



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

ROBERT J. MARTINEAU, JR.
COMMISSIONER

BILL HASLAM
GOVERNOR

January 16, 2017

Via Email and Online Submission at www.ElectrifyAmerica.com

Wayne Killen
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RE: Electrify America's Solicitation for Proposals to Inform the First 30-Month National ZEV Investment Plan

Dear Mr. Killen:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide input on Volkswagen Group of America's (VW) \$2 billion planned investment over the next 10 years in Zero Emission Vehicle (ZEV) infrastructure and awareness in accordance with the Volkswagen Settlement Amended Partial Consent Decree (hereinafter referred to as the VW Settlement).¹

TDEC is the environmental agency in Tennessee with responsibility for implementing regulatory programs under the Clean Air Act and for developing and overseeing programs and initiatives to reduce environmental impacts and promote and support economic development through clean energy technology. TDEC strives to improve and maintain the quality of its air resources such that they are protective of human health and the welfare of Tennesseans while maximizing employment and enhancing economic development within the State. Balancing these factors is critical to the State's continued prosperity.

TDEC has been identified by Tennessee Governor Bill Haslam as the Lead Agency for purposes of administering the State's trust allocation under the VW Settlement's Environmental Mitigation Trust Fund. Once the trust is established, TDEC will follow the steps outlined in the Settlement to apply for beneficiary status on behalf of the State, and will provide opportunity for stakeholder input regarding use of the Trust funds.

The VW Settlement is comprised of three main components, summarized as follows:

- Vehicle Recall: VW is required to remove from commerce or perform an approved emissions modification on at least 85 percent of the affected 2.0 liter vehicles by June 2019.
- Zero Emission Vehicle (ZEV) Investment: VW is required to invest \$2 billion in ZEV charging infrastructure and the promotion of ZEVs.²

¹ <http://www.tennessee.gov/assets/entities/environment/attachments/oeplvwconsentdecree10.25.2016.pdf>

² \$800 million is to be invested in California and \$1.2 billion is to be invested throughout the rest of the U.S.

- Environmental Mitigation Trust Fund: VW is required to fund a \$2.7 billion mitigation trust fund for eligible projects undertaken by beneficiaries³ that reduce NO_x.

As part of the ZEV Investment component, VW is required to submit ZEV investment plans to EPA for approval, and provide government agencies and the public opportunities to provide input on these plans. In response to VW's solicitation for proposals to inform its planning process,⁴ TDEC offers the following in hopes that it can provide VW with basic knowledge regarding EV stakeholders, the current EV landscape, and priorities, recommendations, and goals for ZEV infrastructure and awareness investments in Tennessee:

I. TDEC as Central Point of Contact

Within the State of Tennessee, TDEC is a statewide convener of and facilitator for electric vehicle (EV), EV infrastructure, and sustainable transportation stakeholders. Tennessee benefits from robust multi-sector collaboration and information sharing in these areas. By convening the technical assistance, deployment, education and outreach capabilities of academia, research organizations, local governments, utilities, non-profits, and key industry stakeholders, TDEC is able to support the integration of individualized efforts into a cohesive, statewide vision.

TDEC intends to position Volkswagen Group of America (hereinafter referred to as Electrify America) to maximize the impact of its investments through well-coordinated decisions that are in keeping with the priorities of the State of Tennessee, its local governments, and other stakeholders. In the coming months, TDEC will engage in ongoing communication with Electrify America to provide updates to the information presented within this document, and to ensure that Electrify America has access to the most current and relevant details regarding the ZEV landscape in Tennessee.

Given that certain ZEV infrastructure expenditures are considered eligible projects under the VW Settlement Environmental Mitigation Trust Fund, there may be overlap in activities between what may be financed through Electrify America's ZEV Investment and what is supported through a beneficiary's Environmental Mitigation Trust Fund allocation. To prevent the duplication of efforts and to increase the potential for collaboration and leveraging of funds derived from both the VW Settlement's Environmental Mitigation Trust Fund and Electrify America's National ZEV Investment,⁵ TDEC proposes that it function as the primary point of contact for Electrify America's efforts in Tennessee. TDEC is well-positioned to assist Electrify America with coordination of its efforts locally and can ensure that Electrify America is engaging the appropriate contacts and stakeholders throughout the process.

