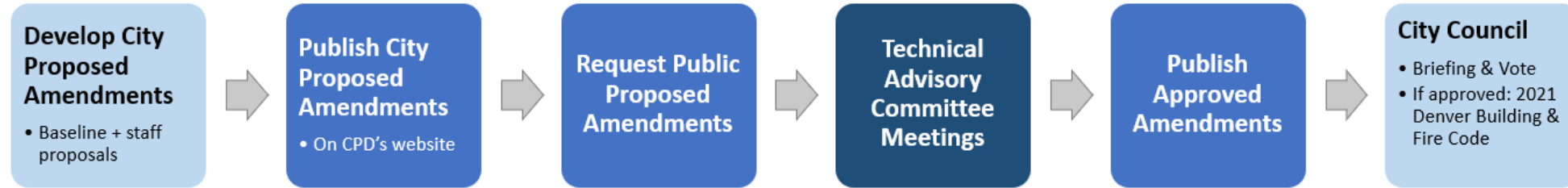


Key finding: All-electric new buildings are lower cost to build and operate

- All electric homes and buildings are 8-27% lower cost to build.
- All electric homes and buildings have lower operating cost by 2-10%.

Next Step: 2021 Code Update

Denver Code Adoption Process



Legend:

- City
- External/Public
- Code Technical Advisory Committee (Code Committee)

