

# 50 STATES OF ELECTRIC VEHICLES

**Q4 2020 Quarterly Report  
& 2020 Annual Review**

**Executive Summary**



**NC CLEAN ENERGY**  
TECHNOLOGY CENTER

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The [NC Clean Energy Technology Center](#) is a UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University. Its mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies, practices, and policies. The Center provides service to the businesses and citizens of North Carolina and beyond relating to the development and adoption of clean energy technologies. Through its programs and activities, the Center envisions and seeks to promote the development and use of clean energy in ways that stimulate a sustainable economy while reducing dependence on foreign sources of energy and mitigating the environmental impacts of fossil fuel use.

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## PREFERRED CITATION

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The full version of this report may be purchased [here](#). Previous executive summaries of *The 50 States of Electric Vehicles* are available for download [here](#). In addition to *The 50 States of Grid*

*Modernization*, the NC Clean Energy Technology Center publishes additional quarterly reports called *The 50 States of Solar* and *The 50 States of Grid Modernization*. These reports may be purchased at [here](#). Executive summaries and older editions of these reports are available for download [here](#).

# ABOUT THE REPORT

## PURPOSE

The purpose of this report is to provide state and local lawmakers and regulators, electric utilities, the electric power industry, the transportation industry, and other energy stakeholders with timely, accurate, and unbiased updates about how states are choosing to study, adopt, implement, amend, or discontinue policies associated with electric vehicles. This report catalogues proposed and approved legislative, regulatory, and utility rate design changes affecting electric vehicles during the most recent quarter, as well as state and investor-owned utility proposals to deploy electric vehicles and charging infrastructure.

## APPROACH

The authors identified relevant policy changes and deployment proposals through state utility commission docket searches, legislative bill searches, popular press, and direct communications with stakeholders and regulators in the industry.

## Questions Addressed

This report addresses several questions about the U.S. electric vehicle landscape, including:

- How are states addressing barriers to electric vehicle and charging infrastructure deployment?
- What policy actions are states taking to grow markets for electric vehicles and related infrastructure?
- How are utility companies designing rates and electric vehicle supply equipment companies designing charging equipment and controls to influence charging behavior of electric vehicle owners?
- Where and how are states and utilities proposing to deploy or pay for electric vehicles and electric vehicle charging infrastructure?

## Actions Included

This report focuses on cataloguing and describing important proposed and adopted policy changes related to electric vehicles. For the purpose of this report, the definition of electric vehicle includes all-electric vehicles (EVs), hybrid electric vehicles (HEVs), and plug-in electric vehicles (PHEVs). In order to explore all policy actions related to electric vehicles, this report catalogs and describes actions related to the deployment of electric vehicle charging equipment, which is often referred to as electric vehicle supply equipment (EVSE). Additionally, the electric

grid is impacted by electric vehicle charging, so legislative and regulatory actions related to electric utilities are included in this report.

In general, this report considers an “action” to be a relevant (1) legislative bill that has been introduced, (2) executive order, or (3) regulatory docket, utility rate case, or rulemaking proceeding. Only statewide actions and those related to investor-owned utilities are included in this report. Specifically, actions tracked in this issue include:

### Studies and Investigations

Legislative or regulatory-led efforts to study electric vehicles specifically, or electric vehicles as part of a broader grid modernization study or investigation.

### Regulation

Changes to state rules related to electric vehicles, including registration fees, homeowner association limitations, and electricity resale regulations affecting vehicle charging.

### Utility Rate Design

Proposed or approved changes to investor-owned utility rate design for electric vehicles, including new electric vehicle tariffs and significant changes to existing electric vehicle tariffs.

### Market Development

New state policy proposals or changes to existing policies aimed at growing the electric vehicle market.

### Financial Incentives

New state or investor-owned utility incentive programs or changes to existing incentive programs for electric vehicles and charging infrastructure.

### State and Utility Deployment

Utility-initiated requests, as well as proposed legislation, to deploy electric vehicles or charging infrastructure.

## Actions Excluded

While actions taken by municipal utilities and electric cooperatives are not comprehensively tracked in this report, particularly noteworthy or high-impact actions are included. The report also excludes actions related to grid modernization without an explicit electric vehicle component, as well as actions related to general time-varying rates not specific to vehicle charging; these types of actions are tracked in the 50 States of Grid Modernization report series.

# EXECUTIVE SUMMARY

## 2020 ELECTRIC VEHICLE ACTION

In 2020, 50 states plus DC took a total of 598 policy and deployment actions related to electric vehicles and charging infrastructure. Table 1 provides a summary of state and utility actions on these topics. Of the 598 actions identified, the most common were related to financial incentives (150), followed by regulation (124) and market development (114).

**Table 1. 2020 Summary of Electric Vehicle Actions**

Type of Action	# of Actions	% by Type	# of States
Financial Incentives	150	25%	33 + DC
Regulation	124	21%	42
Market Development	114	19%	24 + DC
Deployment	79	13%	40 + DC
Studies and Investigations	67	11%	31 + DC
Rate Design	64	11%	31 + DC
<b>Total</b>	<b>598</b>	<b>100%</b>	<b>50 States + DC</b>

Note: The “# of States/ Districts” total is not the sum of the rows because some states have multiple actions. Percentages are rounded and may not add up to 100%.

## TOP TEN MOST ACTIVE STATES OF 2020

Ten states taking the greatest number of actions related to electric vehicles, or some of the most impactful actions, are noted below.

