



# GOVERNMENT/ INDUSTRY

**Digital Summit**

February 2-3, 2021

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## Policies Governing Public EV Charging in the U.S.

Tammy Klein

Transport Energy Strategies



# Topics Covered in the Fuels Institute EV Infrastructure Regulatory Environment Study

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## Installation Issues

Siting

Permitting

Zoning

Site design (such as Americans with Disability Act (ADA) requirements, property flow, curb cuts, proximity of charging equipment to other equipment on site like petroleum dispensers, etc.)

Construction

Installation

Utility engagement with site host for site development

## Operation Issues

How electricity is sold

Marketing of charging services

Disclosures required to be provided to customers

Unit of measurement required in selling electricity

Types of receipts required

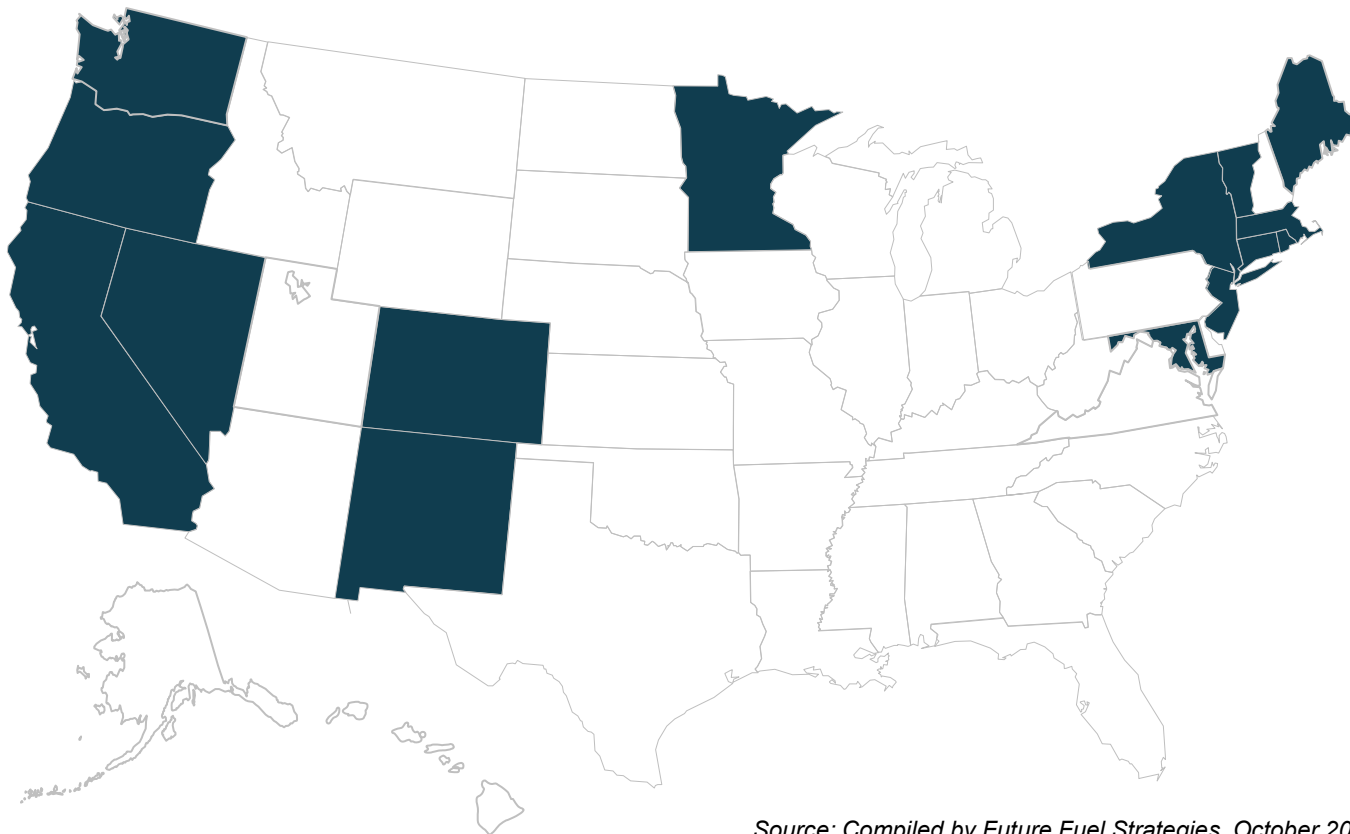
# States Moving at Different Paces on EV Infrastructure

