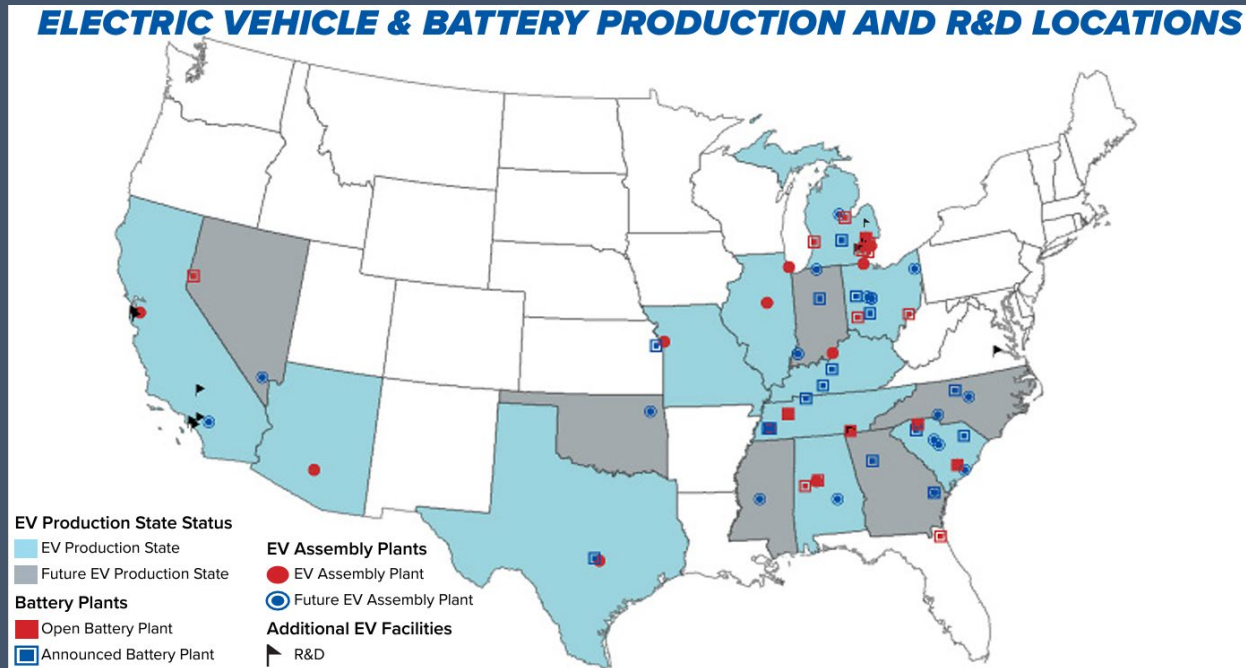


Electronic Vehicle Transformation

Successes and Struggles



The Future Is Electric



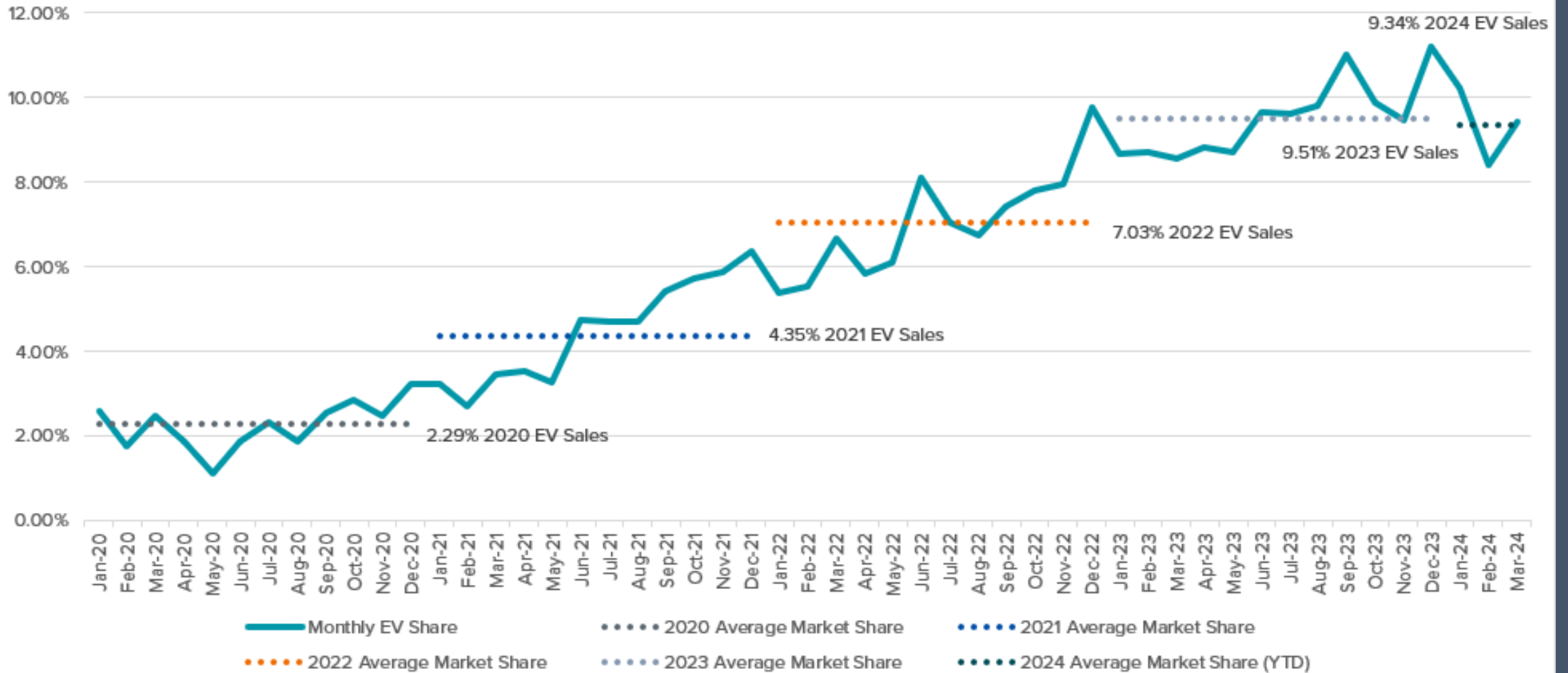
With the right complementary policies in place, the auto industry is poised to accept the challenge of driving EV purchases to between 40 and 50 percent of new vehicle sales by the end of the decade.

