The Possibilities of EV Charging

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nbi new buildings institute

About New Buildings Institute (NBI)

We push for **better buildings** that achieve **zero energy, zero carbon, and beyond**—through research, policy, guidance, and market transformation—to protect people and the planet.

NBI's work targets the aspects of the built environment that can make the greatest impact for the climate.

Research and guidance on "best-in-class" measures, practices and technologies

Advanced code and policy approaches

Training and education to build market capacity

Innovative, leading-edge program design and delivery approaches

Updates on issues critical to the utility energy efficiency business models

On-call subject matter experts

Today's Speakers

Diana Burk

Project Manager
New Buildings Institute

Jessica Wilcox

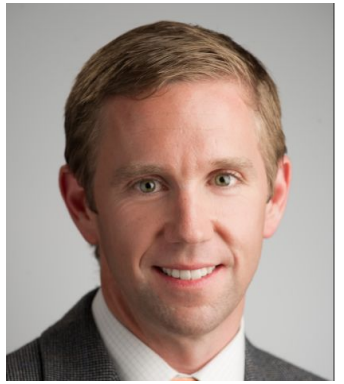
Director
Granite State Clean Cities Coalition

Kevin Wood

Technical Project Manager
Energetics

Anne Blair

Policy Director
Electrification Coalition



Stephen Lommele

Interim Communications and Stakeholder Engagement Lead
Joint Office of Energy and Transportation

Why Drive Electric?

Cost Savings

Many EVs have superior efficiency and a lower total cost of ownership (TCO) compared to internal combustion engine (ICE) vehicles.

Environmental Benefits

EVs can reduce greenhouse gas emissions by up to 50% compared to their ICE counterparts.

Improved Air Quality

EVs produce low or zero tailpipe emissions and will become even cleaner as electricity production becomes cleaner.

Expanding Offerings

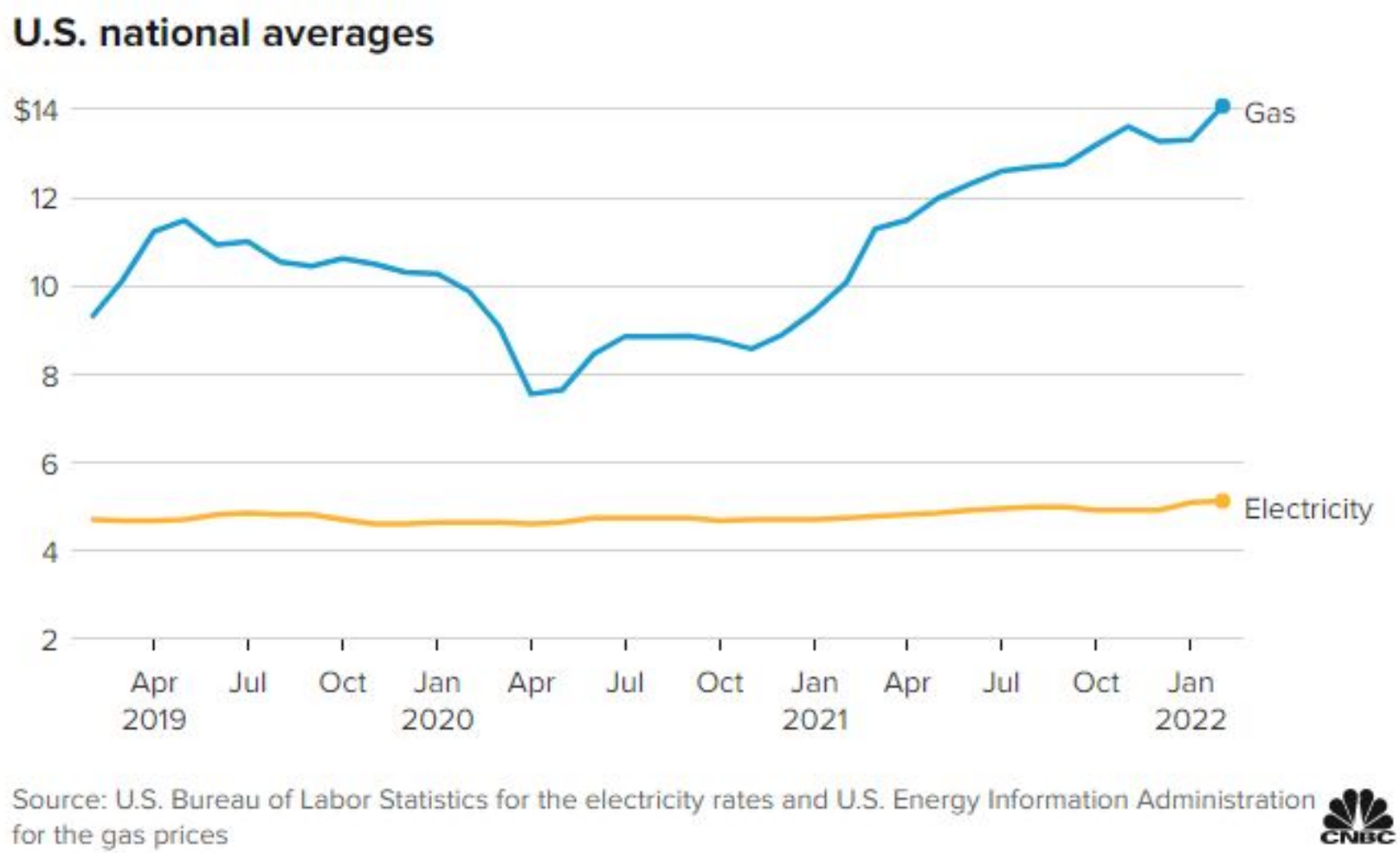
Ever-expanding EV options for school buses and equipment, suitable for a variety of uses and needs, are available in the U.S. market.

