50 STATES OF ELECTRIC VEHICLES

2017 Annual Review

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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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PREVIOUS EDITIONS AND OTHER 50 STATES REPORTS

In addition to *The 50 States of Electric Vehicles*, the NC Clean Energy Technology Center publishes two additional quarterly reports entitled *The 50 States of Grid Modernization* and *The 50 States of Solar*. Full versions of these reports, as well as annual subscriptions, may be purchased at https://commerce.cashnet.com/NCSU-NCCETC.

Previous editions of *The 50 States of Grid Modernization* are available for download at www.nccleantech.ncsu.edu/the-50-states-reports/ or by clicking here:

- Q4 2017: Executive Summary
- Q3 2017: Full Report | Executive Summary
- Q2 2017: Full Report | Executive Summary
- Q1 2017: Full Report | Executive Summary

Previous editions of *The 50 States of Solar* are available for download at www.nccleantech.ncsu.edu/the-50-states-reports/ or by clicking below.

- Q4 2017 and 2017 Policy Review – Executive Summary
- Q3 2017 Executive Summary
- Q2 2017 Executive Summary
- Q1 2017 Executive Summary
- Q4 2016 and 2016 Policy Review – Executive Summary
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GLOSSARY OF ABBREVIATIONS

ALJ	Administrative Law Judge
d/b/a	Doing Business As
DER	Distributed Energy Resource
DG	Distributed Generation
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
HOV	High Occupancy Vehicle
IOU	Investor-Owned Utility
IRP	Integrated Resource Plan
GW	Gigawatt
kW	Kilowatt
kWh	Kilowatt-Hour
MW	Megawatt
PEV	Plug-In Electric Vehicle
PHEV	Plug-In Hybrid Electric Vehicle
PV	Photovoltaics
REC	Renewable Energy Credit or Certificate
RPS	Renewable Portfolio Standard
TOU	Time-of-Use
ZEV	Zero-Emission Vehicle

OVERVIEW

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 utilities designing rates to influence charging behavior of electric vehicle owners?
- Where and how are states and utilities proposing deployment of 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) an executive order, or (3) a 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.

TRANSPORTATION ELECTRIFICATION IN THE U.S.

In 2016, greenhouse gas emissions from the transportation sector surpassed electric power sector emissions for the first time since the late 1970s. This gap continued to grow in 2017, with the transportation sector being the largest contributor to carbon emissions in the U.S. (when compared to electric power, residential, commercial, industrial, and manufacturing sectors.) Although this shift is based on many factors, it underscores the need to improve the efficiency and emissions profiles of the transportation sector. One approach to this concern has been to increase the use of electricity for providing transportation sector energy, while simultaneously shifting electricity generation toward cleaner sources.

The U.S. Electric Vehicle Market

In 2017, approximately 200,000 electric vehicles were sold in the US, the most yet for any year in the U.S. electric vehicle market.[1] As electric vehicle battery prices drop, and driving range and performance improve, more vehicle manufacturers are announcing the launch of new, all-electric vehicle models. In 2017, major vehicle manufacturers, including Daimler, Volkswagen, General Motors, Volvo, and Ford, made announcements on the release and development of all-electric vehicles.[2] Many automakers are also focusing on expanding their production of electric cars with more moderate prices, while also electrifying high-end models.

Beyond price, charging infrastructure availability and range anxiety* remain barriers to consumer adoption of electric vehicles. As battery technology and associated vehicle designs and technologies improve, vehicle ranges are increasing, but charging infrastructure build-out remains a deterrence to greater market acceptance in most parts of the country. While market factors play a large role in this, legal and regulatory barriers are also affecting the pace and location of infrastructure development.

Electric Vehicles and the Grid

Although electric vehicle sales represent only approximately 1% of all light-duty vehicle sales in the U.S., states and electric utilities are already examining the potential impacts of and opportunities for electric vehicles on the grid. The integration of electric vehicles into the electric system is a growing field of research, including vehicle-to-grid technologies, grid demand management, renewable energy integration, and more.

Many utilities are currently exploring the potential for electric vehicles to impact load growth in the future, to provide ancillary services, and to provide opportunities for customer engagement. Although other uses for electricity are not growing rapidly, and some are even projected to stay flat or decline in the coming years, transportation electrification appears to be a major potential growth area for utility companies, causing an increasing number of utilities to focus on what they can do to invest in and benefit from this growth.

* "Range anxiety" refers to the fear that an electric vehicle will run out of power before reaching the destination or a charging station.

OVERVIEW OF 2017 POLICY CHANGES

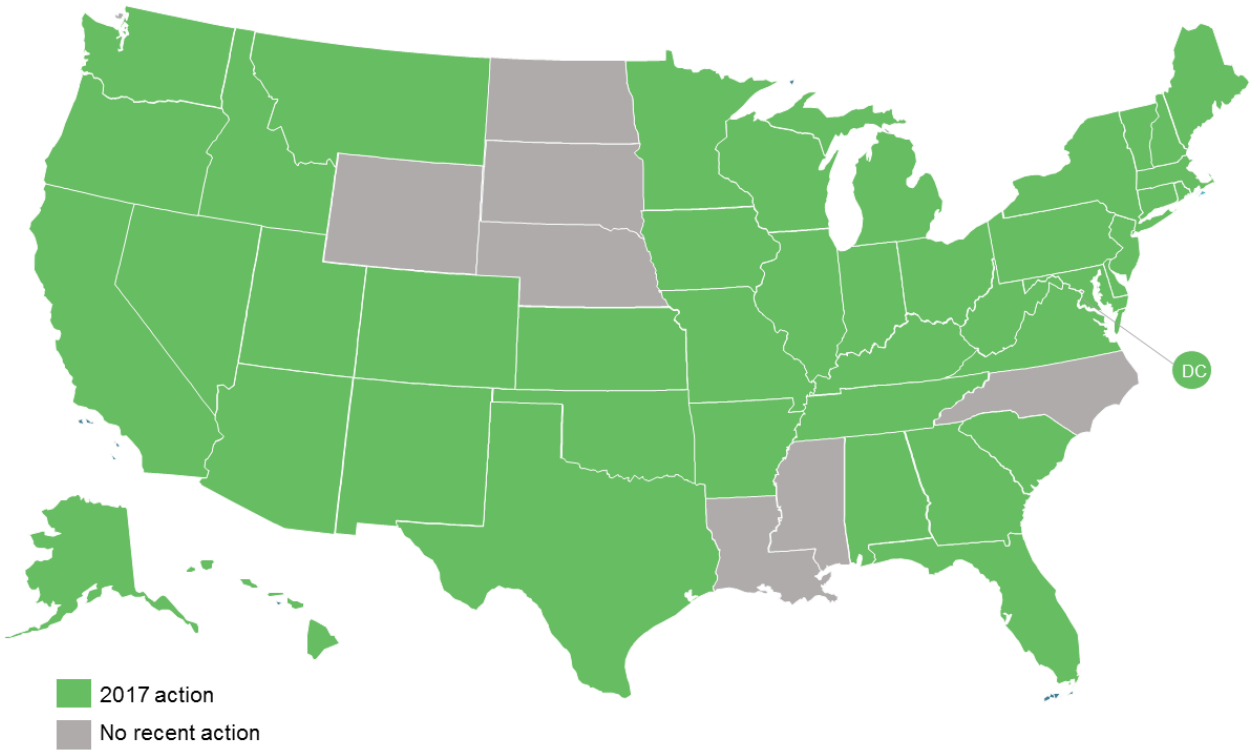
Table 1 provides a summary of state actions related to electric vehicles occurring during the entirety of 2017. Of the 227 actions catalogued, the most common were those related to regulation (70), followed by financial incentives (53), and market development (36). The actions occurred across 43 states plus DC in 2017 (Figure 1). Box 1 highlights some of the key actions of 2017, described in greater detail in the following sections.

Table 1. Summary of Electric Vehicle Actions (2017)

Type of Action	# of Actions	% by Type	# of States
Regulation	70	31%	34
Financial Incentives	53	23%	19 + DC
Market Development	36	16%	17
Studies and Investigations	27	12%	20 + DC
Deployment	24	11%	17 + DC
Rate Design	17	7%	13 + DC
Total	**227**	**100%**	**43 States + DC**

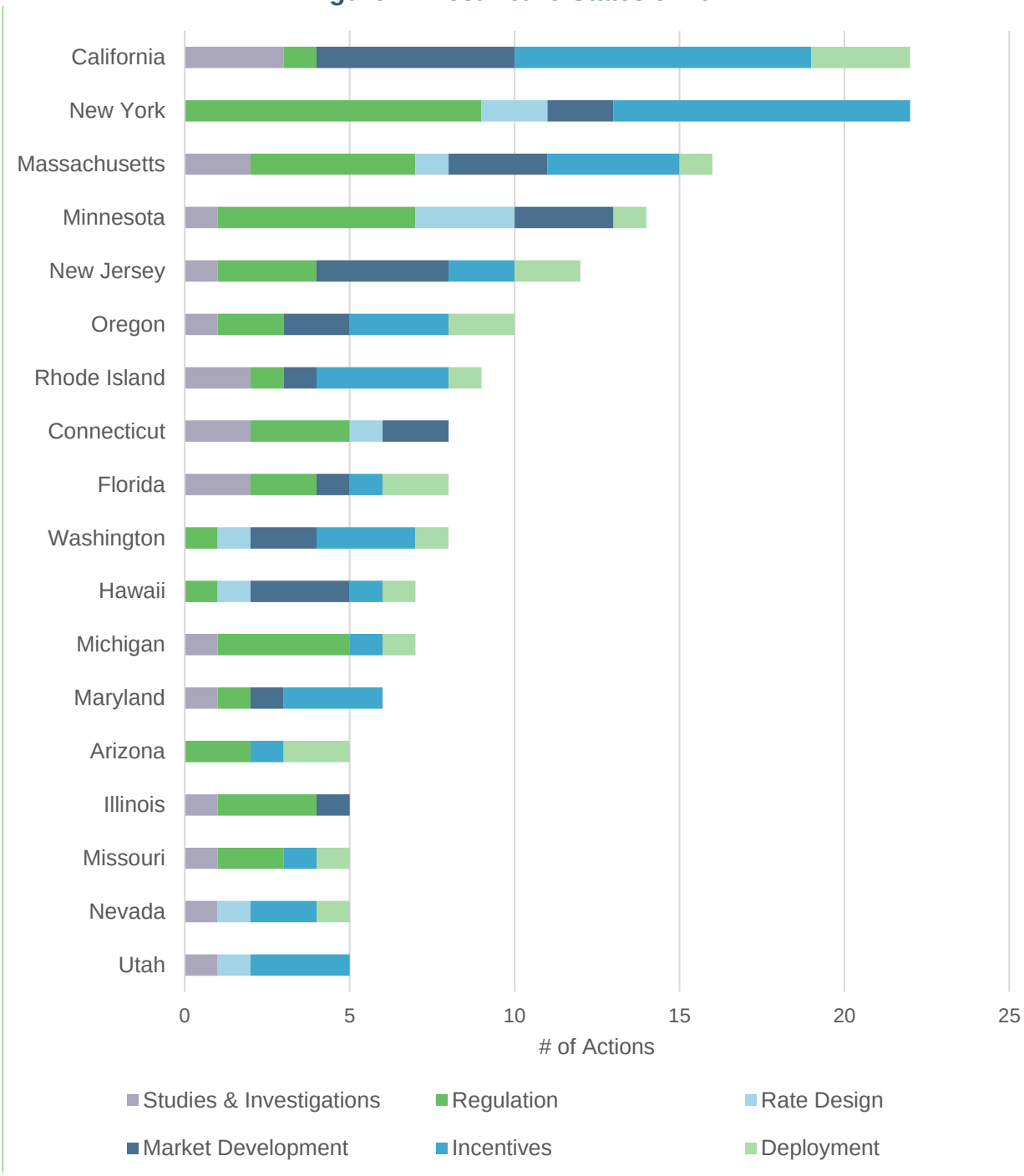
Note: The "# of States/ Districts" total is not the sum of the rows because some states have multiple actions. Percentages are rounded and may not add up to 100%.

Figure 1. Legislative and Regulatory Action on Electric Vehicles (2017)



Over three-quarters of U.S. states took action related to electric vehicles in 2017. California and New York took the greatest number of actions during the year, followed by Massachusetts, Minnesota, and New Jersey (see Figure 2.) Each state focused on different aspects of electric vehicles, from conducting studies to developing incentive programs and deploying charging infrastructure.

Figure 2. Most Active States of 2017



While 227 actions related to electric vehicles were taken in 2017, not all of these resulted in legislative or regulatory decisions. Many bills introduced in 2017 did not pass a single chamber, and only 38 bills (and 5 companion bills) related to electric vehicles were enacted during the year. Although many bills reportedly died during 2017, several have been carried over to 2018 legislative sessions for continued consideration.

Figure 3. Most Active States of 2017, By Action Status

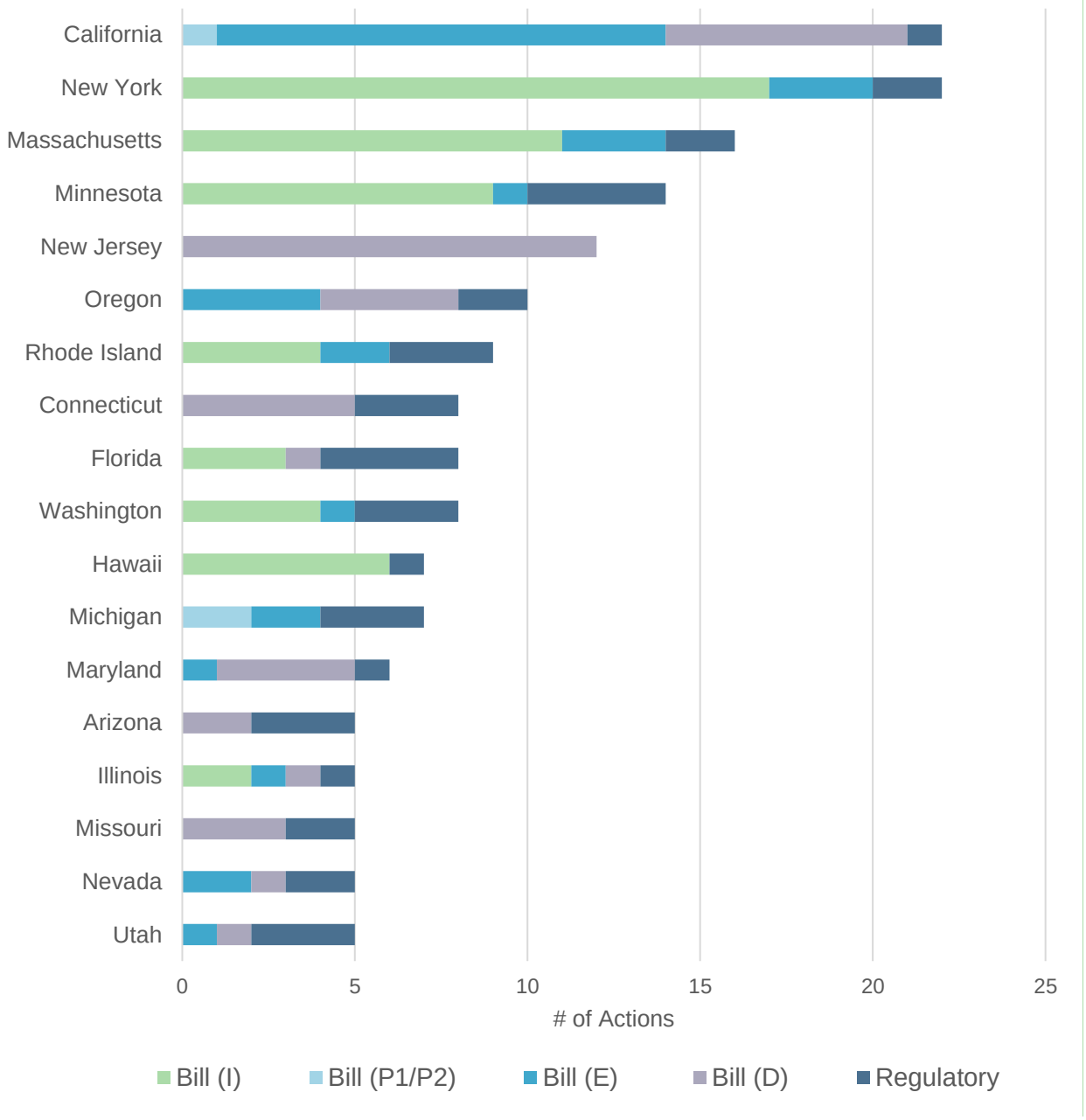
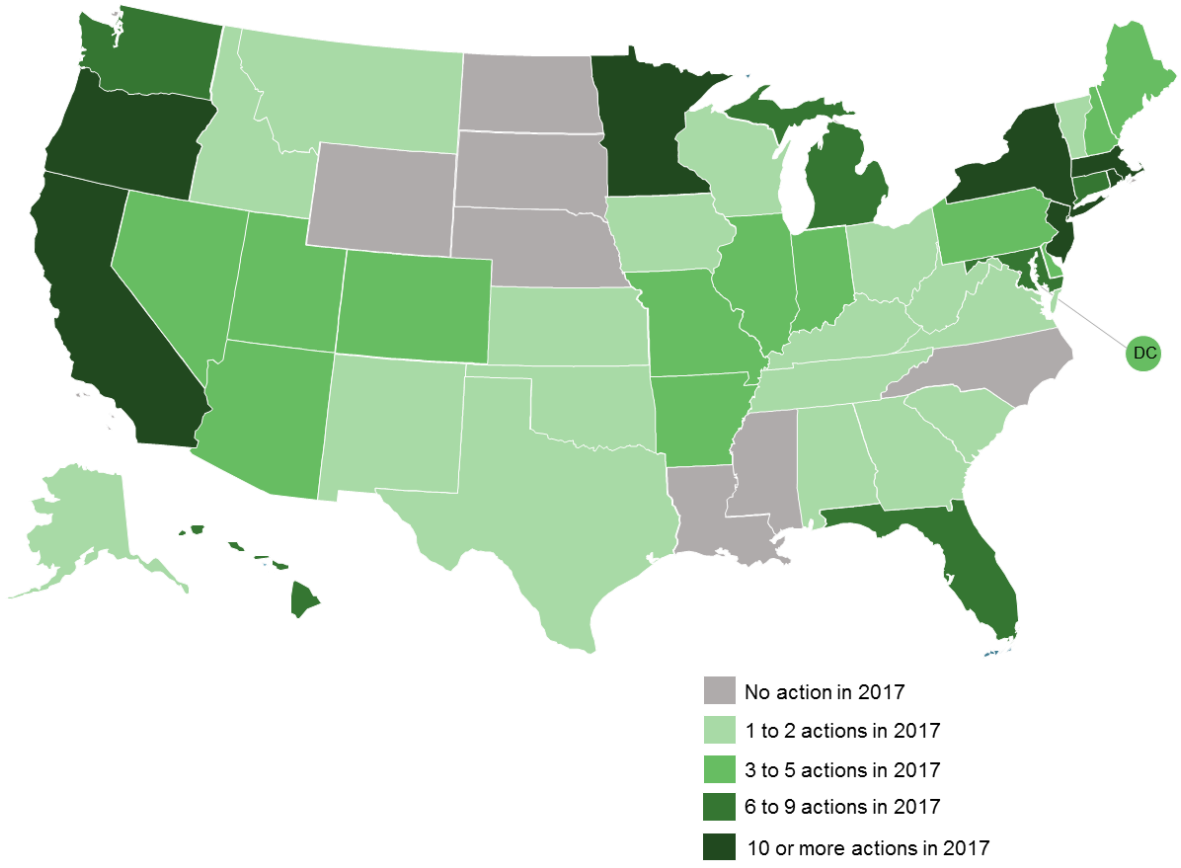


Figure 3 displays the most active states of 2017 by the status of each action taken (I = introduced, P1/P2 = passed one or both legislative chambers, E = enacted, and D = dead). For the purposes of this graph, each individual action is assigned a status, so bills containing

several different electric vehicle components may be counted multiple times. The graph is therefore not intended to be a precise representation, but rather to show that while some states may be considered very active, fewer actions led to policy changes or technology deployment.

Geographically, the greatest number of actions were taken in the Northeast and on the West Coast. Notably, these regions have some of the highest gasoline prices and most aggressive environmental goals in the country. The lowest number of actions occurred in the Lower and Upper Plains and the Southeast (with the exception of Florida).