-Auto Innovators (Aug. 5, 2021)

- \$125+ Billion in U.S. Investment by autos and battery partners since 2017
- \$1.2 Trillion Global EV Investment by 2030
- U.S. Battery plant manufacturing capacity set to grow 649% by 2025

Current Market (through Q1 2024)

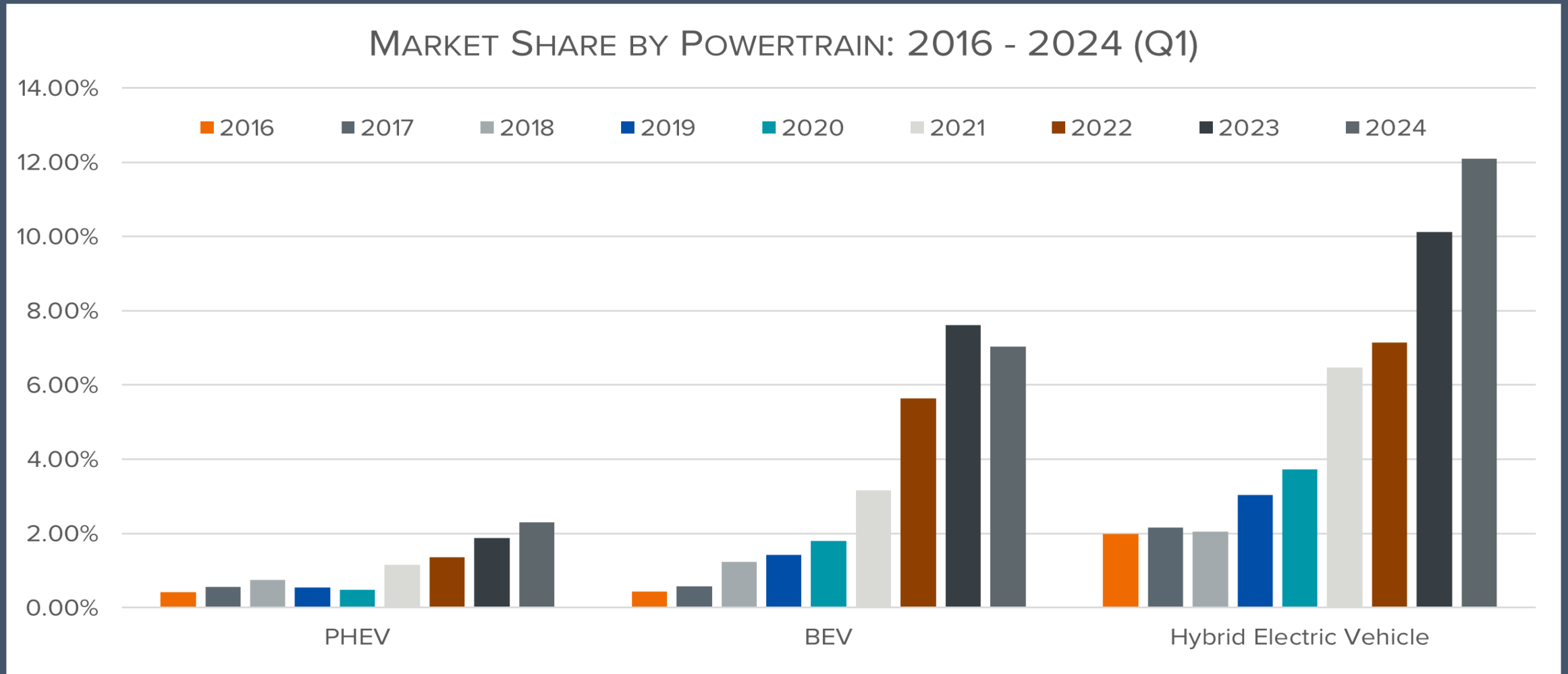
EV Market Share: January 2020 - March 2024