II. Current State of EV Infrastructure and Related Background

There are currently more than 800 publicly accessible EV charging locations in the State of Tennessee. Most of these stations are comprised of lower power, Level-2 or Level-1 options. However, 53 locations offer a total of 94 DC Fast-Charging (DCFC) infrastructure units. Of these 53 locations, a majority are configured to support CHAdeMO chargers (only 11 locations offer SAE Combo Charging System (SAE CCS) options and five

³ All 50 states, Puerto Rico, the District of Columbia, and Indian tribes may elect to become beneficiaries.

⁴ <https://www.electrifyamerica.com/our-plan>.

⁵ Under the Environmental Mitigation Trust, each Beneficiary may use up to 15% of its allocation of trust funds on the costs necessary for, and directly connected to, the acquisition, installation, operation and maintenance of new light duty ZEV supply equipment.

locations offer the Tesla supercharger system). DCFC infrastructure is clustered mostly in or near major metro areas and along eastern portions of I-40.⁶

Although Tennessee is not yet to the point where it can claim a mature and dependable charging ecosystem, the following efforts and partnerships serve to highlight that the State has been an important test bed for advancing the deployment of EVs in the U.S and that it possesses a unique set of key actors across sectors that are ready to implement and collaborate on the next wave of infrastructure improvements:

- In 2009, the charging company ECotality was awarded a grant from the U.S. Department of Energy (DOE) to deploy approximately 14,000 Level-2 chargers and 400 DC Fast Chargers in 18 major cities and metropolitan areas under the EV Project. The State of Tennessee became a charter market for the EV Project, as the territory blanketed by the investment covered a larger geographical area than any other EV Project site. Knoxville, Chattanooga, Nashville, Memphis, and other smaller towns in east, west, and middle Tennessee all gained charging sites. At the time, the coverage of the 425-mile stretch of highway that connects Knoxville, Nashville, and Chattanooga was the nation's largest EV charging corridor to connect multiple major metropolitan areas.⁷
- The Tennessee Valley Authority (TVA), in partnership with Oak Ridge National Laboratory (ORNL) and the Electric Power Research Institute (EPRI), developed solar assisted charging stations – known as the Smart Modal Area Recharge Terminal (SMART) – to minimize demand on the grid and to integrate the use of renewable energy sources. The SMART station was deployed in conjunction with the EV Project, and a total of 125 of these charging stations were installed in Oak Ridge, Knoxville, Nashville, Chattanooga, and Memphis.
- In 2012, ORNL, TVA, EPRI, and TDEC partnered to advance EV charging infrastructure in the State by forming the Tennessee Electric Vehicle Advisory Council (TEVAC). TEVAC's goals are to stay abreast of EV developments, track the adoption of EVs in the State, and provide guidance where appropriate on decisions affecting EV adoption and EV charging infrastructure. The group has since expanded to include Nissan North America, the DOE Clean Cities' East Tennessee Clean Fuels Coalition (ETCF), the Nashville Electric Service, ChargePoint, Metro Nashville Government, and other local governments.
- In 2014, the Chattanooga Area Regional Transportation Authority (CARTA) entered into a funding and partnership agreement with TVA to expand EV charging infrastructure within Hamilton County. CARTA has substantially completed deployment of an extensive electric car charging network of 56 charging ports across 21 different sites. As part of this project, CARTA also installed 80 kW of renewable solar power generation to compensate for electric vehicle consumption at these stations. At this time, CARTA is providing public charging at no cost.
- The State of Tennessee committed \$2.5 million to support EV rebates for consumers. By incentivizing the purchase or lease of EVs, the State contributed to the increased adoption of these vehicles by Tennessee consumers. As of April 2016, all of the rebate funds were exhausted. To date, 4,720 passenger EVs have been registered in the State of Tennessee.⁸
- In addition to light-duty EV charging infrastructure, TVA, local power companies, and local businesses across Tennessee have also partnered on various zero-emission materials handling, goods movement, trucking, and mass transit transportation projects. Highlights include: airports across Tennessee installing

⁶ <http://www.plugshare.com/>.

