

50 STATES OF ELECTRIC VEHICLES

Q3 2018 Quarterly Report

Executive Summary



AUTHORS

Heather Brutz, Clean Transportation Program Manager
Allison Carr, Clean Transportation Specialist
Brian Lips, Senior Policy Project Manager
Autumn Proudlove, Senior Manager of Policy Research
David Sarkisian, Senior Policy Analyst

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.

CONTACT

Autumn Proudlove (afproudl@ncsu.edu)

Heather Brutz (hmbritz@ncsu.edu)

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PREVIOUS EDITIONS AND OTHER 50 STATES REPORTS

Full editions of and annual subscriptions to the 50 States of Electric Vehicles may be purchased at <https://commerce.cashnet.com/NCSU-NCCETC>. Previous editions of *The 50 States of Electric Vehicles* are available for download at www.nccleantech.ncsu.edu/the-50-states-reports/ or by clicking here:

- Q2 2018 Quarterly Report: [Executive Summary](#)
- Q1 2018 Quarterly Report: [Executive Summary](#)
- 2017 Annual Review: [Full Report](#) | [Executive Summary](#)

In addition to *The 50 States of Electric Vehicles*, the NC Clean Energy Technology Center publishes additional quarterly reports called *The 50 States of Solar* and *The 50 States of Grid Modernization*. Previous editions of these reports are available for download at www.nccleantech.ncsu.edu/the-50-states-reports/.

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

This report currently excludes actions taken by utilities that are not state-regulated, such as municipal utilities and electric cooperatives in many states. 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 electric vehicle charging; these types of actions are tracked in the 50 States of Grid Modernization report series.

EXECUTIVE SUMMARY

Q3 2018 ELECTRIC VEHICLE ACTION

In Q3 2018, 32 states plus DC took a total of 211 legislative and regulatory actions related to electric vehicles. Table 1 provides a summary of state and utility actions occurring during Q3 2018. Of the 211 actions catalogued, the most common were related to Financial Incentives (56), followed by Studies and Investigations (34), and Deployment (32).

Table 1. Q3 2018 Summary of Electric Vehicle Actions

Type of Action	# of Actions	% by Type	# of States
Financial Incentives	56	27%	11 + DC
Studies and Investigations	34	16%	23 + DC
Deployment	32	15%	16 + DC
Regulation	31	15%	12
Market Development	30	14%	7 + DC
Rate Design	28	13%	18 + DC
Total	211	100%	32 States + DC

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 Q3 2018

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

Missouri Court Reverses Commission Decision on Charging Station Jurisdiction

In 2017, the Missouri Public Service Commission (PSC) determined that it does not have jurisdiction over electric vehicle charging stations because they do not constitute an "electric plant." In August 2018, the Missouri Court of Appeals overturned the ruling, finding that the PSC does have jurisdiction over charging stations. Following this decision, the PSC approved cost recovery for Kansas City Power & Light's charging stations in late October 2018.