### New Jersey

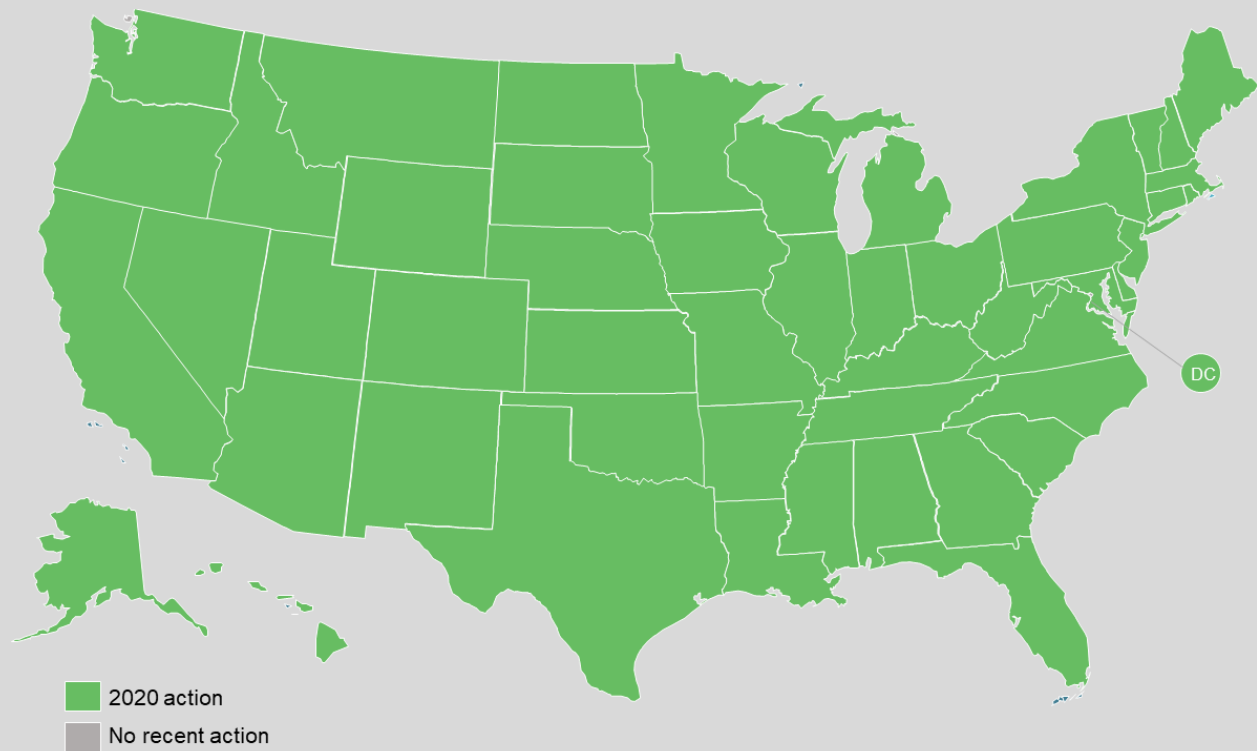
New Jersey lawmakers enacted major legislation early in 2020, adopting a requirement for 85% of light-duty vehicles sold or leased in the state to be plug-in electric vehicles by December 31, 2040. The legislation also included requirements for charging station deployment, state electric vehicle procurement, and new incentive programs for electric vehicles and charging infrastructure. State regulators also approved a shared responsibility model to advance electric vehicle adoption.

### California

The Governor of California signed an executive order setting a goal for 100% of in-state sales of new passenger cars and trucks to be zero-emission by 2035, as well as a goal for 100% of

medium- and heavy-duty vehicles to be zero-emission by 2045. The California Public Utilities Commission considered a draft transportation electrification framework, vehicle-to-grid integration, and electric vehicle sub-metering protocols, as well as utility incentive, rate design, and deployment proposals.

**Figure 1. 2020 Legislative and Regulatory Action on Electric Vehicles**



## New York

The New York Public Service Commission established an electric vehicle make-ready initiative in 2020, which requires utilities to provide incentives for Level 2 and DC fast charging make-ready infrastructure. Later in the year, utilities filed proposals for residential managed charging programs, as required by the Commission. Regulators also considered electric vehicle programs proposed by New York State Electric & Gas and Rochester Gas & Electric.

## Minnesota

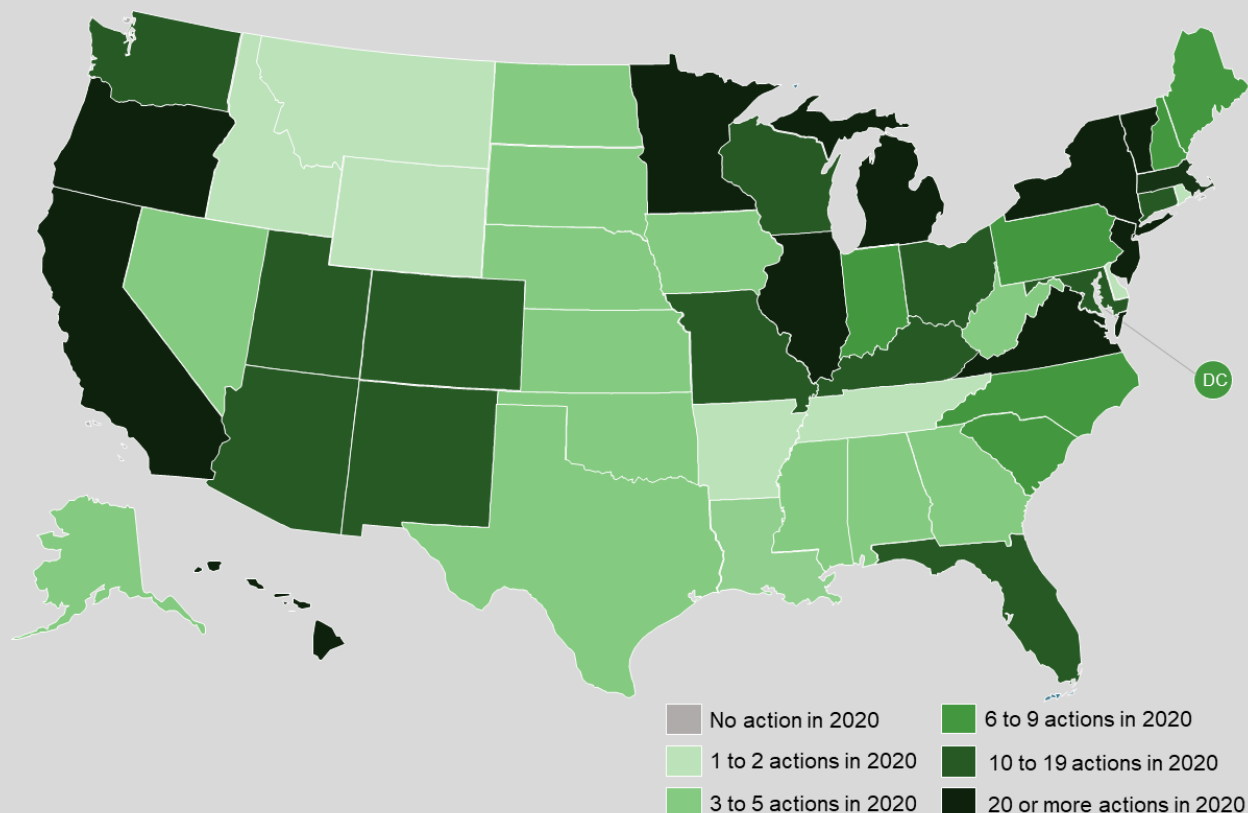
Utilities filed their 2020 electric vehicle tariff reports and transportation electrification plans, while the Minnesota Public Utilities Commission considered many individual electric vehicle programs proposed by utilities to address particular customer segments and pilot new

strategies. These programs include residential and DC fast charging rate designs, new incentive programs, and utility deployment of charging infrastructure.

## Colorado

Colorado’s major utilities, Xcel Energy and Black Hills Energy, filed their transportation electrification plans in 2020, including an array of programs targeting different customer segments with incentives, direct deployment, and rates. The Colorado State Energy Office also released its 2020 electric vehicle plan, and state lawmakers enacted legislation requiring new home builders to offer charging stations or pre-wiring for charging equipment.