⁷ <https://www.brookings.edu/blog/the-avenue/2013/06/12/building-an-electric-vehicle-highway-to-energy-security-tennessee-ev-project/>.

⁸ Polk Vehicle Registration Data, reflecting vehicle registrations through September 2016.

electric ground support equipment, refrigerated food distribution companies converting diesel powered truck refrigeration units to run on electricity, travel centers / truck stops across the State installing electric truck stop spaces, and businesses leveraging utility programs to purchase electric forklifts and electric mass transit options such as electric buses in major metropolitan areas.

III. Priorities, Recommendations, and Goals for ZEV Infrastructure and Awareness Investments in Tennessee

For the purposes of informing Electrify America's consideration of ZEV investments under the first 30-month investment plan, TDEC's Office of Energy Programs, the U.S. DOE-designated State Energy Office, convened the following stakeholders to provide input regarding priorities, recommendations, and goals for EVs and EV infrastructure in Tennessee:

- Drew Frye, *Technology Innovation Power Utilization Engineer*, Tennessee Valley Authority (TVA)
- Melissa Lapsa, *Deputy Director*, *Urban Dynamics Institute*, and Randy Overbey, *Consultant*, Oak Ridge National Laboratory (ORNL)
- Alan Jones, *Senior Research Analyst*, *Transportation Research Office*, Casey Langford, Ph.D., *Policy Office Supervisor*, Brianna Benson, *Planning Specialist*, *Policy Office*, and Thomas Doherty, *Senior Air Quality Planner*, *Policy Office*, Long Range Planning Division, Tennessee Department of Transportation (TDOT)
- Jonathan Overly, *Executive Director*, DOE's Clean Cities' East Tennessee Clean Fuels Coalition (ETCF)
- Erin Gill, *Director*, Office of Sustainability, City of Knoxville
- Erin Hafkenschiel, *Director of Transportation and Sustainability*, *Office of Mayor Megan Barry*, and Laurel Creech, *Assistant Director; Sustainability Division*, *Department of General Services*, Metropolitan Government of Nashville and Davidson County
- Andrew Orr, *Principal Planner*, *Department of Planning and Sustainability*, City of Franklin
- Jennifer Thompson, *Administrator*, Memphis-Shelby County Office of Sustainability
- Erik Schmidt, *Director of Sustainability*, *Office of Mayor Andy Berke*, City of Chattanooga
- James Ellis, *Director*, *Utility Solutions*, ChargePoint
- Brooxie Carlton, *Deputy Assistant Commissioner*, *Rural Development*, Tennessee Department of Economic and Community Development (TNECD)
- Lisa Maragnano, *Executive Director*, Chattanooga Area Regional Transportation Authority
- Leslie Graham, *Director*, *Grants and Partnerships*, Green Commuter

A. Investments in EV Charging Infrastructure

The Electrify America website states that within the first 30-month investment cycle, Electrify America will focus on investing in EV charging infrastructure to increase the availability of chargers nationwide. With regard to any infrastructure investments to be made in Tennessee, we recommend the following:

- For mutual benefit and to avoid duplication, infrastructure investments should be complementary to and coordinated alongside investments being made by State and local governments, automotive manufacturers, infrastructure providers, and the private sector.
- Electrify America should disburse ZEV investments through grants, vouchers, and/or rebates. This will support the rapid deployment of infrastructure, encourage competition amongst multiple vendors, and

allow for recipients of ZEV investments to exercise their choice as to which charging technologies or business models to deploy.