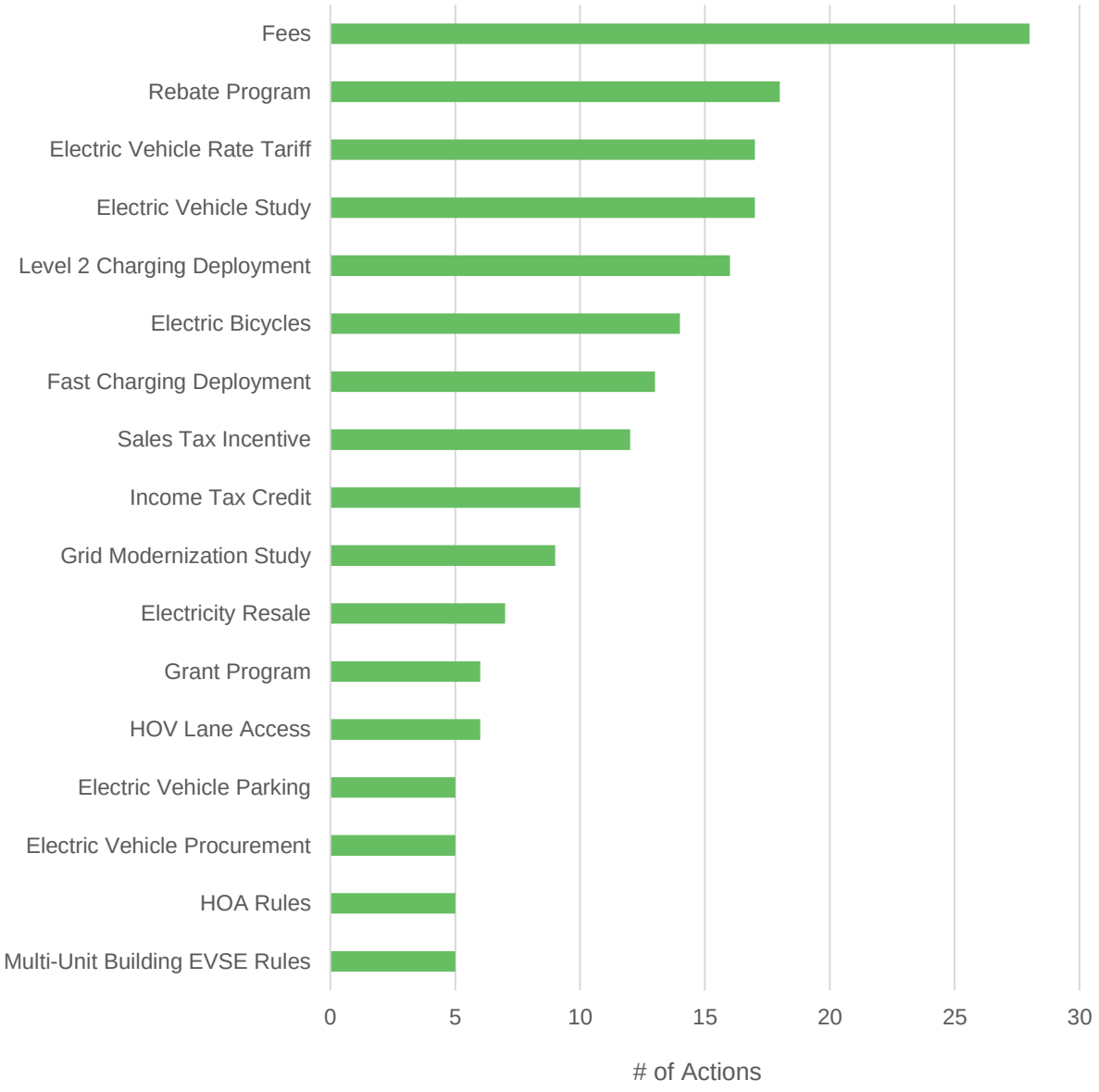
Figure 4. 2017 Action on Electric Vehicles, by Number of Actions



The most common type of electric vehicle action taken in 2017 related to additional registration or other fees for electric vehicle owners. This highlights an underlying issue of declining gasoline tax revenue that many states are facing. For at least six states, the only action taken in 2017 was the consideration of an additional registration fee for electric vehicles.

The next most common type of action taken during 2017 related to state or utility rebate programs for electric vehicles or charging infrastructure. Overall, a total of 53 actions on financial incentives were taken, with the majority of these taking the form of rebate programs.

Figure 5. Most Common Types of Actions Taken in 2017



Box 1. Top Electric Vehicle Policy Trends of 2017

Policymakers and Regulators Addressing Barriers to Charging Infrastructure Development

Many state legislatures and regulatory commissions are working to address existing barriers to charging infrastructure development. Some legislatures considered bills to prohibit homeowner associations from restricting charging installations, while other legislatures and commissions addressed rules relating to public utility regulation and the resale of electricity.

Investigation of Electric Vehicles as Part of Broader Grid Modernization Efforts

As many states initiate broad investigations into grid modernization, electric vehicles are frequently being addressed in these discussions. Working groups or presentations related to electric vehicles were included as part of several of these proceedings, including those in Illinois, Maryland, Ohio, and Rhode Island.

Funding for Electric Vehicle Infrastructure Moving Beyond Level 2 Charging

Funding for electric vehicle charging infrastructure is moving beyond support for Level 2 charging, with several states and utilities considering new funding for DC fast charging. Efforts to fund medium- and heavy-duty electric vehicles are also underway, as broader electrification of the transportation sector is considered.

Utilities Proposing Dedicated Electric Vehicle Charging Rates

Increasing attention is being paid to rate design for electric vehicle charging, with utilities working to encourage electric vehicle owners to charge their vehicles during periods of low system peak demand, while avoiding charging during periods of peak demand. Several utilities proposed new charging tariffs or the extension of pilot tariffs during 2017, while some states are directing utilities to develop tariffs for electric vehicle charging.

Expanding Incentives for Electric Vehicles and Charging Infrastructure

States and utilities took a total of 53 actions related to financial incentives for electric vehicles and charging infrastructure during 2017. The majority of these actions would create new financial incentives, or extend or expand the eligibility requirements for existing incentive programs.

States Considering Additional Fees for Electric Vehicle Owners

The most common type of action taken in 2017 was the consideration of additional fees for electric vehicles. Many states are facing declining gasoline tax revenue, due to increasing vehicle efficiency and adoption of alternative fuel vehicles, and are looking to make up this shortfall by establishing additional registration or other fees for electric and hybrid vehicles.

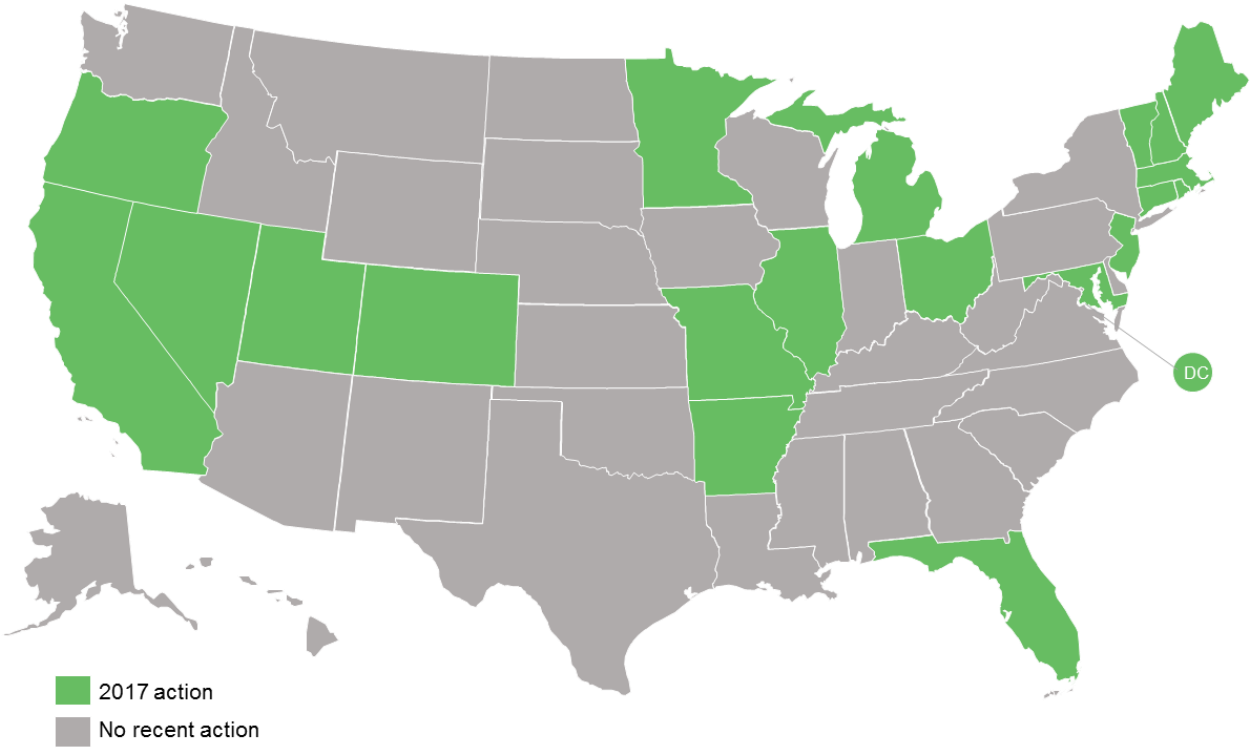
STUDIES AND INVESTIGATIONS

Key Takeaways:

- In 2017, 20 states plus DC took action to study or investigate issues related to electric vehicles.
- Some states and utilities are conducting studies to examine the role of electric vehicles within grid modernization and utility operations, while others are seeking information on specific impacts of electric vehicles.
- Several states are considering the role of utilities within the electric vehicle charging marketplace, as well as rate designs for electric vehicle charging.

In 2017, 20 states and DC formally examined or requested to study some aspect of electric vehicles. Some states are investigating very specific topics, while others are examining broad topics related to electric vehicle or charging infrastructure deployment, grid integration, utility operations, and rate design.

Figure 6. Action on Electric Vehicle Studies and Investigations (2017)



Connecticut agencies are addressing both broad and specific topics. The state's Department of Energy and Environmental Protection requested the development of a complete electric vehicle roadmap as part of the state's Comprehensive Energy Strategy, while the Connecticut Public Utilities Regulatory Authority initiated proceedings to examine whether time-of-use rates would be appropriate for electric vehicle charging.

Legislators and regulators are initiating studies and investigations for a wide variety of reasons. Some of the motives for this approach include compiling information from various sources into one document or docket, providing education to key stakeholders and the public, and coordinating or creating processes for involving many stakeholders and interested parties into the conversation about electric vehicles and related policies.

Actions resulting from completed studies or investigations will vary from state to state. However, the commitment to study topics related to electric vehicles indicates that many states are expecting future deployment at levels which will have considerable impacts on transportation, electric utilities, and other industries. In most cases, the entities requesting studies are seeking to engage multiple stakeholders on topics that require interdisciplinary or cross-sectorial input.

Box 2. Categorizing Studies and Investigations

In the series of 50 States reports, actions included within Studies and Investigations do not include defined policy proposals or directives to implement a specific policy or regulatory change. Once a specific proposal is introduced, that action is included in the more specific category pertaining to that particular type of change, such as Regulation, Rate Design, or Market Development.

A common theme among these studies is exploring the role of electric utilities within the electric vehicle market. Specifically, it appears that states and utilities are seeking to understand the relationship between electric vehicles, utility rate design, and grid modernization efforts. For example, the Colorado Public Utilities Commission opened an investigation into transportation electrification, and the Michigan Public Service Commission (PSC) initiated a technical conference to examine how the Commission should be involved in the design of relevant policies, address rules governing what is known as electricity sales for resale, and pilot new rate design options for electric vehicle charging.

The role of electric vehicles in grid modernization was also a topic addressed by several states engaged in broad grid modernization investigations. For example, the Public Utilities Commission of Ohio's "PowerForward" initiative, Maryland Public Service Commission's grid modernization proceeding, and the Illinois Commerce Commission's "NextGrid" proceeding each included presentations, discussions, or working groups related to electric vehicles within the context of grid modernization.

Finally, several states requested studies on very specific topics within the state's operations. The Maine state legislature introduced a bill to solicit stakeholder input and study the cost of installing and operating electric vehicle supply equipment along state highway corridors. In New Hampshire, legislation was introduced to establish an Electric Vehicle Charging Station Infrastructure Committee to make recommendations for developing charging infrastructure across the state. The state legislature in Florida introduced legislation to consider the impacts of electric vehicles on state transportation revenue and emergency evacuation plans.

Table 2. Updates on Electric Vehicle Studies & Investigations (2017)

State	Study Scope	Description	Source
AR	Distributed Energy Resources	In April 2016, the Public Service Commission (PSC) opened a general proceeding to explore DERs, including electric vehicles. The proceeding is intended to develop comprehensive recommendations on several issues, including DER integration. Among specific topics to be addressed in the proceeding, according to a November 2017 order, is the identification of currently non-quantified functionalities of DERs, including EVs that can be enabled or enhanced by AMI, and which may be better offered by the utility and by third parties.	Docket No. 16-028-U
CA	Electric Vehicles	S.B. 498 directs the California Air Resources Board to study, then develop policies and programs that will increase ZEVs in private-sector fleets. The Governor signed the bill into law in October 2017.	S.B. 498 (E)
	EV Programs	A.B. 615, enacted in October 2017, directs either the University of California or California State University to submit a report to the state legislature on the impact of the Clean Vehicle Rebate Project on the state's ZEV market. The study is due by December 31, 2018. The bill also requires the Department of Finance to submit a report to the state legislature evaluating the fiscal impacts of the Clean Vehicle Rebate Project by July 1, 2018.	A.B. 615 (E)
	EV Programs	A.B. 1184, as amended, directs the State Air Resources Board to submit a report to the legislature regarding (1) funding levels necessary for continuous, year-round operation of the ZEV and near-ZEV incentive programs and (2) changes to these incentive programs necessary to increase adoption of ZEVs.	A.B. 1184 (P1)
CO	Electric Vehicles	In October 2017, the Colorado Public Utilities Commission opened an investigation into transportation electrification. The initial focus of the proceeding is on EVs, though the Commission noted that the investigation could also later address other beneficial electrification issues, including vehicle-to-grid technologies; electric trucks, buses, and medium- and heavy-duty vehicles; and water heating, space heating, and cooling. A Commissioner Information Meeting focusing on EVs was held in early December 2017.	Docket No. 17I-0692E
CT	EV Rate Design	In August 2016, pursuant to Public Act 16-135, the Public Utilities Regulatory Authority (PURA) initiated a proceeding to consider whether it is appropriate to adopt time-varying rates for residential and commercial EV charging. In June 2017, the PURA	**Docket No. 16-07-21** **Final Decision**

		issued its final order, finding that the benefits associated with implementing EV-specific rates would not justify the additional costs. The PURA determined that the current time-varying rates offered by the state's two IOUs are appropriate at this time. However, in an upcoming rate design docket, the PURA may consider the on/off peak differential of these rates.	
	Electric Vehicles	In July 2017, the Connecticut Department of Energy and Environmental Protection (DEEP) published its 2017 Draft Comprehensive Energy Strategy. As part of the report's recommendations, the DEEP suggests that the state develop an EV roadmap to investigate and recommend state policies, programs, and strategies to optimize EV deployment and associated infrastructure. The roadmap is to address many topics, including a multi-agency strategy that builds upon the existing Lead by Example program, opportunities for statewide deployment of charging infrastructure, an evaluation of TOU rate structures to support EVs, an evaluation of the role of utilities in deploying charging infrastructure, strategic approaches to increase access for low to moderate income consumers, approaches to electrify medium and heavy duty vehicles, and consumer awareness and education strategies.	DEEP Draft Comprehensive Energy Strategy
DC	Grid Modernization	In June 2015, the DC Public Service Commission (PSC) initiated a proceeding to identify technologies and policies that can modernize its energy delivery system for increased sustainability, reliability, efficiency, cost-effectiveness, and interactivity. EVs are included within the scope of this investigation. In January 2017, the staff presented its Modernizing the Distribution Energy Delivery System for Increased Sustainability (MEDSIS) report. In the report, the Staff found the current definition of an EV to be adequate and recommended the PSC issue a notice of proposed rulemaking to adopt the definition. The Commission accepted comments on the report through April 2017, and accepted the staff's proposed MEDSIS report in October 2017. The PSC later accepted comments on whether a full assessment of the District's capabilities and characteristics is warranted at this time, and to what extent a consultant should be used to move MEDSIS forward more expeditiously.	Formal Case No. 1130 MEDSIS website MEDSIS Staff Report
FL	EV Programs	H.B. 981 was introduced in December 2017 for consideration in 2018. The bill requires the State Transportation Commission to review all sources of revenue for transportation projects in the state and report to the Governor and legislature when the percentage of electric and hybrid vehicles registered	H.B. 981 (I) S.B. 384 (I)

		in the state reaches two percent of all registered vehicles. The report will make recommendations on continued funding and necessary infrastructure investments to support emergency evacuations of EV users.	
	Electric Vehicles	In October 2017, the Florida Public Service Commission hosted an EV charging roundtable. Presentations were given by several different entities, including several utilities and EV charging providers.	EV Charging Roundtable
IL	Grid Modernization	In March 2017, the Illinois Commerce Commission opened the "NextGrid" proceeding following the passage of legislation in December 2016 that makes comprehensive changes to various aspects of Illinois energy policy. This will be a collaborative process with seven working groups: 1) New Technology and Grid Integration, 2) Electricity Markets, 3) Customer and Community Participation, 4) Regulatory, Environmental, and Policy Issues, 5) Metering, Communications, and Data, 6) Reliability, Resiliency, and Cyber Security, and 7) Ratemaking. EVs are explicitly noted as a topic for consideration within the New Technology Deployment and Grid Integration working group, and are likely to be considered within other working groups as well. The NextGrid process officially began in September 2017, with a kickoff conference held in Chicago.	Docket No. 17-0142 NextGrid Website NextGrid Roadmap
MA	EV Fees	H.B. 2505, enacted in January 2017, directs the Massachusetts Department of Transportation to conduct a study examining both the advisability and feasibility of assessing additional fees on ZEVs to offset projected gasoline tax revenue losses attributable to these vehicles. For the purposes of the report, a ZEV is defined as an EV, a PHEV, or a fuel cell vehicle. The bill also directed the Department of Energy Resources to conduct a study on opportunities for electrification of the state fleet.	H. 2505 (E)
	Electric Vehicles	S.B. 1880 directs the Department of Transportation to conduct a feasibility study on allowing ZEVs to travel in HOV lanes by December 1, 2018. The bill also directs the Secretary of Transportation to conduct a feasibility study on installing EV charging stations at rest stops along interstate highway route 90 by December 31, 2018. The proposed legislation also directs the Secretary of Transportation to conduct a study by April 1, 2019 examining both the advisability and feasibility of assessing additional fees on ZEVs to offset projected gasoline tax revenue losses attributable to these vehicles. Finally, the bill directs the Department of Energy Resources to conduct a study by September 2019 examining opportunities to electrify the state fleet.	S. 1880 (I)