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- 34 states have addressed issues related to the pricing of charging (allowing kilowatt hour (kWh) pricing) and 29 states have made clear in policy that charging site hosts are not public utilities subject to that industry's regulatory regime.
- California is the only state that has set a range of different policies governing public charging, specifically addressing installation- and operation-related EVSE issue. The regulatory regime is overcomplex and permitting projects are difficult, time consuming and expensive – even with a streamlined permitting law in place!
- 10 states address other installation-related issues; five states, operation. Installation-related policies tend to address issues such as licensing of installers, site design, signage and parking. Several states address operation-related questions such as requiring multiple payment options and/or prohibiting subscriptions plans.
- 49 cities and counties have set ordinances or other regulations governing EVSE installation and 23 are in California. One city out of the group surveyed included operation-related EVSE requirements.

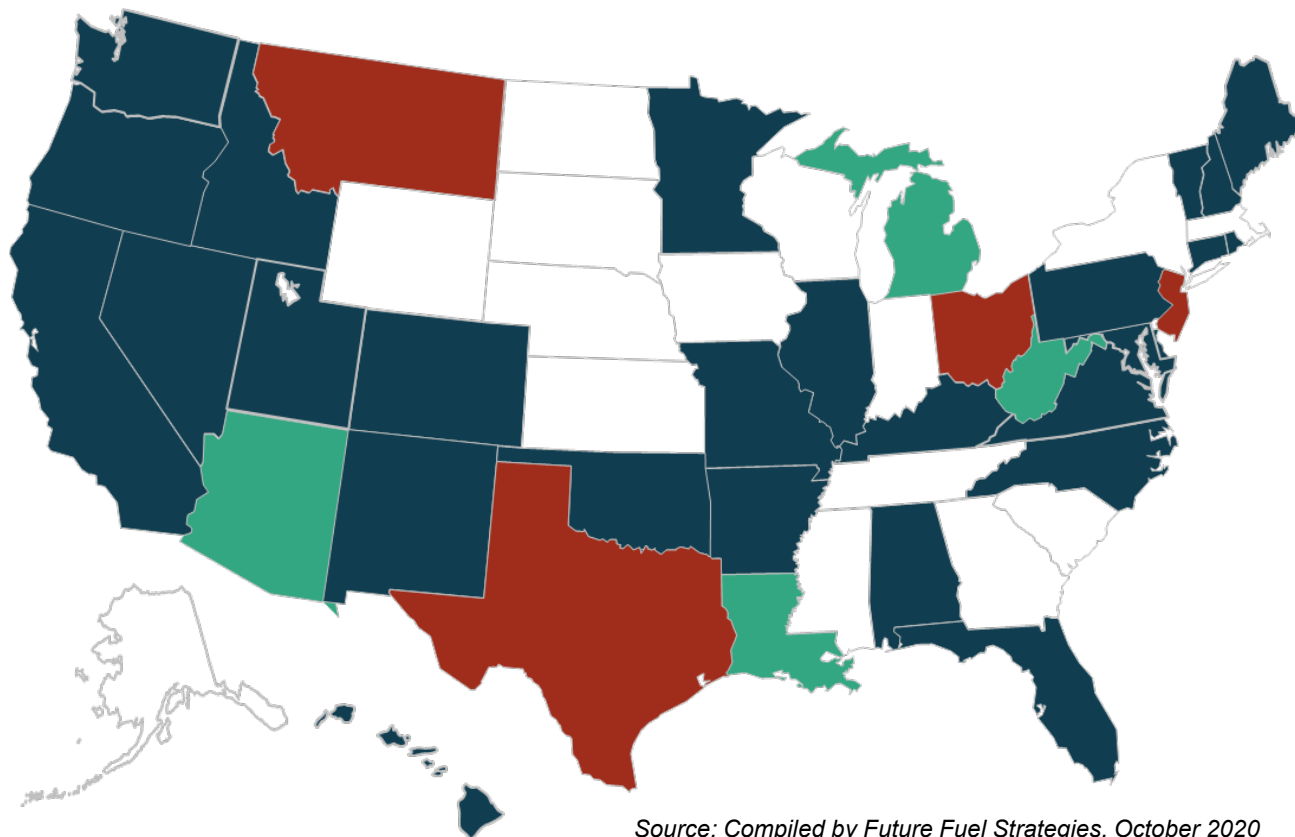
## States with Zero Emission Vehicle Mandates

***These affect the light-duty fleet; earlier this year 15 states (many of these same pictured here) committed to implement heavy-duty ZEV mandates as well***