- Infrastructure should allow for open access and should accept multiple forms of payment.
- The infrastructure network should utilize a transparent and reasonable pricing method.
- Electrify America should engage with local power companies providing electricity to a certain area prior to purchasing or installing any charging infrastructure. TVA and TDEC are well-positioned to facilitate this engagement. This will ensure that any questions related to electrical service (e.g., existing infrastructure, metering and rate structure) can be dealt with on the front end and transparent to both installers and site hosts.

1. *Local Charging Infrastructure Within Key Metro Areas*

a. **Where to Invest:**

The Electrify America website states that initial investments will concentrate on the installation of chargers locally in approximately 15 metro areas, focusing on “areas that could benefit from increased charging infrastructure (e.g., densely populated).” Since 1991, Tennessee has grown in population by 35%. Tennessee’s major cities (i.e., Nashville, Memphis, Knoxville, Chattanooga, and Franklin) are all becoming more and more densely populated as the nationwide trend for mid-sized city growth continues.⁹ For example, based on U.S. Census data, the population within the 14-county Nashville metro statistical area grew by an average of 1.8% annually over the last five years, which is more than double the 0.8% national growth rate.¹⁰ Within the last few years, Nashville has also seen the strongest growth rate in net migration of college-educated people aged 25-34 of any metro area in the country.¹¹ However, in addition to considering metro areas that could benefit from increased infrastructure due to their dense populations, we recommend that Electrify America also consider the following factors when determining which metro areas to invest in:

- ***EV Readiness and EV-Friendly Local Government Policies:*** In a recent study conducted by the Indiana University School of Public and Environmental Affairs, both Memphis and Nashville were determined to fall within the top 36 EV-friendly cities within the U.S.¹² Whether it be through local government efforts and incentives to encourage EV ownership (e.g., EV drivers enjoy free parking in downtown Nashville) or through the offering of public EV infrastructure throughout a city, EV-friendly policies and local governments can help strengthen and maximize the impact of infrastructure investments within a given city.
- ***Smart Mobility Initiatives:*** Nashville and Chattanooga are two of 16 cities that will receive support from Sidewalk Labs, an offshoot of Google parent company Alphabet, and advocacy group Transportation for America, as part of the groups’ efforts to help shape the “smart cities” of the future.¹³ This initiative will focus on the build out and integration of automated

⁹ <http://www.newgeography.com/content/005333-the-us-cities-creating-the-most-white-collar-jobs-2016>;
<http://tntoday.utk.edu/2015/08/27/study-tennessee-track-steady-population-growth/>.

¹⁰ <http://www.tennessean.com/story/opinion/2016/05/01/how-many-people-really-moving-nashville-every-day/83100468/>.

¹¹ <http://www.newgeography.com/content/005333-the-us-cities-creating-the-most-white-collar-jobs-2016>.

¹² <https://chargedevs.com/newswire/which-us-cities-are-the-most-ev-friendly/>.

¹³ <http://t4america.org/2016/10/18/16-cities-join-t4americas-smart-cities-collaborative-to-tackle-urban-mobility-challenges-together/>.

vehicles, shared mobility, and ways to use data to manage complex networks and measure performance. By investing in local communities that are already preparing their transportation systems for the future, Electrify America can pave the way toward streamlined integration of EVs into smart mobility systems.

- ***Cities with Current and Active Plans to Upgrade their EV Infrastructure:*** Both Nashville and Knoxville are currently looking to invest in a wholesale upgrade of their city-owned EV infrastructure within the next year. Should Electrify America choose to invest in infrastructure in either of these two cities, funding could be leveraged and amplified to have more of an overall effect on the community-charging ecosystem.
- ***Areas Where Iconic Projects are Pushing the Electric Movement Forward:*** Stakeholders and partners across the State of Tennessee are already implementing iconic projects to push the envelope further with regard to EV adoption, deployment and advancement. In the City of Chattanooga, TVA, CARTA, and Green Commuter have partnered to pilot the first all-electric car-sharing program in a mid-sized U.S. city.¹⁴ Across the State of Tennessee, ORNL, Tennessee Technological University, and the University of Tennessee, Knoxville have partnered to create a visionary plan for a multimodal smart mobility park and automated vehicle proving grounds pilot (see **Attachment 1**). With regard to EVs, this initiative will identify and address the needs for dynamic and quasi-dynamic EV charging applications based on the innovative technology of wireless power transfer (WPT), leveraging ORNL's knowledge and experience in this field to help determine the most feasible locations for WPT siting on highways and in cities, on highway merging and exit ramps, and on city intersections and arterials. Through its nationwide investments in EV infrastructure, Electrify America has the opportunity to supplement and enhance existing efforts, such as this project, and in other areas that have already demonstrated an interest in advancing vehicle electrification.