**Figure 2. 2020 Electric Vehicle Activity, by Number of Actions**



## Wisconsin

The Wisconsin Public Service Commission issued an order in its investigation into electric vehicle policy and regulation, encouraging utilities to file electric vehicle pilot programs. Regulators also considered programs proposed by Xcel Energy, Wisconsin Electric Power Company, and Wisconsin Public Service including new charging rates and programs leasing utility-owned charging equipment.



## Connecticut

The Public Utilities Regulatory Authority continued to consider zero-emission vehicles during 2020, with both Eversource and United Illuminating filing comprehensive zero-emission vehicle program proposals including a variety of incentives, as well as managed charging programs. The Department of Energy and Environmental Protection also released an electric vehicle roadmap for the state, which includes numerous policy recommendations to accelerate electric vehicle adoption.

## New Mexico

During 2020, Xcel Energy, PNM, and El Paso Electric filed expansive transportation electrification plans, including a variety of incentives, new rate designs, and direct utility deployment. The plans include numerous programs addressing different customer segments, as well as additional incentives for low-income customers. El Paso Electric's plan also includes an electrification grid impact study.

## Oregon

In Oregon, PacifiCorp filed its transportation electrification plan, describing plans for future rate structures and incentive programs. Regulators approved new charging incentive programs proposed by Portland General Electric, as well as modifications to line extension allowance policies. The Governor signed an executive order establishing greenhouse gas reduction goals and requiring a transportation electrification needs analysis to be conducted.

## Hawaii

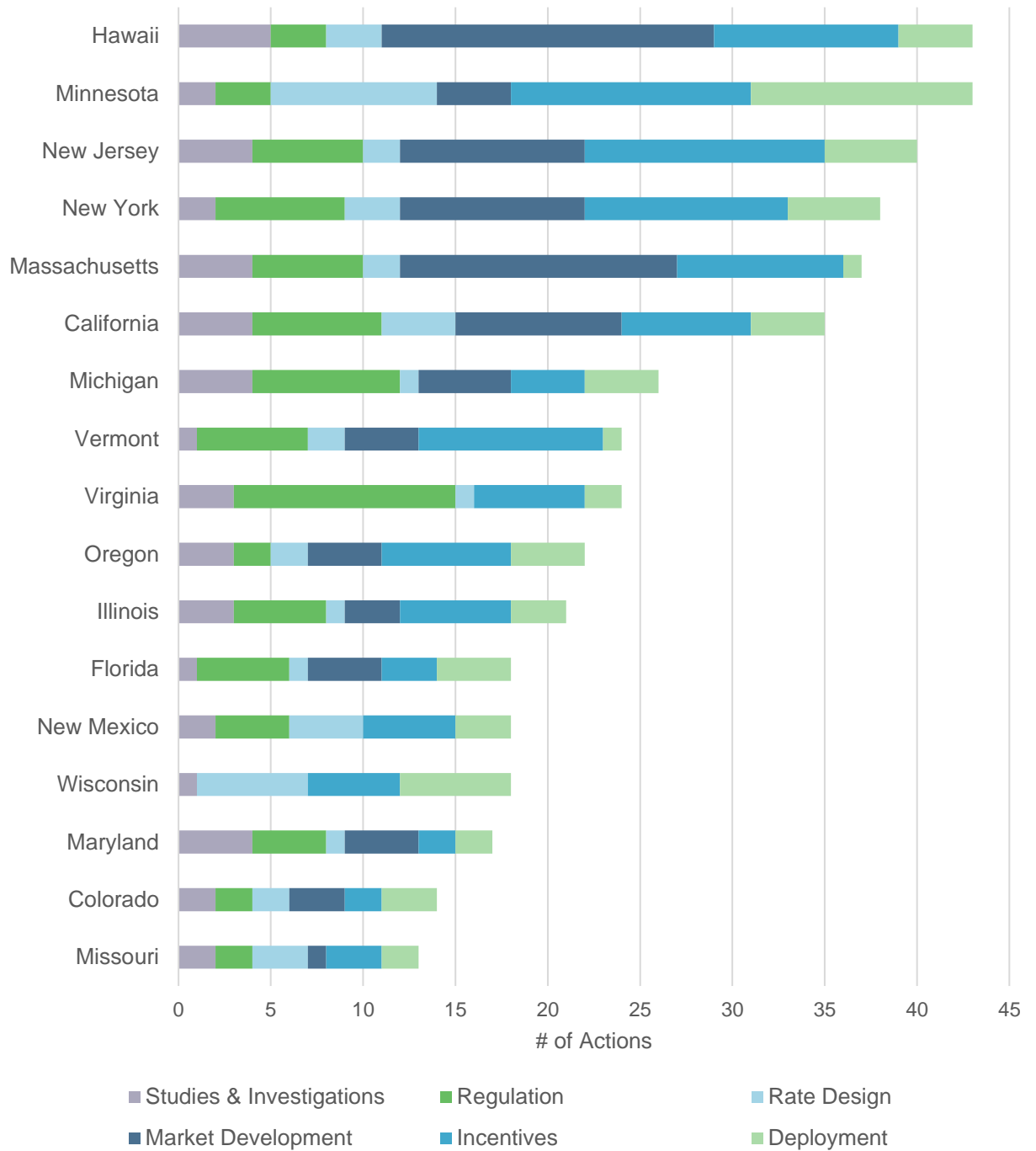
In 2020, Hawaii lawmakers considered numerous bills related to electric vehicle incentives, dedicated electric vehicle charging-enabled parking, and state procurement of electric vehicles, although these bills did not ultimately pass. The Public Utilities Commission is considering electric vehicle rate design in its distributed energy resources proceeding, while the HECO utilities proposed new pilot rates, and electric bus program, and a make-ready infrastructure program.

# TOP ELECTRIC VEHICLE TRENDS OF 2020

## Utilities Filing Expansive Transportation Electrification Plans

A growing number of utilities are filing transportation electrification plans, including an array of programs to promote the development of charging infrastructure for different market segments and encourage vehicle charging during off-peak hours. Utilities in a number of states, including Colorado, Minnesota, Missouri, New Mexico, and Oregon filed transportation electrification plans during 2020.