Pepco Files Transportation Electrification Program Proposal in DC

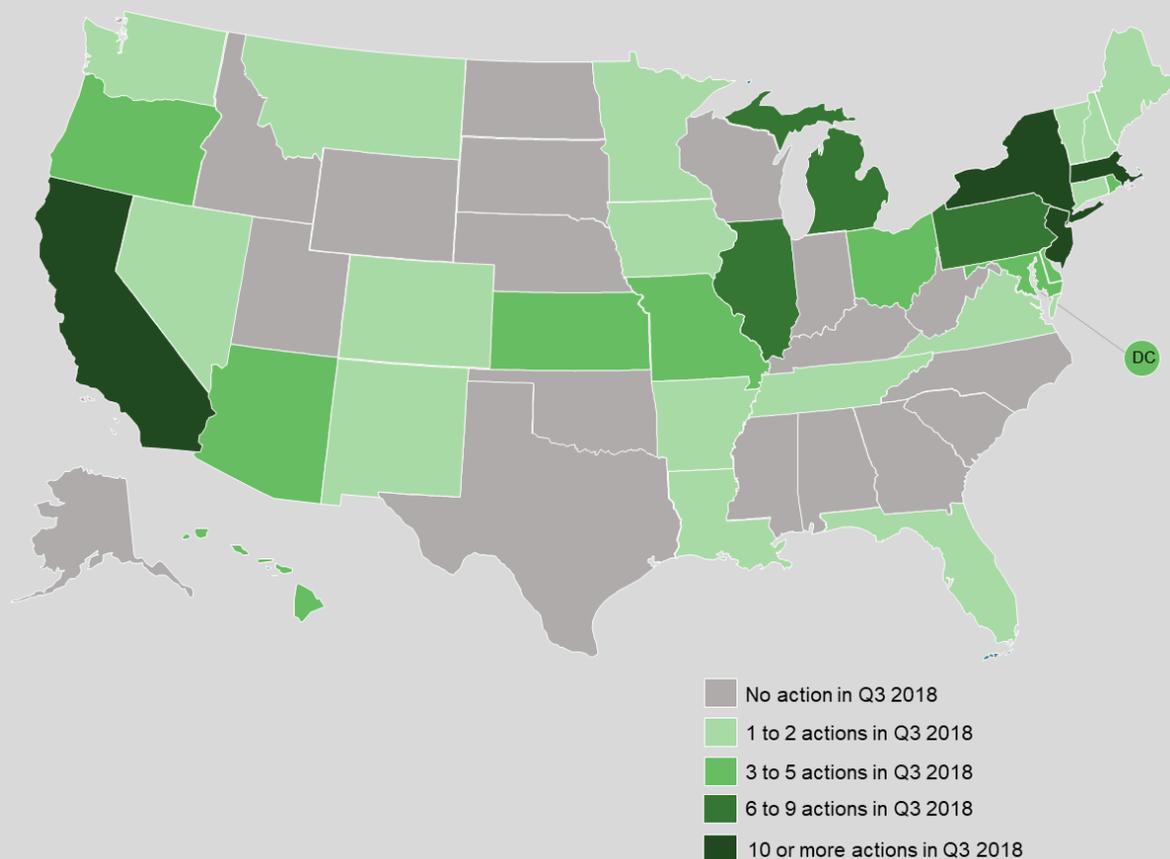
Pepco filed its proposed Transportation Electrification Program with the DC Public Service Commission in September 2018. The program includes a new whole-house electric vehicle rate, incentives for charging stations at residential and multi-family buildings, and direct

deployment of public Level 2 and DC fast charging stations, as well as charging infrastructure for electric buses. The total budget is about \$15.2 million.

Massachusetts and Rhode Island Regulators Approve Electric Vehicle Programs for National Grid

Regulators in both Massachusetts and Rhode Island approved electric vehicle programs for National Grid in Q3 2018. In Massachusetts, National Grid's program includes incentives for non-residential Level 2 and DC fast charging stations. In Rhode Island, National Grid's program includes an off-peak charging rebate, public charging station deployment, and a bill discount program for DC fast charging station owners.

Figure 1. Q3 2018 Legislative and Regulatory Action on Electric Vehicles



PSE&G New Jersey Files \$261 Million Electric Vehicle Program Proposal

In September 2018, PSE&G New Jersey filed its Clean Energy Future Plan, which includes a \$261 million electric vehicle program. The proposed program includes rebates for various types of charging infrastructure and direct deployment of Level 2 and DC fast charging stations.

The program also includes vehicle-to-grid testing and rebates for DC fast charging station owners to help overcome high demand charges.

California Utilities File Proposals to Deploy Charging Infrastructure at Schools and State Parks

Liberty Utilities, Pacific Gas & Electric, San Diego Gas & Electric, and Southern California Edison filed applications in July 2018 for pilot programs supporting electric vehicle charging infrastructure at schools and state parks and beaches. Legislation enacted in 2017 authorized utilities to propose such programs. The four utility programs total about \$55 million in investment.

