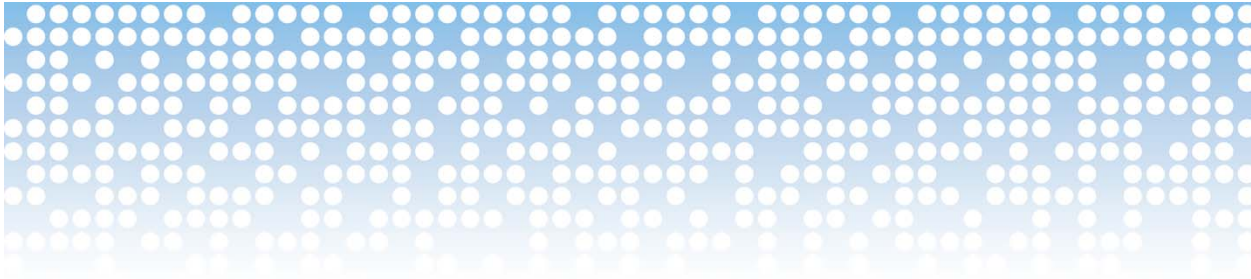


DOCKETED

Docket Number:	21-IEPR-06
Project Title:	Building Decarbonization and Energy Efficiency
TN #:	239432
Document Title:	Presentation - The Role of Energy Efficiency in Building Decarbonization
Description:	S13A_Steve Nadel_ACEEE
Filer:	Raquel Kravitz
Organization:	American Council for an Energy-Efficient Economy (ACEEE)
Submitter Role:	Public
Submission Date:	8/23/2021 3:50:32 PM
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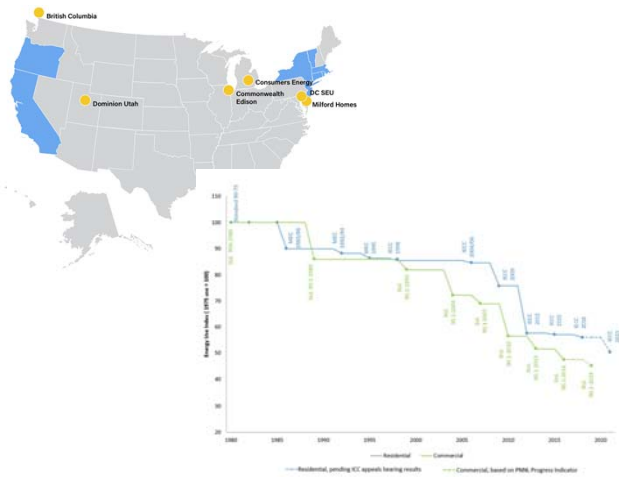


The Role of Energy Efficiency in Building Decarbonization

Steven Nadel, Executive Director
Presentation to CEC Commissioners
Workshop
August 24, 2021