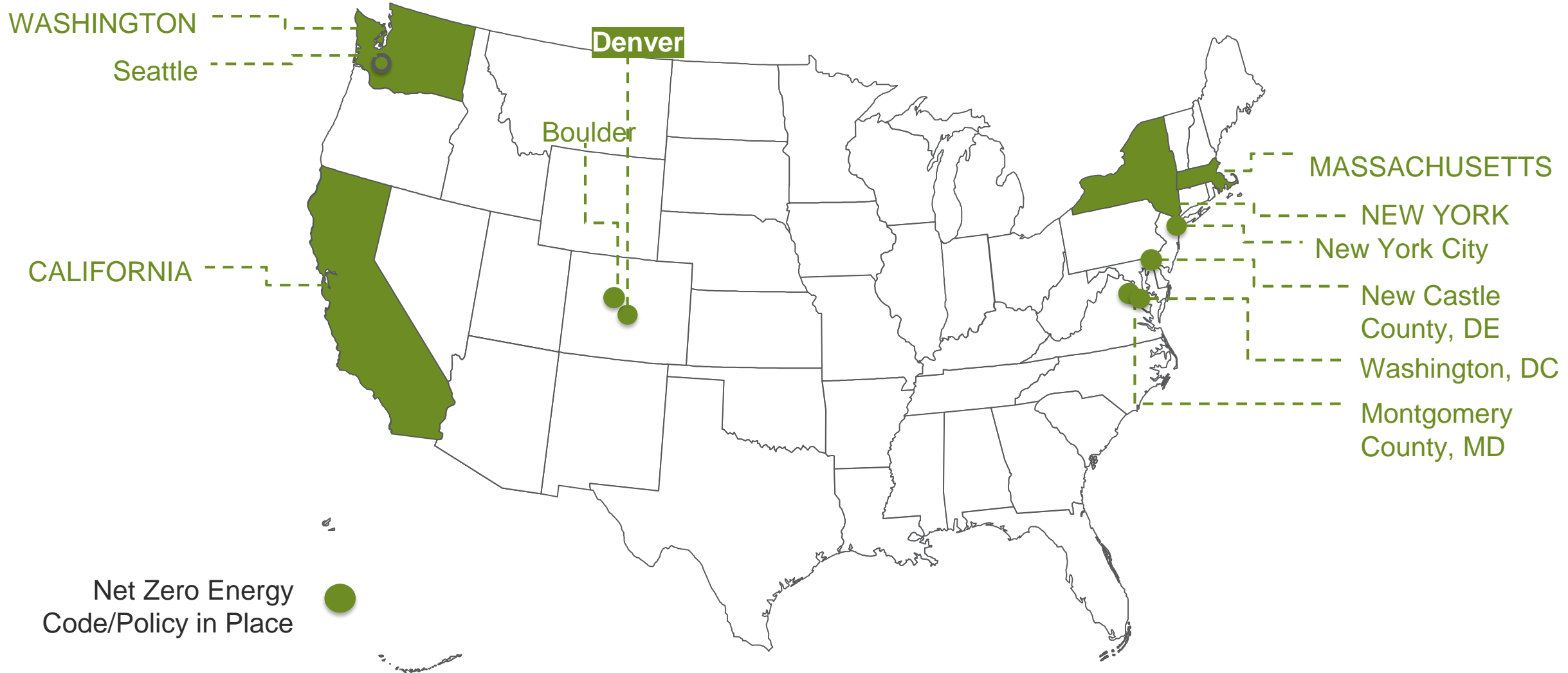
Denver Green Code Process



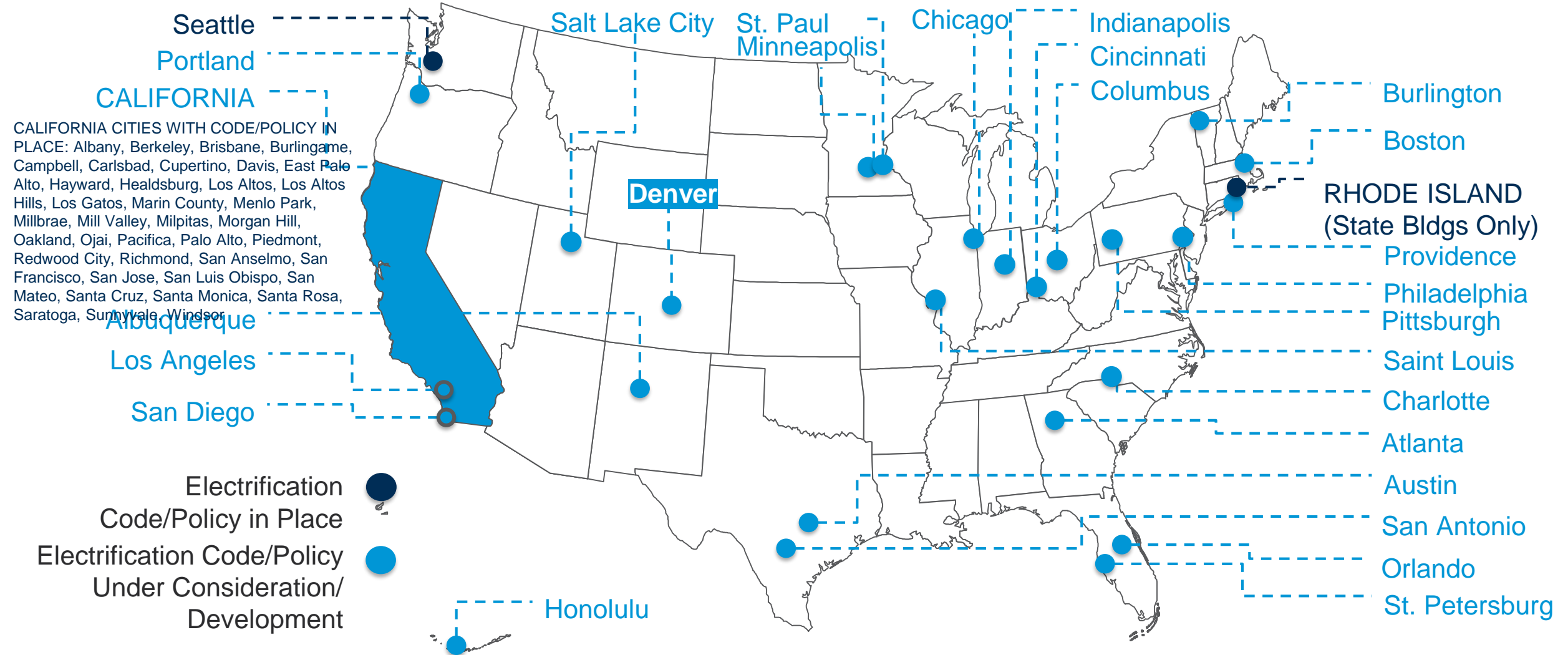
Legend:

- City
- External/Public
- Code Consensus Committee

Net Zero Energy Codes & Policies in Other Cities



New Building Electrification Codes & Policies in Other Cities





Thank you!