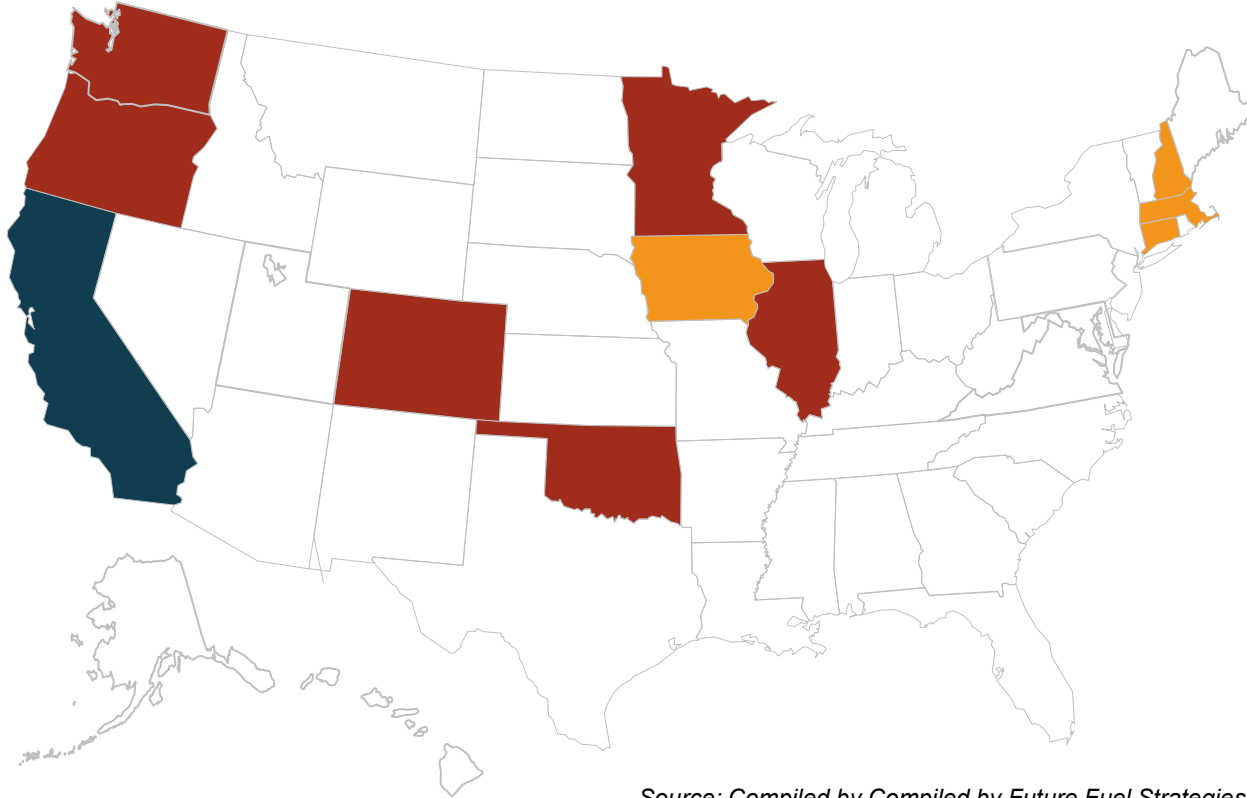
# States Addressing kWh Pricing & Public Utility Issue

*These are the two issues states have moved fastest to address*



# States with Installation/Operation Policies

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# State “Archetype” Groupings

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**Group 1:** States that have implemented a **comprehensive regulatory regime or suite of policies including a ZEV mandate** addressing both EVSE installation and operation requirements that pertain to public charging. Only California has such a regime at this time.