ACEEE



Research

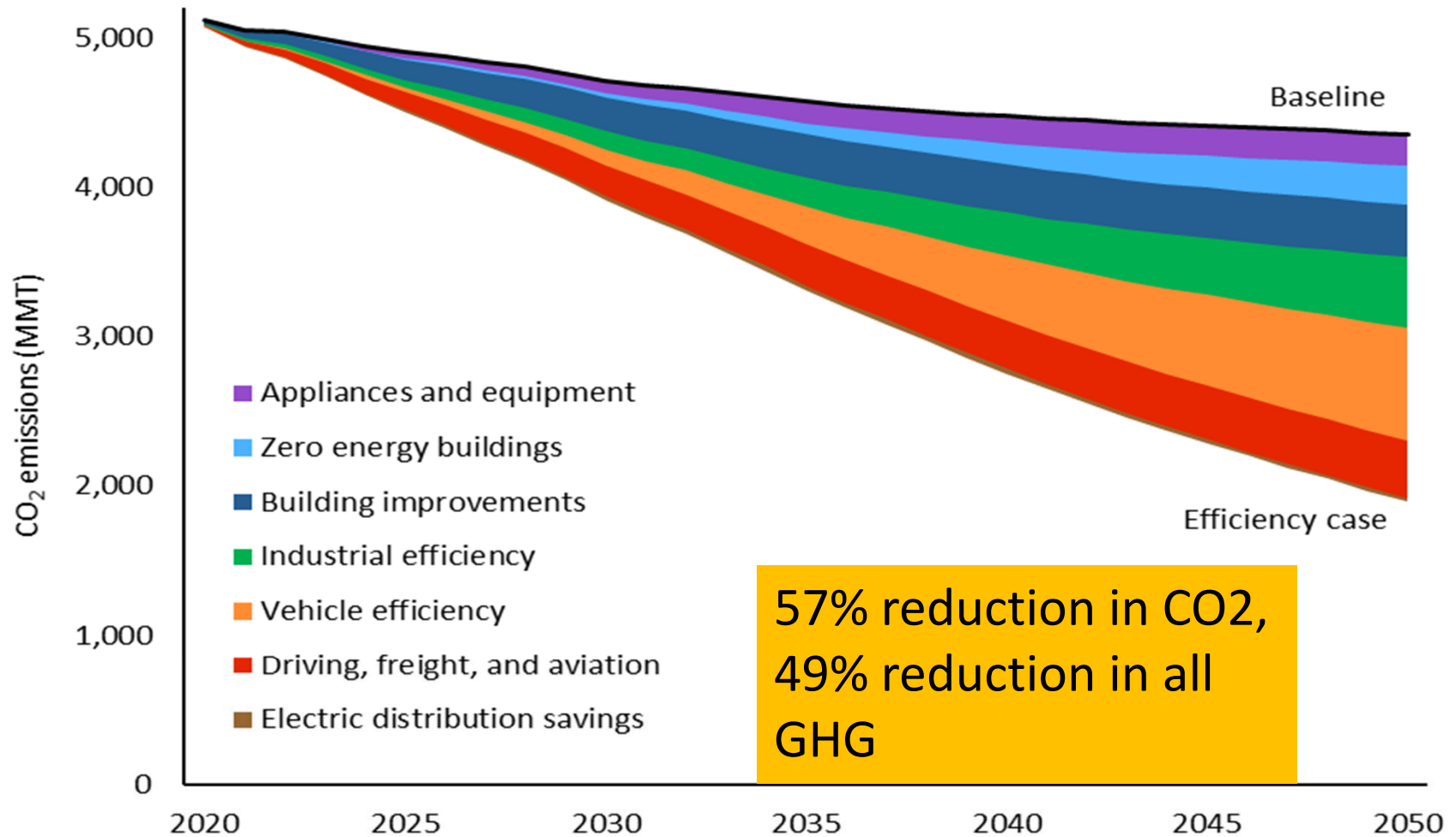


**Program and policy
TA and advocacy**

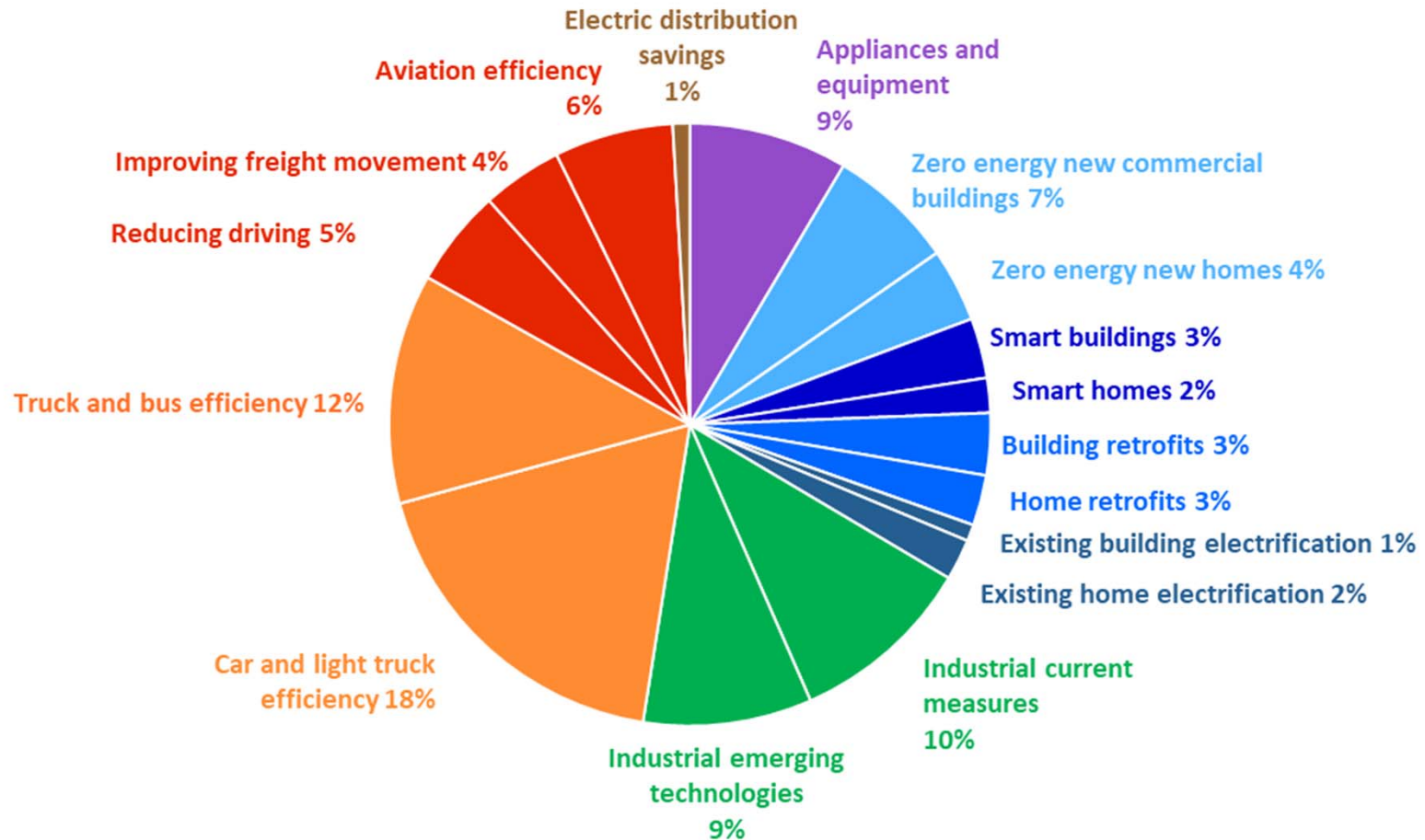