**Figure 3. Most Active States of 2020, by Number of Actions**

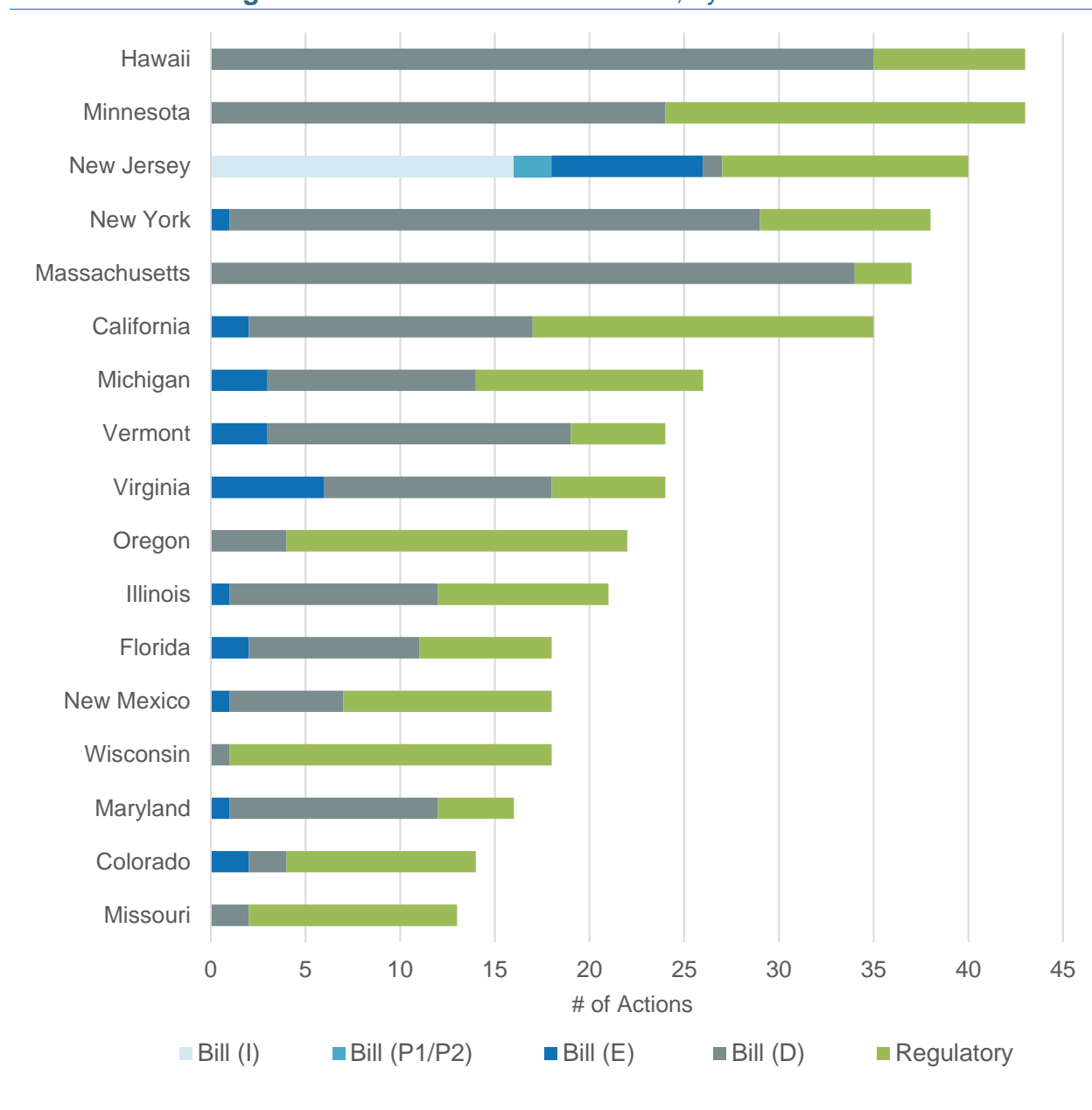


### Growing Use of the Make-Ready Infrastructure Model

States and utilities are increasingly utilizing the make-ready model for charging infrastructure deployment, with utilities supplying wiring and supporting infrastructure, and private companies supplying charging stations. Oftentimes, utilities will offer rebates for the charging stations as

well. New Jersey and New York regulators issued decisions moving forward with this model, while utilities in Connecticut, Hawaii, and Michigan have proposed make-ready programs.

**Figure 4. Most Active States of 2020, by Action Status**



### State Policymakers Adopting Bold Electric Vehicle Targets

State policymakers are beginning to adopt ambitious targets for electric vehicle or zero-emission vehicle adoption in the overall market – not just state fleet vehicles. The Governor of California signed an executive order establishing a goal for 100% of in-state sales of new passenger cars and trucks to be zero-emission by 2035. In New Jersey, lawmakers set a goal for 85% of all light-duty vehicles sold or leased in the state to be plug-in electric vehicles by the end of 2040.

## **Utilities Proposing Passive and Active Managed Charging Programs**

A number of utilities are proposing managed charging programs as growing emphasis is put on off-peak charging and avoiding grid impacts. In New York, utilities filed a variety of managed charging programs for residential customers, and in Connecticut, United Illuminating proposed a passive and active managed charging pilot with three levels of participation, ranging from time-of-use rate enrollment and survey completion to active charging management by the utility.

## **Utilities Committing to Electrify Their Own Fleets**

Many utilities announced commitments to electrify all or a portion of their own fleets during 2020, and Michigan regulators directed Consumers Energy to file a proposal in its next rate case. Utilities making fleet electrification announcements include Xcel Energy, Duke Energy, First Energy, Alliant Energy, HECO, Southern Company, Commonwealth Edison, PNM, and NorthWestern Energy.

## **Encouraging Charging Infrastructure Development at Multi-Family Buildings**

States and utilities are paying greater attention to deploying charging infrastructure at multi-family buildings – a segment that poses some unique challenges. In 2020, New Jersey legislators enacted a bill requiring 30% of all multi-family properties to be equipped with charging infrastructure by the end of 2030. California regulators also considered a pilot proposed by San Diego Gas & Electric designed to deploy charging infrastructure at multi-unit dwellings.

## **Utilities Developing Off-Peak Charging Bill Credit Programs**

Many utilities are proposing programs providing bill credits to customers for electric vehicle charging done during off-peak hours. Minnesota Power requested approval for an off-peak charging rewards pilot, and El Paso Electric included an electric vehicle charging incentive credit program in its New Mexico transportation electrification plan. In Maryland, Exelon proposed a new off-peak charging credit program as well.