Figure 2. Most Active States of Q3 2018

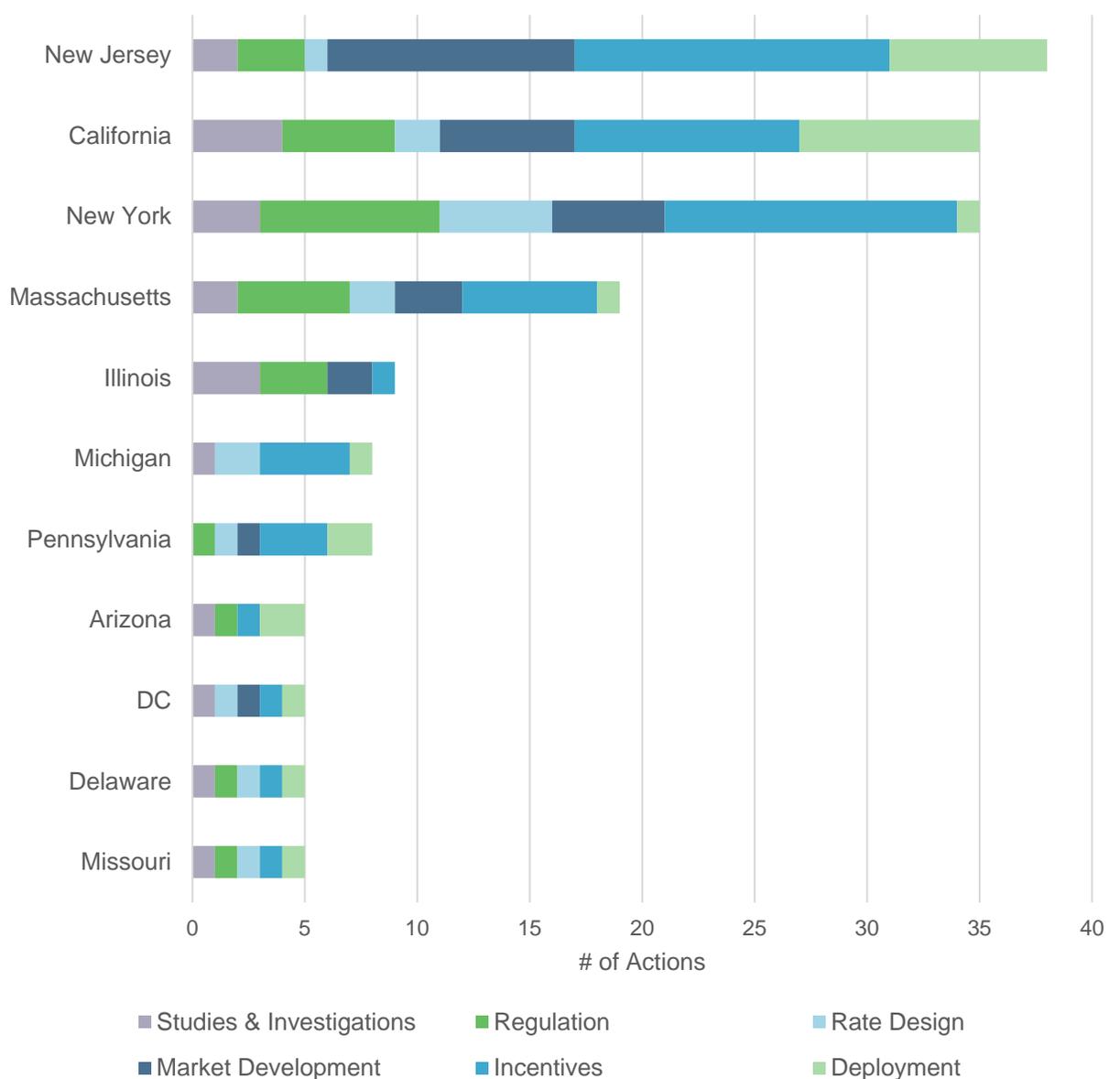
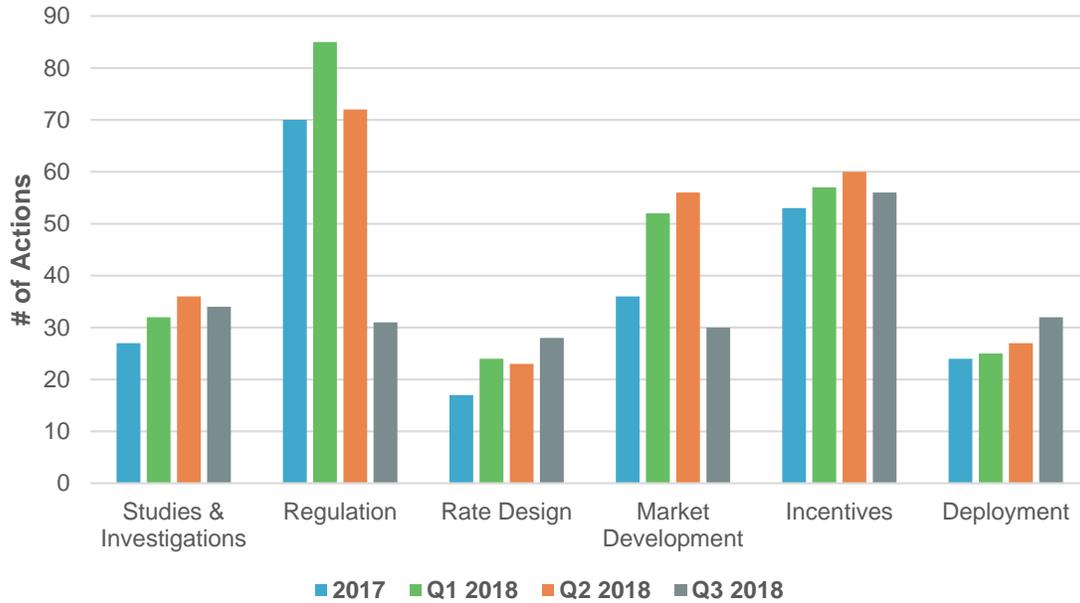