b. Local Infrastructure Network Development:

A significant factor in the consumer adoption of EVs will be the ability to conduct day-to-day local driving while relying solely on electricity as fuel. Electrify America should keep EV driving behavior in mind when determining which infrastructure to install and where to install it. This will eliminate the placement of costly infrastructure at locations where the stations will be underutilized. With regard to Electrify America's investment into local EV infrastructure networks, we recommend the following:

- Given that a majority of EV charging occurs at home, Electrify America should prioritize the installation of infrastructure at or near multi-unit dwellings, where tenants currently do not have access to residential charging.¹⁵
- Studies show that employers with charging stations have employees who are 20 times more likely to buy an EV.¹⁶ Charging at work can also allow drivers to nearly double their vehicles' all-electric daily commute range.¹⁷ As such, Electrify America should also place an

¹⁴ <http://www.businesswire.com/news/home/20161007005739/en/Green-Commuter-Secures-750000-Grant-Electric-Car>.

¹⁵ <https://www.energy.gov/eere/everywhere/ev-everywhere-charging-home>.

¹⁶ <https://www.energy.gov/eere/articles/survey-says-workplace-charging-growing-popularity-and-impact>.

¹⁷ <https://www.energy.gov/eere/everywhere/ev-everywhere-workplace-charging>.

emphasis on installing EV infrastructure at workplace locations, and should partner with employers to build out workplace charging programs and incentives.

- Lastly, Electrify America should focus on installing publicly accessible infrastructure at locations where vehicles sit for longer periods of time, such as at hospitals, universities, commuter lots, municipal buildings, airports, and shopping malls. Based on EV charging behavior data analyzed by Idaho National Laboratory, these types of public charging locations are more likely to be utilized.¹⁸

To enable expanded access to EVs and EV infrastructure for a broad range of Tennesseans, we recommend the following:

- Electrify America should consider the development of community infrastructure hubs with electrical load centers large enough for multi-modal EV charging infrastructure as part of its metropolitan infrastructure investments. The cities of Nashville, Chattanooga, and Memphis all have electric buses in operation as part of their transit systems, and all of these systems are utilizing EV charging infrastructure. By developing community charging infrastructure hubs, Electrify America could build off of infrastructure where it already exists and could support utilization of infrastructure by both medium- and heavy-duty EVs as well as by light-duty EVs.
- Electrify America should also consider directing a significant amount of its investment toward areas that bear a disproportionate share of the air pollution burden within their jurisdictions. To determine such areas in Tennessee, we recommend that Electrify America consult with TDEC’s Office of Energy Programs, the State administrative lead for the VW Settlement, the Office of Policy and Planning, and the Division of Air Pollution Control.
- Electrify America should consider investing in areas where private capital for EV infrastructure may be less prevalent, such as in distressed areas¹⁹ or on the property of small businesses. To determine the best locations or applications for these investments, we recommend that Electrify America consult and collaborate with TDEC’s Office of Policy and Planning, the Tennessee Department of Economic and Community Development, and with civic leaders in each city that Electrify America chooses to invest in.

2. High-Speed Cross-Country EV Charging Network

The Electrify America website states that planned initial investments will also focus on the “development of a high-speed, cross-country network” of DCFC infrastructure along “highly trafficked cross-country highways.”