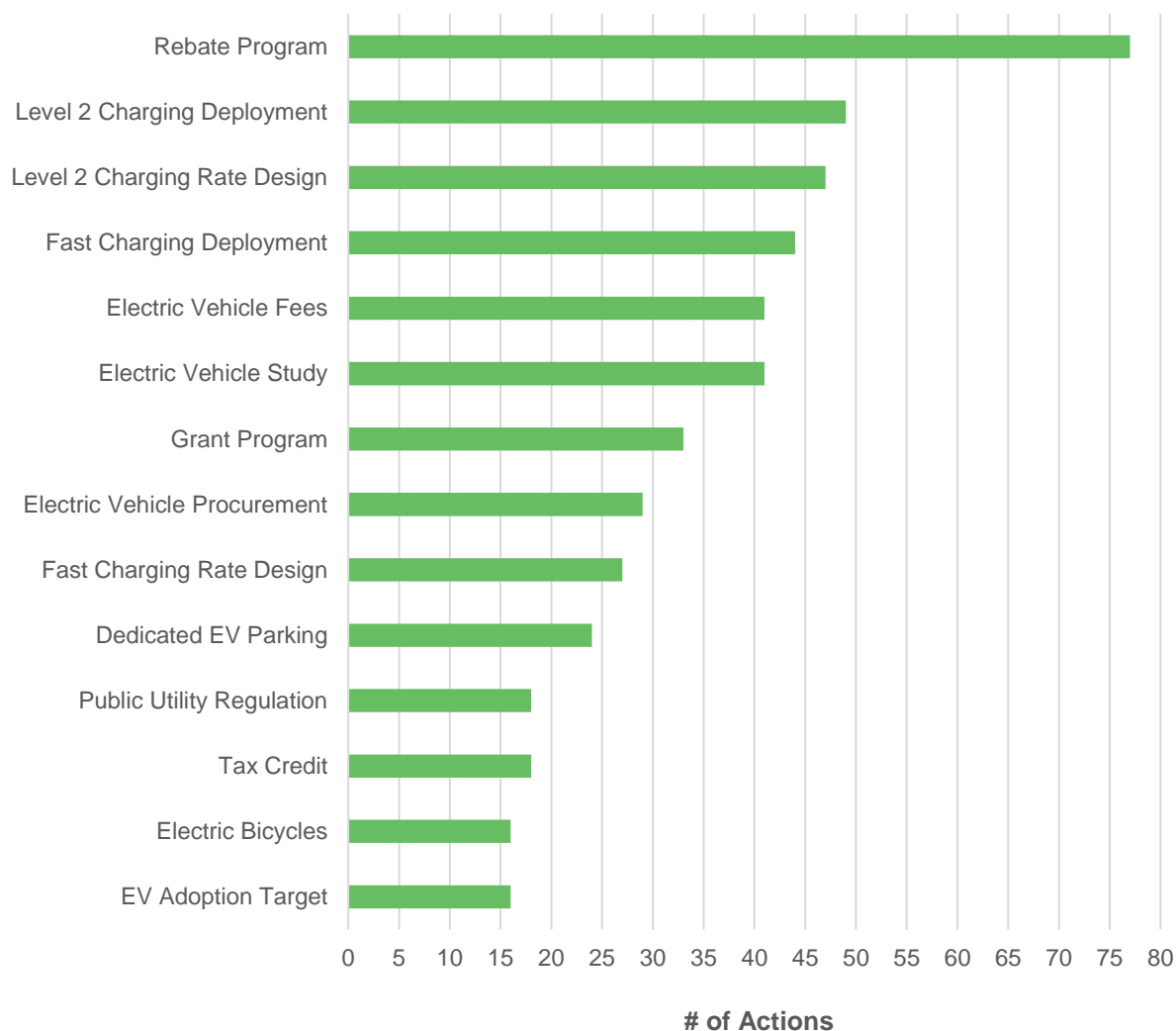
## **States and Utilities Offering Additional Incentives for Low-Income Customers**

Several of the electric vehicle and charging station incentive programs under consideration include additional incentives for low-income customers in order to make electric vehicle adoption more feasible. In New Mexico, transportation electrification plans filed by Xcel Energy, PNM, and El Paso Electric all include additional charging station incentives specifically for low-income customers. Black Hills Energy and Eversource have also proposed programs including additional incentives for low-income customers.

## States Preparing Electric Vehicle Roadmaps and Infrastructure Plans

States continue to develop electric vehicle roadmaps including deployment goals and policy recommendations to achieve them. Some states are also undertaking studies to examine charging infrastructure needs and optimal siting. In 2020, electric vehicle roadmaps were released in Colorado, Connecticut, and Florida, while infrastructure needs analyses were underway in Ohio, Oregon, and Utah.

**Figure 5. Top Electric Vehicle Actions of 2020**



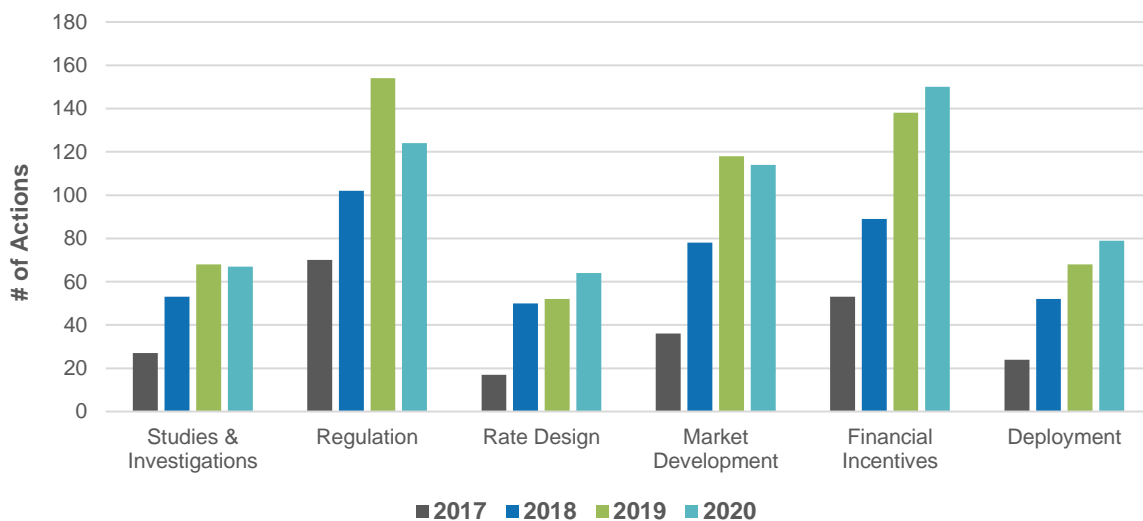
## Utilities Filing Residential Charger Leasing Pilot Proposals

Although most utilities are proposing incentives for residential charging stations, rather than direct deployment, a growing contingent of utilities are requesting approval for pilot programs in which the utility will effectively lease chargers to residential customers. Xcel Energy proposed such pilot programs in Colorado, Minnesota, and Wisconsin. Additional utilities in Missouri and Wisconsin have filed proposals for similar programs.