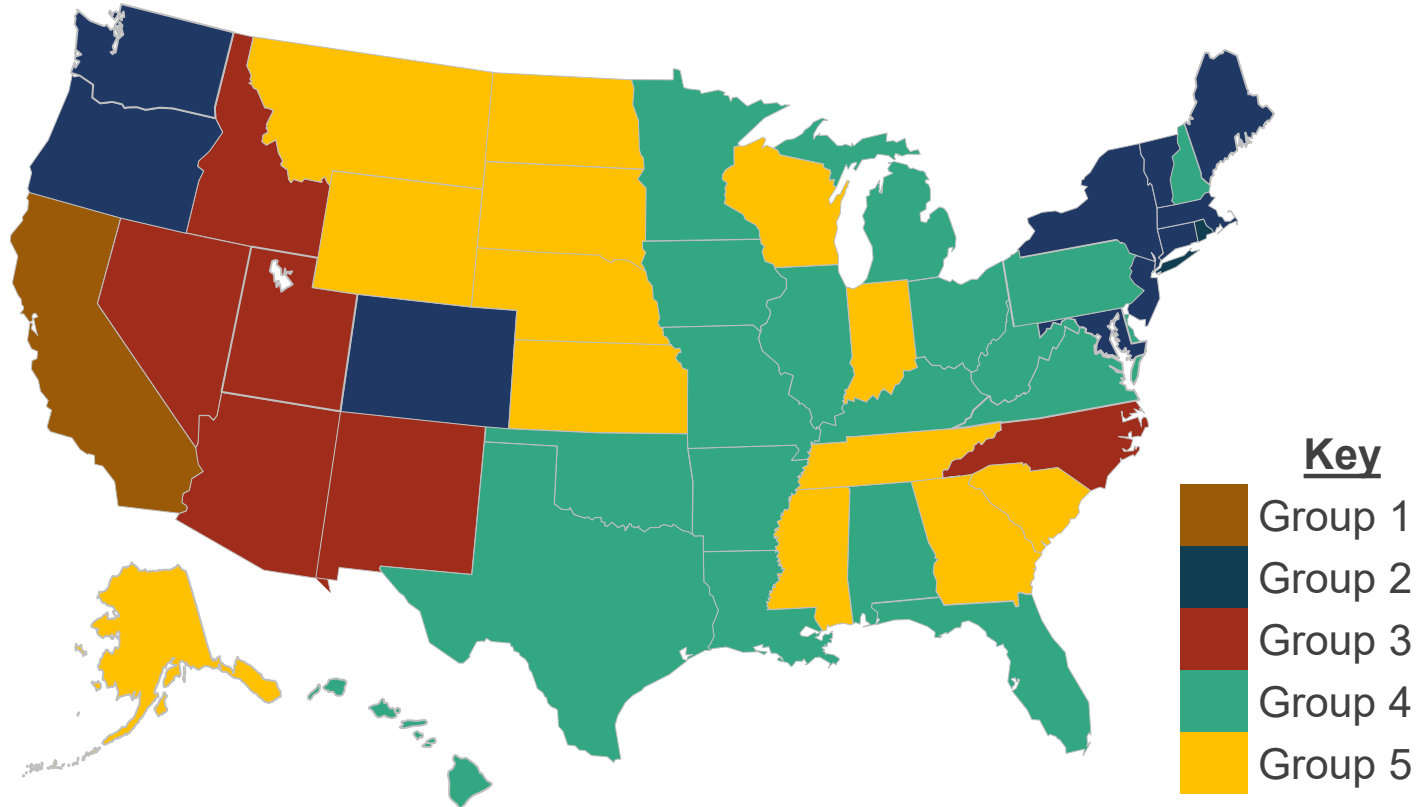
**Group 2:** These states are implementing **ZEV mandates** and/or other targets and have developed and implemented **multiple policies** on installation or operation public charging.

**Group 3:** There is an **electrification target**, and at least **two relevant policies** on installation or operation of EVSE pertinent to public charging.

**Group 4:** There is **no mandate or electrification target**, but there is at least **one relevant policy** on regulations on installation or operation of EVSE pertinent to public charging.

**Group 5:** There is **no mandate or electrification target**, and there are **no relevant policies** on installation or operation of EVSE pertinent to public charging.

# The Majority of States Have Set Little or No Policies Regulating EV Public Charging EVSE





# Quick Summary of Major Public EV Charging Policies in California

Law/Regulation	Description	Responsible Authority
EV-charging regulations pertaining to utility involvement	Electricity rates and design, demand charges, and other programs	California Public Utilities Commission (CPUC)
EV expedited and streamlined permitting	Requires localities to implement ordinances providing for expedited and streamlined EVSE permitting	Set by legislation, implemented in California localities
EV-charging accessibility	Requires EV charging to be accessible to users regardless of membership in an EV service provider (EVSP) network; covers fees, interoperability, reporting requirements	California Air Resources Board
ADA requirements	Through the building code, provides direct guidance to localities on ADA requirements as they pertain to EV charging	California Building Standards Commission, Division of the State Architect
CALGreen	EV-capable parking spaces are required in new construction and major building alterations	California Building Standards Commission
Low Carbon Fuel Standard (LCFS)	Decreases the carbon intensity of fuels on an annual basis to reach 20% reduction in greenhouse gas emissions in the transportation fuel pool by 2030	CARB
National Institute of Standards and Technology (NIST) Handbook, Section 3.40 Regulation – Tentative	Requires EVSE to be type certified and field verified to ensure that a kWh dispensed equals a kWh received	Department of Food and Agriculture, Division of Measurement Standards
Coastal Development Permit (CDP)	May be required to expand or install EVCS located in coastal zones	Coastal Commission