Electronic Vehicle Market Share

- Electric Vehicle market share increased in 37 states in Q1 2024 compared to Q1 2023.
- 344,000+ EVs sold in U.S. in Q1 2024, a 13% increase over Q1 2023.
- Top five list of states for EV sales in Q1 2024:
 - California 24.8%
 - Washington 20.2%
 - District of Columbia 19.5%
 - Colorado 18.3%
 - Hawaii 16.0%

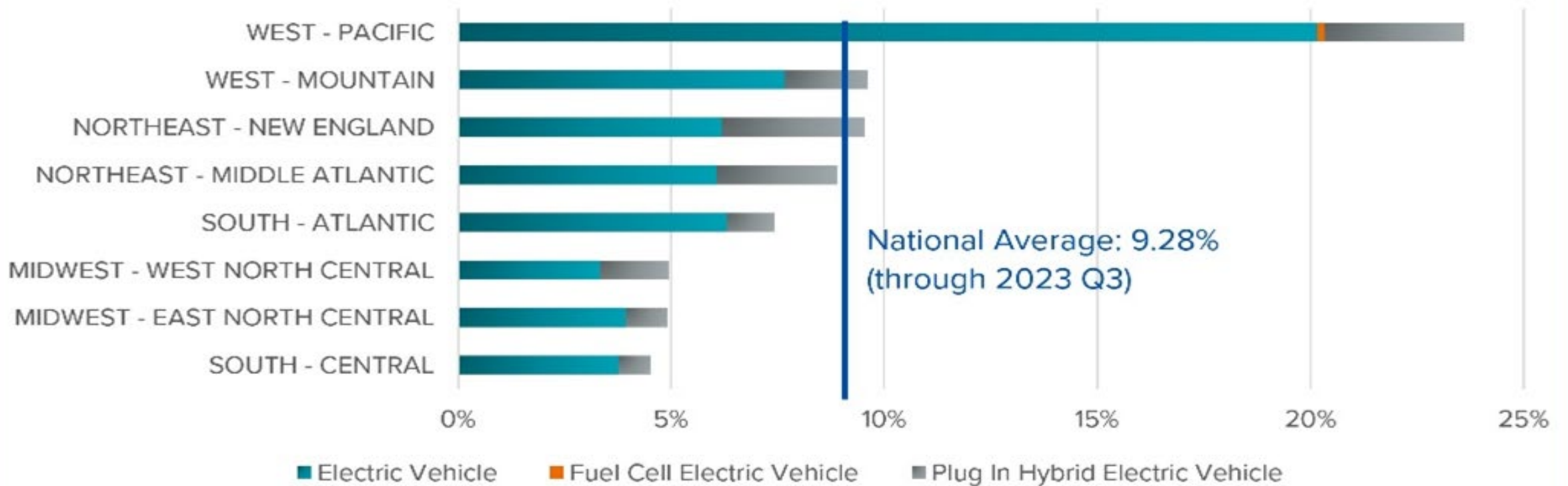
Electric Vehicle Market Share



Total light-duty sales increased 4.2%; internal combustion engine (ICE) vehicle market share contracted 4.6%.

