State Strategies for Electric Vehicle Deployment: Outreach and Education Campaigns

Introduction

State Energy Offices are exploring the deployment of electric vehicle (EV) infrastructure to advance economic, environmental, and security goals. Essential to creating EV-ready communities are the identification of best practices and the education and involvement of key stakeholders such as utilities, local officials, auto dealers, employers, and homeowners associations. These stakeholders are the direct purchasers of electric vehicles, site owners for EV infrastructure, and facilitators of electric vehicle deployment. Based on the experiences of the Northeast Electric Vehicle Network planning project, the National Association of State Energy Officials has prepared this toolkit to support state and territory energy offices' efforts in deploying EVs and electric vehicle supply equipment (EVSE, the infrastructure and equipment that comprise EV charging stations). Sourced from reports by the New York State Energy Research and Development Authority (NYSERDA), the Transportation and Climate Initiative (TCI), and the U.S. Department of Energy's Clean Cities Coalitions in the Northeast and Mid-Atlantic regions, as well as phone interviews with subject matter experts, the toolkit explores the following:

- Unique perspectives of key stakeholders in the EV deployment process;
- Strategies for increasing "EV readiness" and EV deployment; and
- Lessons learned in conducting EV-readiness outreach.

Background on the Northeast Electric Vehicle Network Planning Project

In 2011, TCI, NYSERDA, and 16 of the Northeast region's Clean Cities Coalitions, received an Electric Vehicle Readiness Grant from the U.S. Department of Energy to prepare the region for EV deployment. The project resulted in partnerships with public and private stakeholders that led to establishing the Northeast Electric Vehicle Network and the development of best practices for deploying EV infrastructure.

Electric Vehicles: Facts and Figures

- Approximately 60,000 new EVs were sold between February 2012 and February 2013 - nearly three times the number of new EVs sold the prior year.
- In 2013, there are 15 models of light duty EVs available to consumers, up from only one model available in 2010.
- As of February 2013, there are nearly 16,000 EV charging stations installed across the country.
- Residential charging for consumers is available in about 40% of U.S. dwellings.
- On average, EVs have a driving range of approximately 75 miles, which is enough range to cover over 85% of U.S. daily driving distances.

Sources: Electric Drive Transportation Association, U.S. Department of Energy, and U.S. Energy Information Administration

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Stakeholder Engagement

State Energy Offices, in collaboration with other state agencies, can raise public awareness and engage stakeholders around EV deployment by implementing an education and outreach campaign and supporting local partners' stakeholder outreach. In addition to maintaining consistent messaging and information across state agencies, state energy offices should leverage the expertise and resources housed in other executive agencies to optimize the stakeholder engagement process.

Understanding stakeholder groups' concerns and real and perceived market barriers will help the energy office in addressing each group's unique perspective. Overall, this will aid in tailoring outreach to each stakeholder group in order to dispel myths, set expectations, and determine creative solutions. While most State Energy Offices are adept at stakeholder engagement, there are technical and economic concerns specific to EV deployment. States should anticipate and be prepared to respond to the questions below. Many answers to these questions can be found in the resources listed on the following pages of this document.

Multiple Stakeholder Groups

- What EV models are available in the region and what is the distance range for each model?
- What is the average upfront cost of an EV (truck and passenger vehicle)?
- What are the expected savings over the lifetime of the vehicle?
- What does it cost to install a charging station?
- Where are charging stations located and are they publicly accessible?
- What federal, state, local and utility incentives are available to support EV purchase and EVSE installation?
- Is public charging free? If not, how are users charged?

Homeowners/Multi-Family Developers

- Can EVs be leased?
- What brand and level of home chargers do EV customers tend to purchase?
- Is it possible to install charging stations in multifamily housing?
- What charging solutions exist for homeowners without garages?
- What is the permitting process (cost, processing time, etc.) for installing a residential charging station?

Fleet Managers

- Can an EV handle the distance that drivers must travel on their routes?
- Is the workforce trained to support operations and maintenance of an EV fleet?
- Is the company (for private fleets) or government (for public fleets) procurement process different for EVs?

Local Officials

- What agencies are responsible for permitting a charging station?
- What elements of building and fire safety codes address EVSE deployment?
- In what ways can zoning ordinances facilitate or inhibit EVSE deployment?
- Is specialized workforce training needed for code inspectors?
- What economic development benefits result from EV deployment?

Major Employers and Retailers

- What is the projected demand for EV charging given the region's growth scenarios?
- What signage and design principles should I follow to integrate EV charging into a parking lot or garage?
- Is public charging free for the user? If not, how are users charged?
- What restrictions are placed on public charging stations (length, time of day)?
- What access issues must be addressed for disabled EV-owners?