MD	Grid Modernization	In September 2016, the Maryland Public Service Commission (PSC), as part of the Exelon-PHI merger condition, initiated a grid modernization proceeding to ensure that the electric distribution system in Maryland is customer-centric, affordable, reliable, and environmentally sustainable. The proceeding is addressing rate design, EVs, competitive markets and customer choice, the interconnection process, energy storage, and distribution system planning. The PSC held an initial public hearing in December 2016 and issued a detailed schedule in January 2017. A working group was formed to address each topic area, including EVs. The EV working group is considering several issues, including: (1) making current EV tariffs available in other utility territories, (2) retail choice for EV tariffs, (3) additional EV rate structures, (4) planning limited utility investment in charging infrastructure, (5) a statewide strategy to address grid-related costs of fleet electrification, (6) rate tariffs for corporate fleets and workplace/ commercial charging, and (7) partnering with the state's Department of Transportation and auto industry to promote EV rates. All issues except for number six were considered between February and December 2017, while issue number six will be considered between January and June 2018. In October 2017, the PSC issued an order, approving the use of funds for an EV infrastructure gap analysis.	Public Conference No. 44
ME	Electric Vehicles	H.B. 994 would create a commission to study, with stakeholder input, the placement of EV charging stations on Maine's highways and the cost of installing and maintaining these stations. A report would be due by December 6, 2017. The bill died in May 2017.	L.D. 1439 / H.P. 994 (D)
MI	Electric Vehicles	In April 2017, the Michigan Public Service Commission (PSC) initiated a collaborative technical conference regarding deployment of charging or fueling infrastructure for alternative fuel vehicles by regulated utilities. The focus of the conference was whether the investments result in a net ratepayer benefit and if so, over what time period. Three additional questions were also examined: (1) what charging technology is available, (2) what role the PSC should take in developing relevant policies, and (3) how the PSC and other government agencies should interact with stakeholders when looking at future programs. The conference was held in August 2017, and three near-term actions that the PSC can take were identified: (1) addressing resale of electricity rules, (2) providing information to customers, and (3) examining changes to EV tariffs and new rate design options. Following the conference, the PSC solicited comments on whether	Docket No. 18368

		targeted pilot programs should be conducted. In December 2017, the PSC published an order, announcing that a second technical conference will be held in February 2018, focusing on four to five fully-developed targeted pilot programs addressing at least one of four issues - customer education, rate design and smart charging, grid impact, and infrastructure deployment.	
MN	Electric Vehicles	In December 2017, the Minnesota Public Utilities Commission opened a Commission inquiry into EV charging and infrastructure. The purpose of the proceeding is to gather information on three primary topics: (1) the possible impacts and benefits of EVs on the electric system, utilities, and ratepayers; (2) the degree to which utilities and regulatory policy can impact EV adoption in the state; and (3) EV tariff options that could facilitate wider availability of charging infrastructure. A workshop is scheduled for March 16, 2018.	Docket No. 17-879
MO	Electric Vehicles	In March 2017, the Missouri Public Service Commission (PSC) opened a proceeding to gather information on issues including AMI installation, PACE financing programs, alternative rate design proposals, and the PSC's role in promoting a competitive market for PEVs. A workshop was held in May 2017, where these issues were discussed, and in July 2017, the Commission staff filed a report with recommended next steps. The report noted that the issues of EV rate design and resale of electricity from EV charging infrastructure came up in various stakeholders' comments. The staff did not recommend any additional workshops on EV charging, but did recommend that EV issues be included in further discussion on modified rate design.	Docket No. EW-2017-0245
NH	Electric Vehicles	S.B. 517 was developed through a legislative service request submitted in October 2017. The bill would establish an Electric Vehicle Charging Stations Infrastructure Commission. The Commission would be comprised of state agency commissioners, industry representatives, and members of the House and Senate. The Commission is to make recommendations on topics including ZEV and EVSE planning, development, regulation, tax credits, potential funding sources, and state agency workplace charging.	S.B. 517 (I)
NJ	Electric Vehicles	Among other changes, S.B. 3471 directs the Board of Public Utilities, in consultation with the Department of Environmental Protection, Department of Transportation, Department of Treasury, local governments, and stakeholders, to research issues	S.B. 3471 (D)

		impacting the state's goal of encouraging the use of EVs.	
NV	Electric Vehicles	In July 2016, the Public Utilities Commission of Nevada (PUCN) opened an investigatory docket on EV charging infrastructure. Comments were accepted until early August 2016 on several issues, including how the PUCN should regulate the purchase of power from charging stations, demand charges from high amperage EVs, the relationship between existing tariffs and other programs, statewide charging infrastructure deployment, workplace charging, and studies evaluating the effect of EVs on the grid. A workshop was held in August 2016, and additional information was accepted until early October 2016. Comments were accepted in March 2017 on several additional topics, including: proposed legislative, regulatory, or local government changes that affect EVs; relevant Nevada market updates; load and tariff analysis for certain transit bus fleet electrifications; EV drivers using time-varying rates; a pilot EV-time-varying sub-meter program; program design for an expansion of NV Energy's EV program; additional funding sources to support transportation electrification; barriers to EV deployment; the role of transportation electrification in DER planning and demand response programs; environmental, economic, and grid benefits of transportation electrification; and how EVs, storage, and renewables co-exist in NV Energy's existing programs and tariffs. In November 2017, the PUCN consolidated this proceeding with Docket No. 17-08021.	Docket No. 16-01018 Docket No. 17-08021
OH	Grid Modernization	The Public Utilities Commission of Ohio (PUCO) announced the launch of its PowerForward grid modernization investigation in March 2017. PUCO intends to use the study to chart a path forward for future grid modernization projects and innovative regulations that can improve the consumer experience. PowerForward is scheduled to occur in three phases. Phase 1 launched in April 2017 with a three-day "Glimpse of the Future" speaker series. The investigation continued over three days in July 2017 with Phase 2: Exploring Technologies, and will continue in Q1 2018 with Phase 3: Ratemaking and Regulation. Multiple presentations given as part of the first two workshops addressed EVs.	PowerForward Website
OR	Grid Modernization	S.B. 978 requires the Public Utility Commission to establish a public process to investigate the impact of developing industry trends, technologies, and policy drivers on the existing regulatory system and utility incentives. The bill directs the Commission to investigate many specific topics, including transportation electrification. The bill was signed by	S.B. 978 (E)

		the Governor in August 2017 with an effective date of January 1, 2018.	
RI	Electric Vehicles	Senate Resolution 981 requests that the Public Utilities Commission issue a report detailing how utilities should encourage the use of EVs. Specifically, the report should outline a framework for creating standards and guidance for utilities that want to invest ratepayer funds in EV infrastructure. The resolution also cites a desire to integrate EV planning for the purpose of meeting the Resilient Rhode Island Act of 2014 for reducing statewide greenhouse gas emissions. The resolution passed the State Senate in June 2017.	S.R. 981 (E)
	Grid Modernization	In March 2017, the Governor of Rhode Island directed the Public Utilities Commission, Office of Energy Resources (OER), and Division of Public Utilities and Carriers (DPUC) to design a new regulatory framework for Rhode Island's electric system. The proceeding, called the Power Sector Transformation Initiative, is addressing four major topic areas: utility business models, grid connectivity and functionality, distribution system planning, and beneficial electrification. In October 2017, a draft document of principles and recommendations for each topic area was published. EVs are a key component of the discussion on beneficial electrification. The draft document on beneficial electrification noted considerations regarding the utility's role, cost recovery, and pilot programs. In November 2017, the Power Sector Transformation Initiative Phase One Report was submitted. The report includes several goals and recommendations, including designing utility rates for EV charging to encourage charging outside of peak demand periods and to make batteries available to the grid to provide additional benefits. The report notes that there was significant debate around utility ownership of EV charging infrastructure, and that the OER and DPUC will work to further engage stakeholders on this issue.	Power Sector Transformation Initiative Phase One Report
UT	Electric Vehicles	In September 2016, Rocky Mountain Power submitted a proposal, pursuant to the 2016 Sustainable Transportation and Energy Program (STEP) Act, to implement an EV incentive program. The proposed program includes a load research study. RMP will invite certain EV owners to voluntarily participate in the study. Participants will be divided into three groups: a control group, a group on the TOU Rate Option 1, and a group on the TOU Rate Option 2. The total proposed EV program budget is $2 million. The EV program was addressed in Phase 3 of the proceeding, with a final order issued in June 2017. The Commission approved the study, with RMP	Docket No. 16-035-36 Phase 3 Order

		agreeing to meet with stakeholders to review the initial results and discuss what actions and costs would be necessary to ensure a meaningful study.	
VT	Grid Modernization	In June 2017, the Vermont Public Utility Commission opened a broad grid modernization proceeding to examine emerging trends in the utility sector and existing forms of regulation in light of these trends. Among the topics to be considered is the emergence of EVs. Thus far, the proceedings has focused on alternative utility business models.	Docket No. 17-3142-PET

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

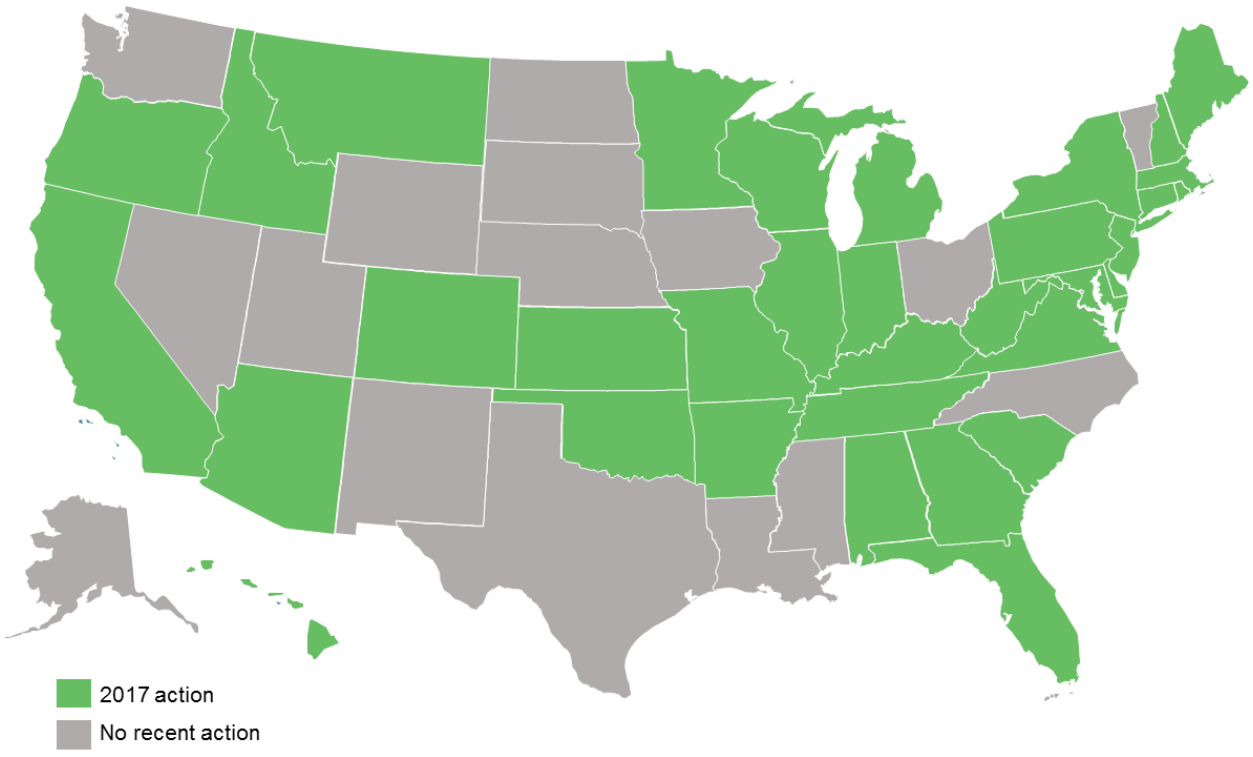
ELECTRIC VEHICLE REGULATION

Key Takeaways:

- In 2017, 34 states considered a total of 70 changes to electric vehicle regulations.
- Nineteen states took a total of 28 actions related to creating or amending fees for electric and hybrid vehicles, making this the most common type of action of 2017.
- Several states are addressing rules related to the installation of electric vehicle charging infrastructure in parking lots and the enforcement of electric vehicle parking and charging spaces.

In 2017, 34 states took actions to regulate or address regulatory issues related electric vehicles. Among the six categories of actions addressed in this report, actions falling into the "regulation" category were the most common in 2017, with 70 individual actions tracked and identified. These actions addressed registration and other fees on electric vehicles, public utility regulation and electricity sales for resale, the ability of homeowner associations and landlords to restrict charging infrastructure development, defining and regulating electric bicycles, and enforcement of designated electric vehicle parking areas.

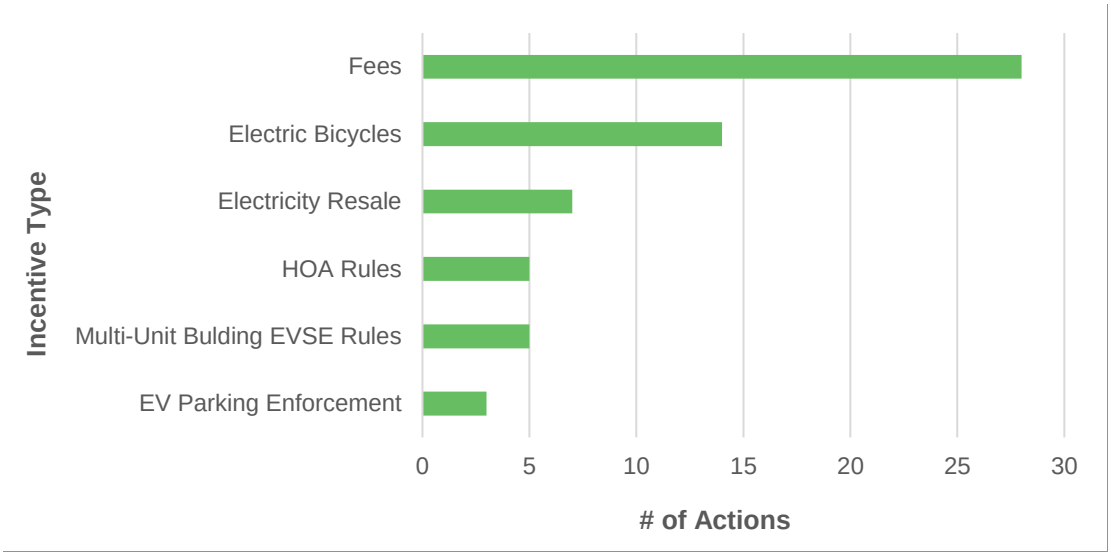
Figure 7. State Action on Electric Vehicle Regulation (2017)



Across the country, rules related to public utility regulation and electricity sales for resale vary significantly. Often, the legal ability of third parties to sell electricity at electric vehicle charging

stations to station users is unclear. Some states explicitly allow the resale of electricity at charging stations, allowing owners to charge for use by the kilowatt-hour. However, many states prohibit the resale of electricity, or do not explicitly address it within their laws and regulations. In 2017, regulatory commissions in Alabama, Delaware, Indiana, and Pennsylvania considered this issue. The Arkansas state legislature passed a bill that will exempt from regulation as public utilities those entities that provide electric vehicle charging.

Figure 8. 2017 Action on Electric Vehicle Regulation, by Type of Action



Many states are considering motor vehicle registration fees specifically for electric, hybrid, and alternative fuel vehicles. Nineteen states addressed registration or other fees for electric and hybrid vehicles in 2017, with eight states – California, Idaho, Indiana, Minnesota, Oklahoma, South Carolina, Tennessee, and West Virginia – adopting new fees during the year. Most state legislatures are proposing flat registration fees that apply to all electric or alternative fuel vehicles. However, other states are proposing fee or tax structures that would be based on vehicle usage or estimated lost motor fuel tax revenue.

Other states are addressing issues related to electric vehicle parking and charging. The Rhode Island legislature enacted a bill allowing state and local authorities to enforce a parking violation fine of $85 for parking in a designated electric vehicle space if vehicles are not electric. The Florida legislature proposed a non-criminal fine for illegally parking in an electric vehicle space.

In addition to issues related to electric vehicle parking and electricity resale, states are addressing barriers to electric vehicle charging at privately-owned or multifamily locations. During 2017, Maryland, Massachusetts, and New Jersey considered legislation prohibiting condominium or homeowner associations from banning or unreasonably restricting electric vehicle supply equipment.

Finally, eight states considered legislation related to electric bicycles during the year. The majority of these bills set forth definitions of electric bicycles and establish rules regarding registration fees, minimum operator age, and helmet usage.

Table 3. Updates on Electric Vehicle Regulation (2017)

State	Sub-Topic	Description	Source
AL	Public Utility Regulation / Electricity Resale	In June 2017, the Alabama Public Service Commission initiated a generic proceeding to determine whether an entity owning or operating EV charging infrastructure is subject to public utility regulation. The Commission issued a request for comments on several different questions, which were due by December 15, 2017.	Docket No. 32694
AR	Electric Bicycles	H.B. 2185, enacted in April 2017, defines electric bicycles; details the rights, responsibilities, and duties of electric bicycle operators; requires manufacturer labels to include certain types of information; and establishes age and helmet requirements for operation. The bill also excludes electric bicycle operators from insurance, registration, licensing, and title requirements.	H.B. 2185 (E)
	Public Utility Regulation / Electricity Resale	S.B. 272, enacted in February 2017, amends the state's definition of a public utility to exclude entities that provide electricity exclusively for EV charging.	S.B. 272 (E)
AZ	Electric Bicycles	S.B. 1273, introduced in January 2017, adopts a definition for electric bicycle, details the rights and privileges of an electric bicycle operator, restricts operator age to 16 and above, and establishes where electric bicycles may be operated.	S.B. 1273 (D)
	Fees	S.B. 1146, introduced in January 2017, requires vehicle registering officers to show the taxpayer the amount that they would pay if it were an alternative fuel vehicle.	S.B. 1146 (D)
CA	Fees	S.B. 1, enacted in April 2017, establishes an additional $100 annual registration fee for ZEVs model year 2020 or later. The fee will include an inflation adjustment.	S.B. 1 (E)
CO	Electric Bicycles	H.B. 1151 establishes three technical classes of electric-assisted bicycles and sets forth several rules.	H.B. 1151 (E)
CT	Electric Bicycles	H.B. 6271 would define high-speed and low-speed electric bicycles, and subject high-speed electric bicycles to different regulations than low-speed electric bicycles. These regulations are not specified in the bill.	H.B. 6271 (D)
	Neighborhood EVs	S.B. 252 would authorize the registration of neighborhood EVs and allow the operation of these vehicles on roadways with speed limits of 30 miles per hours or less. The bill also directs the Department of Motor Vehicles to establish equipment standards for neighborhood EVs.	S.B. 252 (D)
	Sales by EV Manufacturers	H.B. 7097 allows the Commissioner of Motor Vehicles to issue a new or used car dealer's license to a manufacturer of EVs.	H.B. 7097 (D)

DE	Public Utility Regulation / Electricity Resale	In August 2017, the Public Service Commission staff requested that the Commission issue a notice that electric and natural gas charging providers file applications with the Commission as public utilities and to seek approval for rates charged to the public. The Commission considered comments from the Department of Natural Resources and Environmental Control (DNREC) at an August meeting, where the Department suggested that a Commission ruling be delayed in order for stakeholders to work toward a legislative remedy. In September 2017, the Commission approved DNREC's recommendation to coordinate on draft legislation and delayed action on the staff's proposal.	Docket No. 17-0933
FL	EV Parking Enforcement	S.B. 1082 was introduced in December 2017 and will be considered in 2018. The bill amends the law to specify a non-criminal fine for illegally parking in an EV parking space.	S.B. 1082 (I)
	EV Procurement Rules	S.B. 92 requires the Department of Management Services to create a plan for state-owned motor vehicles. Part of the plan would have required the state to create guidelines on when EVs or extended range EVs should be purchased or leased.	S.B. 92 (D)
GA	Fees	H.B. 316, introduced in February 2017, excludes low-speed EVs from the fees that are assessed on alternative fuel vehicles.	H.B. 316 (I)
	Fees	H.B. 317 reduces the annual alternative fuel vehicle fee from $200 to $100.	H.B. 317 (I)
HI	Fees	S.B. 649 would establish a registration surcharge for EVs that would be deposited into the state highway fund.	S.B. 649 (I)
ID	Fees	Idaho's Governor signed H.B. 20 into law in February 2017. The bill amends vehicle registration fees, creating a new registration fee for PHEVs, in addition to the existing registration fee for EVs. PHEVs will have an additional registration fee of $75, which will be allocated to the highway distribution account. The bill also eliminated the additional registration fee for hybrid vehicles that are not PHEVs.	H.B. 20 (E)
IL	Electric Bicycles	S.B. 396 establishes three technical classes of electric-assisted bicycles, and sets forth some regulations.	S.B. 396 (E)
	Fees	H.B. 661 provides that EVs be charged the same registration fee as non-EVs, rather than the current $35 fee for a two-year registration.	H.B. 661 (I)
	Fees	H.B. 662 increases the registration fee for EVs from $35 for a two-year registration to $216 for an annual registration. The fee for hybrid vehicles would be $158.50.	H.B. 662 (I)