Reduce Oil Dependence

Transportation accounts for 70% of U.S. crude oil and petroleum imports, with 92% of all transportation being powered by oil. Electricity provides a valuable source of fuel diversity.

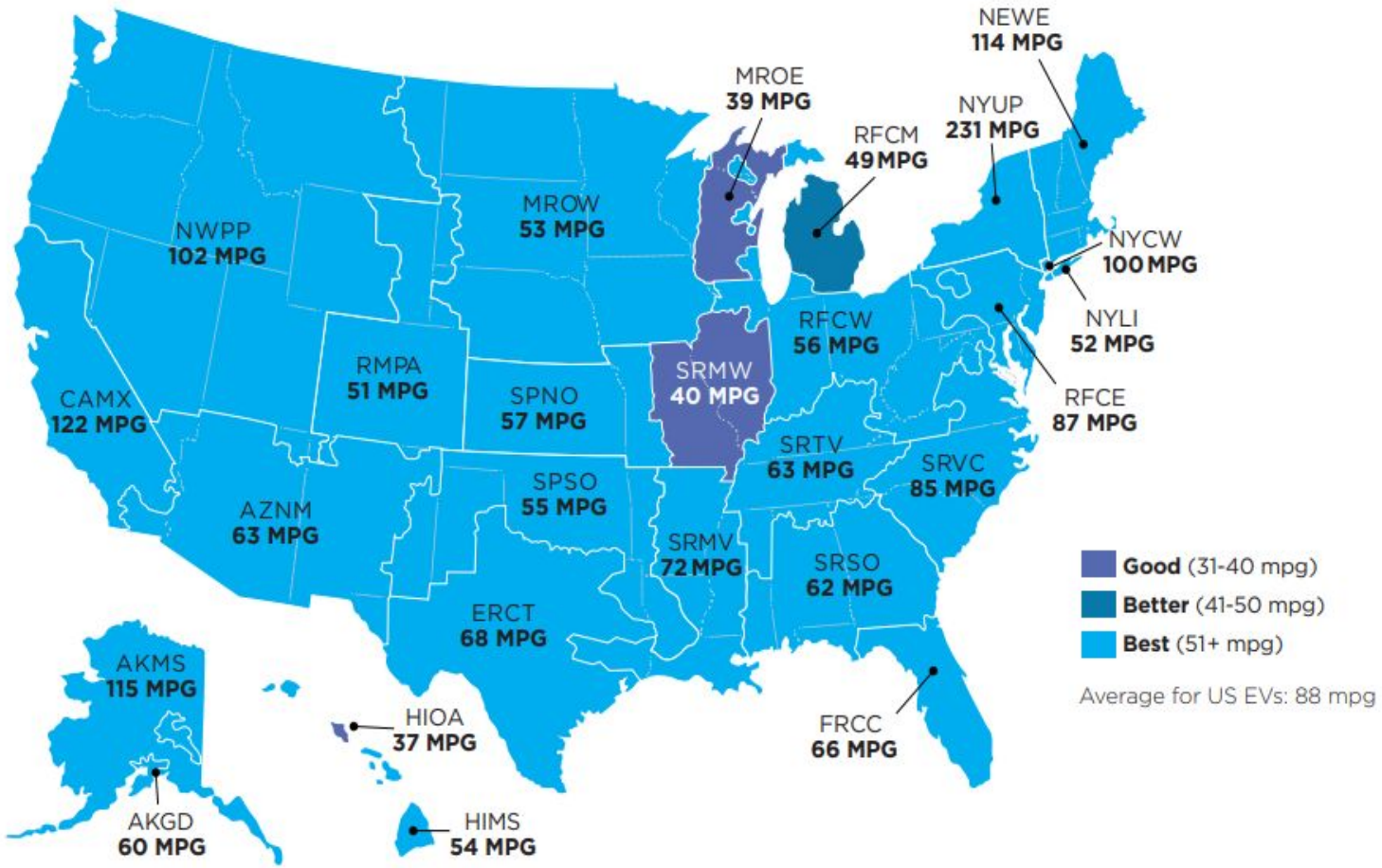
Electrification Coalition

Lower Costs: Electricity Costs Less and is More Stable than Gas or Diesel

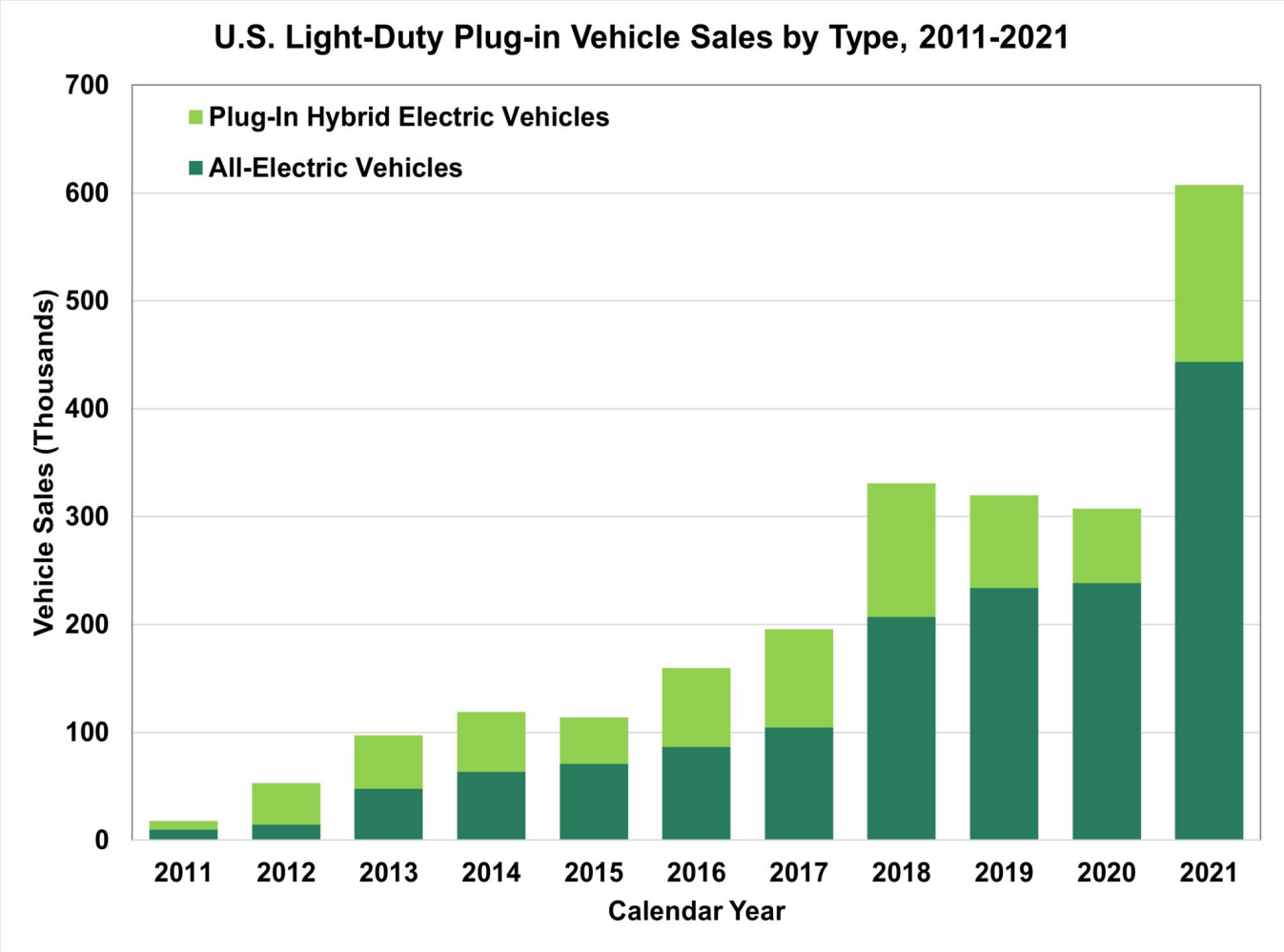