Electric Vehicle Market Share

EV MARKET SHARE BY REGION



Keys to Expanded Electric Vehicle Adoption

- Convenient, easy to use, everywhere
- Top reason to reject an EV “Nowhere to Charge”

Infrastructure

- Home/work Charging
- Public Charging
- H2 Fueling

Costs

- Vehicle
- Fuel

- EVs still more expensive than gas - Incentives help bridge the gap
- Fuel must be cheaper than gas

Customers

- (Retail/Fleet)
- Awareness
 - Choice/Capability
 - Convenience

Production

- Factories
- Labor
- Supply side security
- Critical Minerals

- Automakers investing \$515 billion domestically by 2030 (starting line)
- Building a new global supply chain from scratch, hundreds of factories.

- Buy-in from all new vehicle purchasers

States Invest in EV Manufacturing – South Carolina

In 2022, Governor Henry McMaster issued Executive Order 2022-31, which formalizes the governor's efforts to coordinate the future roll-out of the state's electric vehicle infrastructure. The governor's order prioritizes the state's efforts to recruit electric vehicle-related businesses to South Carolina by training the state's workforce to be prepared for the jobs related to the industry and establishing a “one-stop-shop” at the South Carolina Department of Commerce (Commerce) for businesses interested in investing in the state.

Companies investing in South Carolina:

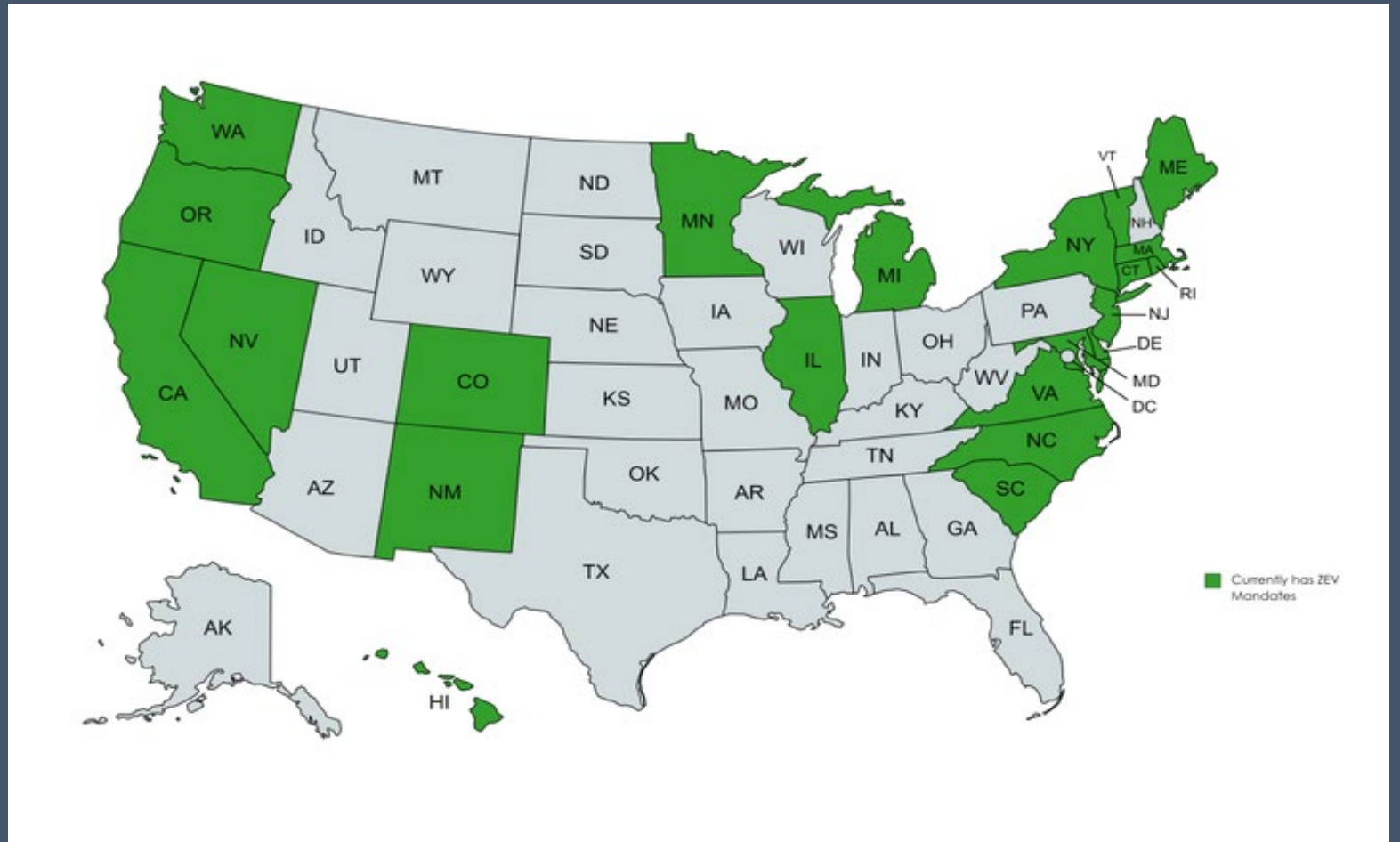
- **Redwood Materials** - \$3.5 Billion to produce anode and cathode materials, to power 1 million vehicles annually, hiring 1,500 workers.
- **Volkswagen** – building a \$2 billion assembly plant, to make all electric truck and SUVs, hiring 4,000 workers.
- **Albemarle Corporation** - building a \$1.3 billion “Mega-Flex” plant to process lithium hydroxide batteries. The new plant will produce 50,000 metric tons of the material annually.
- **BMW** – Will invest \$1.7 billion on a battery assembly plant, employing 300 workers.
- **ZF Group** – Investing \$500 million to add 400, new workers to its existing 2,000 workforce to build a new kind of transmission for electric vehicles.