IN	Fees	H.B. 1002 was signed into law in April 2017. As part of a much larger bill that increases transportation funding in Indiana, this bill puts into place an additional registration fee for EVs and hybrid vehicles. The registration fee for EVs starts at $150, and the registration fee for hybrid vehicles starts at $50. These registration fees will increase every five years based on an index factor.	H.B. 1002 (E)
	Electricity Resale	As part of Indiana Michigan Power's general rate case, filed in July 2017, the utility proposed changes to its terms and conditions to allow resale of electricity from EV charging infrastructure to customers, as long as customers are not charged on a per-kWh basis.	Docket No. 44967
KS	Fees	H.B. 2060 was introduced in January 2017. The bill increases annual license fees for electric and hybrid vehicles. The bill proposes a fee of $75 for hybrid vehicles and a fee of $150 for EVs.	H.B. 2060 (I)
	Public Utility Regulation / Electricity Resale	H.B. 2166 was introduced in January 2017. The bill allows non-state owners of parking lots with EV parking spaces to charge fees for the use of the EV charging space.	H.B. 2166 (I)
KY	Fees	H.B. 317 would adopt an additional $100 registration fee for plug-in EVs. The bill defines plug-in EVs as being powered exclusively by electricity and excludes low-speed vehicles and alternative-speed motorcycles.	H.B. 317 (D)
MA	Aeropods	S. 1975 "An Act enabling innovation in the automotive industry to create the highly efficient vehicles of tomorrow" amends the code to define aeropods as three-wheeled alternative fuel vehicles with enclosed passenger spaces and sets forth other regulations in their design.	S.B. 1975 (I)
	Autonomous Vehicles	H.B. 3417 would require autonomous vehicles operated in the state to be ZEVs. The proposed legislation defines a ZEV as either a battery EV, a PHEV or a fuel cell vehicle.	H.B. 3417 (I)
	Autonomous Vehicles	S. 1945 sets forth safety requirements for autonomous vehicles and indicates that all autonomous vehicles must be ZEVs.	S. 1945 (I) H. 3417 (I)
	EVSE Fees	H.B. 2505, enacted in January 2017, prohibits owners and operators of public EV charging stations from requiring users to pay a subscription fee or obtain a membership. However, charging station owners and operators may charge different prices to users with and without memberships or subscriptions.	H.B. 2505 (E)
	HOA Rules	H.B. 4069 specifies that homeowner associations cannot prevent owners from installing EV charging stations. It also sets rules and regulations for the installation and operation of such stations.	H. 4069 (I)

MD	HOA Rules; Multi-Unit EVSE Rules	H.B. 699 and S.B 301 would have prevented condominiums and homeowner associations from passing regulations barring the construction of EVSE. The bills also create requirements for condominiums and homeowner associations with architectural permit approval processes for EVSE, regarding how they must consider and approve requests to install EVSE.	H.B. 699 (D) S.B. 301 (D)
ME	Fees	S.B. 417 would create an annual registration fee of $250 for hybrid vehicles and $350 for EVs, rather than the $35 fee for other passenger vehicles. The bill died in May 2017.	L.D. 1226 / S.P. 417 (D)
	Fees	In December 2017, Legislative Request 2634 "An Act to Ensure Equity in the Funding of Maine's Transportation Infrastructure by Imposing an Annual Fee on Hybrid and Electric Vehicles" was introduced for consideration during the 2018 Legislative Session. This proposed legislation was introduced by a state agency / department.	L.R. 2634 (I)
MI	Electric Bicycles	H.B. 4781, introduced in June 2017, sets forth where electric bicycles can be operated and provides references for the definition of an electric bicycle. The bill was signed by the Governor in October 2017.	H.B. 4781 (E)
	Electric Bicycles	H.B. 4782, introduced in June 2017, defines an electric bicycle, limits speed, requires manufacturer labeling, establishes age and helmet restrictions, and requires a public hearing prior to regulation of electric bicycles. The Governor signed the bill into law in October 2017.	H.B. 4782 (E)
	Electric Patrol Vehicles	H.B. 4127, introduced in January 2017, defines an electric patrol vehicle, limits the areas of operation for these vehicles, and sets forth the required equipment.	H.B. 4127 (P1)
	Electric Patrol Vehicles	S.B. 589, introduced in September 2017, defines an electric patrol vehicle, and sets forth who may operate them and where they may be operated. The bill passed the State Senate in January 2018.	S.B. 589 (P1)
MN	Fees	H.F. 3, enacted in 2017, adopts an additional $75 registration fee all-electric vehicles beginning in 2018.	H.F. 3 (E)
	Fees	H.F. 2202 creates a new tax, which would apply to the purchase of electricity "made solely for the purpose of recharging an electric vehicle." The State of Minnesota previously directed all public utilities create EV charging tariffs (which typically offer low rates for off-peak EV charging and is measured through installation of a dedicated meter), and this surcharge would be included as part of these tariffs. The tax rate would be calculated bi-annually, based on the amount of electricity sold for use by EVs and the estimated reduction in motor fuel taxes due to operation of EVs. Therefore, the electricity	H.F. 2202 (I)

		surcharge would be designed to offset the loss of motor fuel tax due to EVs.	
	Fees	H.F. 498 creates a new alternative fuel vehicle tax that applies to light-duty vehicles and recreational vehicles. The bill specifies that Commissioner of Revenue would calculate an alternative fuel vehicle each year. The rate of tax per alternative fuel vehicle would be calculated by dividing the gasoline tax revenues by the total number of light-duty vehicles registered in the state during the prior year.	H.F. 498 (I)
	Fees	Companion bills H.F. 1133 and S.F. 2029 amend vehicle registration and tax requirements by adding an additional charge of $85 for all-electric vehicles.	H.F. 1133 (I) S.F. 2029 (I)
	Fees	H.F. 1922 creates an additional fee for all EVs. The fee is $75 for all registered PHEVs and $125 for all-electric vehicles. The bill specifies that revenue from the fee should be deposited in the state's highway user tax distribution fund.	H.F. 1922 (I)
	Fees	S.F. 2215 creates an additional fee of $125 for all EVs. The bill specifies that revenue from the fee should be deposited in the state's highway user tax distribution fund.	S.F. 2215 (I)
MO	Fees	H.B. 694 amends the state's motor fuel taxes. Although the majority of the bill focuses on the fuel tax structure for propane motor fuel, the bill would require owners of all PHEVs (of model year 2018 or newer) to pay one-half of the state's annual alternative fuel decal fee.	H.B. 694 (D)
	Fees	H.B. 771 would reduce the amount of the annual alternative fuel decal fee that PHEV owners pay to one-half of the stated fee. Currently, the full alternative fuel decal fee is $75 per year for electric (including PHEVs that are model year 2018 or newer), propane, and natural vehicles with gross vehicle weight under 18,000 pounds. Fees are greater for larger vehicles.	H.B. 771 (D)
MT	Fees	H.B. 205 creates an additional fee for EVs. The fee would be equal to $95 and increase by $3 for every cent the gasoline tax increases over 27 cents per gallon. These fees would be deposited in the highway revenue account. The bill was vetoed by the Governor in May 2017.	H.B. 205 (D)
NH	Fees	H.B. 1541 would impose special registration fees of $200 for EVs and $100 PHEVs The fee could be adjusted in the future at a rate relative to future increases in state road tolls. This bill was pre-filed for consideration during the 2018 legislative session.	H.B. 1541 (I)
NJ	Electric Bicycles	Companion bills S.B. 3510 and A.B. 4663 allow operation of low-speed electric bicycles on streets, highways, sidewalks, and bicycle paths. The bills also specify that an	A.B. 4663 (D) S.B. 3510 (D)

		operator of a low-speed electric bicycle is not required to register the low-speed electric bicycle, furnish proof of insurance, or have a driver's license.	
	EVSE Fees; HOA Rules; Public Utility Regulation / Electricity Resale; Utility Operation	S.B. 3471 allows utilities to operate public EV charging stations as a regulated service in underserved markets. The bill also provides that the Board of Public Utilities cannot regulate the rates and fees charged by non-utility operators of public EV charging stations. Furthermore, the bill deems EV charging a service rather than a sale of electricity, and notes that a person owning, controlling, operating, or managing an EV charging station will not be deemed a public utility due to these services. Additionally, the bill disallows public EV charging station operators from charging membership or subscription fees for station use. Charging station owners and operators are directed to develop payment methods that allow access to the general public. Finally, the bill directs the Department of Community Affairs, upon request, to determine on a case-by-case basis whether or not a planned real estate development has placed an unreasonable restriction on location or operation of EV charging equipment in the development. Unreasonable restrictions are prohibited.	S.B. 3471 (D)
	HOA Rules; Multi-Unit EVSE Rules	A.B. 4747 and S.B. 3474 remove potential obstacles to and promotes the installation of EVSE by prohibiting community associations from adopting or enforcing rules to ban EV charging stations. The bill disallows community associations, such as homeowner associations and condominiums, from unreasonably restricting the installation of EV charging equipment, and these associations could be liable for a civil penalty for doing so. The bill outlines guidelines for managing issues related to cost and access to charging stations as a "common element" for all members of the association. Bills with similar content have been introduced in the 2018 legislative session.	A.B. 4747 (D) S.B. 3474 (D)
NY	Electric Bicycles	A.B. 1018 and S.B. 2888 define an electric-assisted bicycle, establishes age requirements for operation, helmet requirements, and penalties for non-compliance.	A.B. 1018 (I) S.B. 2888 (I)
	Electric Bicycles	A.B. 6898 and S.B. 5286 define electric-assisted bicycles, establish power output and speed restrictions, and set a minimum operator weight. The bills also create registration and fee requirements, as well as consequences for violation of these rules.	A.B. 6898 (I) S.B. 5286 (I)
	Electric Bicycles	A.B. 6960 and S.B. 5482 require sellers of electric-assisted bicycles to provide notification to the buyer of rules regarding areas of operation and establishes a penalty for violation.	A.B. 6960 (I) S.B. 5482 (I)
	Electric Bicycles	A.B. 7059 and S.B. 2282 to define electric-assisted bicycle and set forth requirements for operation. The bills also	A.B. 7059 (I)

		establish areas of use and include provisions on taxes and fees.	S.B. 2282 (I)
	Electric Bicycles	A.B. 7791 and S.B. 6029 define electric-assisted bicycle, set forth application of motor vehicle and traffic laws, and establish areas of operation The bills also include manufacturing and equipment requirements, age and helmet requirements, penalties for violation, incident protocol, and allowance for further regulation.	A.B. 7791 (I) S.B. 6029 (I)
	Electric Bicycles	A.B. 8206 and S.B. 5977 define electric bicycle and set forth the rights and duties associated with electric bicycles. The bills also establish areas of operation and penalties for violations.	A.B. 8206 (I) S.B. 5977 (I)
	EV Parking Enforcement, HOA Rules	S.B. 969 makes it a violation to park a non-electric vehicle in an EV charging station. Owners or operators of these facilities may remove non-electric vehicles from these spaces after notifying the local police. The bill also disallows community associations from prohibiting the installation of EV charging stations.	S.B. 969 (I)
	For-Hire Vehicles	A.B. 7963 (substituted by S.B. 6326-A) permits all hybrid electric and EVs to be used as taxicabs, as long as they meet all other requirements for for-hire vehicles. The bill was enacted in December 2017.	S.B. 6326-A (E) A.B. 7963 (E)
	Repair Services	A.B. 8248 requires vehicle sales entities that manufacture or assemble ZEVs to offer a repair service for these vehicles.	A.B. 8248 (I)
OK	Fees	H.B. 1449, enacted in 2017, adopts an additional $100 registration fee for EVs and an additional $30 fee for hybrid vehicles.	H.B. 1449 (E)
OR	Multi-Unit EVSE Rules	H.B. 2510, enacted in June 2017, requires landlords to allow tenants to install EV charging stations unless there is less than one parking space per rental unit.	H.B. 2510 (E)
	Multi-Unit EVSE Rules	H.B. 2511, enacted in June 2017, allows tenant installation of EV charging stations for non-commercial use and sets forth property rights for the charging station absent a landlord-tenant agreement.	H.B. 2511 (E)
PA	Electricity Resale	Upon a motion by the Public Utility Commission chair, the Commission issued a secretarial letter in June 2017, requesting comments regarding distribution utility tariff provisions about the resale of electricity to third parties. The Commission requested comments on several specific issues, including the restrictions these provisions place on third-party EV charging, the advantages and disadvantages of provisions that would allow unrestricted resale of electricity for third-party EV charging, and other tariff provision designs and regulatory options could	Docket No. M-2017-2604382

		provide clear rules for third-party EV charging. Comments were accepted in August 2017.	
RI	EV Parking Enforcement	H.B. 6302 and S.B. 77 amend state laws governing vehicle "stopping, standing, and parking restrictions." The bills enact restrictions that prohibit vehicles from parking at any EV charging station if (1) the vehicles are not connected to the charging station and (2) the parking space is clearly marked as EV charging only. Enforcement of the parking provisions can be enforced by local or state authorities. The penalty for the parking violation is $85. This bills were signed into law in July 2017.	H.B. 6302 (E) S.B. 77 (E)
SC	Fees	H.B. 3516, enacted in May 2017, adopts a new biennial road use fee of $120 for vehicles powered exclusively by electricity, hydrogen, and other alternative fuels. This fee is in addition to the standard motor vehicle registration fee.	H.B. 3516 (E)
TN	Fees	H.B. 534 and S.B. 1221 (IMPROVE Act), enacted in May 2017, establish an additional registration fee of $100 for EVs.	H.B. 534 (E) S.B. 1221 (E)
VA	School EVSE Rules	Virginia's governor signed H.B. 2431 into law in February 2017. The bill allows school boards to install and operate EVSE that charge retail fees to the public for use. EVSE on school property can be open to the public during non-school hours.	H.B. 2431 (E)
WA	Multi-Unit EVSE Rules	S.B. 5716 requires that the development regulations of any jurisdiction allow EV infrastructure in any area, including those zoned for multi-family residential use. The exceptions to this are areas zoned for resource use or critical areas.	S.B. 5716 (I)
WI	Fees	A.B. 478 creates an additional registration fee of $125 for non-hybrid EVs weighing less than 8,000 pounds.	A.B. 478 (I)
	Sales By EV Manufacturers	Companion bills A.B. 717 and S.B. 605 were introduced in the latter part of 2017 for consideration in 2018. The bills amend existing laws to allow vehicle manufacturers that solely manufacture EVs to also serve as vehicle dealers for EVs.	A.B. 717 (I) S.B. 605 (I)
WV	Fees	S.B. 1006 sets additional registration fees for EVs and plug-in hybrids at $200 and $100 per year, respectively.	S.B. 1006 (E)

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

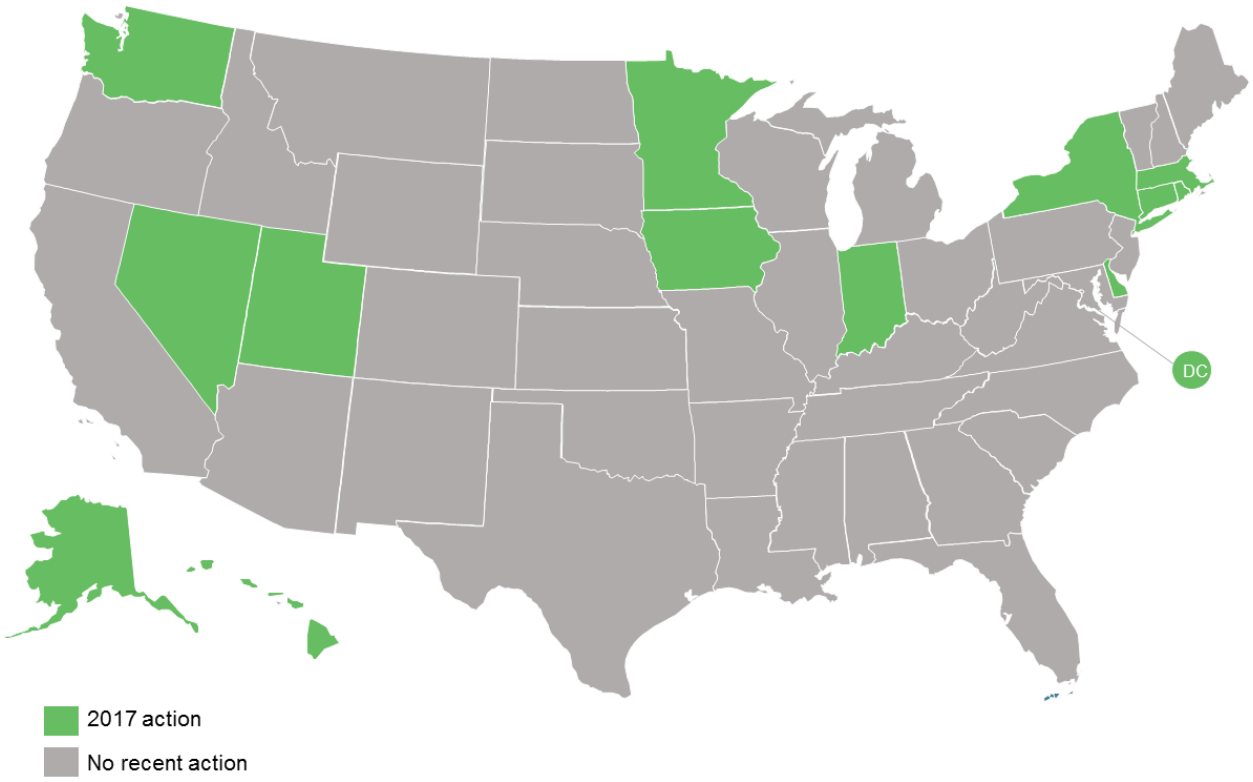
ELECTRIC VEHICLE RATE DESIGN

Key Takeaways:

- In 2017, 13 states plus DC took 17 actions related to rate design for electric vehicle charging.
- Two utilities requested approval to make pilot electric vehicle tariffs permanent options, while two additional utilities proposed extending existing pilot programs.
- Proposed electric vehicle tariffs are utilizing different peak periods and on-peak/off-peak rate differentials.

A growing number of utilities are proposing dedicated tariffs for customers with electric vehicles, aiming to encourage electric vehicle owners to charge vehicles during periods of lower system demand. In 2017, utilities in 11 states and DC proposed new rate schedules or changes to existing rate schedules for electric vehicle owners, while legislators in four states introduced bills related to electric vehicle tariffs.

Figure 9. Action on Electric Vehicle Rate Design (2017)

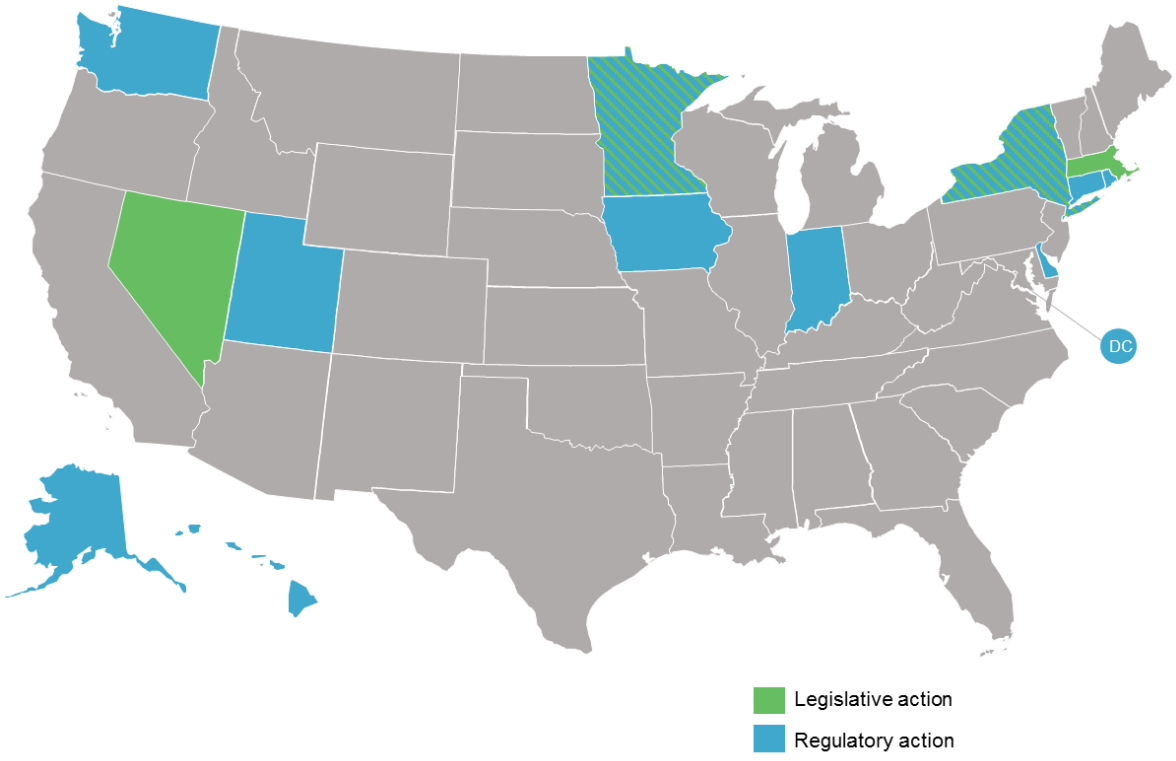


The primary feature of electric vehicle tariffs being proposed is time-varying rates. By charging lower rates for electricity used during periods of lower system demand and higher rates for electricity used during periods of high system demand, utilities have the opportunity to influence the charging behaviors of electric vehicle owners and potentially smooth electricity demand.