## Group 2 States

State	ZEV Program?	Other EV Target or Plan?	Installation Legislation/ Regulations?	Addresses Public Utility Definition?	Allows kWh Pricing?	Other Operation Legislation/ Regulations?
Colorado	+	+	+	+	+	+
Connecticut	+	-	-	+	-	+
Maine	+	-	-	+	+	-
Maryland	+	-	-	+	+	-
Massachusetts	+	-	+	+	+	+
New Jersey	+	+	-	+	+	-
New York	+	-	-	+	+	-
Oregon	+	+	+	+	+	-
Rhode Island	+	-	-	-	+	-
Vermont	+	-	-	+	+	-
Washington	+	+	+	+	+	-

*These states are implementing ZEV mandates and/or other targets and have developed relevant legislation or regulations on installation and/or operation of EVSE pertinent to NRC.*

Source: Compiled by Future Fuel Strategies, June 2020

Example policies on installation and operation:

- Washington: EV-readiness and capability legislation
- Connecticut and Massachusetts: Site hosts must allow multiple payment options; prohibits subscriptions



## Group 3 States

State	Other EV Target or Plan?	Installation Legislation/ Regulations?	Addresses Public Utility Definition?	Allows kWh Pricing?	Other Operation Legislation/ Regulations?
Arizona	+	-	+	-	-
Idaho	+	-	+	+	-
Nevada	+	-	+	+	-
New Mexico	+	-	+	+	-
North Carolina	+	-	+	+	-
Utah	+	-	+	+	-

*There is an electrification target, and at least two relevant policies on regulations on installation or operation of EVSE pertinent to NRC.*

Source: Compiled by Future Fuel Strategies, June 2020

Except for North Carolina, these states are signatories to the **Regional Electric Vehicle West** plan and released voluntary minimum standards for EVSE that cover siting, location, technical and signage. Provisions include:

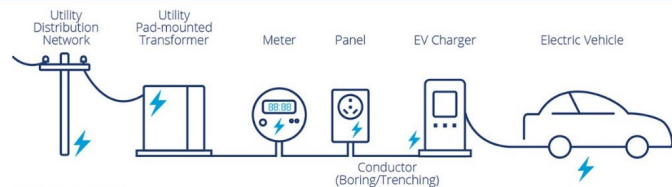
- ADA-compliance with wheelchair accessibility.
- Sites within one mile of a highway interchange or exit; within 0.5 miles from a highway interchange or exit to maximize driver convenience.
- Dual protocol - at least one CHAdeMO fast charger and one SAE Combined Charging System (CCS) fast charger. Two or more DCFC stations at each site.
- Cell service or free Wi-Fi available to customers.
- Support multiple payment options, including but not limited to, ability to pay with a credit card, app-based mobile payments, subscription services, chip and pin, or vehicle-based payments.

## Group 4 States

State	Installation Legislation/ Regulations?	Addresses Public Utility Definition?	Allows kWh Pricing?	Other Operation Legislation/ Regulations?
Alabama	–	+	+	–
Arkansas	–	+	+	–
Delaware	–	+	+	–
District of Columbia	–	+	+	–
Florida	–	+	+	–
Hawaii	–	+	+	–
Illinois	+	–	–	–
Iowa	–	+	+	+
Kentucky	–	+	+	–
Louisiana	–	–	–	–
Michigan	–	–	–	–
Minnesota	+	–	–	–
Missouri	–	–	–	–
New Hampshire	–	–	–	+
Oklahoma	+	–	–	–
Pennsylvania	–	+	+	–
Texas	–	+	+	–
Virginia	–	+	+	–
West Virginia	–	–	+	–

*There is no ZEV mandate or electrification target, but there is at least one relevant policy on regulations on installation or operation of EVSE pertinent to NRC.*

Source: Compiled by Future Fuel Strategies, June 2020



Source: M.J. Bradley & Associates, 2019.