While the population of Tennessee has grown by 35% since 1991, the number of miles Tennesseans drive in a year is up 52% over that same 25-year period. This equates to an additional 71.1 billion

¹⁸ <https://avt.inl.gov/sites/default/files/pdf/arra/SummaryReport.pdf>.

¹⁹ Following the methodology of the Appalachian Regional Commission, “distressed areas” shall be defined as those census tracts in at-risk and transitional counties that have a median family income no greater than 67 percent of the U.S. average and a poverty rate 150 percent of the U.S. average or greater.

<https://www.arc.gov/research/sourceandmethodologydistressedareasfy2007fy2017.asp>.

miles a year traveled on Tennessee's roads.²⁰ These billions of miles traveled represent a huge opportunity for greater efficiency and cleaner methods of travel.

On November 3, 2016, the U.S. Department of Transportation's Federal Highway Administration (FHWA) announced the designation of 55 routes that will serve as the basis for a national network of "alternative fuel" corridors.²¹ The designation of these corridors fulfills a directive in the "Fixing America's Surface Transportation (FAST) Act" and will help drivers identify routes where they can refuel and recharge vehicles that run on various alternative fuels, including electricity. In Tennessee, the entire I-40 corridor has been designated as an alternative fuel corridor.²² Of note, the section of I-40 between Dandridge to Nashville was designated as a "sign-ready" EV charging corridor, due to the fact that charging infrastructure along this route is already in operation.²³

Through its solicitation for nominations and its designation of alternative fuel corridors, FHWA has already done a lot of the research and due diligence to determine which high-volume corridors are best suited to be built out as part of a national EV network. With regard to any cross-country network infrastructure investments, we therefore recommend that Electrify America assist with filling in the gaps on FHWA designated corridors that are not yet considered "signage-ready." In Tennessee, this would translate into an electrification of I-40 from end to end, focusing heavily on the western stretch between Nashville and Memphis. Although infrastructure is already in place along I-40 east of Nashville, there is also a need to update aging chargers along this section of the corridor.

In addition, we also recommend the following with regard to Electrify America's high-speed cross country infrastructure investments:

- DCFC infrastructure should be installed approximately every 50 miles along key interstate routes for both SAE CCS and CHAdeMO charging standards.
- Charging infrastructure should be installed at convenient and user-friendly sites, such as at shopping centers with food, restrooms, lighting, and security.
- Electrify America should consider partnering with major site hosts, such as retail chains with multiple locations along key interstate routes within the State, so that ownership, insurance and liability, payment for use, maintenance, siting, and data collection determinations may be streamlined or replicated across several locations.
- In coordination with site hosts and local power companies, Electrify America should engage in long range planning for each site to enable infrastructure expansion and the capability to accommodate higher voltage charging at a later date.

B. Investments to Increase EV Awareness and Foster Education

The Electrify America website states that within the first 30-month investment cycle, Electrify America will invest in "increasing awareness and fostering education about EVs, charging availability, and the benefits of

²⁰ <http://www.census.gov/quickfacts/table/PST045216/00>.

http://www.tripnet.org/docs/TN_Transportation_by_the_Numbers_TRIP_Report_Jan_2016.pdf.

²¹ http://www.fhwa.dot.gov/environment/alternative_fuel_corridors/.

²² The nomination to designate I-40 was submitted by TDOT. TDEC's Office of Energy Programs, ETCF, and many alternative fuel stakeholders assisted with the compilation of this nomination (see **Attachment 2**).

²³ <http://hepgis.fhwa.dot.gov/fhwagis/ViewMap.aspx?map=Highway+Information%7CElectric+Vehicle+%28EV%29#>.

electric mobility through various means such as ride and drives, multi-channel advertising, website, social media, and educational programs.”