While electric vehicle tariffs generally utilize time-varying rates, the hours designated as on-peak and off-peak, as well as the difference between on-peak and off-peak rates vary significantly from utility to utility.

Proposed tariffs also vary differ on the extent of their applicability. Some EV tariffs are whole-house rates, while others apply exclusively to the electricity consumed in electric vehicle charging, requiring sub-metering at the charging location. For charging-only rates, responsibility for the cost of the additional meter is an issue also addressed.

Figure 10. Legislative and Regulatory Action on EV Tariffs



Several utilities are implementing pilot electric vehicle tariffs before requesting approval for permanent rates. Rocky Mountain Power in Utah proposed an electric vehicle time-of-use pilot program in 2017, while Hawaiian Electric Company proposed a five-year extension of its pilot electric vehicle tariff. Two utilities – Alaska Electric Light and Power (AK) and Eversource (CT) – proposed making pilot electric vehicle tariffs permanent options during 2017.

Five additional utilities – Pepco (DC), Delmarva Power and Light (DE), Interstate Power and Light (IA), Indiana Michigan Power (IN), and Northern States Power Company (MN) – proposed new electric vehicle tariffs in 2017. All five programs utilize time-of-use pricing, and two offer a 100% renewable energy option at an additional cost.

Table 4. Updates on Electric Vehicle Rate Design (2017)

State	Utility	Description	Source
AK	Alaska Electric Light and Power Company	In November 2016, Alaska Electric Light and Power Company (AEL&P) requested that its experimental Off-Peak EV Charging rate be converted to a permanent rate option. AEL&P also requested the creation of a new rate schedule for EV supply equipment. Under this new tariff, AEL&P would own and install a level 2 charging station at the customer's home for monthly fee of $11.28. In October 2017, the Regulatory Commission of Alaska approved both rate schedules.	Docket No. U-17-002 Docket No. TA455-1 Order No. 5
CT	Connecticut Light and Power Company d/b/a Eversource	In November 2017, Eversource filed a general rate case, which includes a continuation and expansion of its EV Rate Rider Pilot Program. Eversource proposed making the rider a permanent rate option and opening participation to customers owning and operating separately metered fast charging stations. Hearings are scheduled for January and February 2018.	Docket No. 17-10-46
DC	PEPCO	In April 2017, Pepco filed a proposal to implement a new plug-in vehicle program. Part of this program would include a new rate option for residential customers with EVs. The proposed program is limited to 100 customers with existing EVs and charging infrastructure, and will require installation of a second meter. Participants may also elect an adder of 3.64 cents per kWh to receive electricity from 100% renewable sources. Pepco also proposed a new whole-house time-varying rate for residential EV owners, which would not require the installation of a second meter. This option would not be available to net metering customers.	Formal Case No. 1143
DE	Delmarva Power and Light	In October 2017, Delmarva Power and Light filed a proposal to implement a new plug-in vehicle program. Part of this program would include a new whole-house time-varying rate option for residential EV owners. This rate option would not be available to net metering customers. Delmarva also proposed a new adders for customers on a plug-in vehicle rate, which would allow customers to opt to receive electricity from 100% renewable sources. The proposed adder is 0.72 cents per kWh.	Docket No. 17-1094
HI	Hawaiian Electric Company	The Public Utilities Commission approved a five-year extension of Hawaiian Electric Company's pilot EV tariffs. The Schedule EV-F tariff governs the company's sale of electricity to the third-party operator of a public EV charging facility, and the	Docket No. 2016-0168

		Schedule EV-U tariff establishes the rates by which the company provides electric charging service directly to customers. Following revisions to the previously flat rate EV-U tariff, both pilot tariffs now feature three time-of-use periods. In June 2017, both pilot tariffs were extended by five years, expiring June 30, 2023.	
IA	Interstate Power and Light d/b/a Alliant Energy	As part of Alliant Energy's general rate case, filed in April 2017, the utility proposed a new optional EV charging rate. The proposed rate would be time-varying and available to both residential and non-residential customers. Customers meeting certain requirements (existing transformer can serve the incremental load and the customer's charging station and meter are attached to the existing service line for the existing building) qualify for a reduced meter charge, while those not meeting these requirements will be charged the standard service charge for an additional meter. Initial briefs were due in October 2017.	Docket No. RPU-2017-0001
IN	Indiana Michigan Power	As part of Indiana Michigan Power's general rate case, filed in July 2017, the utility proposed modifying its residential off-peak energy storage rate to add EV charging as qualifying equipment. Under this tariff, usage from the EV charging system is sub-metered.	Docket No. 44967
MA	All IOUs	H.B. 3742 directs the state's distribution utilities to file pilot commercial rate tariffs with alternative rate structures to traditional demand charges to encourage faster charging for light and heavy duty vehicles. The utilities are to evaluate the relative costs, benefits, and ancillary benefits associated with different rate designs aimed at encouraging faster charging.	H.B. 3742 (I)
MN	All IOUs	Legislation enacted in 2014 required the state's three IOUs to develop EV tariffs. In its order approving the tariffs, the Minnesota Public Utilities Commission required the utilities to each file annual reports on their EV tariffs. In their 2017 reports, the utilities shared that very few customers are on their EV tariffs, and a variety of reasons were presented. The Commission issued an order in October 2017, which included specific directives for each utility with the intention of improving the participation rates for their EV tariffs.	Docket No. 15-111
	Northern States Power Company d/b/a Xcel Energy	In November 2017, Xcel Energy proposed a new residential EV service pilot program. Participants would have two options for EVSE installation – to pay the cost upfront or pay an increased fixed monthly charge of $27.45 to pay for the Level 2 charging equipment. Customers are responsible for wiring	Docket No. 17-817

		expenses under both options. The new program would include the same on-peak and off-peak rates as the existing EV tariff. The proposed term of the pilot is 2 years. Customers paying the increased monthly fee can elect to have the EVSE removed at the end of the term, replaced or upgraded, or purchase the EVSE at the undepreciated balance. Customers paying for the EVSE upfront can take ownership of the equipment or have the equipment replaced or upgraded at the end of the term. The utility will own all EVSE for the duration of the pilot.	
	Cooperative and Municipal Utilities	H.F. 2202 extends the requirement for the state's IOUs to file EV charging tariffs to the state's cooperative and municipal utilities. The bill also establishes a surcharge that is to be included as part of these tariffs.	H.F. 2202 (I)
NV	All IOUs	S.B. 145, enacted in May 2017, includes the EV Infrastructure Demonstration program. The program requires utilities to submit an annual plan to carry out the program, which may include EV charging tariffs with time-varying rates.	S.B. 145 (E)
NY	All IOUs	A.B. 288, enacted in October 2017, directs all combination gas and electric corporations in the state to file residential EV charging tariffs with the Public Service Commission by April 2018.	A.B. 288 (E) S.B. 3745 (E)
	Consolidated Edison	In December 2017, Consolidated Edison (ConEd) proposed expanding its existing Business Incentive Rate to include publicly accessible EV quick charging stations. Under ConEd's proposal, a total of 30 MW would be allocated to EV charging stations. The program would be open to new charging stations with at least 100 kW in aggregate charging capacity and up to 2,000 kW in aggregate demand. The incentive rate would provide a delivery rate reduction for up to seven years. Participants would be required to receive economic benefits from federal, state, or local authorities.	Docket No. 17-02921/17-E-0814
RI	Narragansett Electric Company d/b/a National Grid	In November 2017, Narragansett Electric Company d/b/a National Grid filed a general rate case, including plans to implement the state's Power Sector Transformation efforts. As a part of this proposal, National Grid requested approval of a transportation electrification program. The program includes an off-peak charging rebate pilot, in which participating customers will receive a rebate equal to 6 cents per kWh during the summer (June through September) and 4 cents per kWh during the winter (October through May) for all kWh charged during off-peak hours (9 pm to 1pm).	Docket No. 4770

UT	Rocky Mountain Power	In September 2016, Rocky Mountain Power submitted a proposal, pursuant to the 2016 Sustainable Transportation and Energy Program (STEP) Act, to implement an EV incentive program. The proposed program includes an EV TOU pilot program. RMP's two proposed pilot tariffs would utilize on-peak and off-peak pricing. Other parties proposed that the second option utilize both on/off peak pricing and tiered rates in order to encourage efficiency during off-peak hours. The EV program was addressed in Phase 3 of the proceeding, with a final order issued in June 2017. In the order, the Public Service Commission approved RMP's proposed tariffs that do not utilize tiered pricing.	Docket No. 16-035-36
WA	Avista Utilities	In December 2017, Avista proposed extending its EVSE pilot program until June 30, 2019. Avista is also proposing to adjust the rates charged under this program for public DC fast charging. Avista proposed moving from a flat rate of 30 cents per minute to a time-varying rate, ranging from 20 cents per minute to 30 cents per minute, or 27 cents per kWh to 54 cents per kWh.	Docket No. UE-160082

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

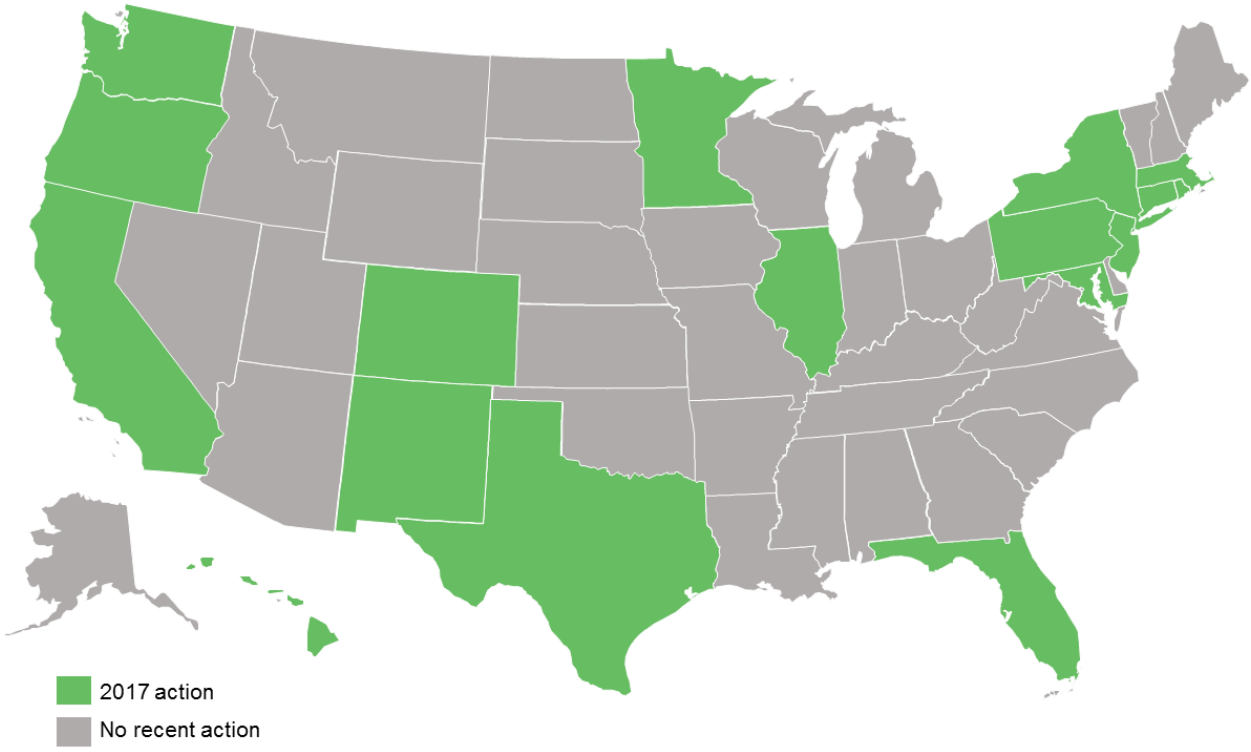
ELECTRIC VEHICLE MARKET DEVELOPMENT

Key Takeaways:

- In 2017, 17 states took 36 policy actions to encourage the development of electric vehicles and charging infrastructure.
- Several states took action on initiatives related to dedicated electric vehicle parking and planning for infrastructure deployment.
- Six states addressed electric vehicle use of high occupancy vehicle lanes, with only California enacting legislation on this issue in 2017.

Market development initiatives received significant attention in 2017, with 17 states taking 36 policy actions to encourage the expansion of electric vehicle charging infrastructure and electric vehicle markets. The greatest number of market development actions were taken in California in 2017, with four out of five proposed bills being enacted during the year.

Figure 11. Action on Electric Vehicle Market Development (2017)



Various initiatives regarding electric vehicle charging station infrastructure and dedicated electric vehicle parking were considered by state legislatures in 2017, with at least nine states taking actions of this type. Some of these bills focused on planning for charging infrastructure, while others focused on means of paying for the infrastructure. Legislatures in California and Massachusetts enacted legislation in 2017, both authorizing local governments to designate certain parking areas for electric vehicle charging.

Six states considered allowing electric vehicles to use high occupancy vehicle lanes (regardless of the number of passengers) in 2017, with only California enacting legislation, A.B. 544, which allows newly-purchased single-passenger electric vehicles in high occupancy vehicle lanes.

Box 3. About the Volkswagen Settlement

In recent years, Volkswagen (VW) agreed to a complex series of legal settlements with the U.S. Environmental Protection Agency, states, and private parties after admitting installation of devices on its diesel engines intended to manipulate tailpipe emissions monitoring equipment, a violation of the Clean Air Act. The 2016 Consent Decree included three components – a recall or buyback for VW vehicle owners, a $2 billion payout for zero emissions vehicle infrastructure, and a $2.7 billion payout for environmental mitigation to be directed to states.

For the mitigation fund, eligible mitigation actions include projects to reduce NO_x emissions from heavy-duty diesel sources, such as large trucks, buses, and freight switching railroad locomotives. Eligible mitigation actions may also include charging infrastructure for light-duty zero-emission passenger vehicles (limited to 15% of the fund total.)

Each state is to determine how its share of the $2.7 billion settlement fund is to be distributed, and in 2017 most states sought public input and worked to design their plans. This report series will continue to provide coverage of this topic when state legislatures adopt or update plans.

Two states – New Jersey and Pennsylvania – considered new planning requirements for electric vehicles, and another two states – California and Texas – considered highway signage rules for charging stations. Only in California was legislation enacted, which directs the state Department of Transportation to include charging station locations on freeway exit information signs.

Figure 12. 2017 Market Development Action, by Action Type

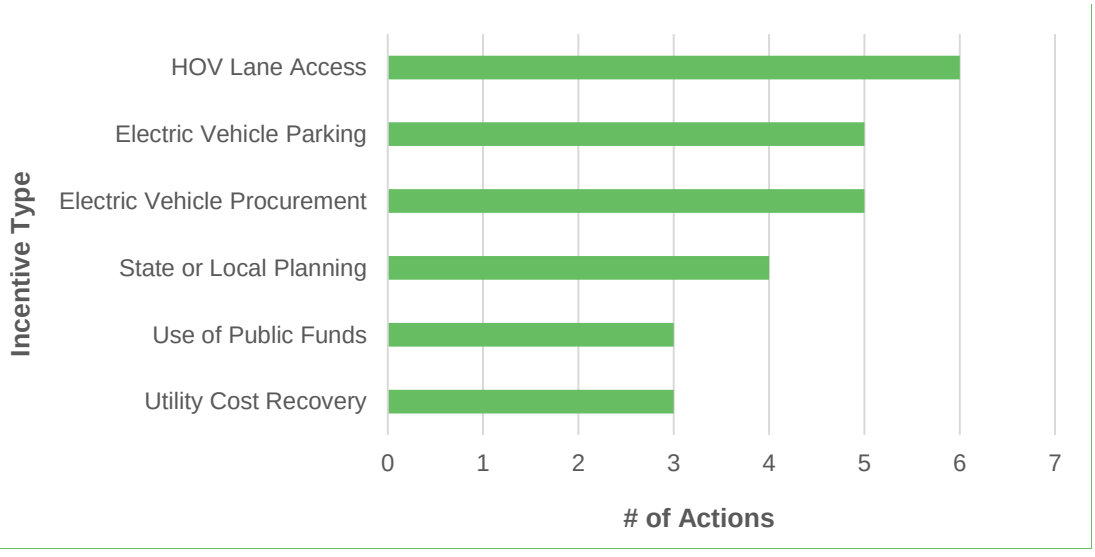


Table 5. Updates on Electric Vehicle Market Development (2017)

State	Sub-Type	Description	Source
CA	Building Codes	A.B. 1239 requires the Department of Housing and Community Development to research, develop, and propose building standards for EV parking spaces for existing parking lots associated with multi-family and non-residential buildings. The bill was vetoed by the Governor in October 2017.	A.B. 1239 (D)
	EV Parking	A.B. 1452, signed by the Governor in October 2017, authorizes local governments and authorities to designate parking areas for EV charging use only.	A.B. 1452 (E)
	EV Procurement	S.B. 498 increases the state's targets for its ZEV light-duty fleet, requiring at least 50% of the state's light-duty vehicle fleet to be ZEVs by 2025 (an increase over the current goal of 25% by 2020). The Governor signed the bill into law in October 2017.	S.B. 498 (E)
	HOV Lane Access	A.B 544, signed into law in October 2017, allows low-emission cars (such as EVs) to use HOV lanes, even when the driver is riding alone. This legislation applies only to newly purchased vehicles.	A.B. 544 (E)
	Fuel Efficiency Standards; Procurement Targets	A.B. 739 requires that state agency purchases of certain passenger vehicles and light-duty trucks meet new fuel efficiency standards, and that certain percentages of units purchased be zero emission. The bill was signed into law by the Governor in October 2017.	A.B. 739 (E)
	Signage	A.B. 1633, signed into law in July 2017, directs the California Department of Transportation to begin including charging station locations on freeway exit information signs.	A.B. 1633 (E)
CO	Utility Cost Recovery	H.B. 17-1232 allows utilities to provide EV charging as a regulated or unregulated service and allows cost recovery for investments and a return on such investments. The bill further requires that costs are recovered in a similar manner as distribution system investments.	H.B. 17-1232 (D)
CT	General Market Development	H.B. 6495, introduced in January 2017, encourages the use of EVs to reduce carbon density and improve air quality in the state. The bill does not provide any specific details on how these goals would be achieved.	H.B. 6495 (D)
	HOV Lane Access	H.B. 6052 allows EVs to utilize HOV lanes (exempting them from multiple occupant	H.B. 6052 (D)

		requirements.) An annual fee of $25 would be charged to participate in this program.	
FL	Education and Outreach	In January 2017, Tampa Electric Company (TECO) filed a petition to amend its Energy Education, Awareness, and Agency Outreach Program to include education related to the operation, maintenance, and ownership of EVs. TECO is proposing to partner with local high schools to teach students about several topics, including proper driving skills to maximize energy efficient driving with EVs, characteristics and operation of different EV charging technologies, considerations of EV ownership, and electric rates and when charging EVs is least expensive.	Docket No. 20170015
HI	EV Parking	H.B. 793 requires that parking lots with more than 100 spaces offer at least one EV parking space with charging infrastructure per 100 parking spaces. It also establishes fines for non-compliance and creates a taskforce to examine the deployment of EVSE in public parking lots.	H.B. 793 (I)
	EV Parking	S.B. 817 requires that parking lots in places of public accommodation with more than 100 parking spaces offer EV parking spots at a rate of one per 100 spaces by July 1, 2018 and two per 100 by July 1, 2023. This would be enforced by county permitting and planning authorities. The bill also establishes enforcement procedures that the county authorities would follow to ensure compliance.	S.B. 817 (I)
	Use of Public Funds	S.B. 234 authorizes the use of the public benefits fee for installing and upgrading electrical infrastructure to support EVSEs. It also authorizes the public benefits administrator to create procedures for administering the public benefits fee money for this purpose.	S.B. 234 (I)
IL	Use of Public Funds	S.B.789 allows county boards, municipalities, and townships to use motor fuel tax funds allotted to it for infrastructure to support publicly owned or privately owned EVs. The bill was vetoed in August 2017.	S.B. 789 (D)
MA	Building Codes; EV Parking; Utility Cost Recovery	H. 2505, enacted in January 2017, authorizes municipalities to restrict certain parking areas within their control for use by ZEVs only. The bill also allows the State Board of Building Regulations and Standards to include requirements for EV charging for residential and appropriate commercial buildings within the state's building and electric code. Finally, the bill notes that electric and distribution companies are able to submit proposals for cost	H. 2505 (E)