- 24 states through their PSCs have addressed the utility role in infrastructure
- All three models are being used by the states
- Incentives are commonly approved by PSCs as well as charging station ownership
- New York and California are two states requiring hundred of millions in investment in make-ready infrastructure

## Approved Investments for IOUs in the Three Models

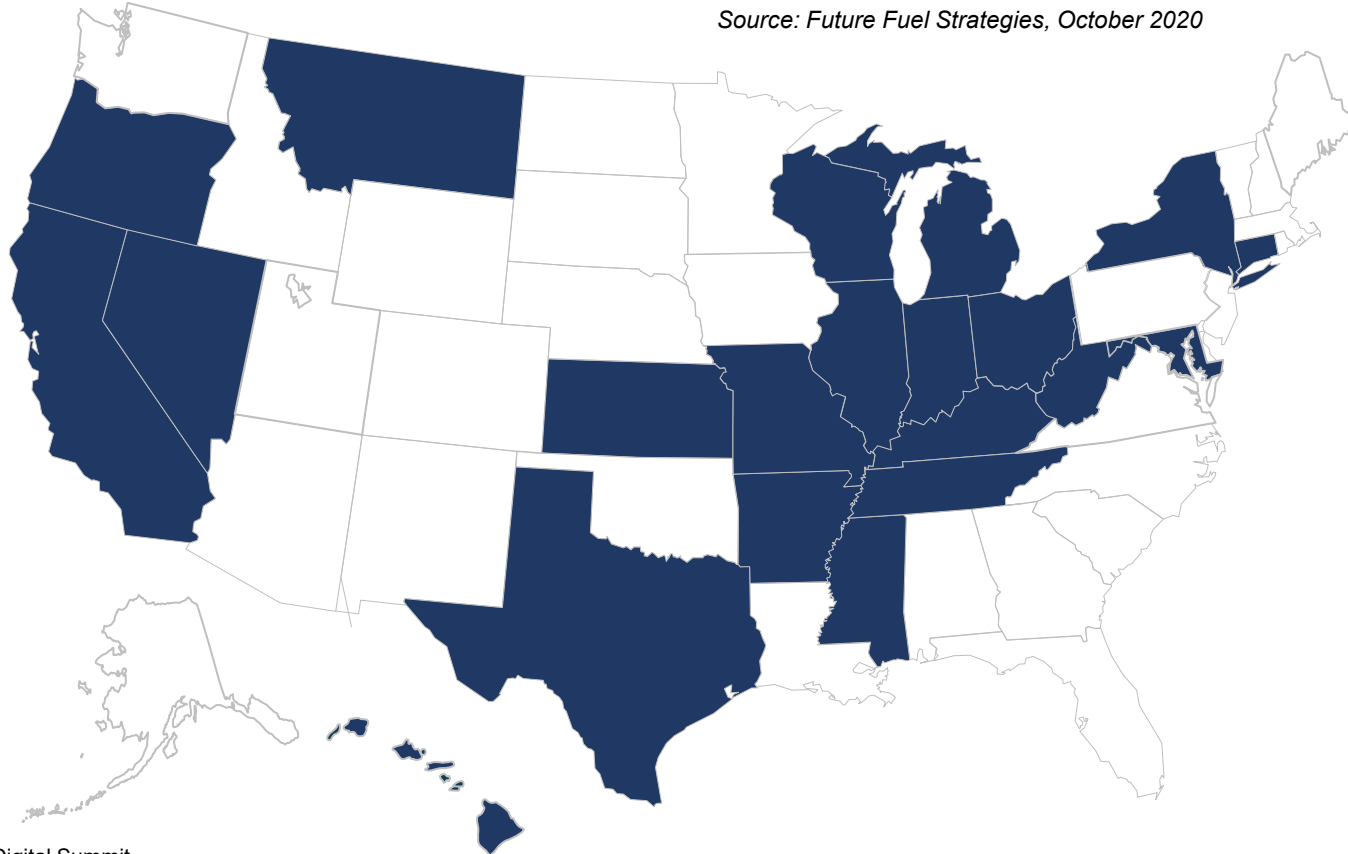
State	Make-Ready Infrastructure	Ownership	Incentives
Arizona	✓		✓
California	✓	✓	✓
District of Columbia	✓		
Delaware		✓	✓
Florida		✓	
Georgia		✓	
Hawaii		✓	
Indiana	✓		✓
Kansas		✓	
Kentucky		✓	
Massachusetts	✓		✓
Maryland		✓	✓
Michigan	✓		✓
Minnesota	✓	✓	
Missouri		✓	✓
Nevada			✓
New York	✓		✓
Ohio			✓
Oregon	✓	✓	✓
Pennsylvania	✓	✓	✓
Rhode Island	✓		✓
Utah	✓		✓
Washington		✓	
Wisconsin		✓	