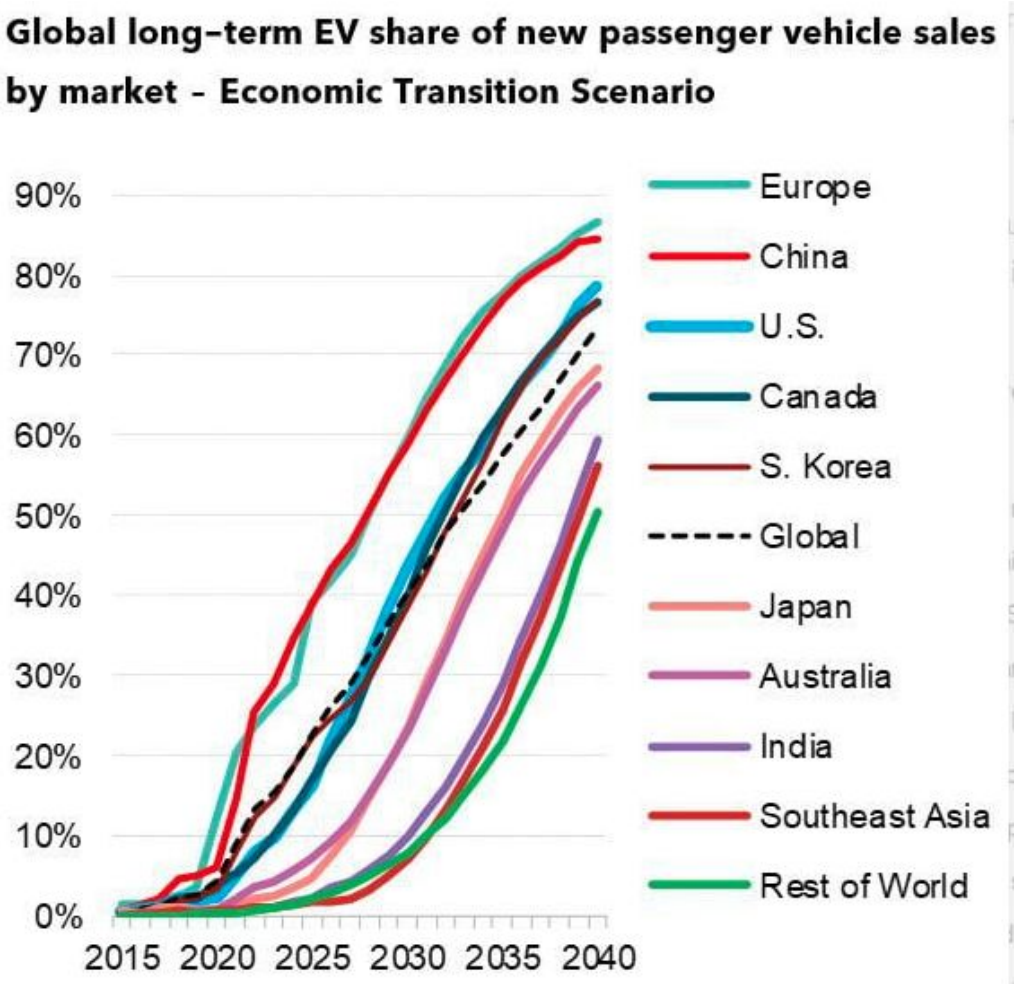
Source: CNBC

Driving an Electric Vehicle is Cleaner than Gas Vehicles

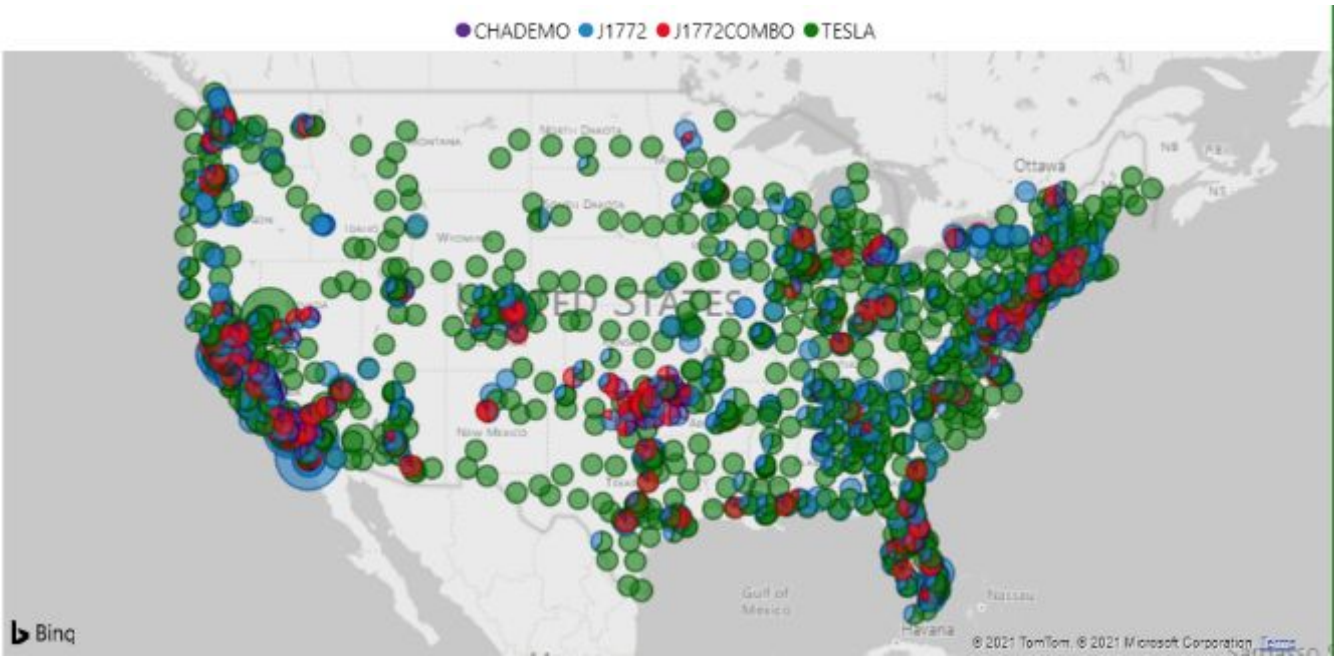


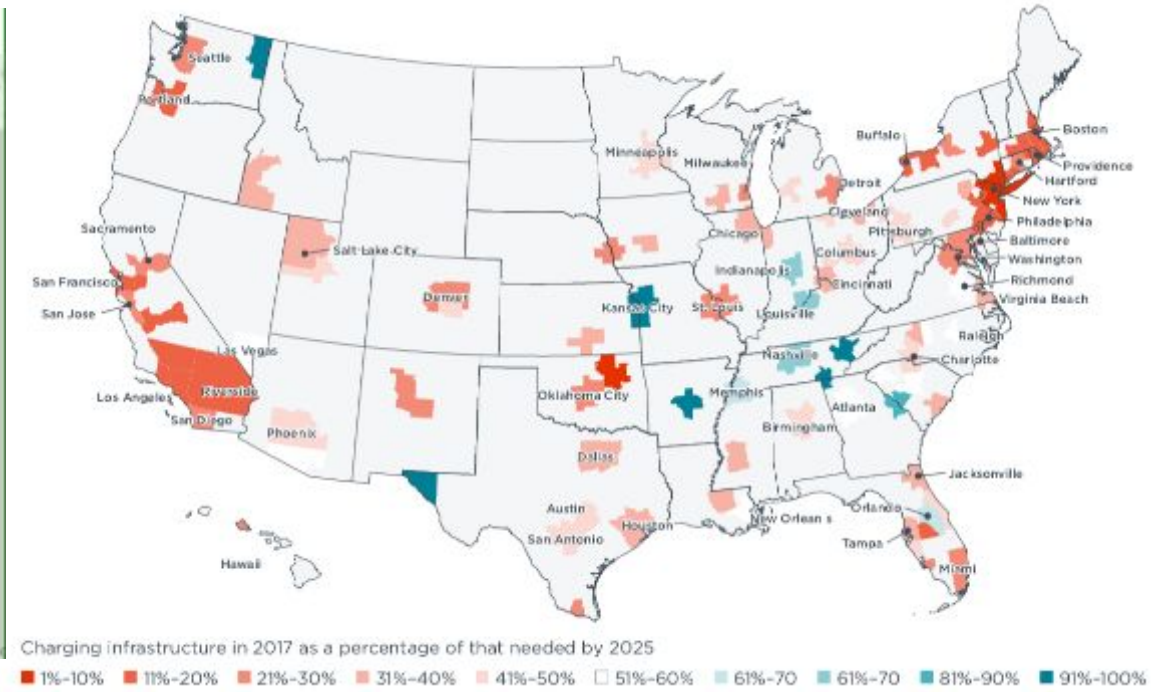