Education

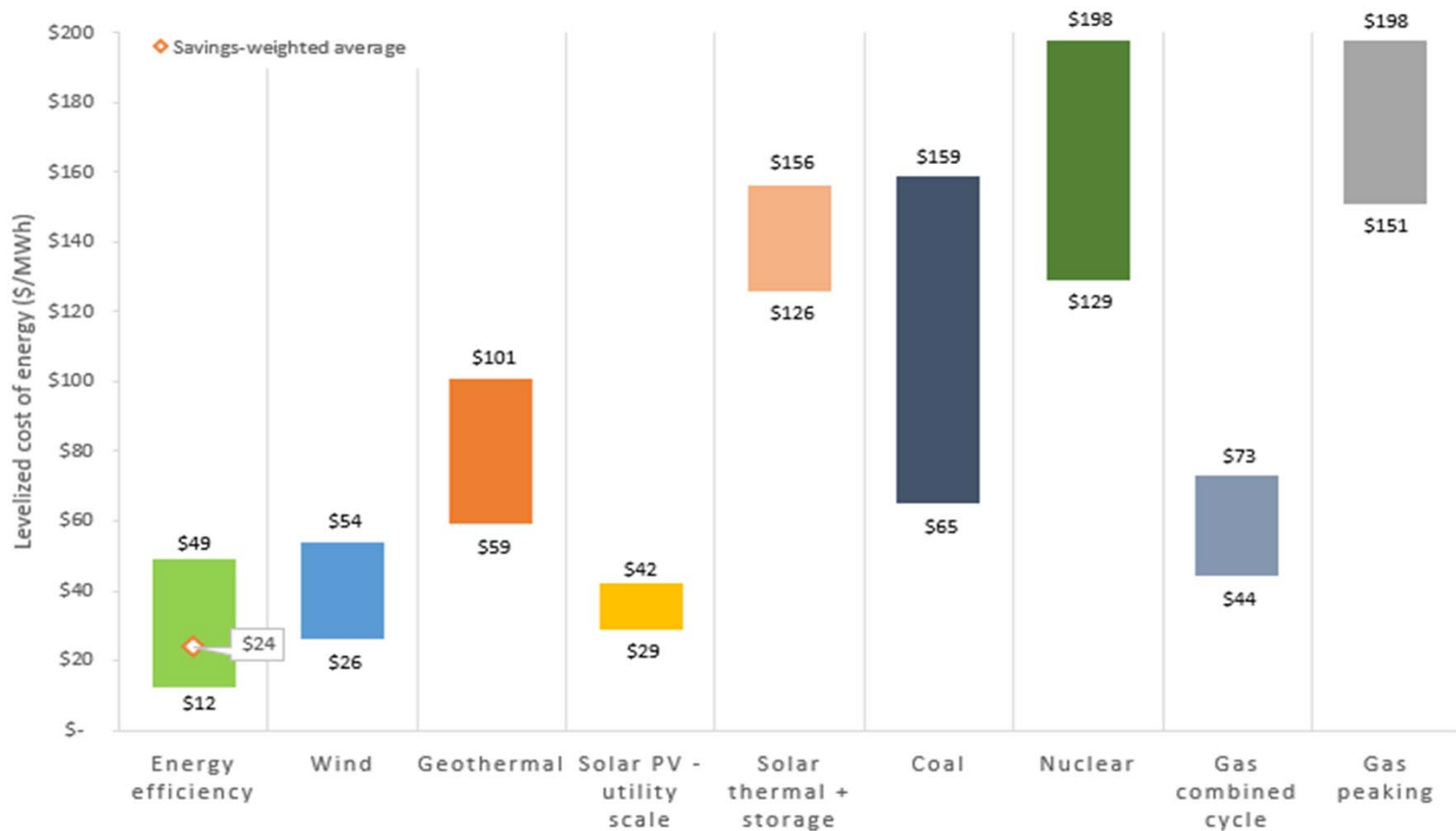
Energy efficiency can get us halfway to decarbonization...