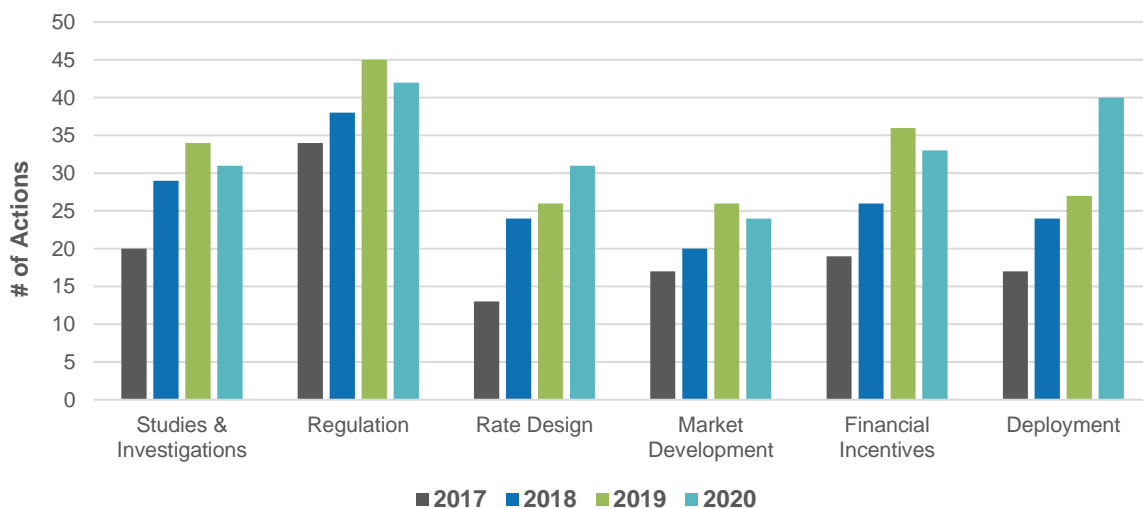
## IN COMPARISON: 2019 VS. 2020

Total electric vehicle action held steady in 2020, with approximately the same number of actions taken in 2019 and 2020. In 2020, activity increased in the Rate Design, Financial Incentives and Deployment categories, while decreasing in Studies and Investigations, Regulation, and Market Development. The number of states taking actions increased in Rate Design and Deployment as well, while declining slightly in each of the other categories. State lawmakers enacted at least 35 bills related to electric vehicles during 2020.

**Figure 6. Number of Electric Vehicle Actions 2017-2020**



**Figure 7. Number of States Taking Electric Vehicle Actions 2017-2020**



## Q4 2020 ELECTRIC VEHICLE ACTION

In Q4 2020, 43 states plus DC took a total of 270 legislative and regulatory actions related to electric vehicles. Table 2 provides a summary of state and utility actions occurring during Q4 2020. Of the 270 actions catalogued, the most common were related to Financial Incentives (64), followed by Market Development (53), and Rate Design (44).

**Table 2. Q4 2020 Summary of Electric Vehicle Actions**

Type of Action	# of Actions	% by Type	# of States
Financial Incentives	64	24%	17
Market Development	53	20%	12 + DC
Rate Design	44	16%	27 + DC
Studies and Investigations	38	14%	24
Deployment	37	14%	23
Regulation	34	13%	19
<b>Total</b>	<b>270</b>	<b>100%</b>	<b>43 States + DC</b>

Note: The “# of States/ Districts” total is not the sum of the rows because some states have multiple actions. Percentages are rounded and may not add up to 100%.

## TOP ELECTRIC VEHICLE ACTIONS OF Q4 2020

Five of the quarter’s most notable electric vehicle actions are noted below.

### **North and South Carolina Regulators Approve Duke Energy Electric Vehicle Programs**

Regulators in both North Carolina and South Carolina issued decisions on Duke Energy’s proposed electric vehicle programs during the quarter. The North Carolina Utilities Commission approved the public Level 2 charging program and limited versions of the multi-family dwelling, DC fast charging, and electric school bus programs. In South Carolina, regulators approved the residential charging and DC fast charging programs.

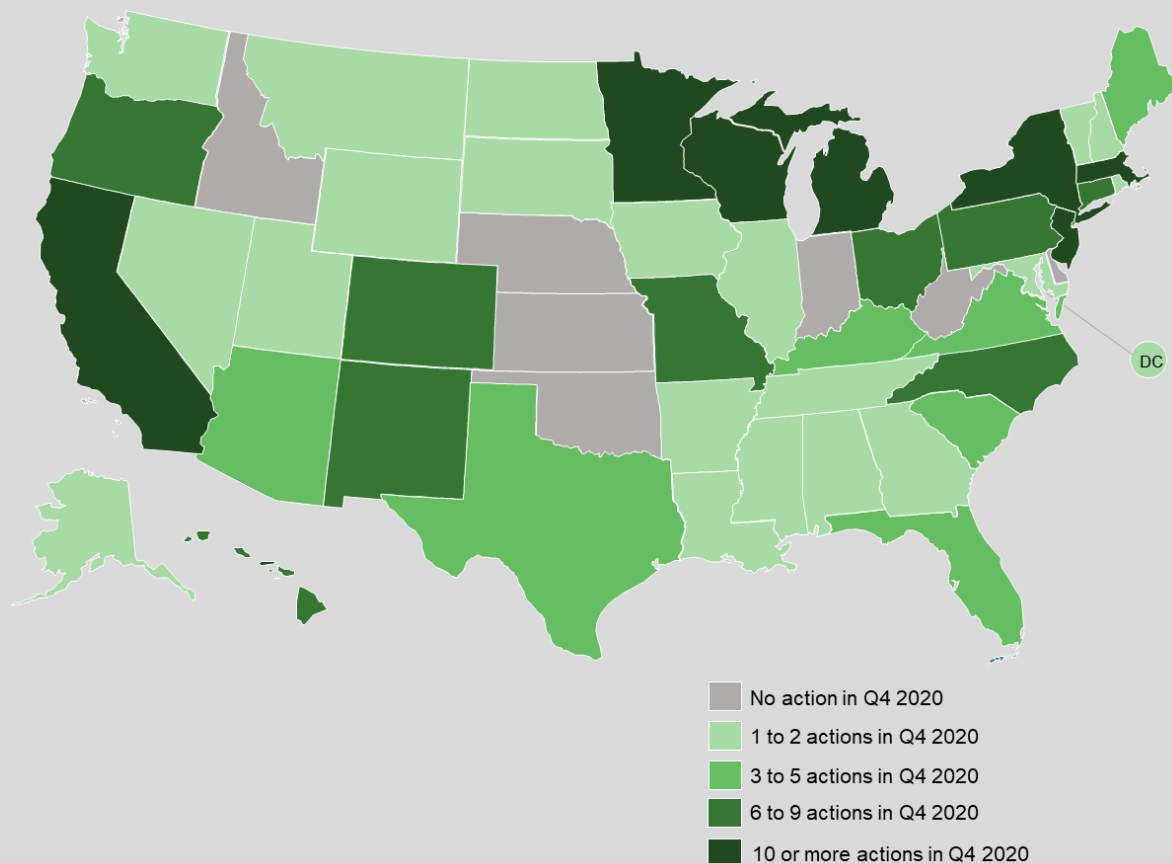
### **California Public Service Commission Adopts Vehicle-to-Grid Integration Strategies**

The California Public Service Commission issued a decision adopting a vehicle-to-grid integration framework in December 2020. The decision authorizes utilities to propose vehicle-to-grid integration pilots and directs utilities to collaborate with the California Independent System Operator on wholesale market rules for vehicle-grid projects. Utilities are also to consider automated load management and vehicle-grid integration in future transportation electrification filings.