		recovery to construct, own, and operate public EV charging infrastructure, but approval will only be granted if the proposal is in the public interest and does not hinder the development of the competitive charging market.	
	EV Procurement	S. 1880 requires that 25% of motor vehicles purchased by the state each year are ZEVs by 2025.	S. 1880 (I)
	HOV Lane Access	H. 1815 would permit battery EVs to travel in HOV lanes.	H. 1815 (I)
MD	Volkswagen Settlement	H.B. 442 establishes the Volkswagen Settlement Fund as a special, non-lapsing fund to administer the environmental mitigation funds from the Volkswagen settlement. The bill also established the Maryland Energy Administration and Department of the Environment as joint administrators of the fund.	H.B. 442 (D)
MN	HOV Lane Access	H.F. 1133 and S.F. 2029 would permit single occupant all-electric vehicles to drive in HOV or dynamic shoulder lanes.	H.F. 1133 (I) S.F. 2029 (I)
	Planning	S.F. 829 establishes a program to promote EVs in large cities (of more than 100,000 people) within the state. Utilities serving large cities would be required to submit plans to encourage their customers to purchase EVs and facilitate the development of EV infrastructure. Activities in the plan could include education, financial incentives, research, and demonstration projects. The bill also has provisions for cost recovery and reporting.	S.F. 829 (I)
	Utility Cost Recovery	Minnesota H.F. 2460 would allow IOU cost recovery for certain programs related to alternative fuel vehicles, including EVs and EV charging infrastructure. This bill would allow the Public Utilities Commission to approve utility programs and tariffs designed to address development of the market for alternative fuel vehicles.	H.F. 2460 (I)
NJ	Planning	A.B. 4552 and S.B. 3470 are intended to encourage local municipalities to consider planning for EV charging stations at appropriate locations. The bill provides several opportunities and mechanisms. For example, the bills encourage municipalities to consider EV charging infrastructure each time the municipality reexamines its master plan. This bill suggests that a municipality's master plan should include the site of existing, future, and planned EVSE. By adding EVSE into a master plan, communities could and should address EVs in zoning ordinances. Also, the	A.B. 4552 (D) S.B. 3470 (D)

		bill requires consideration of charging infrastructure locations in local redevelopment plans.	
	Planning	Companion bills A.B. 4835 and S.B. 3183 encourage municipalities to plan for and identify financing mechanisms for EVSE through local redevelopment planning processes. Specifically, the bills direct and authorize municipalities to consider planning for public EV charging stations in redevelopment plans. The proposed legislation also authorizes municipalities to develop EVSE using revenue streams available for redevelopment projects.	A.B. 4835 (D) S.B. 3183 (D)
	EV Parking	S.B. 3471 authorizes municipalities to adopt ordinances restricting certain parking areas (limited to those in rights-of-way within the municipality's control) as parking for EVs only. The legislation also declares that it is the state's policy to accelerate the adoption of EVs and charging infrastructure.	S.B. 3471 (D)
	Width Exceedance	A.B. 4538, S.B 2940, and S.B. 2874 would allow all-electric school buses to operate on state roads with a maximum width of 102 inches. All other school buses are restricted to a maximum width of 96 inches.	A.B. 4358 (D) S.B. 2940 (D) S.B. 2874 (D)
NM	Clean Energy Standard	In August 2017, Western Resource Advocates, the New Mexico Attorney General, and Prosperity WORKS filed a petition for rulemaking with the New Mexico Public Regulation Commission. The petitioners proposed a technology-neutral Clean Energy Standard, aiming to reduce CO2 emissions by 4% per year. The proposed standard would provide utilities with additional credit for each EV registered in its service territory. The Commission held workshops on the proposed standard in October and November 2017 and January 2018.	Docket No. 17-00211-UT
NY	EV Parking	Companion bills A.B. 87 and S.B. 5909 require parking facilities owned and operated by a state entity to install EV charging stations for 10% of the parking spaces offered. The state would be responsible to make these installations and their maintenance.	A.B. 87 (I) S.B. 5909 (I)
	HOV Lane Access	A.B. 4139 would allow drivers of alternative fuel vehicles and PHEVs to use HOV lanes, regardless of the number of occupants in the vehicle.	A.B. 4139 (I)
OR	Alternative Fuel Corridor	In March 2017, Senate Committee on Business and Transportation introduced a bill to define alternative fuel, designate certain segments of highway as an alternative fuel corridor, require the government to	S.B. 988 (D)

		provide dispensing stations, requiring access, and require a progress report. In April, a public hearing and possible public works session were scheduled, but the bill died at the end of the session.	
	HOV Lane Access	H.B. 2509 tentatively allows drivers of EVs to use HOV lanes regardless of the number of passengers. The duration of this allowance depends whether federal law changes the authority of states to make such changes	H.B. 2509 (D)
PA	Planning	H.B. 1446 calls for substantial planning efforts and requires the establishment of statewide goals for fueling infrastructure development. It would require the Governor to create statewide goals for the expansion of EV infrastructure and establish a framework for regional planning (including data collection on vehicle ownership and usage.) Regional plans would be submitted by regional electric distribution companies. Notably, the bill would allow electric companies to recover many costs related to the EV infrastructure. Additionally, the bill would require the Department of Transportation to provide at least two high-speed EV charging stations and a natural gas fueling station at each interstate highway rest area and welcome center.	H.B. 1446 (I)
RI	Use of Public Funds	S.B. 786 would allow the State of Rhode Island to use proceeds from the auction or sale of Regional Greenhouse Gas Initiative CO_2 allowances for promoting "cost-effective energy efficiency and renewable energy technologies to reduce thermal GHG emissions." The bill also specifically mentions and allows use of the funds for promoting the use of ZEVs and charging stations.	S.B. 786 (I)
TX	EV Procurement	S.B. 26 authorizes state agencies, counties, and with fleets of at least 15 vehicles to replace the fleet with alternative fuel vehicles (including hydrogen fuel cell vehicles, PHEVs, and all-electric vehicles.) State agencies are to prioritize alternative fuel vehicles when purchasing or leasing new vehicles. The bill excludes emergency and law enforcement vehicles from these provisions.	S.B. 26 (P1)
	Signage	H.B. 3679 requires signs to be put up informing motorists of facilities providing alternative fuels and EV charging stations.	H.B. 3679 (P1)
WA	General Market Development	S.B. 5716 requires cities to adopt incentives to encourage new structures to be fitted with, and existing structures to be retrofitted with, rapid charging station electrical outlets. These incentives	S.B. 5716 (I)

	may include bonus height, site coverage, floor area rights, and transferrable development rights.	
EV Procurement	S.B. 5931 requires that all state agencies and local governments, to the extent practicable, meet certain fuel usage requirements for public vessels, vehicles, and construction equipment. For these vehicles, 50% of fuel usage must be electricity or biofuels by June 2020. This requirement increases to 75% by June 2023 and to 100% by June 2025.	S.B. 5931 (I)

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

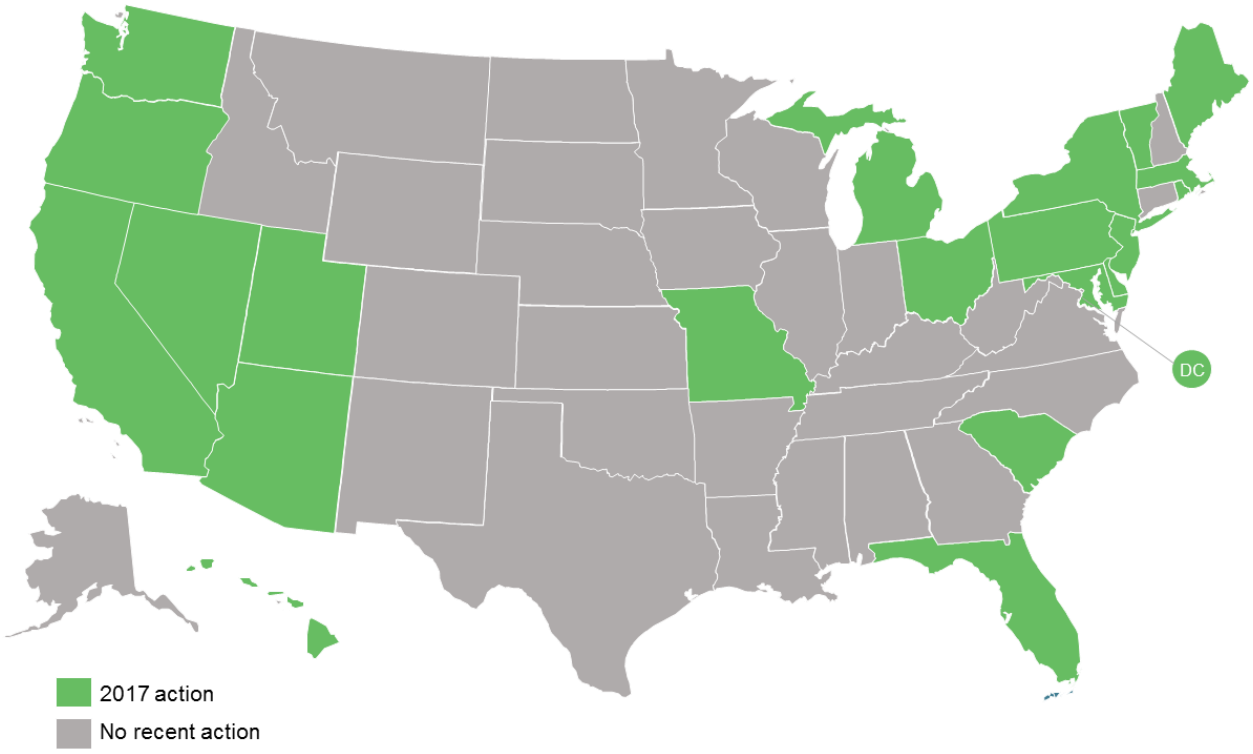
FINANCIAL INCENTIVES

Key Takeaways:

- In 2017, there were 53 actions ongoing or under consideration in 21 states plus DC related to incentives for electric vehicles.
- Of these, 18 were rebate programs, 12 were sales tax incentives, and 10 were income tax credits.
- Thirty-one actions related to incentives for electric vehicles, 17 related to incentives for electric vehicle charging infrastructure, and 5 related to both.

In 2017, there were 53 actions ongoing or under consideration in 21 states and DC related to incentives for electric vehicles and charging infrastructure. The majority of these actions were efforts to provide new or expanded incentives for electric vehicle purchases or charging infrastructure development. However, it is noteworthy that at least one action would have ended an existing incentive for electric vehicles.

Figure 13. Action on Financial Incentives (2017)



The majority of action on financial incentives was legislative in 2017, with 42 bills (and 7 companion bills) considered during the year. These bills related to a variety of different incentive types, including tax incentives, such as sales tax exemptions or income tax credits, as well as the development of grant and loan programs. Of these bills, nine were enacted in seven different states – California, Maryland, Nevada, New York, Oregon, Utah, and Washington –

during 2017. Bills enacted in Oregon, Utah, and Washington expand the eligibility for existing incentives, while enacted legislation in California, Maryland, and New York extend existing incentives. An additional bill in California, as well as a bill in Nevada, open the door to new incentive programs. California's legislation also establishes a new program similar to the federal government's previous "cash for clunkers" program.

Box 4. Tax Incentives, Grants, Rebates, and Financing Programs

The term **tax incentives** covers a broad spectrum of incentives, including income **tax credits** and **deductions**; **property tax exemptions**, exclusions, abatements, and credits; and **sales and use tax exemptions** and refunds. **Grant programs** are one-time monetary payments, typically awarded through a competitive process, while **rebate programs** provide cash incentives for equipment installations meeting program specifications. Finally, **loan programs** provide financing for the purchase of electric vehicles or charging infrastructure and **Property Assessed Clean Energy (PACE) financing** programs allow property owners to borrow money to pay for certain clean energy improvements and repay the amount via a special assessment on the property. Find incentives for renewable energy and energy efficiency technologies with the Database of State Incentives for Renewables and Efficiency.

Utilities in eight states proposed or announced new financial incentives – typically rebate programs – related to electric vehicles. Six of these programs were incentives for electric vehicle supply equipment. Overall, legislators and regulators considered financial incentives for both electric vehicles and electric vehicle charging infrastructure during the year. Of the actions identified, 30 related incentives for electric vehicles, 17 related to incentives for electric vehicle supply equipment, and 5 related to both.

Figure 14. Action on Incentives by Incentive Type

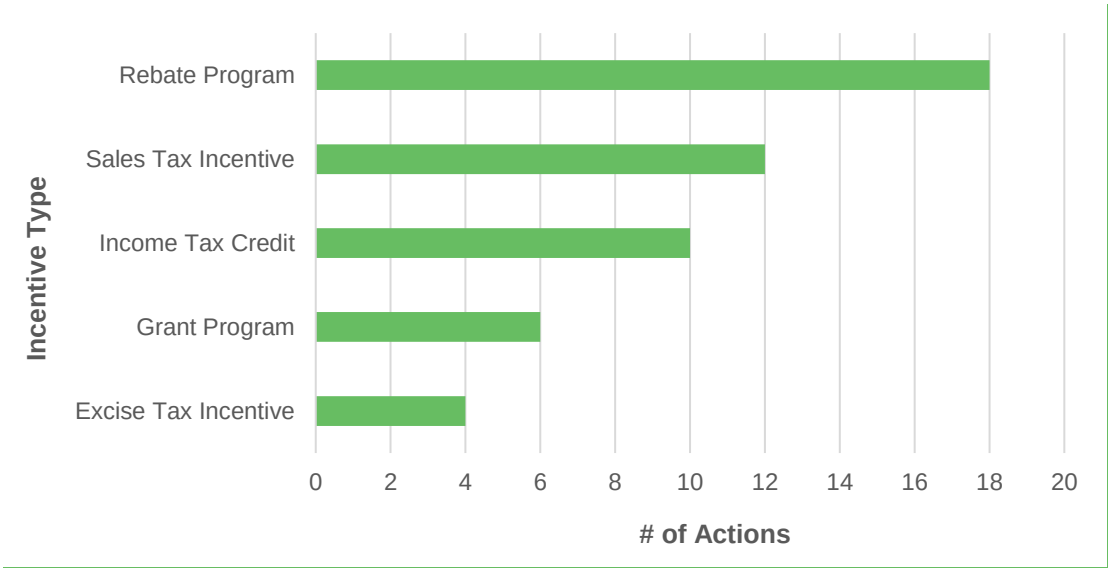


Table 6. Updates on Financial Incentives (2017)

State	Incentive Type	Description	Source
AZ	Rebate Program	As part of Arizona Public Service's (APS) 2018 Demand-Side Management Plan, filed in September 2017, the utility proposed the addition of a new pilot incentive for EV pre-wiring to its existing Residential New Construction Program. The incentive would be equal to $100 per home, and provided to homebuilders installing EV pre-wiring in garages.	Docket No. E-01345A-17-0134
CA	Grant Program	A.B. 1073, enacted in October 2017, extends until 2020 the requirement for at least 20% of available funding for the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program to be used to support the early commercial deployment of zero and near-zero emission heavy duty trucks.	A.B. 1073 (E)
	Income Tax Credit	A.B. 1341 would have expanded availability of the zero-emission vehicle tax credit to leased vehicles.	A.B. 1341 (D)
	Loan Program	A.B. 964 would have created the California Affordable Clean Vehicle Program to offer low-interest financing to low-income individuals for the purchase of zero emission or plug-in vehicles.	A.B. 964 (D)
	Loan Program	A.B. 1259 would have expanded availability of the Capital Access Loan Program to EVs that are leased rather than purchased.	A.B. 1259 (D)
	Rebate Program	A.B. 193 would have established the Clean Reused Vehicle Rebate Project to provide rebates for (1) acquiring an eligible used vehicle, (2) replacing or refurbishing an EV battery for an eligible used vehicle, or (3) vehicle service contracts to cover the costs for unexpected vehicle repairs that are unique problems in eligible used vehicles and not covered by manufacturer warranties. Compensation for a replacement vehicle for other vehicle owners is not to exceed that provided to low-income owners.	A.B. 193 (D)
	Rebate Program	A.B. 615, enacted in October 2017, extends the existing Clean Vehicle Rebate Project to January 1, 2019.	A.B. 615 (E)
	Loan Program, Rebate Program	A.B. 630, enacted in October 2017, established the Clean Cars 4 All Program. In addition to payments for retiring high-polluting vehicles, the bill also directs the Air Resources Board, in consultation with the State Energy Resources Conservation and Development Commission, to increase low and moderate income access to electric transportation. This may include incentives or financing programs for zero emission or near-zero emission vehicles.	A.B. 630 (E)

	Sales Tax Incentive	A.B. 1081 would have ended the state's existing sales tax exemption for vehicles meeting California's super ultra-low emission vehicle standard, enhanced advanced technology partial zero-emission vehicle standard, or transitional zero-emission vehicle standard on January 1, 2023.	A.B. 1081 (D)
	Sales Tax Incentive	S.B. 79 would have exempted secondhand purchases of PEVs from the state's sales tax until January 2025.	S.B. 79 (D)
DC	Rebate Program	In April 2017, Pepco filed a proposal to implement a new PEV program. Part of this program would include an option for residential customers to have a smart level 2 charging station installed for 50% of the station and installation costs. This program is limited to 50 customers, and requires installation of a second meter. Pepco may remotely manage these chargers. The proposed program would also install up to ten smart level 2 charging stations at multi-family buildings at 50% of the cost.	Formal Case No. 1143
DE	Credit Program, Loan Program, Rebate Program	In October 2017, Delmarva Power & Light filed a proposal to implement a new PEV program. Part of this program would include an option for residential customers with existing plug-in vehicles and charging infrastructure to use a "FleetCarma" device, which will provide information on usage location, time, and amount of charge to both the customer and the utility. Participating customers will receive an upfront credit of $50, a $5 monthly credit, and additional credit for off-peak charging. This program is limited to 50 customers. Another part of this program would include an option for residential customers to have a smart level 2 charging station installed for 50% of the station and installation costs. Twelve-month interest-free financing would also be offered to these customers. This program is limited to 50 customers, and a second meter will be installed to sub-meter the charging station. Delmarva proposes to also install up to ten smart level 2 charging stations at multi-family buildings at 50% of the cost.	Docket No. 17-1094
FL	Grant Program	H.B. 633 creates a Florida Smart City Challenge Grant Program within the Department of Transportation, enabling municipalities to apply for grants for projects that will advance autonomous vehicle deployment or demonstration; connected vehicle technology deployment; shared mobility services, innovation, and deployment; or the use of EVs and EVSEs. Up to three awards of $6 million each may be awarded. Awards must be made by January 2019; this is a one-time, non-recurring authorization and appropriation of funds.	H.B. 633 (I)