Allocation of Efficiency Savings



Levelized Cost per kWh



More Expensive to Decarbonize Without Energy Efficiency

3 ton



5 kW



5 ton

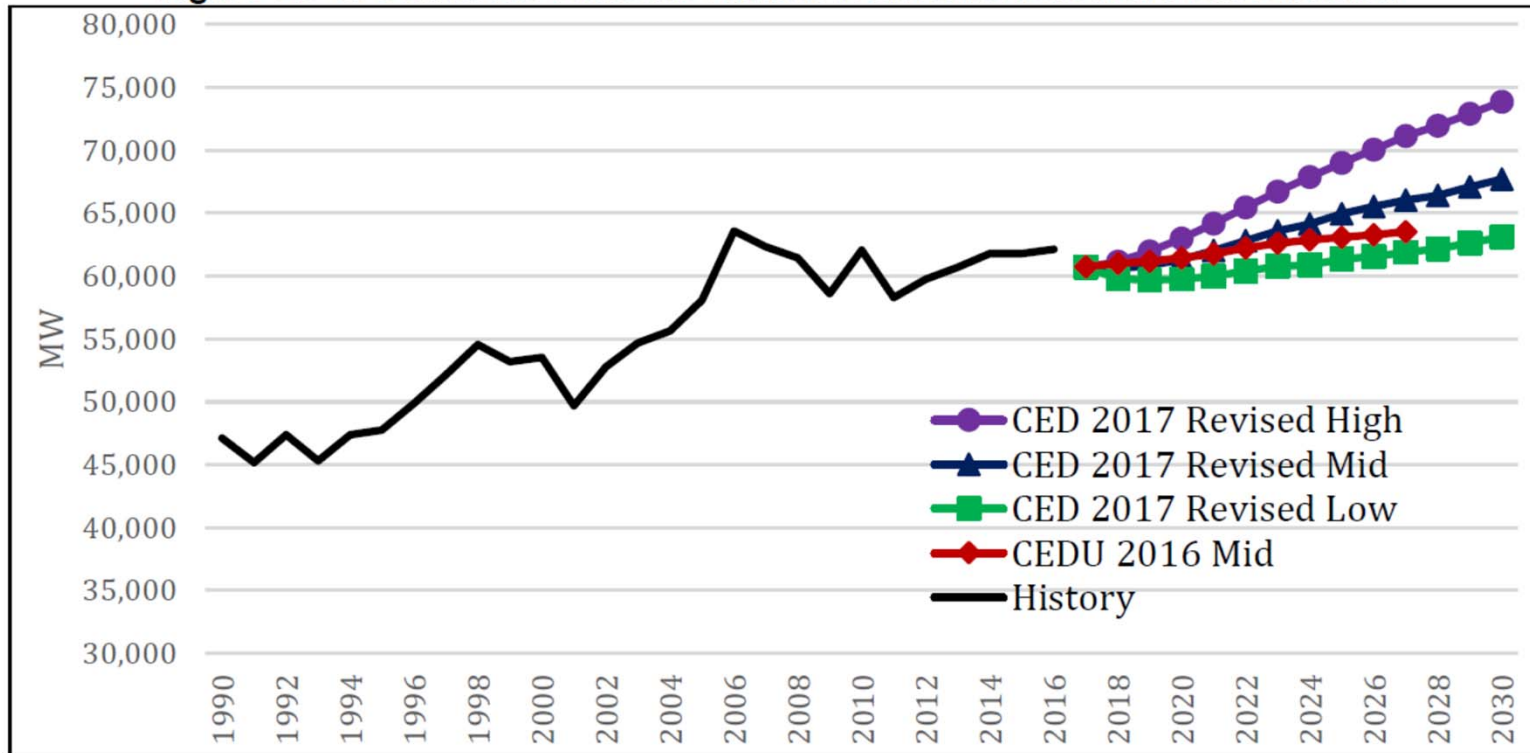


7 kW



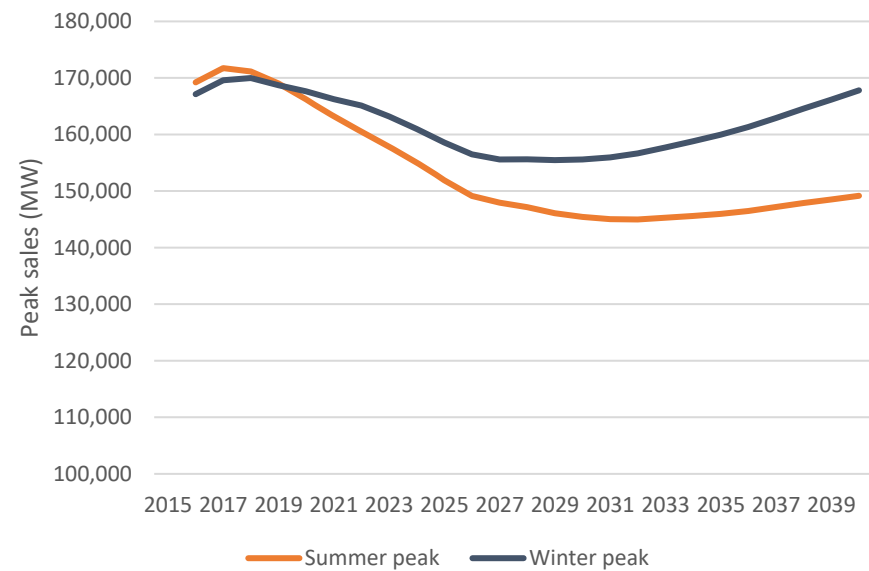
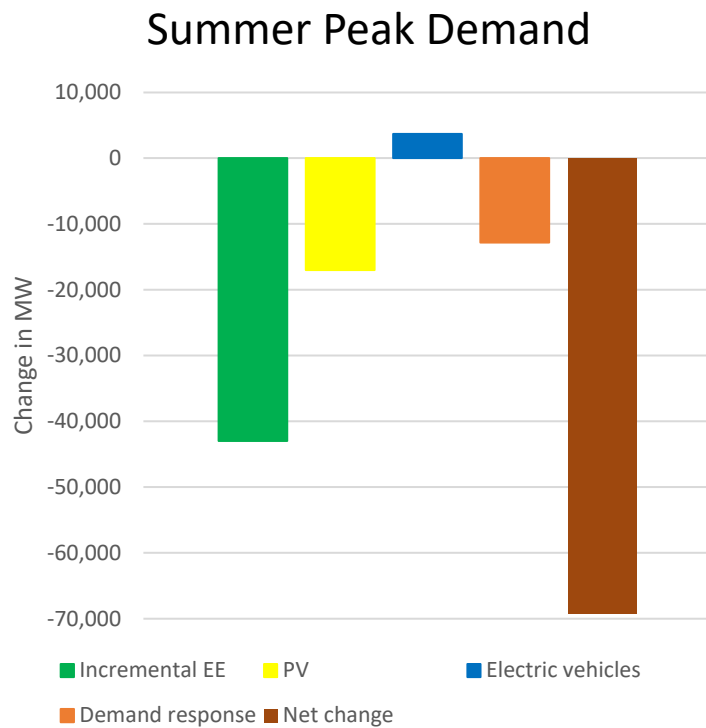
California Peak Demand Forecast

Figure ES-3: Statewide Baseline Annual Noncoincident Net Peak Demand



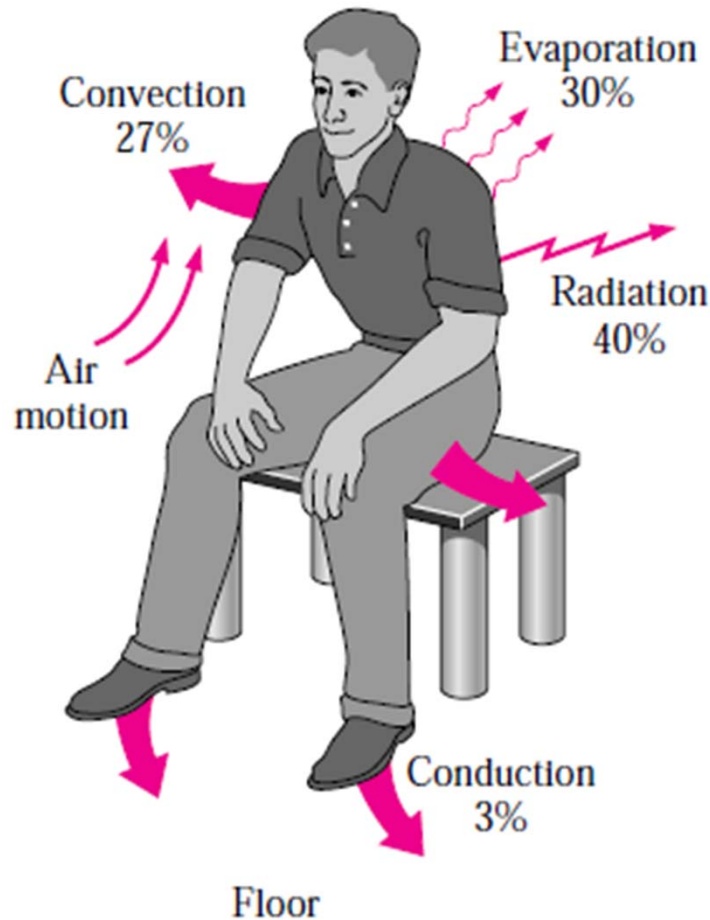
Source: California Energy Commission, Energy Assessments Division, 2017.