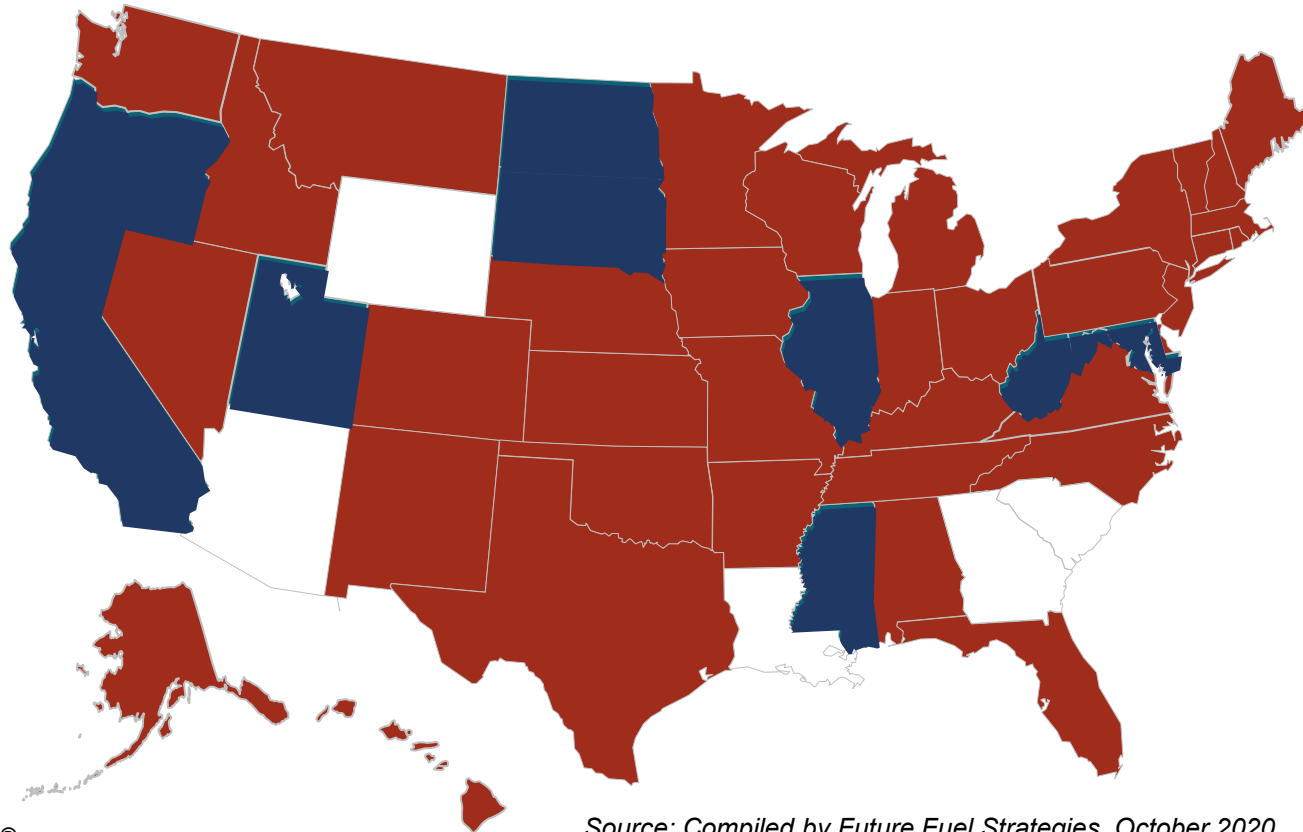
# EVSE Funding under the VW Settlement That May Be Available for Public Charging

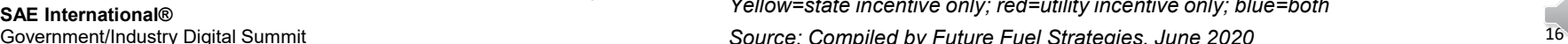
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Source: Future Fuel Strategies, October 2020