States Invest in EV Manufacturing – South Carolina

- **Cirba Solutions** – Investing \$300 million to hire 300 workers to build a lithium-ion battery recycling plant and produce enough materials for 500,000 electric vehicle batteries.
- **Bosch** – Investing \$260 million in its existing plant for a new electric motor production line, hiring 350 people.
- **BorgWarner** – Investing \$43 million to build electric vehicle battery systems at its existing facility hiring 122 new workers.
- **ABB E-mobility** – An electric vehicle charging company is investing \$4 million to increase production and hiring 100 new workers.
- **Volvo** – Is adding to its electric vehicle production facility, investing \$118 million to build the Polestar 3 manufacturing line, hiring 1,300 additional workers.

State Action On Electric Vehicle Transformation - Zero-Emission Vehicle Mandates by U.S. State

22 States
Representing
50.5% of the
population



State Action On Electric Vehicle Transformation - Zero-Emission Vehicle Mandates by States

California - 100% of new vehicles sold in the state to be zero-emission by 2035

Colorado - 82% of vehicles on sale to be electric by 2032

Connecticut - 20% of new car sales to be ZEVs by 2025

Delaware - 43% of new cars to be electric or hybrid by 2027 and 82% by 2032

Hawaii - Zero emissions from greenhouse gas in all transportation sectors by 2045

Illinois - 100% of all new vehicle sales to be new ZEVs

Maine - 43% of new cars to be electric or hybrid by 2027 and 82% by 2032

Maryland - Set a goal of 60,000 ZEVs by 2025 and 20% of new car sales by 2025

Massachusetts - Set a goal of 75,000 ZEVs by 2025 and 30% of new car sales by 2030

Michigan - 100 of the state's fleet to be zero-emission vehicles by 2040

Minnesota - Adopted California emission standards by 2025

State Action On Electric Vehicle Transformation - Zero-Emission Vehicle Mandates by States

Nevada - 100% of new vehicles to be ZEVs by 2035

New Jersey - all cars sold in the state will be ZEVs / plug-in hybrids by 2035

New Mexico - 82% of new vehicles sold in state must be ZEVs by 2032

New York - 100% of new vehicles sold in state to be ZEVs by 2035

North Carolina - 50% of new passenger vehicles sales to be ZEVs by 2030

Oregon - 100% of new passenger vehicles sold to be ZEVS by 2035

Rhode Island - 100% of new passenger vehicles sold to be ZEVS by 2035

South Carolina - 100% of new passenger vehicles sold to be ZEVS by 2035

Vermont - 100% of new passenger vehicles sold to be ZEVS by 2035

Virginia - 100% of new passenger vehicles sold to be ZEVS by 2035

Washington - 100% of new passenger vehicles sold to be ZEVS by 2035

State Action On Electric Vehicle Transformation – Other Zero-Emission Vehicle Actions by States