Peak Demand in Southeast: Aggressive Case



Source: Nadel, ACEEE, 2017

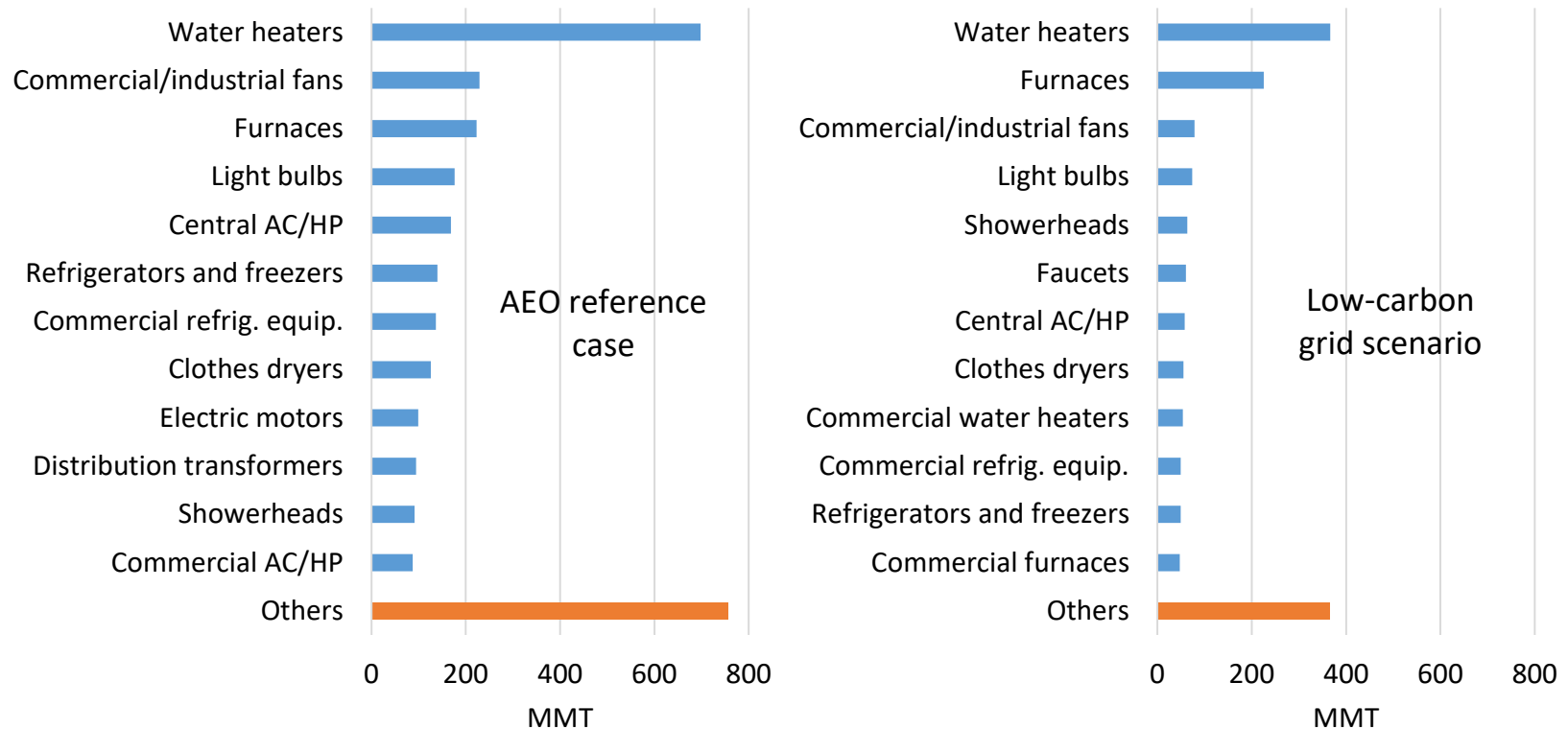
Comfort: Heat Transfer from a Person