With regard to these investments, we recommend the following:

- Electrify America should invest heavily in interstate, intercity, and parking level signage, both to guarantee infrastructure visibility and to familiarize non-EV drivers with the ubiquity of charging stations. Such signage would help to reduce consumer range anxiety and will help EV drivers find infrastructure that might be hard to locate. FHWA’s designation of EV corridors, particularly those that have been deemed “signage ready,” presents a ripe opportunity for Electrify America to increase awareness about the infrastructure that already exists, as well as any new infrastructure to be placed along those corridors, through billboards or wayfinding signage (signage along public highways, streets, and private roads open to the public, which helps EV drivers navigate to charging stations). With regard to the latter, we recommend that Electrify America coordinate with state and local transportation departments to create signs that conform to FHWA’s minimum standards for signage,²⁴ as well as to determine the best locations for placement of such signage. TDEC is prepared to assist with this coordination in Tennessee.
- Electrify America should conduct experiential, brand-neutral demonstrations of EVs and EV infrastructure at major events or destinations in Tennessee, where visibility is guaranteed to be high. Such locations or events could include:
 - **Great Smoky Mountains National Park:** This Park is the most visited National Park in the U.S., drawing more than 10 million visitors annually.²⁵ In 2016, the Park installed two public DCFC stations and two Level-2 charging stations at its two visitors’ centers.
 - **Tennessee State Parks:** Tennessee’s 56 state parks encompass nearly 200,000 acres.²⁶ Most Tennesseans live within an hour of at least one state park, making the parks an accessible option for Tennesseans to enjoy the outdoors and participate in a variety of recreational activities. In 2016, Tennessee State Parks had a total of 34 million visitors.
 - **Popular Tennessee Tourist Attractions:** Tennessee falls within the top 10 U.S. states for tourism; in 2016, the State announced a record-setting milestone of more than 105.3 million person stays over the course of 2015, which was a 3.9% increase in visitation from the year before.²⁷ Within the South, Tennessee is centrally located, often acting as a pass-through for travelers headed to other major business or tourist hubs, such as Atlanta, Charlotte, Louisville, Asheville, Savannah, Charleston, and the beaches of the Gulf Coast. A few of the top Tennessee tourist attractions include:
 - **Dollywood:** Tennessee’s most popular ticketed attraction, this theme park near the Great Smoky Mountains, named after country singer Dolly Parton, attracts more than three million visitors per year.²⁸
 - **Graceland:** The former home of Elvis Presley in Memphis draws hundreds of thousands of fans each year.²⁹

²⁴ http://www.afdc.energy.gov/fuels/electricity_charging_station_signage.html.

²⁵ <http://www.nationalgeographic.com/travel/national-parks/most-visited-parks-photos/>.

²⁶ <http://tnstateparks.com/>.

²⁷ https://www.tnvacation.com/industry/sites/default/files/TDTD_2016_AnnualReport.pdf.

²⁸ <http://www.dollywood.com/>.

²⁹ <https://www.graceland.com/>.