## States Using the Full 15% VW Settlement Fund Allocation for Developing/Expanding EV Infrastructure





Source: Compiled by Future Fuel Strategies, June 2020



# City Research Covered 100 Cities & Counties in 27 Metropolitan Statistical Areas

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- New York-Newark-Jersey City, NY-NJ-PA MSA
- Los Angeles-Long Beach-Anaheim, CA MSA
- Chicago-Naperville-Elgin, IL-IN-WI MSA
- Dallas-Fort Worth-Arlington, TX MSA
- Houston-The Woodlands-Sugar Land, TX MSA
- Washington-Arlington-Alexandria, DC-VA-MD-WV MSA
- Miami-Fort Lauderdale-Pompano Beach, FL MSA
- Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
- Atlanta-Sandy Springs-Alpharetta, GA MSA
- Phoenix-Mesa-Chandler, AZ MSA
- Boston-Cambridge-Newton, MA-NH MSA
- San Francisco-Oakland-Berkeley, CA MSA
- Riverside-San Bernardino-Ontario, CA MSA
- Detroit-Warren-Dearborn, MI MSA
- Seattle-Tacoma-Bellevue, WA MSA
- Minneapolis-St. Paul-Bloomington, MN-WI MSA
- San Diego-Chula Vista-Carlsbad, CA MSA
- Tampa-St. Petersburg-Clearwater, FL MSA
- Denver-Aurora-Lakewood, CO MSA
- St. Louis, MO-IL MSA
- Baltimore-Columbia-Towson, MD MSA
- Charlotte-Concord-Gastonia, NC-SC MSA
- Orlando-Kissimmee-Sanford, FL MSA
- San Antonio-New Braunfels, TX MSA
- Portland-Vancouver-Hillsboro, OR-WA MSA
- Las Vegas-Henderson-Paradise, NV MSA
- Kansas City, MO-KS MSA

# Cities and Counties that Have Installation Requirements in Place Outside of California

*Commonly:*

- Permitting requirements specific to non-residential EVSE sites
- Parking requirements specific to EVs
- Signage requirements
- Other specific design or installation requirements
- EV-ready building code requirements for non-residential sites

City or County	MSA- Rank	State	State Group	Requirements				
				Permitting	Parking	Signage	Specific Site Design or Install	EV Ready Building Code
Atlanta	Atlanta-9	GA	5	+	+	+	+	+
Boston	Boston-11	MA	2	+	+	+	+	-
Chicago	Chicago-3	IL	4	+	-	-	+	+
Clayton County	Atlanta-9	GA	5	-	+	+	+	+
Cook County	Chicago-3	IL	4	-	-	-	+	-
Dallas	Dallas-4	TX	4	-	+	-	+	-
Denver and Denver County	Denver, 19	CO	2	-	+	-	+	-
Gwinnett County	Atlanta-9	GA	5	-	+	-	+	-
Houston	Houston-5	TX	4	-	-	-	+	-
Jersey City	New York-1	NJ	2	-	-	+	-	-
Kansas City	Kansas City-31	KS	5	-	-	+	+	-
Mesa	Phoenix-10	AZ	3	-	+	-	+	-
Miami-Dade County	Miami-7	FL	4	-	-	+	+	+
Montgomery County	Washington, DC-6	MD	2	-	+	-	+	-
Naperville	Chicago-3	IL	4	-	+	+	+	-
New York City	New York-1	NY	2	-	+	-	+	-
North Hempstead	New York-1	NY	2	+	+	-	+	-
Philadelphia	Philadelphia-8	PA	4	+	-	-	-	-
Pierce County	Seattle-15	WA	2	-	-	-	+	-
Sandy Springs	Atlanta-9	GA	5	-	+	-	+	-
Seattle	Seattle-15	WA	2	+	+	-	+	-
Snohomish County	Seattle-15	WA	2	-	-	-	-	-
Tacoma	Seattle-15	WA	2	-	-	+	+	+
Warren	Detroit-14	MI	4	+	+	-	-	-
Washington County	Portland-25	OR	2	-	-	+	+	-
Washington, DC	Washington, DC-6	DC	3	-	-	-	-	-

Source: Future Fuel Strategies, July 2020

# Conclusion: How Might Policy Evolve in the U.S.?

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- Expedited, streamlined permitting that is coordinated between the states and localities and harmonized so that it's clear for commercial site hosts
  - Patchwork policies between states and as among localities is not efficient or effective for anyone
  - The patchwork even exists in states with ZEV mandates and targets
- EV-ready and capable building policies so that those involved in public charging can effectively plan and allocate financial resources efficiently
  - If states and localities plan to adopt the 2021 International Code which addresses EV-readiness and capability, they should/could begin to indicate that now
- Precisely communicated requirements related to installation and operation, right down to the landscaping
  - All requirements should be better communicated on state and locality websites, in forms and guides and with contact information for questions and issues
- Policies that clearly delineate the role of utilities in the three ownership models so that it is clear to other potential market entrants
- There is very little in the way of policy outside of California and the kWh pricing issue on operational-related issues

# Thank You!

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**Tammy Klein**  
**Principal**  
**Transport Energy Strategies**  
**+1.703.625.1072 (M)**  
**[tammy@transportenergystategies.com](mailto:tammy@transportenergystategies.com)**