Growth of Electric Vehicle Sales





The Growth and Need for Charging Infrastructure



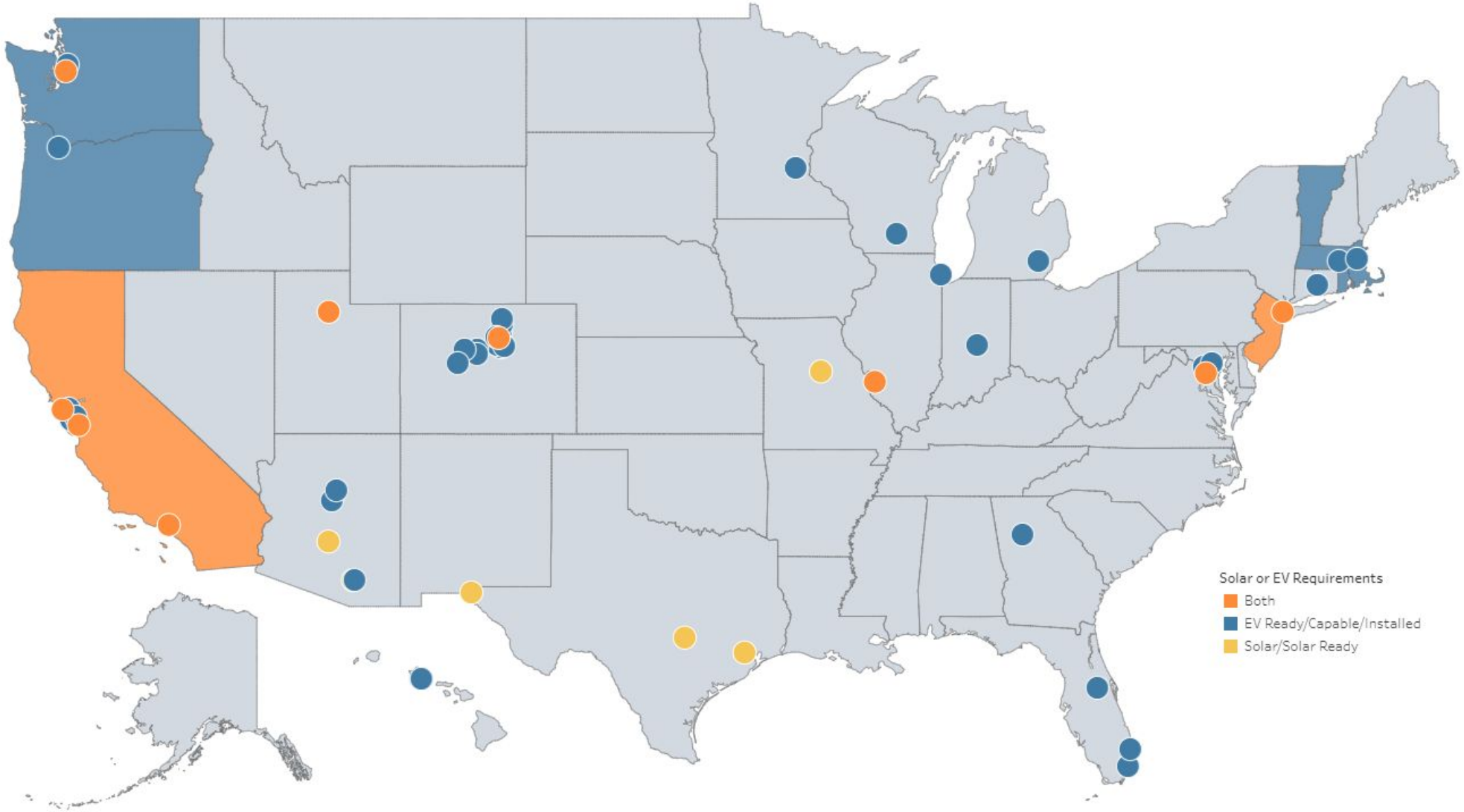


176% growth in from 2020-2022
109,500 ports at 52,400 locations
25,300 fast charging at 6,500 locations

Of the 100 most populous metro areas, 88 had less than half of the needed charging infrastructure in place for 2025 based on expected EV growth.