## El Paso Electric and PNM File Transportation Electrification Plans in New Mexico

PNM and El Paso Electric filed expansive transportation electrification plans with New Mexico regulators in December 2020. PNM's plan includes a variety of incentives for different customer segments, as well as residential and non-residential rate pilots for vehicle charging. El Paso Electric's plan also includes several different incentives targeting different charging market segments, as well as an electrification grid impact study.

**Figure 8. Q4 2020 Legislative and Regulatory Action on Electric Vehicles**



## New York Utilities File Residential Managed Charging Proposals

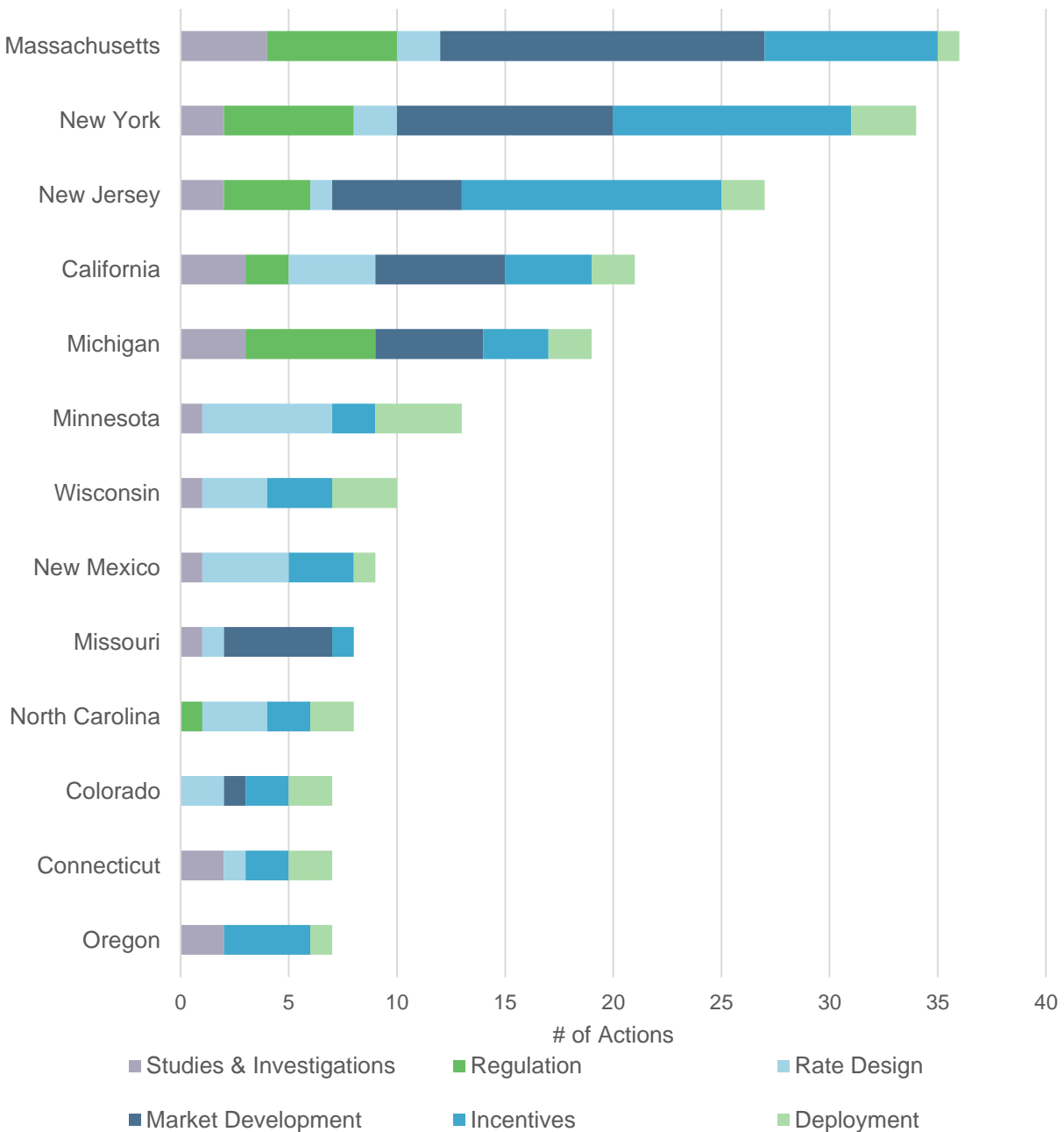
Utilities filed their residential managed charging program proposals with the New York Public Service Commission during the quarter. Several utilities filed passive managed charging programs, with New York State Electric & Gas and Rochester Gas & Electric proposing a program with three levels of participation. National Grid filed a proposal for an active managed charging program offering incentives for charging equipment installation and utility management of charging.



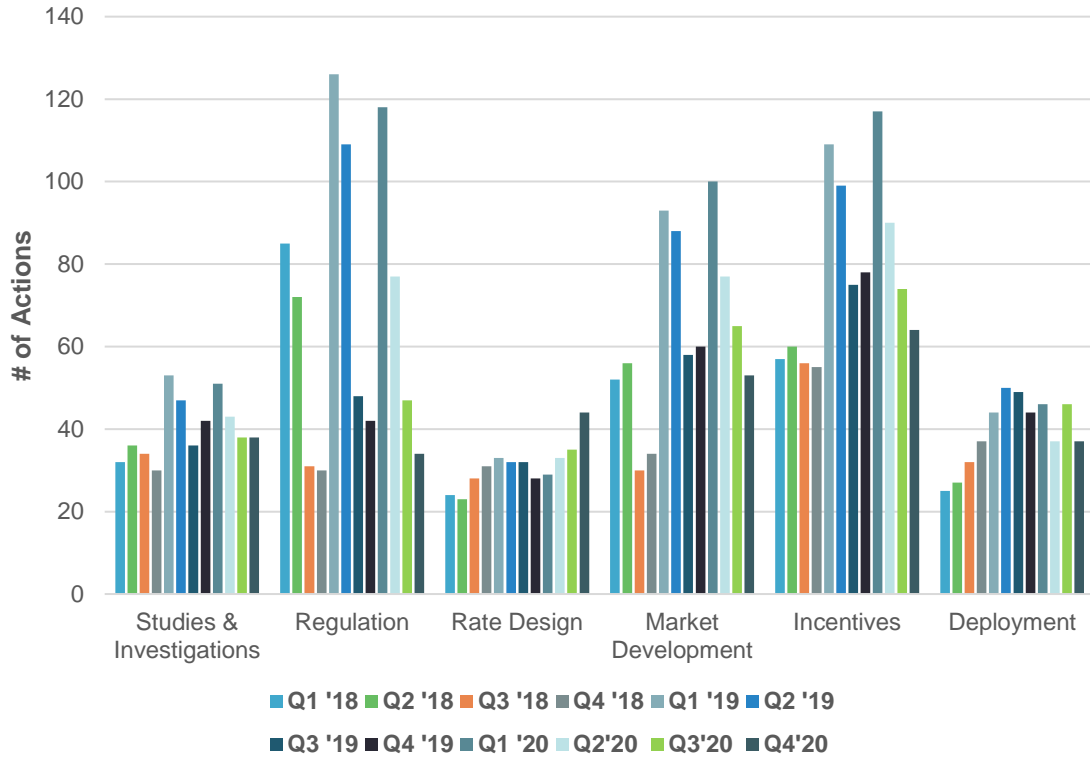
## Michigan Regulators Approve Consumers Energy PowerMIFleet Program