Figure 3. Electric Vehicle Action by Category, 2017 to Q3 2018



TOP ELECTRIC VEHICLE POLICY TRENDS OF Q3 2018

Utilities Proposing Demand Charge Alternatives for Fast Charging Stations

Owners of DC fast charging stations are typically billed on a utility’s general service tariff with a three-part rate, including per-kWh energy charges, a demand charge, and a fixed charge. The fast charging nature of these stations results in high demand charges on owners’ bills, which can be a deterrent to developing this infrastructure. To overcome this obstacle and encourage the build-out of DC fast chargers, several utilities are proposing demand charge alternatives for the owners of fast charging stations. NV Energy’s recent proposal includes a demand charge discount, gradually decreasing over a ten-year period, and PECO’s proposal in Pennsylvania uses a five-year demand credit. In New Jersey, PSE&G proposed monthly rebates over a five-year period, while Orange and Rockland Utilities in New York put forward a 20% discount on delivery rates. Pacific Power’s new Washington tariff initially excludes demand charges, transitioning to demand charges over years three through twelve of the tariff, and National Grid’s recently approved electric transportation plan in Rhode Island offers a credit to offset 100% of the demand charge for three years.

Electric Bus Investment Ramping Up, Along with Vehicle-to-Grid Testing

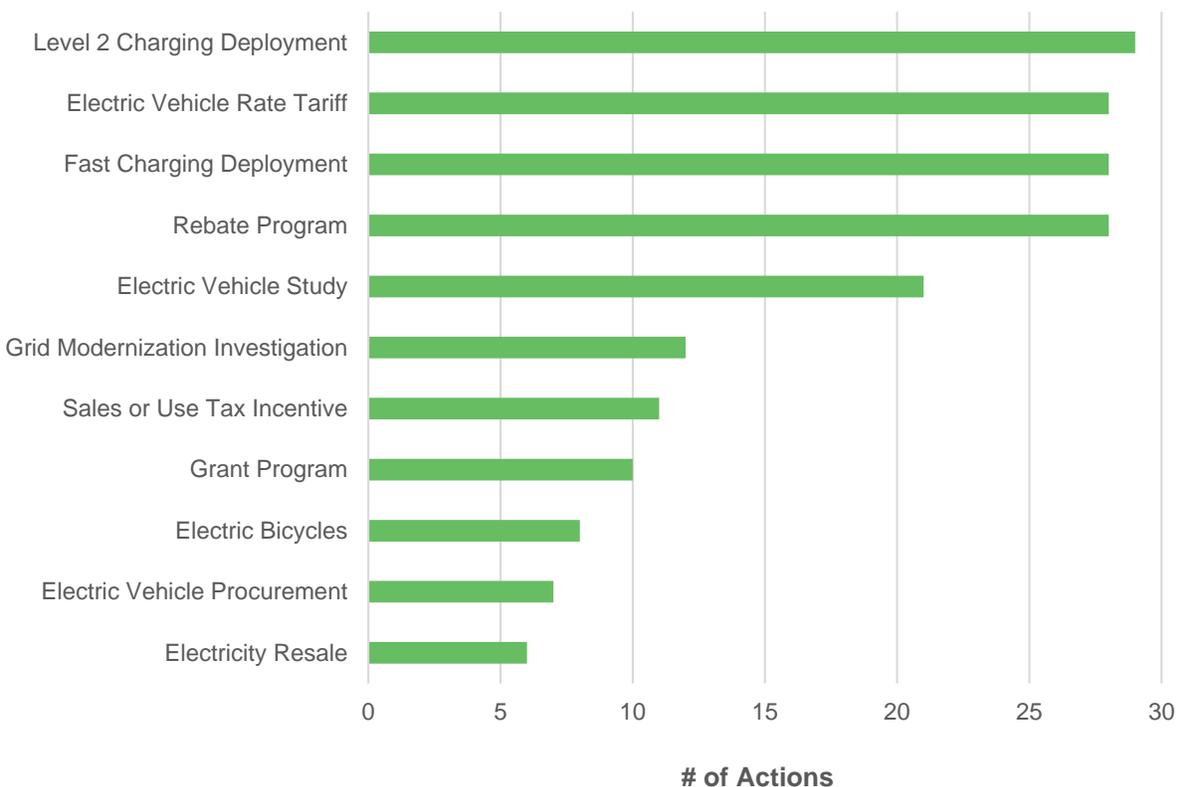
While transportation electrification efforts have been predominantly focused on light-duty electric vehicles, states and utilities are quickly ramping up investment in electric buses. Delmarva Power & Light in Delaware proposed an incentive program for vehicle-to-grid-ready school buses, and Pepco recently requested approval to deploy charging infrastructure at bus