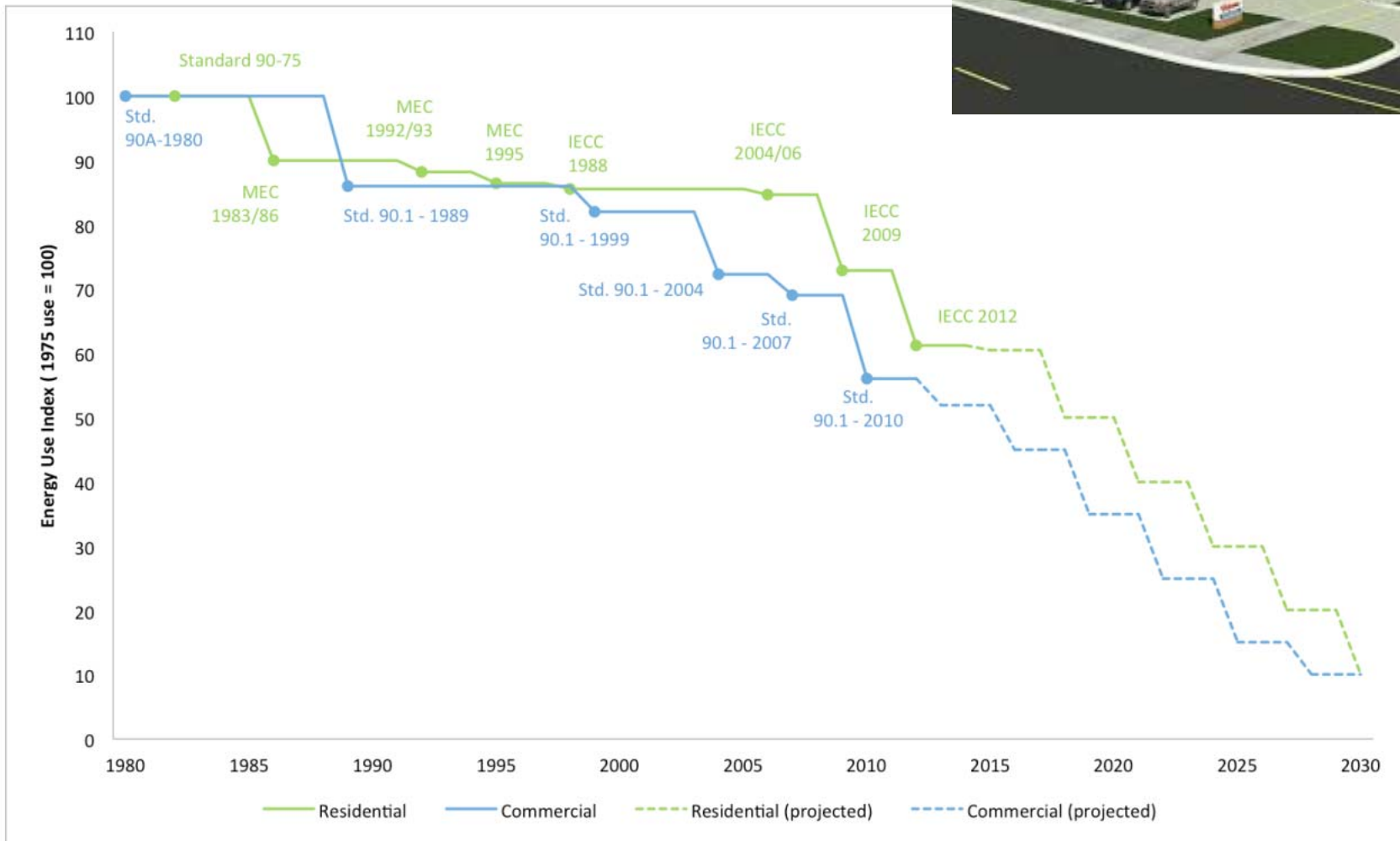
Efficiency and Renewables



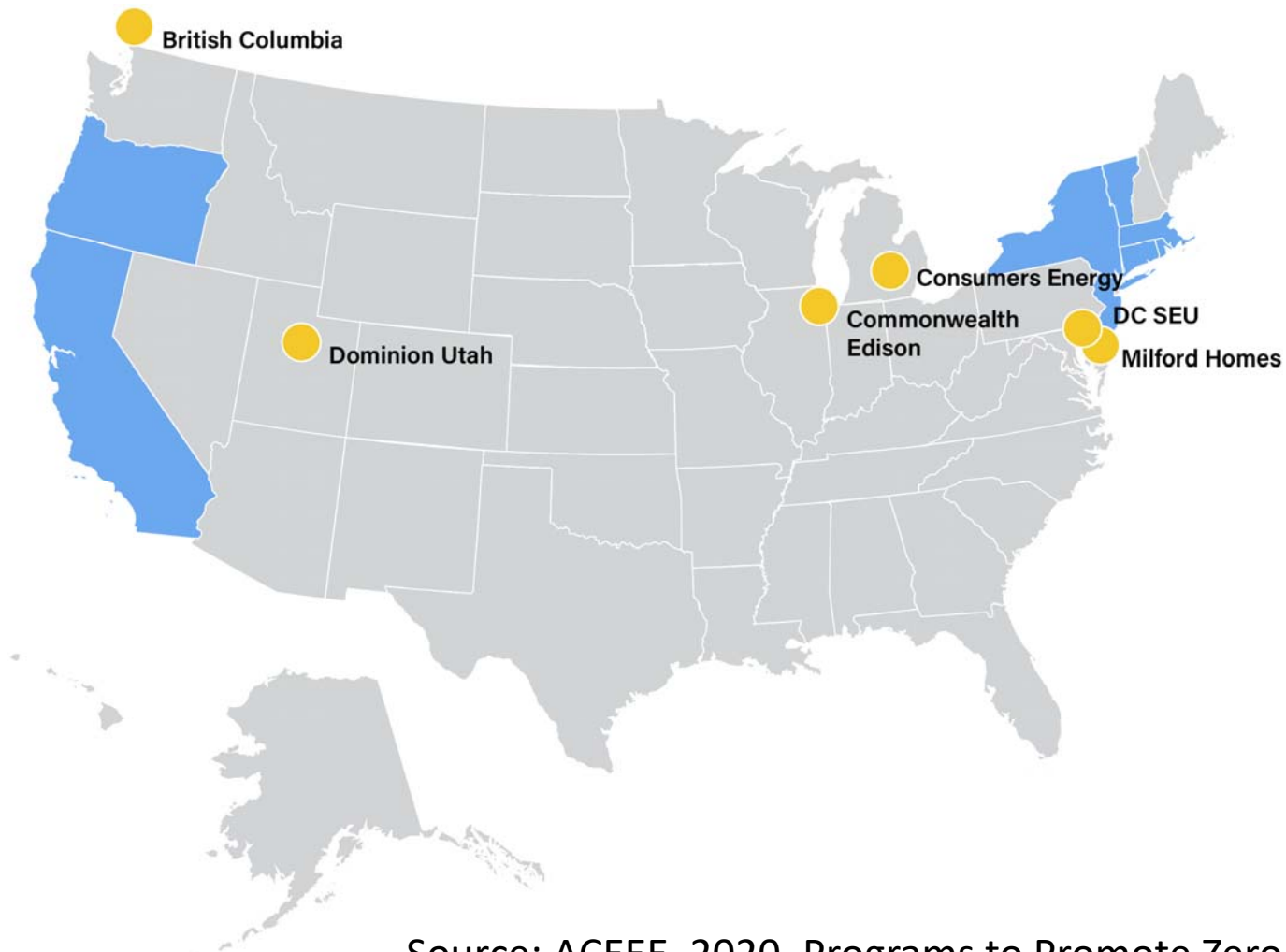
Appliances and Equipment: Potential Savings from Updated Standards