HI	Income Tax Credit	S.B. 821 was introduced in January 2017. It would provide an income tax credit to taxpayers who install publicly available EVSE infrastructure. The bill was carried over to the 2018 legislative session.	S.B. 821 (I)
MA	Grant Program	H.B. 3742 would establish a competitive grant program for regional transit authorities to implement innovative transportation planning and fleet electrification. The funds are to be used to purchase and use EVs and charging infrastructure, including public charging stations.	H.B. 3742 (I)
	Rebate Program	H.B. 1751 would create a rebate program for customers purchasing or leasing qualified PEVs. The initial rebate amount would be up to $2,500 for vehicles with a battery capacity of at least 10 kWh. Rebates for vehicles with a battery capacity of at least 4 kWh and less than 10 kWh would be up to $1,500.	H.B. 1751 (I) H.B. 2709 (I) S.B 1840 (I)
	Rebate Program	In January 2017, National Grid filed its proposal with the Department of Public Utilities (DPU) for its EV Market Development Program. The three-year, $23.8 million program would help deploy Level 2 and DC Fast EV charging station equipment at locations owned or leased by non-residential customers. The charging equipment would be owned and maintained by the customer, but National Grid would provide a financial incentive and would install all necessary electric distribution company equipment on the company's side of the meter. The DPU held hearings and received additional testimony throughout 2017.	Docket No. 17-13
	Sales Bonus	H.B. 3742 would establish a rebate program for car dealerships in the state that sell or lease EVs to consumers. The rebate would be equal to $400 for each EV sold or leased, with at least $200 going directly to the salesperson selling or leasing the vehicle. Only EVs with a manufacturer's suggested retail price of up to $75,000 are eligible.	H.B. 3742 (I)
MD	Excise Tax Credit, Rebate Program	H.B. 110 extends the EV Recharging Equipment Rebate Program through 2020 and authorizes motor vehicle excise tax credits for specified qualified PEVs. The bill also increased the amount required to be transferred from the Strategic Energy Investment Fund to the Transportation Trust Fund to offset the loss in gas tax revenue from the sale of EVs. The bill failed to pass out of committee, but many of its provisions were adopted into H.B. 406, the Clean Cars Act of 2017.	H.B. 110 (D)
	Excise Tax Credit, Rebate Program	S.B. 393 and H.B. 406 were signed into law in May 2017. The bills extend the EV Recharging Equipment Rebate Program through 2020, increase the overall	H.B. 406 (E) S.B. 393 (E)

		annual amount authorized from $600,000 to $1,200,000, and decrease the rebate amounts. Individuals may now receive up to 40% of the cost of an EVSE or $700 (whichever is less). Businesses and state and local government units can receive rebates in the amount of 40% of the costs of acquiring and installing EVSEs or $4,000 (whichever is less.) Retail service station dealers can receive rebates of 40% of those costs of purchasing and installing an EVSE or $5,000 (whichever is less.) The bill also changed the qualifications of the vehicles that the PEV excise tax credit applies to. New qualifications are that the vehicle must cost less than $60,000, have been purchased new and titled between July 1, 2017 and July 1, 2020, and have a battery capacity of at least 5 kWh. The bill increased the total amount of excise tax credits that can be allocated to $3 million and authorized the transfer of up to $2.4 million from the Strategic Energy Investment Fund to the Transportation Trust Fund.	
	Excise Tax Credit, Rebate Program	S.B. 315 extends the EV Recharging Equipment Rebate program through 2020 and increases the overall amount of rebate money authorized. The bill also changed the amounts of each rebate. The bill authorized motor vehicle excise tax credits for qualified plug-in vehicles and altered the qualifications for qualifying plug-in vehicles. The bill increased the amount of funds to be transferred from the Strategic Energy Investment Fund to the Transportation Trust Fund. The bill did not move forward as a standalone bill but its provisions were incorporated into the Clean Cars Act of 2017 (S.B. 393/ H.B. 406) that was signed into law.	S.B. 315 (D)
ME	Grant Program	H.B. 745 would establish a grant program for businesses to install EV charging stations. The bill would require that the state allocate 15% of trust funds from the Volkswagen Partial Consent Decree, for light-duty ZEV supply equipment. Charging stations would be required to be accessible and available for use by the public. The Governor vetoed the bill in June 2017.	L.D. 1062 / H.P. 745 (D)
MI	Rebate Program	In March 2016, Consumers Energy filed a general rate case, including a proposed incentive program for customers installing at-home EV charging stations. Customers would be eligible for a $1,000 incentive, and a total of 2,500 incentive payments would be available over three years (totaling $2.5 million.) The ALJ recommended against cost recovery for the rebate program, and Consumers Energy subsequently withdrew its proposal for the Plug-In Vehicle Charging Program in January 2017.	Docket No. U-17990

MO	Income Tax Credit	S.B. 461 would extend the sunset on the tax credit available for alternative fuel infrastructure projects, including the development and construction of refueling infrastructure and EV charging. The bill would have extended the tax credit by six years by moving the deadline from January 1, 2018 to January 1, 2024.	S.B. 461 (D)
NJ	Sales Tax Incentive	A.B. 4750 would extend the state's sales and use tax exemption to include PHEVs. Under current law, a vehicle may be exempt from the State sales and use tax if it qualifies as a "zero emission vehicle." This bill would extend the sales tax exemption to include PHEV.	A.B. 4750 (D)
	Credit Program	A.B. 4727 / S.B. 3062 would provide a 50% credit against the Societal Benefits Charge (SBC) for utility customers who install and manage publically available EV charging stations. The SBC is a charge imposed on all customers of New Jersey's investor-owned utilities for reducing energy use and promoting renewable energy. Under this bill, the electric or gas customer would receive a credit of 50% of what they would typically owe for the SBC each calendar year.	A.B. 4727 (D) S.B. 3062 (D)
NV	Rebate Program	S.B. 145, enacted in May 2017, includes the EV Infrastructure Demonstration program. The program requires utilities to submit an annual plan to carry out the program, which may include incentives for customers installing or offering EV charging infrastructure.	S.B. 145 (E)
	Sales Tax Incentive	A.B. 398 would have exempted EVs from certain sales taxes until September 30, 2019.	A.B. 398 (D)
NY	Meter Fee Exemption; Registration Fee Exemption; Toll Discount; Sales Tax Incentive	A.B. 4139 includes several different types of incentives for EVs. EZ pass account holders with EVs or ZEVs that have a highway fuel efficiency of 35 miles per gallon or higher would receive a 25% discount on tolls. EV and ZEV owners would also receive an exemption from the first year of registration fees, and EVs and ZEVs would be exempt from state sales and use tax. The difference between the purchase price of a PHEV and the average price of a comparable non-hybrid or non-alternative fuel vehicle would also be exempt from state sales and use tax. Finally, the bill authorizes municipalities to designate parking meters as free of charge for PHEV, EV, and ZEV owners.	A.B. 4139 (I)
	Income Tax Credit	A.B. 2706 creates a state income tax credit for installing EV charging electrical outlets at condos and cooperative housing. The credit would be equal to 55% of costs, up to $5,000. The credit is to be	A.B. 2706 (I)

		available beginning January 1, 2018 and ending December 31, 2022.	
	Income Tax Credit	A.B. 3009, enacted in April 2017, extends the availability of the existing state tax credit for alternative fuel and EV recharging property until December 31, 2022. The credit was previously set to expire at the end of 2017.	A.B. 3009 (E)
	Rebate Program	In March 2017, New York Governor Cuomo announced a $70 million EV rebate and outreach program. The Drive Clean Rebate Program, administered by the New York State Energy Research and Development Authority, provides up to $2,000 for the purchase of a new PHEV, an all-electric vehicle, or a hydrogen fuel cell car. A total of $55 million will be offered in rebates, while $15 million will be used for customer awareness efforts.	Press Release Drive Clean Rebate Program
	Registration Fee Exemption	A.B. 6854 and S.B. 2932 exempt new EVs and clean fuel vehicles from the first year of registration fees. This incentive would expire January 1, 2022.	A.B. 6854 (I) S.B. 2932 (I)
	Sales Tax Incentive	A.B. 1790 exempts low-emission and energy efficient vehicles from state sales and use tax until December 31, 2020.	A.B. 1790 (I)
	Sales Tax Incentive	S.B. 2705 exempts low-emission and energy efficient vehicles from state sales and use tax until December 31, 2021.	S.B. 2705 (I)
	Sales Tax Incentive	A.B. 6269 exempts the sales of new and used hybrid and high-efficiency vehicles from state sales and use tax. The bill also authorizes local governments to exempt hybrid and high-efficiency vehicles from local sales tax.	A.B. 6269 (I)
	Sales Tax Incentive	S.B. 952 exempts sales for PHEVs from state sales and use tax, and authorizes local governments to also exempt PHEVs from local sales tax.	A.B. 9587 (I) S.B. 952 (I)
OH	Rebate Program	In a broad grid modernization proceeding, Ohio Power Company filed a joint stipulation with a number of parties in August 2017. The stipulation proposes a number of programs and investments, including an EV technology demonstration pilot. The pilot program includes a rebate program for the hardware, network services, and installation of charging infrastructure for up to 300 level 2 charging stations and 75 DC fast charging stations. An evidentiary hearing was held in November 2017.	Docket No. 16-1852-EL-SSO
OR	PACE Financing	H.B. 2132, enacted in June 2017, expanded Property Assessed Clean Energy (PACE) financing eligibility to EV charging infrastructure.	H.B. 2132 (E)

	Rebate Program	H.B. 2704 is intended to support the state's goal of increasing the use of EVs by providing funds for the rebate and Charge Ahead Oregon program, extending tax credits, requiring implementation and administration of the program, setting forth the eligibility requirements, and requiring a progress report on implementation of the program.	H.B. 2704 (D)
	Sales Bonus	H.B. 2514 would have established an EV sales incentive program, providing $250 to any salesperson at an electric motor vehicle dealer who sells, leases, or exchanges for trade-in allowance a new EV. The maximum budget for this program is $1 million.	H.B. 2514 (D)
PA	Grant Program	H.B. 1661 provides guidelines for the "equitable distribution" of funds allocated to Pennsylvania through the Volkswagen Environmental Mitigation Trust. The bill would require that (1) the majority of funds be used to deploy vehicles certified to CARB low-NOx standards, (2) grants to non-governmental fleet vehicles provide 25% of total vehicle cost (up to $50,000 per vehicle), (3) grants to government fleets may not exceed 10% of funds, (4) funds granted to government fleets should prioritize mass transit, para transit, or waste disposal fleets, and (5) funds must be prioritized to leverage matching funds.	H.B. 1661 (I)
RI	Income Tax Credit	H.B. 5836 would provide tax incentives for the construction of publically available EV charging stations. The state of Rhode Island would provide a tax credit of 30% of the labor and equipment cost for the construction of electric charging stations with a maximum of $30,000. The tax credit would also apply to improvements to existing charging stations. The charging stations would be required to be available to the public 24 hours a day, 7 days a week, and the parking space must be designated for use by EVs.	H.B. 5836 (I)
	Income Tax Credit	S.B. 214 would create tax incentives for the installation of alternative fueling infrastructure and facilities, including electricity. The state would allow a tax credit of 30% of the cost of the equipment and a credit of 30% of the cost for construction and installation.	S.B. 214 (I)
	Excise Tax Incentive, Sales Tax Incentive	H.B. 5138 and S.B. 139 are companion bills that would exempt light-duty PEVs from state sales and excise taxes. The sales tax credit would be allowed up to $2,000. The bill specifies that the credit is limited to one vehicle per individual and ten vehicles per business entity.	H.B. 5138 (I) S.B. 139 (I)

SC	Sales Tax Incentive	H.B. 3321 exempts from the state sales tax any devices, equipment, and machinery used in the production of EVs.	H.B. 3321 (I)
UT	Grant Program, Rebate Program	In September 2016, Rocky Mountain Power (RMP) submitted a proposal, pursuant to the 2016 Sustainable Transportation and Energy Program (STEP) Act, to implement an EV incentive program. The proposed program includes incentives for installation of certain charging infrastructure, including non-residential and multi-family Level 2 chargers ($4,000 per single port charger and $7,000 per multi-port charger, up to 75% of total cost), DC fast chargers ($45,000 per single port chargers and $63,000 per multi-port charger, up to 75% of total cost), and grant-based custom projects and partnerships. The Level 2 charger and DC fast charger incentives each have an annual caps of $400,000. The total proposed program budget is $2 million. The EV program was addressed in Phase 3 of the proceeding, and a final order issued in June 2017, with the Public Service Commission approving RMP's proposed incentives.	Docket No. 16-035-36
	Income Tax Credit	H.B. 29 amends the tax credit for energy efficient vehicles so that there is no longer a tax credit given on the percentage of the price of the vehicle but purely a flat tax credit given based on the type of vehicle. For long-range EVs the credit is $1,500, and for short-range EVs it is $1,000; for electric motorcycles it is $750. The bill also sets a formula for tax credits given to qualifying leased vehicles. The bill failed to pass the House in February 2017.	H.B. 29 (D)
	Income Tax Credit	S.B. 24 was introduced in December 2016 and signed into law by the Governor in March 2017. This bill amends the corporate and individual heavy-duty vehicle tax credits. Among its provisions, the bill amended the tax credit for alternative fuel heavy-duty vehicles to include electric and hydrogen-electric drivetrains.	S.B. 24 (E)
VT	Rebate Program	In June 2017, Green Mountain Power announced its new Leaf Power Program, offering customers $10,000 off the purchase of a 2017 Nissan Leaf.	Press Release
WA	Excise Tax Incentive; Sales Tax Incentive	H.B. 1662 extends motor vehicle excise tax, sales tax, and use tax exemptions currently in place for ride-sharing vehicles to EVs.	H.B. 1662 (I)
	Income Tax Credit	H.B. 1809 expands eligibility for the low- and zero-emission truck tax credit to now include passenger shuttles and commercial service trucks, as well as freight trucks.	H.B. 1809 (E)

	Sales Bonus	In December 2017, Avista proposed extending its EVSE pilot program until June 30, 2019. As part of its request, Avista proposed increasing the incentive it pays to automotive dealers selling EVs to Avista customers and collecting certain data from the customers. Avista proposed increasing the incentive from $100 to $200.	Docket No. UE-160082

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

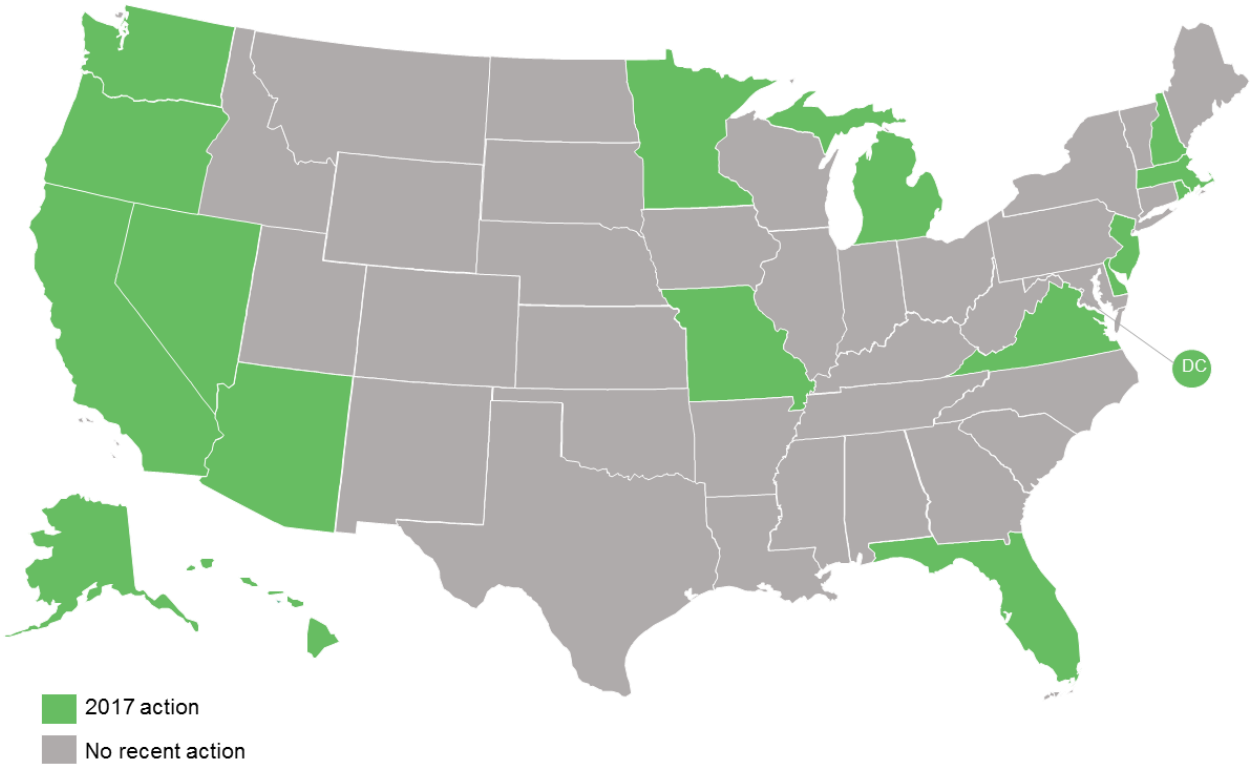
STATE AND UTILITY DEPLOYMENT

Key Takeaways:

- In 2017, there were 24 pending or decided proposals from state legislators or utilities across 17 states plus DC to deploy electric vehicles or charging infrastructure.
- Utilities in nine states plus DC sought approval to deploy approximately $137 million in electric vehicle charging infrastructure.
- Seven bills were introduced in five states in 2017 to allow or require the deployment of electric vehicle charging infrastructure.

Given the vast and varied infrastructure investments needed to foster a robust electric vehicle industry, a number of states are charging ahead with deployment of this infrastructure. In many cases, these efforts begin at the legislature with bills either directly requiring or allowing certain projects, or asking the utilities to create and implement plans with their regulators.

Figure 15. State and Utility Deployment Action (2017)



Eight bills in five states related to electric vehicle charging infrastructure were introduced in 2017, with three of these bills ultimately being enacted. A pair of bills enacted in California allow utilities to propose the installation of electric vehicle charging infrastructure at schools, state parks, and beaches. Legislation enacted in Nevada requires NV Energy to develop

annual plans with the Public Utilities Commission to promote or incentivize the deployment of electric vehicle infrastructure.

Sometimes spurred by similar legislation passed in previous sessions, utilities in 12 plus DC sought approval from regulators to deploy electric vehicle charging infrastructure in 2017. Many of the utility proposals are multifaceted, including investments in different types of equipment for different classes of vehicles.

Table 7. Utility Requests for EV Charging Investments

State	Utility	Proposed Budget	Status
Arizona	Arizona Public Service	$3.58 Million	Pending
California	Pacific Gas & Electric	$20 Million	$8.1 Million approved
	San Diego Gas & Electric	$18.19 Million	$18.6 Million approved
	Southern California Edison	$19.45 Million	$16.06 Million approved
Delaware	Delmarva Power & Light	$1.74 Million	Pending
District of Columbia	Pepco	$1.67 Million	Pending
Florida	Duke Energy Florida	$8 Million	Pending
Massachusetts	Eversource	$45 Million	$45 Million approved
Michigan	Consumers Energy	$15 Million	Denied
Missouri	Ameren	$570,000	Denied
Oregon	Pacificorp	$4.64 Million	Pending
	Portland General Electric	$4.3 Million	Pending
Rhode Island	National Grid	$11.55 Million	Pending
TOTAL		$137.05 Million requested	$87.76 Million approved

Of the approximately $137 million in major projects that were discussed during 2017, utilities in two states were granted approval, utilities in two states were denied, and utilities in five states plus DC are still awaiting a decision. The California Public Utilities Commission approved a total of almost $43 million in projects for the three investor-owned utilities, down from the approximately $57 million originally requested. The Massachusetts Department of Public Utilities approved Eversource's $45 million proposal as well.

Regulators in Missouri, however, rejected Ameren's proposal based on a determination that could have further implications. In denying the approval of charging stations at six locations that would be owned by the utility, the Commission ruled that electric vehicle charging stations do not constitute an electrical plant, and thus are not subject to Commission regulation. Therefore, Ameren may choose to own and operate charging stations on an unregulated basis, but cannot recover costs through rates.