Utilities

- Will charging create local grid reliability concerns?
- How are EV purchases in my service territory being tracked?
- What infrastructure or meter upgrades are required when installing a charging station?
- How have other utilities – through rate design or other mechanisms – incentivized EVs?

Sharing Best Practices

Those conducting outreach and education should be able to offer stakeholders guidance through relevant lessons learned and best practices gleaned from existing initiatives to deploy EV/EVSE. The following findings were compiled by NYSERDA and TCI based on the experiences of stakeholders in the Northeast. State Energy Offices should consider compiling similar local best practice documents for their states.

Assessment of Current EVSE and EV Deployment

A state energy office and other policymakers with an interest in EV/EVSE deployment should understand the existing patterns of electric vehicle and infrastructure ownership and installation. TCI and NYSERDA conducted an in-depth assessment of the demographic, geographic, and policy landscapes behind EV/EVSE in the Northeast. The findings, listed below, will inform their policy and education efforts going forward and will help private investors in EV infrastructure understand where opportunities exist to serve EV drivers. The report also reviews the data collection and analysis methodology so that similar studies can be carried out around the country.

- Most EV ownership exists in large metropolitan areas outside of the urban core.
- Communities with high rates of EV ownership tend to be younger, wealthier and more educated than those without high incidents of EV ownership.
- EV ownership is positively correlated with greater access to EV dealerships and EVSE.

EVSE Cluster Analysis

Smart deployment of EVSE will ensure that public and private resources supporting transportation electrification are invested efficiently and effectively. This analysis looks at nine types of locations with attributes favorable for EVSE deployment and identifies the key traits that make these locations good EVSE sites. Case studies are included to demonstrate how sites in widely different communities can be successful EVSE locations. Lessons learned include:

- Publicly accessible EVSE costs remain high and outside funding is often necessary to spur installation.
- One of the biggest opportunities for EVSE locations is in the downtown areas of both cities and smaller towns.
- The multi-family housing sector represents a high-priority market in which EVSE is under-deployed.
- The primary financial driver behind many EV charging stations located in retail centers is a desire to attract new retail customers and improve brand reputation by being associated with sustainability initiatives.
- To use public subsidies efficiently, public investment in EVSE should be targeted to places of frequent use and high visibility to the public and those with the most acute air quality concerns.

Creating EV-Ready Towns and Cities: A Guide to Planning and Policy Tools

This report provides an analysis of the ways in which various local policies and regulations - zoning, parking, codes, permitting, and partnership and procurement - can be used to facilitate EV deployment. As every town or city is different, each recommendation should be considered within the local context. A few key findings include:

- To date, most expedited permitting efforts for EVSE have focused on single-family homes. Future initiatives should consider other installation scenarios.
- Creating more EV-friendly building codes should not increase development costs significantly.
- Explicitly allowing EVs and EVSEs as a permissible use in zoning regulations is a good first step for zoning revisions.

Additional guidance for best practices in EVSE siting and installation design and building and electrical codes can be found in *EV Siting and Design Guidelines* and *EV-Ready Codes for the Built Environment*, respectively. Using these guidance documents can help bring more consistency to both EVSE installations and the rules governing them, which can make EVSE easier to use and facilitate faster, lower cost installations. Consult local municipalities, EVSE installers, and EVSE site owners to learn about best practices on these issues in your state.

EV Outreach Strategies

A range of strategic activities can help raise awareness in support of electric vehicle and infrastructure deployment. From distributing technical materials to convening stakeholder coordination meetings, the following examples – one from a State Energy Office and the other from a Clean Cities Coalition – demonstrate the approaches available for achieving EV-readiness. In each case, the follow-up that each entity conducted following the stakeholder meetings was crucial to advancing the communities' EV-readiness plans.

Delaware

The Delaware Division of Energy and Climate (DE&C) – the State Energy Office that also serves as the Delaware Clean Cities Coalition – promotes EV deployment throughout the state. By working with the Delaware Clean State Program, the DE&C aims to identify barriers, develop siting and design guidelines, and provide public communications. As a result of screening "The Revenge of the Electric Car" with an audience of approximately 25 industry representatives, a number of the attendees are now engaged in the work of the Delaware Clean Cities Coalition.

In addition, the agency distributed copies of siting and design guidelines to 50 towns and cities and all of the counties in the state. After reviewing the information, several local officials and planning departments followed up with the DE&C to obtain information about future plans for EV/EVSE in Delaware and learn more about the Clean Cities program.