EV-Ready Requirements

Cities and States with EV-Ready Requirements

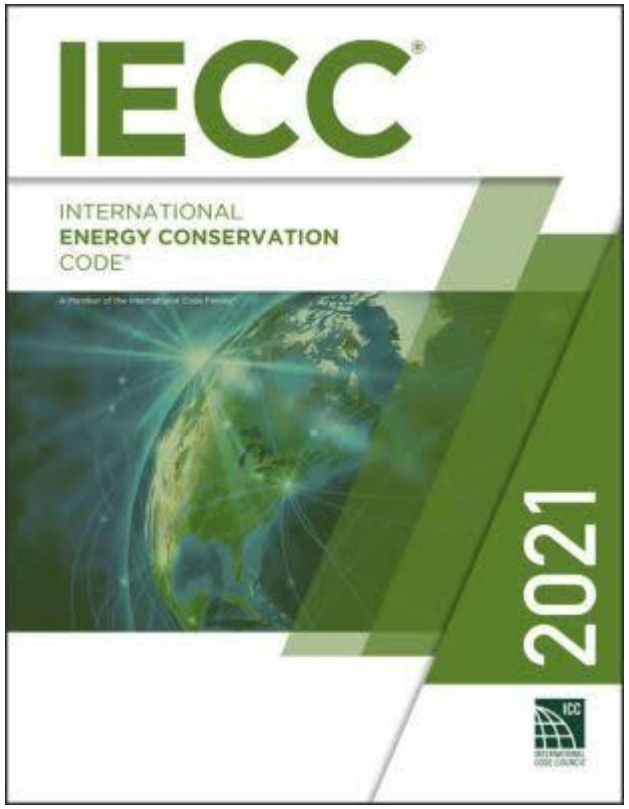


Source: U.S. DOE

IECC Overview

2024 **IECC**

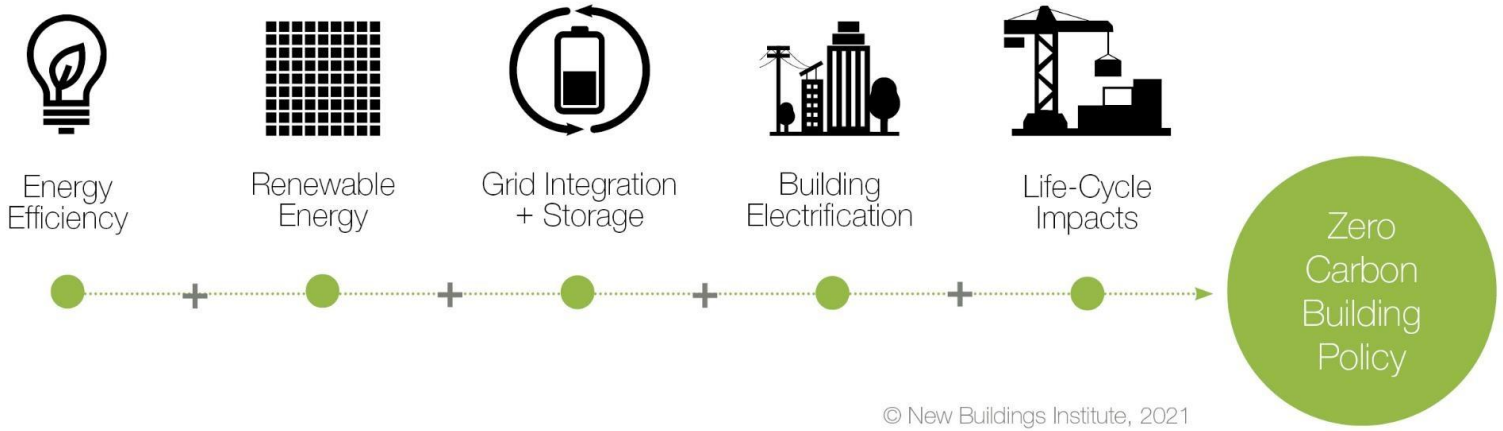
The International Energy Conservation Code (IECC) is the model energy code adopted by the vast majority of the US and is updated every 3 years.