Figure 16. Proposed EV Charging Deployment by Action Type

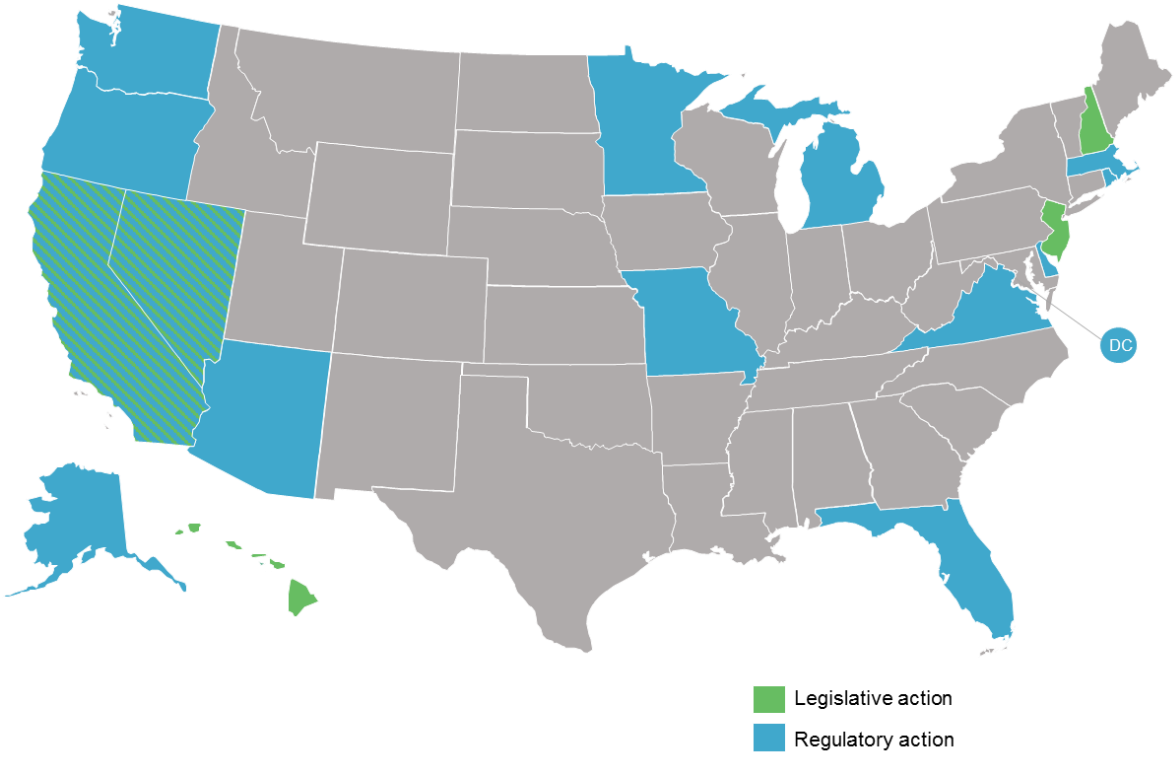


Table 8. Updates on State and Utility Deployment (2017)

State	Utility	Technology	Description	Source
AK	Alaska Electric Light and Power Company	Charging Infrastructure (Level 2)	In November 2016, Alaska Electric Light and Power Company (AEL&P) requested the creation of a new rate schedule for EV supply equipment. Under this new tariff, AEL&P would own and install a level 2 charging station at the participating customer's home for monthly fee of $11.28. In October 2017, the Regulatory Commission of Alaska approved both rate schedules.	Docket No. U-17-002 Docket No. TA455-1 Order No. 5
AZ	Arizona Public Service	Charging Infrastructure (Level 2)	As part of Arizona Public Service's (APS) 2018 Demand-Side Management Plan, filed in September 2017, the utility proposed a new Managed EV Charging Pilot Program. APS would own and manage charging stations deployed through this program at fleets, workplaces, and multi-family housing communities. APS would be able to schedule the charging of EVs at these stations in a way that avoided peak hours. The proposed budget for the pilot program is $1.33 million. Participating customers would repay funds used to purchase the charging stations over ten years, less a $750 incentive.	Docket No. E-01345A-17-0134
		Charging Infrastructure (Level 2), EV Buses	As part of Arizona Public Service's (APS) 2018 Demand-Side Management Plan, filed in September 2017, the utility proposed a new School Bus EV Pilot Program. Under the program, APS would provide a limited number of EV buses and charging infrastructure for free to participating school districts, selected through a lottery. The proposed budget for the program is $2.25 million. APS will work with participating schools to manage charging.	Docket No. E-01345A-17-0134
CA	Investor-Owned Utilities	Charging Infrastructure (Level 2)	A.B. 1082, enacted in October 2017, grants electric utilities the authority to propose the installation of EVSE at schools, and authorizes the use of these charging stations before, during, and after school. The bill also includes a mechanism for cost recovery by the utility.	A.B. 1082 (E)
	Investor-Owned Utilities	Charging Infrastructure (Level 2)	A.B. 1083, enacted in October 2017, grants electric utilities the authority to propose the installation of EVSE at state	A.B. 1083 (E)

			parks and beaches. The bill also includes a mechanism for cost recovery by the utility.	
	Investor-Owned Utilities	Charging Infrastructure (Level 2 & 3), Heavy Duty, Medium Duty	S.B. 350 of 2015 requires the state's investor-owned utilities to undertake transportation electrification activities in consultation with the California Public Utilities Commission (CPUC), the State Air Resources Board and the Energy Commission. The CPUC initiated an investigation on March 2016, which eventually directed the utilities to file applications for approval of proposed programs and investments to accelerate widespread transportation electrification. The definition of transportation electrification in S.B. 250 is broad and includes light-duty, medium-duty, and heavy-duty transportation. After receiving the utilities' applications in January 2017 for a total budget of more than $57 million, the CPUC issued a decision in January 2018, approving with modifications 15 of the 17 priority review projects proposed by the three utilities for a total budget of $41 million. The proposed projects are varied and target several classes of vehicles, and have specific guidelines outlined in the CPUC decision. Each of the utilities will form a Program Advisory Council to provide feedback and guidance as the programs are implemented.	Docket No. A. 17-01-020 Docket No. A. 17-01-021 Docket No. A. 17-01-022 Proposed Decision Final Decision
DC	Pepco	Charging Infrastructure (Level 3)	In April 2017, Pepco filed a proposal to implement a new plug-in vehicle program. Part of this program would include deployment of up to four public direct current fast chargers, owned by Pepco. Users would pay per kWh and could potentially pay an adder to receive 100% renewable energy. In October 2017, the Public Service Commission issued an order, moving the proceeding into the existing Modernizing the Distribution Energy System for Increased Sustainability (MEDSIS) docket (Formal Case 1130).	Formal Case No. 1143 Formal Case No. 1130
DE	Delmarva Power and Light	Charging Infrastructure (Level 2 & 3)	In October 2017, Delmarva Power and Light filed a proposal to implement a new plug-in vehicle program. Part of this program would include deployment of two public direct current fast chargers, owned by Delmarva, along main transportation	Docket No. 17-1094

			corridors. The program would also include deployment of two public level 2 charging stations in neighborhoods within Delmarva's service territory. These level 2 charging stations would also be owned by Delmarva and would provide electricity from renewable energy sources.	
FL	Duke Energy Florida	Charging Infrastructure (Level 2)	A proposed August 2017 settlement agreement primarily related to Duke Energy Florida's Levy Nuclear Plant also proposes the deployment of at least 530 charging stations, owned by Duke Energy, at customer properties. The deployment will operate as a five-year pilot program. The agreement notes that Duke may spend up to $8 million, plus reasonable operating and maintenance costs, on the program. At least 10% of the charging stations must be installed in low-income communities. Up to 5% of program funds may be used for market education and outreach. The Public Service Commission approved the settlement agreement in November 2017.	Docket No. 20170183 Order No. PSC-2017-0451-AS-EU
	Gulf Power	Charging Infrastructure (Level 2)	As part of a settlement agreement in Gulf Power's October 2016 general rate case, the utility will implement an EV charging pilot program. Gulf Power will provide charging stations on a revenue-neutral basis for up to five years. The settlement agreement was approved by the Commission in May 2017.	Docket No. 20160186 Order No. PSC-17-0178-S-EI
HI	N/A	Charging Infrastructure (Level 3)	S.B. 822 was introduced in January 2018 to the Hawaii Senate. The bill would require the Hawaii Department of Transportation to install, maintain, and operate DC fast-charging EVSE at fifty mile intervals along major highways in Kauai, Maui, Molokai, and the Island of Hawaii.	S.B. 822 (I)
MA	Eversource	Charging Infrastructure (Level 2 & 3)	As part of Eversource's general rate case filed in January 2017, the utility proposed a $45 million EV infrastructure program as part of its grid modernization investment plan. The program would include deployment of up to 72 DC fast charging stations at 36 sites and up to 3,955 level 2 charging stations at 452 sites throughout Eversource's service territory. The utility proposed installing "Eversource-side infrastructure" (distribution primary lateral	Docket No. 17-05 Order Establishing Eversource's Revenue Requirement

			service feed, necessary transformer and transformer pad, new service meter, new service panel, associated conduit and conductor necessary to connect equipment), while contracting with third parties to install "participant-side infrastructure." Program funds would not be spent on actual chargers. Eversource's plan includes targeting of multi-unit buildings, universities, hospitals, and public parking spaces for level 2 charging, and targeting of high travel density locations for fast chargers. Furthermore, up to 10% of infrastructure would be deployed in "environmental justice communities." The plan also includes marketing and education. The Department of Public Utilities (DPU) issued an order in November 2017 on the revenue requirement portion of Eversource's case. The DPU approved the proposed EV program, except for the customer education marketing plan. The DPU noted that typically the utility does not own infrastructure beyond the service point (meter); however, due to the state's small EV market, the DPU approved Eversource's ownership of infrastructure beyond the meter and up to the charging station in order to facilitate deployment. The DPU directed Eversource to prioritize sites with public access, and declined to require any EV charging or TOU rate options, as suggested by other parties. Instead, Eversource is directed to collect data from site hosts so that in the future it may design EV rates and demand response programs. Finally, the DPU did not approve Eversource's proposed electrification of bucket trucks, noting that these requests should be made through the capital additions process.	
MI	Consumers Energy	Charging Infrastructure (Level 2 & 3)	In March 2016, Consumers Energy filed a general rate case, including a proposed Plug-In Vehicle (PEV) Program. The program would consist of 60 DC fast charges being deployed at 30 locations, and 750 240 Volt AC charging stations being deployed. Stations would be deployed in publicly accessible locations, with a focus on higher-populated metropolitan areas, locations with limited or no charging access, and highly visible locations. Charging stations would be	Docket No. U-17990

			metered, with energy paid for by the station host business owner. The total proposed cost is $15 million, and Consumers Energy would incorporate the costs into its rate base. The ALJ recommended against cost recovery for the PEV program. Consumers Energy subsequently withdrew its proposal for the PEV program in January 2017.	
MN	Northern States Power Company d/b/a Xcel Energy	Charging Infrastructure (Level 2)	In November 2017, Xcel Energy proposed a new residential EV service pilot program. Participants would have two options for EVSE installation – to pay the cost upfront or pay an increased fixed monthly charge of $27.45 to pay for the Level 2 charging equipment. Customers are responsible for wiring expenses under both options. The new program would include the same on-peak and off-peak rates as the existing EV tariff. The proposed term of the pilot is 2 years. Customers paying the increased monthly fee can elect to have the EVSE removed at the end of the term, replaced or upgraded, or purchase the EVSE at the undepreciated balance. Customers paying for the EVSE upfront can take ownership of the equipment or have the equipment replaced or upgraded at the end of the term. The utility will own all EVSE for the duration of the pilot.	Docket No. 17-817
MO	Union Electric Co. d/b/a Ameren	Charging Infrastructure (Level 2 & 3)	In August 2016, Union Electric Company d/b/a Ameren Missouri filed a proposal for a pilot EV charging program. Through the program, Ameren would install and operate EV charging stations at six locations. Each location would have both direct current fast chargers and level 2 chargers installed. Customers using the charging stations would be charged a flat fee per 15 minute interval ($2.50 for fast chargers and $0.30 for level 2 chargers). Ameren estimated the total cost to be $570,000. In October 2016, the Public Service Commission rejected Ameren's proposal due to the 15-minute fee structure, and directed the utility to refile its proposal. Ameren refiled in October, changing the fee structure to $0.17 per minute for fast chargers and $0.20 per kWh for level 2 chargers. In June 2017, the Commission issued a final order, denying Ameren's proposal. The	Docket No. ET-2016-0246

			Commission determined that EV charging stations do not constitute an electric plant, and are not subject to Commission regulation. Ameren may own and operate charging stations only on an unregulated basis and may not recover costs from ratepayers.	
NH	N/A	Charging Infrastructure (Level 2)	H.B. 1776 would appropriate approximately $13,000 in state funds over three years for the installation and maintenance of EV charging stations at the state house campus or at a legislative parking lot. The EVSE would be available to the legislative members, state employees, and the public. The bill would allow legislative members to deduct the EV charging fees from their allocated mileage payment. The bill was pre-filed in December 2017 for consideration during 2018 session.	H.B. 1776 (I)
NJ	All IOUs	Charging Infrastructure (Level 3)	S.B. 2640 and A.B. 2398 direct public agencies (including the Department of Transportation, Department of Environmental Protection, New Jersey Turnpike Authority, and South Jersey Transportation Authority) to develop a pilot program and related guidelines for a level 3 EV charging pilot program. "Level 3 charging" is defined as "providing a 480 volt alternating current to plug-in electric vehicle." The pilot program would involve electric and gas public utilities and private fuel station providers; it would result in the development of level 3 charging infrastructure within 18 months of bill passage. A similar bill has been introduced for the 2018 legislative session.	A.B. 2398 (D) S.B. 2640 (D)
	N/A	Charging Infrastructure (Level 3)	Companion bills S.B. 874 and A.B. 404 direct the New Jersey Turnpike Authority and the South Jersey Transportation Authority to install EV charging stations at service areas along the state's toll roads. The bill specifies that charging stations are required to be installed in at least 5% of the parking spaces at service areas with at least 100 spaces. EV charging equipment must be available to the public, and the Turnpike Authorities are allowed to recover costs from drivers who use the stations.	A.B. 404 (D) S.B. 874 (D)

NV	NV Energy	Charging Infrastructure	S.B. 145, signed in May 2017, established the Electric Vehicle Infrastructure Demonstration Program. The bill requires utilities to submit annual plans to the Commission to promote or incentivize the deployment of EV infrastructure. The plans may include the payment of an incentive to a customer who installs EV infrastructure, new rates to be used by electric vehicle charging stations, and/or education. The Commission opened a new docket in August 2017 to implement the law, and has since received comments and held a series of workshops.	S.B. 145 (E) Docket No. 17-08021
OR	Pacificorp	Charging Infrastructure (Level 3)	S.B. 1547 of 2016 required Oregon's IOUs to each file with the Public Utility Commission applications for programs to accelerate the deployment of transportation electrification. Pacificorp filed its application in December 2016, which included a variety of activities. Pacificorp, Commission Staff, and various other parties filed a stipulation in August 2017, which included some of the activities from Pacificorp's original proposal, including a pilot public charging station program, outreach and education, and a demonstration and development pilot.	S.B. 1547 (2016) Docket No. UM 1810
	Portland General Electric	Charging Infrastructure (Level 3)	S.B. 1547 of 2016 required Oregon's IOUs to each file with the Public Utility Commission applications for programs to accelerate the deployment of transportation electrification. Portland General Electric (PGE) filed its application in December 2016, which included a variety of activities. PGE, Commission Staff, and various other parties filed a stipulation in June 2017, which included three of the activities from PGE's original proposal, including electric bus charging stations, dual head fast charging stations, and outreach and education. The Commission held a hearing on the case in October 2017.	S.B. 1547 (2016) Docket No. UM 1811
RI	Narragansett Electric Company d/b/a National Grid	Charging Infrastructure (Level 2 & 3)	In November 2017, Narragansett Electric Company d/b/a National Grid filed a general rate case, including plans to implement the state's Power Sector Transformation efforts. As a part of this proposal, National Grid requested approval of a charging station	Docket No. 4770

			demonstration program. Under National Grid's proposal, the utility would deploy level 2 charging infrastructure for public use at workplaces, apartment buildings, income-eligible community sites, and public transit stations, as well as DC fast charging at designated public fast-charging locations.	
VA	N/A	Charging Infrastructure (Level 3)	In October 2017, Governor McAuliffe announced $14 million (coming from a portion of the state's Volkswagen settlement) in funding to deploy an interconnected, statewide public EV charging network.	Press Release
WA	Avista Utilities	Charging Infrastructure (Level 2)	In December 2017, Avista proposed extending its EVSE pilot program until June 30, 2019. The pilot extension target is to install 120 level 2 chargers at single-family homes, 75 level 2 chargers at workplace and fleet locations, and 15 public level 2 chargers, for a total of 210 charging stations. Avista is also proposing to reduce the percentage of wiring costs it will reimburse customers for from 80% to 50% (the maximum reimbursement limits are unchanged). The company also proposes to fund up to $100,000 on EVs, EVSE, education, and outreach activities for low-income customers.	Docket No. UE-160082

Legislative Status Key: I = Introduced, P1 = Passed One Chamber, P2 = Passed Both Chambers, E = Enacted, D = Dead. Bill statuses are up to date as of early January 2018.

Q1 2018 OUTLOOK

STATES TO WATCH

Based on early legislative action, six states to watch in early 2018 are New Jersey, Florida, Hawaii, New Hampshire, New York, and Washington.

Legislators introduced several bills in **New Jersey** early in the 2018-2019 legislative session; by mid-January more than 20 bills had been introduced for consideration. In **Florida**, legislators introduced bills to establish a Smart City Challenge Grant Program within the state, with smart mobility being a significant part of the proposed program.

Bills introduced in **Hawaii** would require procurement of electric vehicles for the state fleet and authorize use of state public benefits funds for charging infrastructure. In **New Hampshire**, several bills would support electric vehicle infrastructure by providing uniform signage, establishing an electric vehicle infrastructure commission, and constructing electric vehicle supply equipment for use at the state legislative facilities.

The **New York** state legislature is considering several pieces of proposed legislation, including bills creating a sales tax exemption for plug-in hybrid electric vehicles, expanding tax credits for electric vehicles, and enforcing parking fines for unauthorized use of electric vehicle parking spaces. Legislation in **Washington** modifies tax benefits for electric vehicles and provides new guidelines for electric vehicle procurement by public agencies.

FIVE ISSUES TO WATCH IN Q1 2018

(1) **States continue to address the perceived and expected impacts of electric vehicles on state motor fuel tax revenue.** Due to the increasing efficiency of motor vehicles and adoption of electric and other alternative fuel vehicles, many states expect revenue from state motor fuel taxes to plateau or decline within the next few years. States continue to address this concern by establishing or adjusting fees for alternative fuel vehicles, including electric vehicles and hybrid vehicles. Already in 2018, legislators in Arizona, Kentucky, Hawaii, New Hampshire, and Vermont have proposed new fees or changes to existing fees. Despite these proposals to increase fees, it is notable that many of these states are also considering exempting electric vehicles from state sales taxes.

(2) **States are addressing barriers to installing electric vehicle supply equipment at multi-family residential locations.** Stakeholders in several states have identified barriers and challenges associated with charging electric vehicles at rental or multi-family residential units. Some states, such as California and New Jersey, are addressing these barriers by proposing regulations and guidelines for homeowners associations, developers, and apartment owners.

For example, proposed legislation in California would remove the exemption for rent-controlled property lessors to consider requests to install charging infrastructure. Additionally, legislators in Colorado have introduced a bill that would require builders of new residential properties to offer a “pre-wire” option, allowing homeowners to easily install electric vehicle charging units at a later time.

(3) **States are identifying specific sources of state funding to support the deployment of electric vehicles.** Legislation introduced in several states in early 2018 would include funding support for electric vehicles using Regional Greenhouse Gas Initiative (RGGI) auction proceeds, Volkswagen Settlement funds, state public benefits funds, and other state Department of Transportation funding. Although Volkswagen Settlement mitigation trust funds may be used for a variety of projects and will be awarded to state beneficiaries designated by the Governor, several state legislatures are requesting that funds be used for specific activities. The New Mexico legislature is considering directing funds for purchase of electric school buses, while the New Hampshire legislature is considering use of funds for development of zero-emission vehicle infrastructure. In New Jersey, proposed legislation would allow the use of proceeds from the RGGI to be used for electric vehicles and charging infrastructure, while legislation in Hawaii would allow the public benefits fee to be used to fund charging infrastructure investments.

(4) **States are broadening their visions for transportation electrification, creating opportunities for deployment of heavy-duty electric vehicles, such as school buses, transit buses, and tractor trailers.** As battery and vehicle technologies improve, the cost of medium- and heavy-duty electric vehicles will likely become more affordable for fleets and public agencies. In 2017, Tesla and Cummins both announced the development of electric engines for heavy-duty, Class 7 trucks.[3] In Hawaii, legislators introduced a bill requiring all buses operated by counties, as well as all state vehicles, to be electric vehicles by 2035. Additionally, the Washington state legislature is considering a bill that would examine options to incentivize the purchase of electric truck tractors by allowing buyers to apply for an exemption of up to $10,000 in state sales taxes.

(5) **States and utilities continue to consider electric vehicle deployment programs and charging tariffs as part of broader grid modernization efforts.** As an increasing number of states undertake investigations into grid modernization, many of these proceedings are addressing the role of electric vehicles in the future grid. Proceedings in several states, including Illinois, Maryland, and Ohio, will continue through Q1 2018 and beyond, while legislators and regulators in additional states are likely to initiate similar investigations during 2018. Hawaii’s investor-owned utilities are expected to file their Electrification of Transportation Strategies and Roadmaps in the early part of 2018.

ENDNOTES

[1] *U.S. Plug-In Vehicle Sales for 2017 Q4 and Full Year*, EV Volumes, http://www.ev-volumes.com/country/usa/

[2] David Reichmuth, *Why Are So Many Car Companies Making Big EV Announcements?*, Union of Concerned Scientists Blog, October 2017, https://blog.ucsusa.org/dave-reichmuth/why-are-so-many-car-companies-making-big-ev-announcements.

[3] Tesla Semi, https://www.tesla.com/semi; *Cummins Unveils Next Generation of Energy-Diverse Products and Technology Solutions*, August 2017, http://investor.cummins.com/phoenix.zhtml?c=112916&p=irol-newsArticle&ID=2297183.