Key Contact:

Morgan Ellis
Climate Planner
DE&C
morgan.ellis@state.de.us

New York

Empire Clean Cities, formerly known as the New York City and Lower Hudson Valley Clean Communities, Inc., developed a targeted outreach campaign for truck and passenger vehicles based upon their knowledge of the regional economy and demographics. The following outlines components of their outreach strategy:

- Fleets: Manhattan Beer and Coca-Cola represent large food and beverage fleets with shorter average trip lengths. Daytime deliveries allow for overnight charging. Empire Clean Cities plans on inviting fleet managers and company representatives to learn about EVs.
- Major Retailer: Walmart, as a major retailer in the area, is a good candidate for electrification because their fleet makes small deliveries during the day and they have parking facilities to support EV charging for their customers at their stores. Empire Clean Cities plans on inviting company representatives and fleet managers to learn about EVs.
- Local Officials: The City of New Rochelle, Yonkers City Council, and the City of White Plains each has major commuter populations in the Lower Hudson Valley and have municipal fleets that could be converted to EVs. Empire Clean Cities held a lunch meeting to bring together elected officials from each of the three cities.

Of note, Empire Clean Cities worked with the Mayor of White Plains to bring together industry partners and city agency officials to discuss how to transform White Plains into a model EV deployment city. Through a series of meetings, the Mayor ultimately decided to create a pilot program for EVSE charging stations located at the city's Metro-North station – one of the busiest commuter rail stations in New York, second only to New York City's Grand Central Station. By establishing White Plains as an example for other cities in the state, Empire Clean Cities hopes that other public-private partnerships will evolve across the region.

Key Contact:

Christina Ficicchia
Executive Director
Empire Clean Cities
christina@empirecleancities.org

Common Themes and Lessons Learned

A number of common themes have emerged in the Northeast Electric Vehicle Network planning project that State Energy Offices can consider when designing and conducting EV readiness programs.

- **Collaborate across state and local governments:** Division of responsibilities and authorities differs among state and local governments across the country. Aligning policies and priorities across various jurisdictions within your state is critical and should be the first step in streamlining complex processes (e.g., permitting charging stations).
- **Talk to others:** Learning from other states and communities that have more experience with EVs can help identify opportunities and pitfalls and expedite the planning process.
- **Know your audience:** While standard presentations are beneficial, it is essential to cater to specific state and local needs and facts.
- **Maximize your outreach:** Working through stakeholders' existing channels of communication, such as presenting to local working groups or task forces designated to address energy or sustainability, reduces costs and leverages trusted networks; minimizing the effort that a stakeholder must put forth to obtain information is key.
- **Be visible:** Many consumer groups voiced a concern that EVs "won't catch on," but also believed that as charging station networks expand, this attitude will change. For this reason, demonstration projects should be highly visible.
- **Be creative:** Selling advertising space on charging infrastructure to brands that target the EV buyer market may generate revenue to support the operations and maintenance of the infrastructure. Generate innovative solutions to market barriers encountered during public education campaigns.
- **Provide incentives:** To make the case for EVs to consumers, monetary incentives, such as tax credits, are critical.
- **Target fleets:** Fleet managers respond to client demand. For this reason, government clients should be cognizant of their purchasing power to catalyze the deployment of EVs.

Budgeting EV Deployment Outreach

When looking at the budgets for the Clean Cities Coalitions in 2012, the costs of outreach activities varied from coalition to coalition, but on a quarterly basis, the average funding amount was approximately $7,500.

Additional Resources:

The following resources, from public and private sources, support national efforts to enhance the deployment of EV and EVSE.

Alternative Fuels Data Center, U.S. DOE - provides information, data, and tools on EV/EVSE deployment

Clean Cities, U.S. DOE - helps vehicle fleets and consumers reduce their petroleum use and builds partnerships with local and statewide organizations in the public and private sectors

Electric Vehicle Webinar, Ready Codes for the Built Environment, NASEO - includes presentations on the Northeast region's activities, supply equipment support, and stakeholder involvement

Strategic Deployment of Electric Vehicles (EV) and EV Infrastructure: A Cluster-based Analysis, NASEO - includes presentations on an EVSE support study and cluster analysis, as well as an overview of Maryland's EV and EV infrastructure developments

Electric Transportation, EPRI - conducts research and development on vehicle and infrastructure technologies that enable the use of electricity as a transportation fuel

FuelEconomy.gov - is the official U.S. government source for fuel economy information

Julia Friedman, Program Manager
jfriedman@naseo.org
Garth Otto, Project Manager
gotto@naseo.org

National Association of State Energy Officials
2107 Wilson Boulevard, Suite 850
Arlington, VA 22201
www.naseo.org