In December 2020, the Michigan Public Service Commission approved Consumers Energy’s PowerMIFleet program, which will provide Level 2 and DC fast charging station incentives and make-ready infrastructure for fleets. The total program budget is \$12.2 million. The Commission also directed the utility to include a proposal for a pilot program for the company’s fleet in its next rate case.

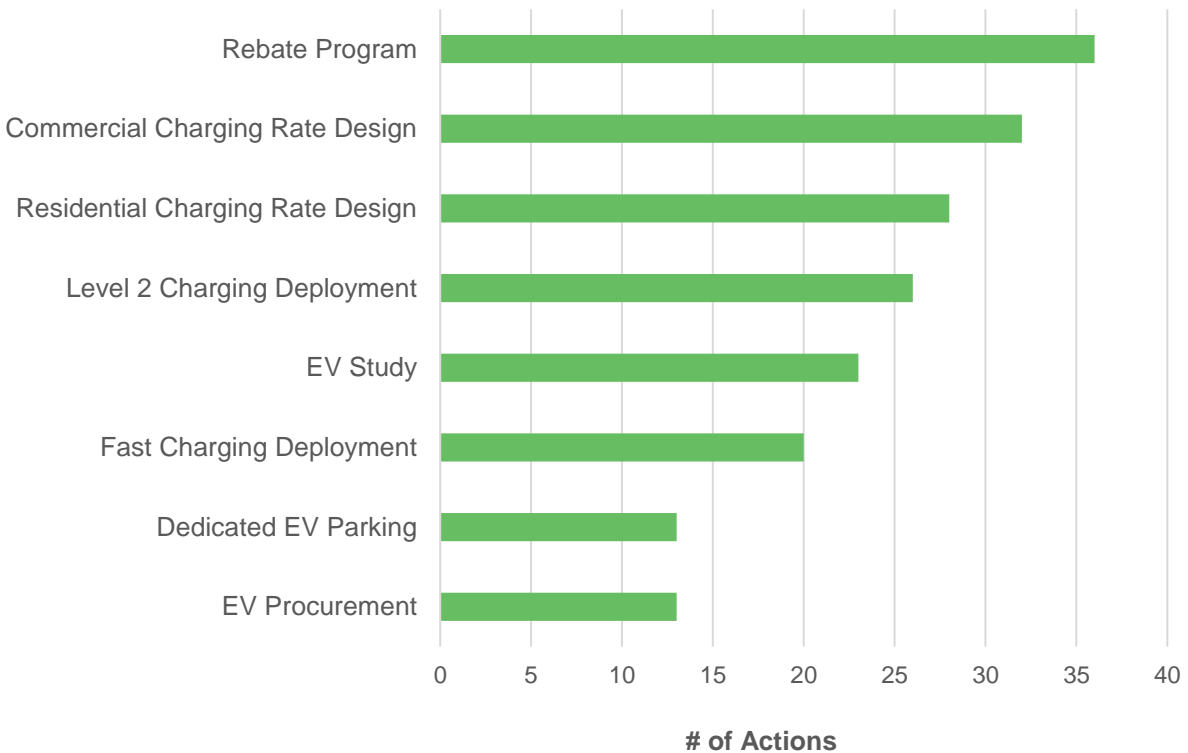
**Figure 9. Most Active States of Q4 2020**



**Figure 10. Electric Vehicle Action by Category, Q1 2018 to Q4 2020**



**Figure 11. Top Electric Vehicle Actions of Q4 2020**



# FULL REPORT DETAILS & PRICING

## FULL REPORT DETAILS

### Content Included in the Full Quarterly Report:

- Detailed tables describing each pending and recently decided state and investor-owned utility action related to electric vehicles and charging infrastructure. Actions are broken out into the following categories:
  - Studies and Investigations
  - Regulation
  - Rate Design
  - Market Development
  - Financial Incentives
  - State and Utility Deployment
- Links to original legislation, dockets, and commission orders for each legislative and regulatory action
- Excel spreadsheet file of all actions taken during the quarter and separate Powerpoint file of all summary maps available upon request
- Qualitative analysis and descriptive summaries of electric vehicle policy action and trends
- Outlook of action for the next quarter

## WHO SHOULD PURCHASE THIS REPORT

The 50 States of Electric Vehicles allows those involved in the electric and transportation industries to easily stay on top of legislative and regulatory changes. The report provides a comprehensive quarterly review of actions. At a cost of \$500 per issue (or \$1,500 annually), the 50 States of Electric Vehicles offers a significant time and financial savings. With direct links to original sources for all actions, customers may stay on top of legislative and regulatory developments between quarterly reports.

### **Electric Vehicle and Charging Infrastructure Companies**

- Identify new market opportunities, as well as changing and risky markets
- Stay on top of state policy developments relevant to your business
- Give your own team a head start in tracking legislative and regulatory proceedings

### **Electric Utilities**

- Learn about the approaches being taken by other utilities facing similar opportunities and challenges

- Stay on top of relevant state policy developments
- Utilize an objective source of information in legislative and regulatory proceedings

### Investors and Financial Analysts

- Identify new investment opportunities and emerging areas of growth, as well as risky investments
- Identify active utility investment proceedings

### Advocacy Organizations

- Learn about the electric vehicle actions under consideration across the country
- Learn about the outcomes of other states' policy discussions
- Utilize an objective source of information in legislative and regulatory proceedings

### Researchers and Consultants

- Access valuable data requiring a vast amount of time to collect first-hand
- Identify research needs to inform electric vehicle proceedings
- Cite an objective source in your own research and analysis

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Subscription Type	Annual Subscription	Single Report
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<b>All-Tech Subscription</b> <i>(Includes 50 States of Electric Vehicles report, 50 States of Solar report, &amp; 50 States of Grid Modernization report; plus biweekly legislative &amp; regulatory tracking; policy data sheets, &amp; monthly email updates for solar, grid modernization/energy storage, &amp; electric vehicles)</i>	\$10,500	N/A

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