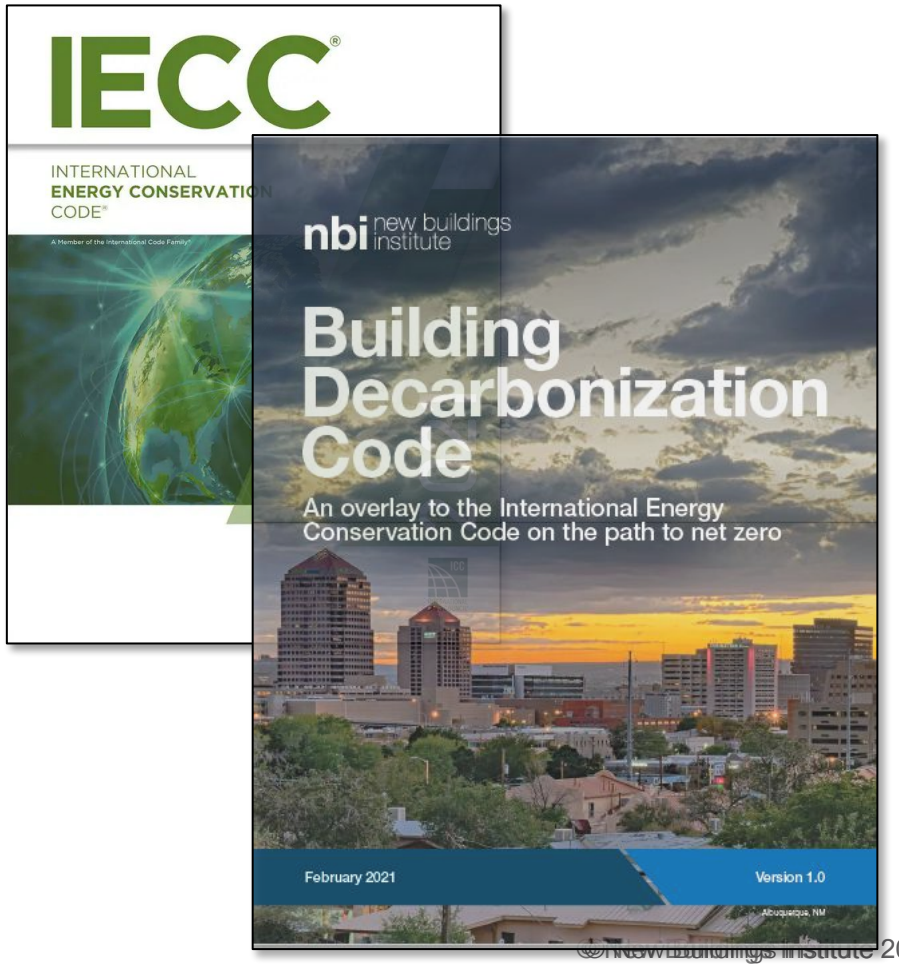


NBI Proposals to 2024 IECC

2024 **IECC**

The Five Foundations of Zero Carbon Building Policies





Commercial EV Infrastructure Requirements

2024 **IECC**

TABLE C405.14.1
REQUIRED EV POWER TRANSFER INFRASTRUCTURE

Occupancy	EVSE Spaces	EV Ready Spaces	EV Capable Spaces
Group A	10%	0%	10%
Group B	15%	0%	30%
Group E	2%	0%	5%
Group F	2%	0%	5%
Group H	1%	0%	0%
Group I	2%	0%	5%
Group M	10%	0%	10%
Group R-1	20%	5%	75%
Group R-2	20%	5%	75%
Group R-3 and R-4	2%	0%	5%
Group S exclusive of parking garages	1%	0%	0%
Group S-2 parking garages	1%	0%	0%

EV Capable

EV space that has the electrical panel capacity and conduit, called raceway, installed to implement EV charging in the future.

EV Ready

EV space that has circuit installations and panel capacity, raceway with wiring, receptacle, and circuit overprotection devices.

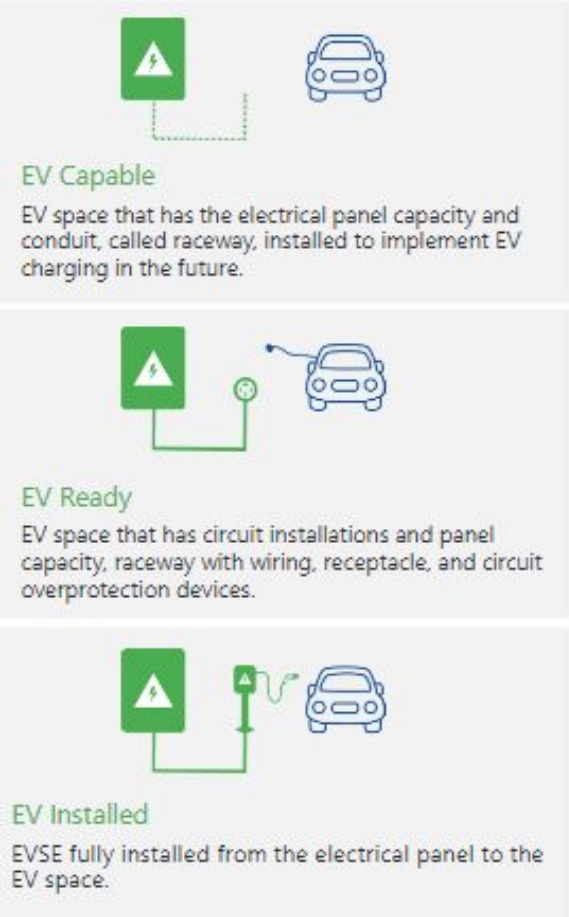
EV Installed

EVSE fully installed from the electrical panel to the EV space.

Residential EV Infrastructure Requirements

2024 **IECC**

- Released Late October
- Potentially require single family homes to install one of three options:
  1. EV Capable (conduit/capacity)
  2. EV Ready (outlet)
  3. EVSE Installed (charger)



Get Involved

2024 IECC

- Join webinar tomorrow, 1pm, Thursday September 29th
- Consider submitting comments to commercial code by October 21, 2022
- Subscribe for Codes for Climate Newsletter

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