- **Rock City:** Visitors can see 7 states from Rock City’s vista on Lookout Mountain, just minutes from Chattanooga. Nearly 500,000 visitors from all over the world visit this natural attraction each year.³⁰
- **The Grand Ole Opry:** Nashville’s Grand Ole Opry is the longest-running radio broadcast in U.S. history, extending back to 1925. Dedicated to honoring country music and its history, the weekly show features a mix of famous singers and contemporary chart-toppers. It attracts hundreds of thousands of visitors from around the world and millions of radio and Internet listeners.³¹
- **Country Music Association (CMA) Music Festival:** This festival is the largest country music event in the world. The annual, four-day event takes place in June at or near the Music City Convention Center and Nissan Stadium in downtown Nashville, featuring more than 70 hours of live music by over 400 country music artists and celebrities.³²
- **Riverbend Music Festival:** For 35 years, the Riverbend Music Festival in Chattanooga has been one of the region’s largest multi-day music events.³³ The festival spans eight days and features multiple stages, acts, and vendors all along the Tennessee riverfront in downtown Chattanooga. The event attracts over 90,000 people per day, with roughly 650,000 attendees over the course of the festival.
- **Sporting Events:** The NFL’s Tennessee Titans and the NHL’s Predators call Nashville home, and the NBA’s Grizzlies are based in Memphis. In college sports, the University of Tennessee’s Volunteers and Vanderbilt’s Commodores compete in the SEC’s Eastern Division. Each of these teams has a very loyal fan-base, and the UT Volunteers typically attract in excess of 100,000 fans at home football games in Knoxville.³⁴
- **Sustainable Transportation Awards and Forum:** The annual Tennessee Sustainable Transportation Awards and Forum recognizes outstanding sustainable transportation efforts and initiatives within the State. This event is co-hosted by TDEC, TDOT, and ETCF.³⁵ The event, which occurs in May, the National Clean Air Month, features a showcase of alternative fueled vehicles, and could provide a platform for Electrify America to conduct an experiential EV demonstration or ride and drive. The event typically attracts State and local transportation planners, non-profit representatives, fleet managers, representatives from private industry and academia, as well as interested citizens.
- **Environmental Conferences:** The Environmental Show of the South, which occurs in May, is the largest and most comprehensive environmental conference and tradeshow in the region, attracting roughly 1200 people. The event is organized and hosted by TDEC’s Division of Solid Waste Management.³⁶ The Tennessee Environmental Conference, which occurs in March, focuses on bridging the gaps between health, economic development, environment, and industry.³⁷ The event is typically attended by over 500 State, local, and federal government officials, business and

³⁰ <http://www.seerockcity.com/>.

³¹ <http://www.opry.com/>.

³² <http://www.cmaworld.com/cma-music-festival/>.

³³ <http://riverbendfestival.com/>.

³⁴ <http://www.utsports.com/facilities/neyland/>

³⁵ <http://www.tennessee.gov/environment/article/energy-sustainable-transportation-awards-forum>.

³⁶ <http://www.tennessee.gov/environment/topic/sw-environmental-show-of-the-south>.

³⁷ <http://www.tnenvironment.com/>.

industry leaders, consultants, engineers, developers, land owners, architects, and energy experts. The Tennessee Environmental Conference is planned by a committee of representatives from TDEC, academia, industry, and community organizations.

- Auto dealerships are a fundamental driving force behind EV deployment, acting as the middle man between manufacturers and consumers. To improve the EV shopping experience and to drive overall EV sales, Electrify America should develop brand-neutral dealership education programming. This programming could share best practices and recommendations on effective EV sales strategies, with an aim to improve dealership knowledge of local consumer incentives, rebates and tax credits, EV charging infrastructure installation, utility rates, and EV charging technology. To incentivize dealership participation, Electrify America could develop a recognition program to showcase successful dealership participants.
- As noted above, Electrify America should coordinate with TDEC in order to synchronize its efforts in Tennessee. By leveraging TDEC and its network of stakeholders, Electrify America will expand the reach of its ZEV awareness and education programs and will ensure that the appropriate stakeholders remain engaged.

In closing, TDEC and the abovementioned stakeholders appreciate the opportunity to provide comments on Electrify America's \$2 billion planned investment over the next 10 years in ZEV infrastructure and awareness. Should you have any questions regarding these comments, please contact me directly. You may also direct any follow-up communications or questions to Molly Cripps, Director of the TDEC Office of Energy Programs, at Molly.Cripps@tn.gov or 615-253-1945. We thank you for your time and consideration and look forward to working with you in the coming months ahead.

Sincerely,



Robert J. Martineau, Jr.

Commissioner

Tennessee Department of Environment and Conservation

cc: Kendra Abkowitz, PhD, *Director of Office of Policy and Planning*, TDEC
Molly Cripps, *Director of Office of Energy Programs*, TDEC
Jenny Howard, *General Counsel*, TDEC
Shari Meghreblian, PhD, *Deputy Commissioner of Bureau of Environment*, TDEC
Michelle Walker Owenby, *Director of Division of Air Pollution Control*, TDEC
Lauran Sturm, *Assistant General Counsel*, TDEC