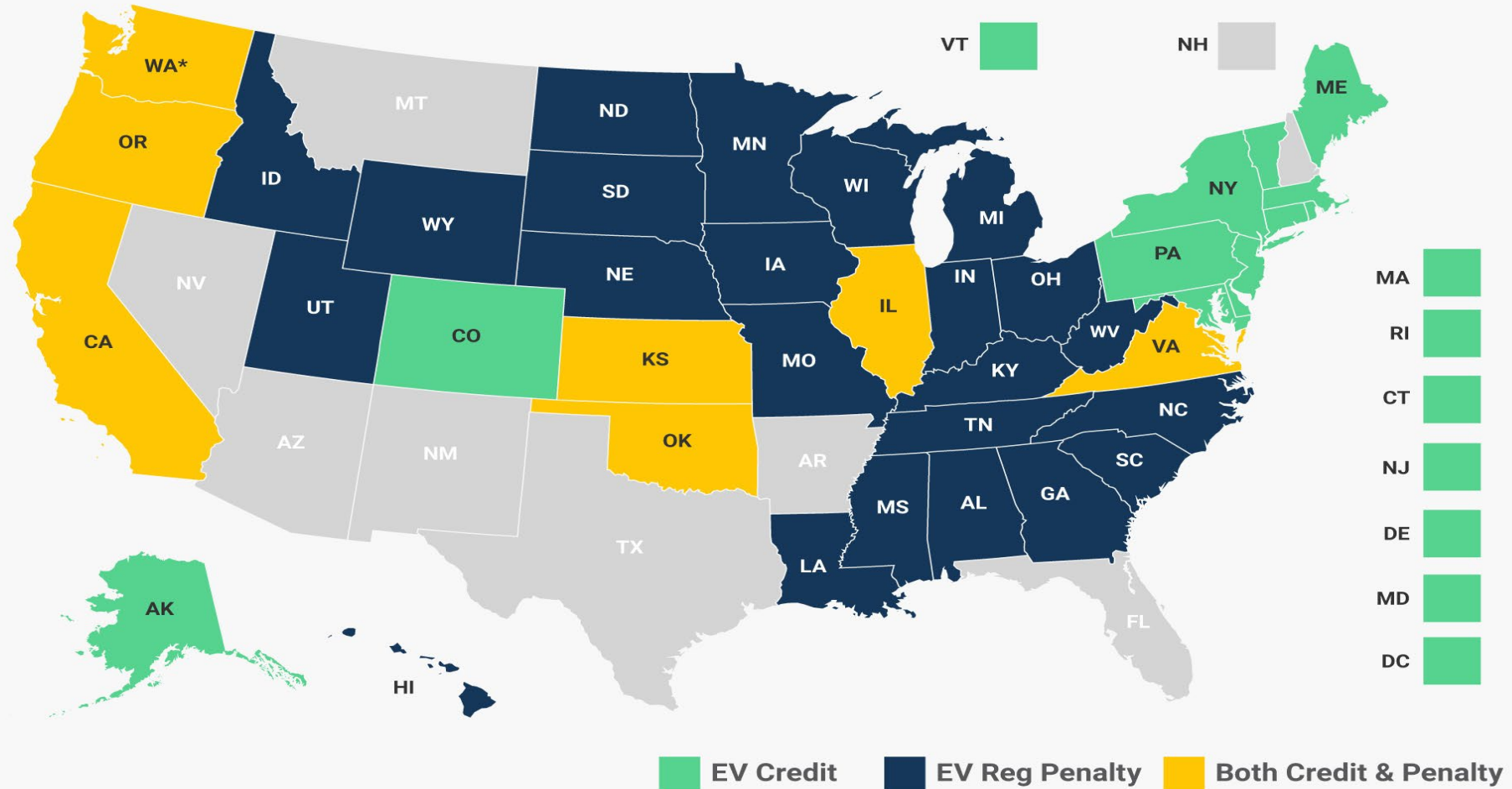
- Intermountain West Electric EV Corridor to help drivers to use EVs across the Western U.S. and includes the states of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah & Wyoming
- 19 states offer tax credits for the purchase of electric vehicles in addition to the federal tax credit of \$7,500. State tax credits range from \$1,000 to \$7,500.