Code Goal

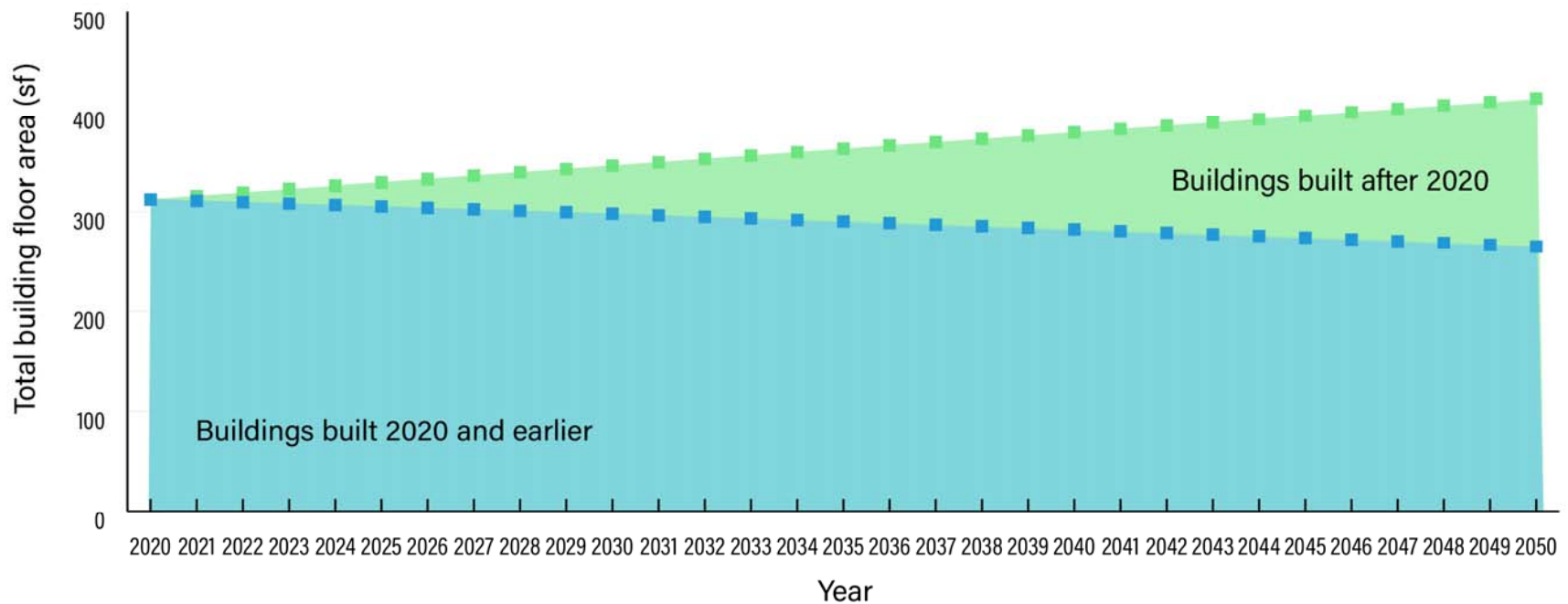


Zero Energy Home and Building Programs



Source: ACEEE, 2020, Programs to Promote Zero Energy Homes and Buildings

New and Existing Buildings as Share of Building Floor Area (Residential + Commercial)



Source: ACEEE calculations based on data in EIA AEO 2020.

Residential Retrofits

- Whole home retrofits
 - Hope for Homes retrofit incentives now before Congress
 - Multifamily programs
- Need improved retrofit techniques



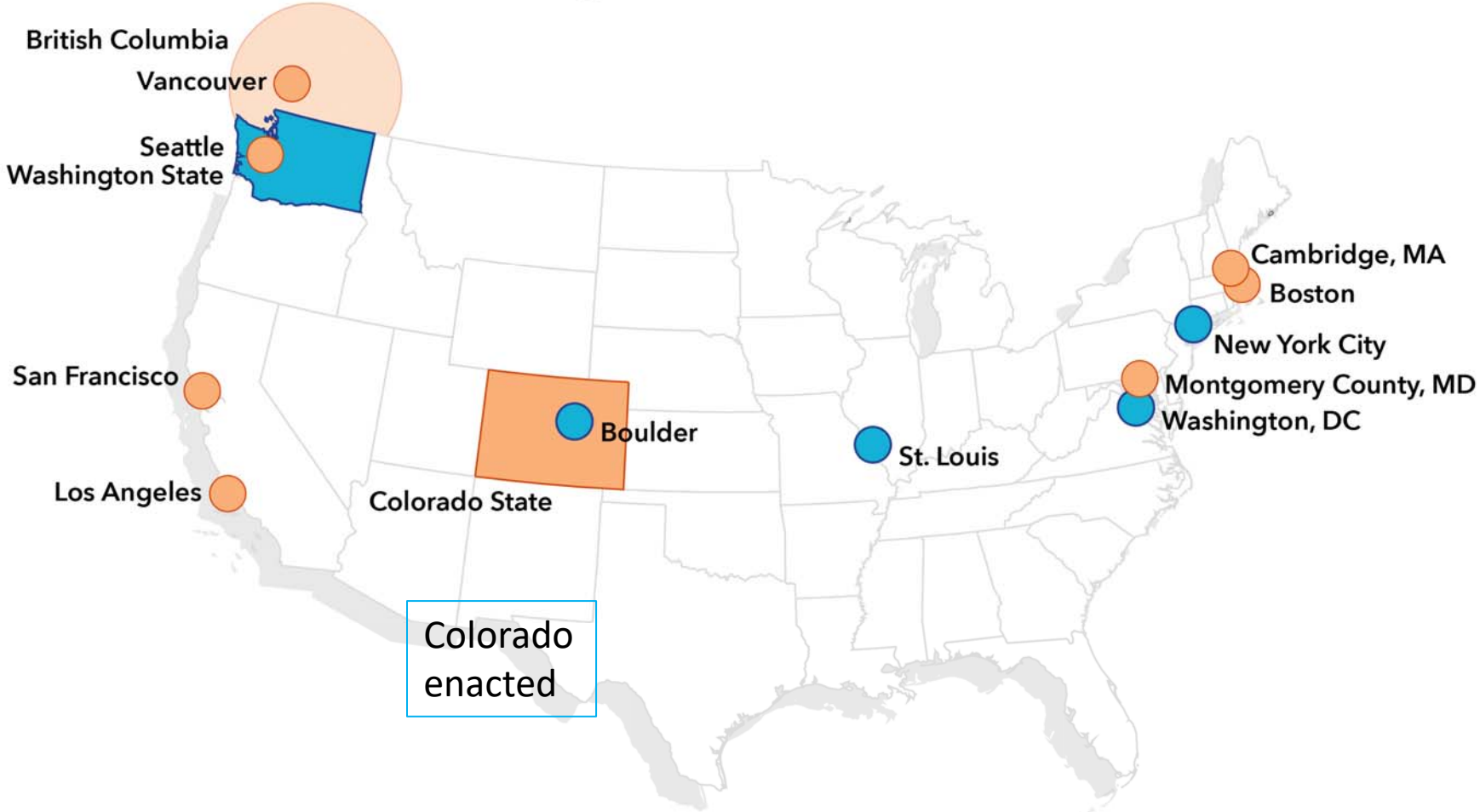
Commercial Retrofit Programs

- Moving beyond lighting
 - Intelligent efficiency/GEB
 - Whole building retrofits
 - HVAC including ventilation
- Deep retrofits at time of building renovation
- ACEEE will be doing a study on commercial retrofit programs in 2021