depots and along bus routes to serve electric commuter buses. PSE&G New Jersey proposed spending \$45 million on electric school bus incentives and plans to test vehicle-to-grid technology with a portion of the buses receiving incentives, while San Diego Gas & Electric in California requested approval for an electric school bus vehicle-to-grid pilot. Arizona Public Service’s proposed School Bus Electric Vehicle Pilot Program, providing a limited number of free buses and charging infrastructure, is also currently under consideration.

Utilities Collecting Data on Electric Vehicle Charging Patterns

Several utilities are making concerted efforts to collect data on charging patterns of electric vehicle owners. This data can be used to inform new rate designs, infrastructure investment, and managed charging programs. The Tennessee Valley Authority recently announced a two-year voluntary program using data loggers to better understand charging habits. The Massachusetts Department of Public Utilities directed National Grid to collect charging data in order to develop time-varying rates and a potential electric vehicle demand response program in the future. PSE&G New Jersey proposed a technical trial as part of its Residential Smart Charging Program, which would collect data from 500 participating vehicles, and Delmarva Power & Light in Delaware proposed an incentive for customers opting to use a device collecting data on charging station usage location, time, and amount of charge.

Figure 4. Top Electric Vehicle Actions of Q3 2018



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
- A separate Excel file including all actions, descriptions, and links to original sources
- Summary maps of action for each policy category above, including a separate Powerpoint file of all summary maps
- 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, saving valuable staff time. At a cost of \$500 per issue (or \$1,600 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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