Federal Efforts

- Executive Order on Strengthening American Leadership in Clean Cars and Trucks, issued by President Joe Biden on August 5, 2021.
- The Biden administration on March 20, 2024, issued regulations designed to ensure that the majority of new passenger cars and light trucks sold in the United States are all-electric or hybrids by 2032.
- John Bozzella, president of the Alliance for Automotive Innovation, which represents 42 car companies that produce nearly all the new vehicles sold in the United States, said in a statement that the new rule was “a stretch goal” but one that offered some flexibility. “The future is electric,” he said. Still, the rules “are mindful of the importance of choice to drivers and preserve their ability to choose the vehicle that’s right for them,” he said

Tax Treatment of Electric Vehicles

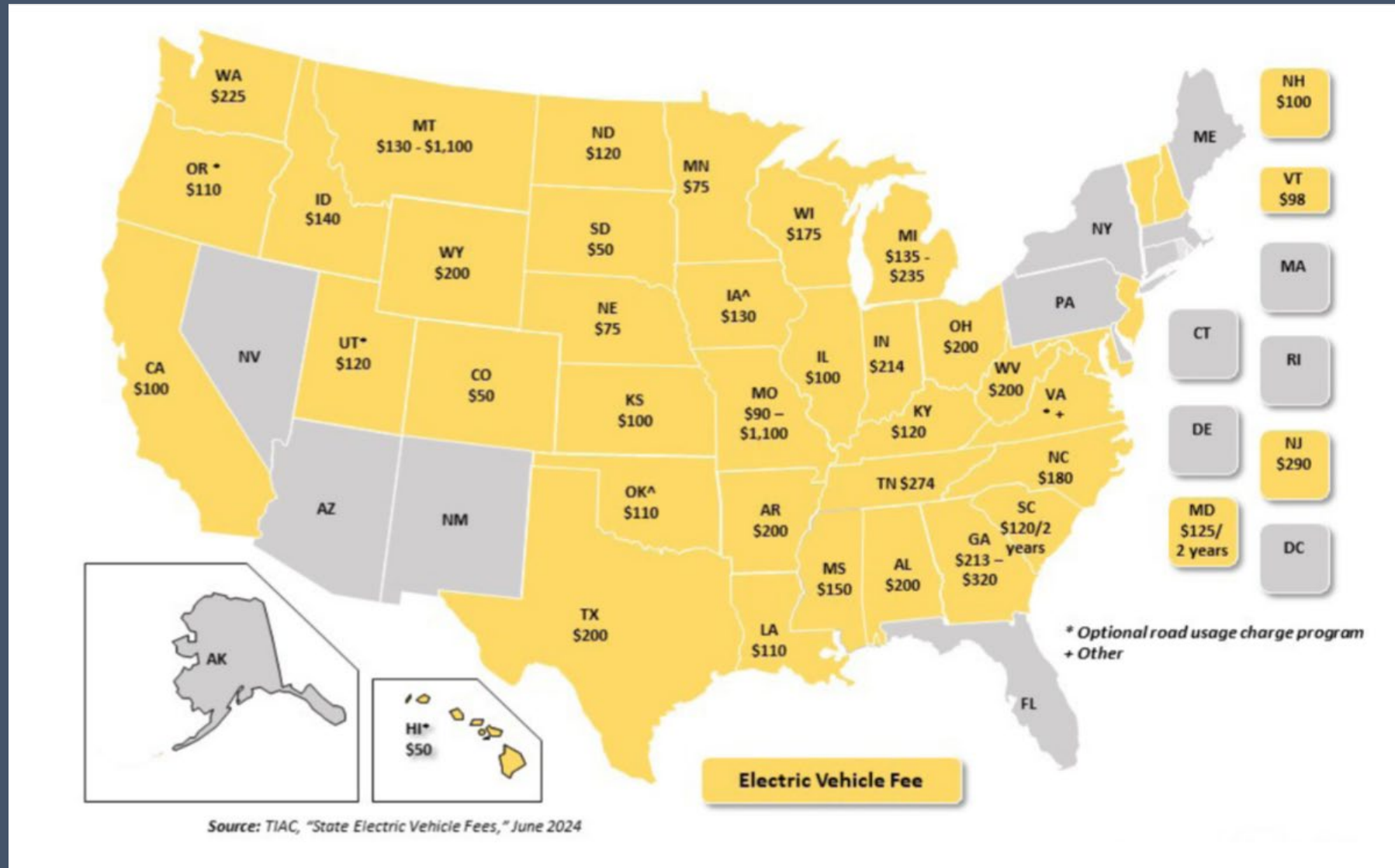
States offering tax credits and additional registration fees, as of July 2023