GAO Deep Retrofit Project

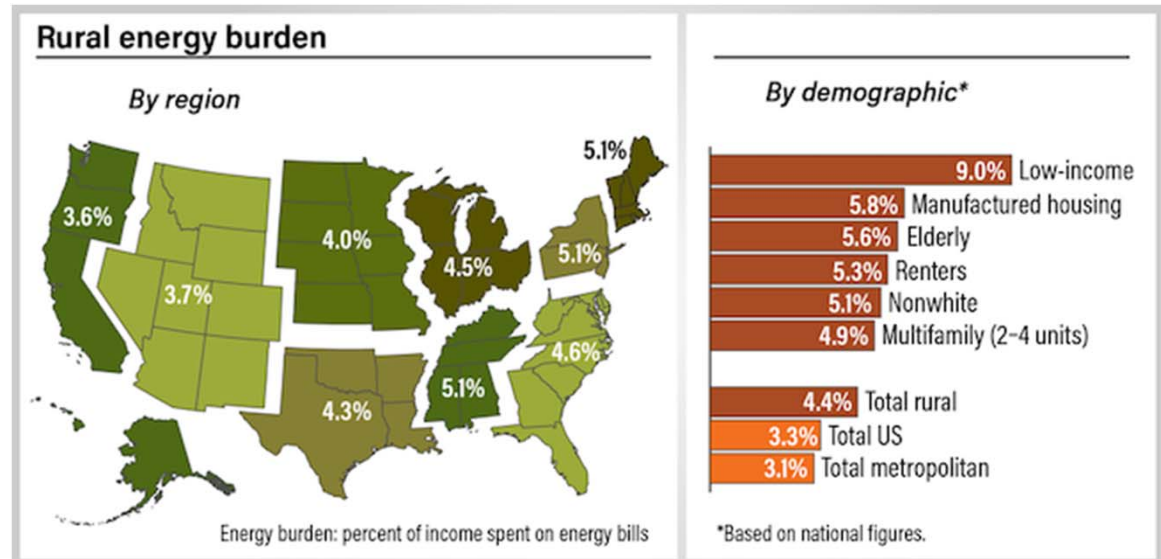
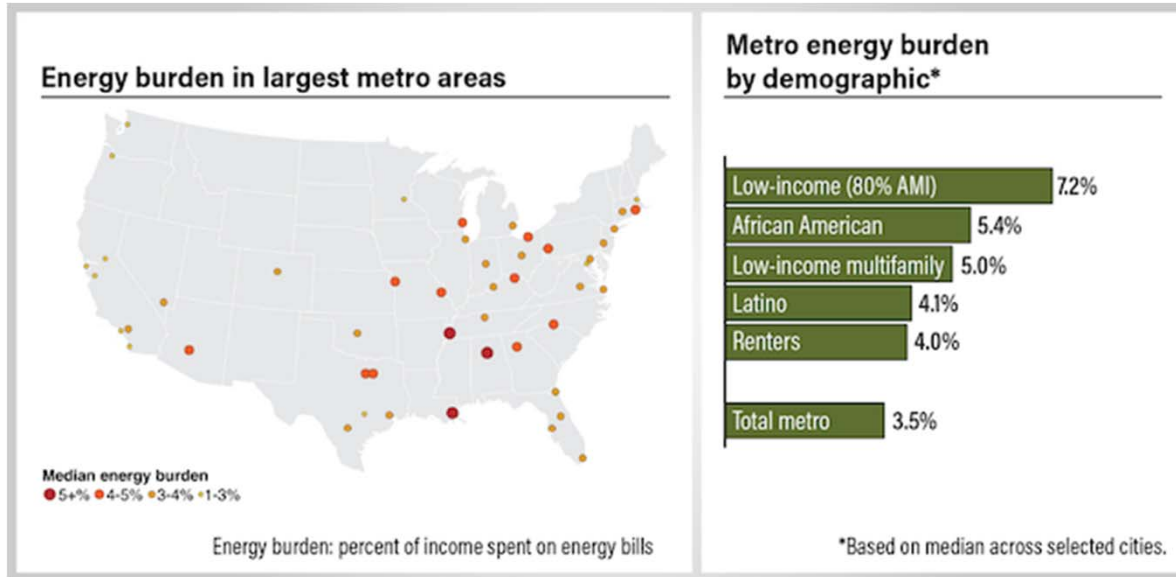
Building Performance Standards



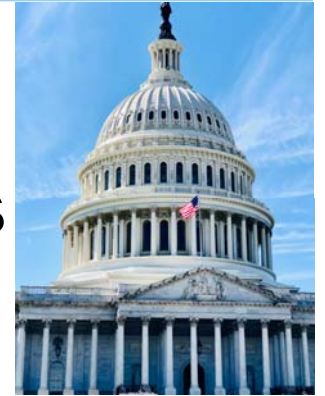
Source: ACEEE, *Mandatory Building Performance Standards*, 2020

 Enacted
 Under Consideration

Addressing Equity Critically Important



Potential Building Efficiency Measures in Federal Infrastructure & Reconciliation Bills



- More money for WAP program
- HOPE for HOMES residential retrofit incentives
- ZEHA incentives for HP and other electrification measures
- GREAHT incentives for affordable multifamily retrofits
- Higher residential EE measure tax incentives (25C)
- Higher commercial building incentives, sliding scale 30-50% savings
- Higher new home tax incentives with Energy Star and Zero Energy Ready tiers

Contact Information

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