Note: *Washington offers a sales tax exemption instead of a tax credit

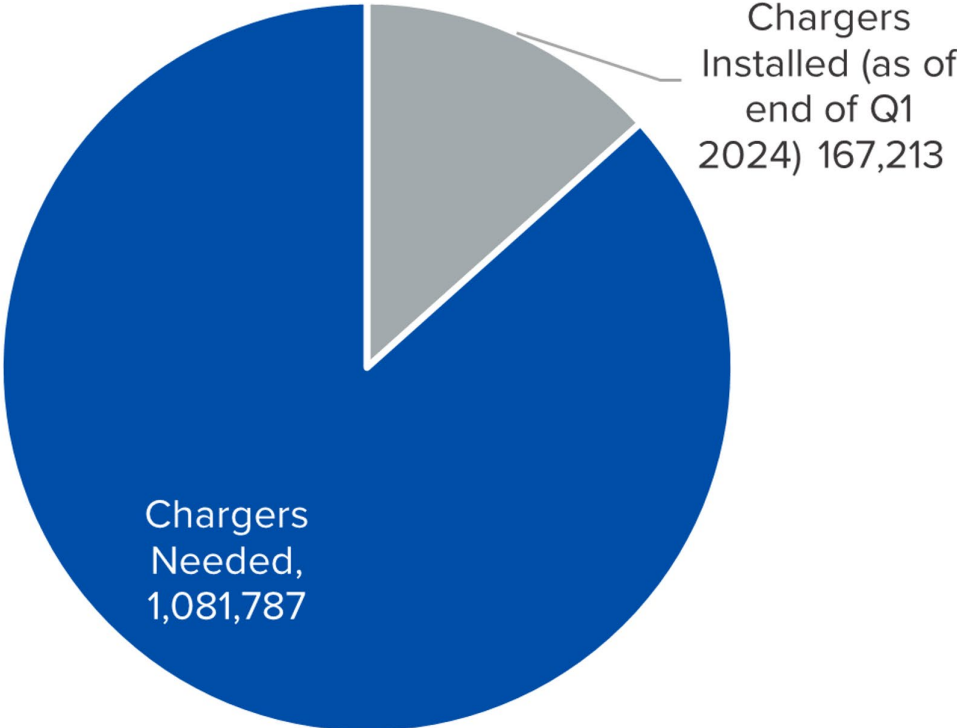
Sources: U.S. News and World Report, State Statutes

States with Electric Vehicle Registration Fees



Status of Electric Charging Stations

1,249,000 Public Chargers Needed to Support
50% EV sales by 2030 / 33 million EVs



■ Chargers Installed (as of end of Q1 2024) ■ Chargers Needed

Institute for State Policy Leaders'
Auto Innovation Academy, Electric Vehicles Seminar

September 9-11, 2024

Omni Atlanta Hotel at Centennial Park

Atlanta, Georgia

The *Auto Innovation Academy* is a partnership project with the Alliance for Automotive Innovation designed to educate state policymaker leaders about the transition to electric vehicles (EVs) and associated policy and regulated issues state legislators are and will be addressing.

The two-and-a-half-day policy seminar provides a balanced program across a broad range of topics and features the most important voices in the electrification arena. Legislators' hotel and travel expenses will be reimbursed up to \$2,000.

If you are interested in attending, please contact:

Neal Osten
Executive Director, Institute for State Policy Leaders
neal@statepolicyleaders.org

The Institute, a 501(c)(3) educational foundation, hosts programs on selected topics throughout the year. Each program provides policymakers with a balanced deep dive on a topic and allows policymakers to discuss their concerns and questions with the leading experts on the subject. More information on the Institute can be found at www.statepolicyleaders.org.



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