



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

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Via Email and Online Submission at www.ElectrifyAmerica.com

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RE: Electrify America Cycle 3 Investment National Call for Submissions

The TN Department of Environment and Conservation's Office of Energy Programs (TDEC OEP) appreciates the opportunity to provide input on Electrify America's \$2 billion planned investment over a 10-year period in Zero Emission Vehicle (ZEV) infrastructure and awareness. In response to Electrify America's request for comment, proposals, or recommendations with regard to the third 30-Month National ZEV Investment Cycle, TDEC provides the following updates to its Cycle 2 submission dated March 1, 2018:

1. Unique opportunities to work with your organization in deploying impactful and financially sustainable ZEV investments

Drive Electric TN (DET): Throughout 2018, a core team of stakeholders—including State agencies (TDEC OEP and the TN Department of Transportation (TDOT)), electric utilities, local governments, universities, businesses, and advocacy groups—worked together to develop a shared vision for electric transportation in TN, which includes goals and guiding principles to increase TN's electric vehicle (EV) population to 200,000 by 2028 (there are 9,271 actively registered EVs as of June 2020). Together, these stakeholders comprise the DET consortium and have worked together to complete the following projects:

- [EV Roadmap](#) – Identifies 48 projects to increase EV adoption across multiple TN use cases and sectors; categorizes projects by “Opportunity Area,” including Charging Infrastructure Availability, Public Awareness, Innovative and Supportive Programs and Policies, and EV Availability, Offerings, and Innovation.
- [EV Charging Infrastructure Needs Assessment](#) – Highlights the condition of TN's publicly available EV charging infrastructure and identifies charging needs and potential geographic locations to support 200,000 EVs in TN by 2028.
- [EV Ride and Drives](#) – DET educates TN consumers about EV ownership benefits, purchase options, and other adoption considerations through vehicle demonstrations and ride and drives (TDEC OEP and TN Clean Fuels have hosted several ride and drive events for workplaces in Nashville, Murfreesboro, Memphis, Knoxville, and Chattanooga).
- [EV Owners Clubs](#) – DET members provide forums for EV owners and enthusiasts to support EV education events and opportunities (TDEC OEP launched and maintains an owners club for Middle TN, known as [Drive Electric Nashville](#)).
- [DET Website](#) – Provides resources, event information, pathways for engagement, and news related to DET projects and transportation electrification in TN.
- [Opportunity Area Committees](#) – In early 2020, three Opportunity Area committees were formed to begin work on the development and completion of projects identified within the Roadmap (e.g., development of dealership education programs, guidance on charging station signage, a local government policy guide, etc.). These committees are now meeting regularly and are being led by members of the TN Valley Authority (TVA), the TN Valley Public Power Association (TVPPA), TDEC OEP, the Metropolitan Government of Nashville and Davidson County, and TN Clean Fuels.

There is an opportunity for Electrify America to become a sponsor of DET in order to support DET administration and/or digital media and marketing as an avenue for brand-neutral education and awareness investments. Additionally, Electrify America could choose to sponsor and support the completion of specific projects identified within the DET Roadmap (e.g., development of a dealership education/certification program, creation of an EV tourism and destination charging initiative, etc.), should particular projects be of interest.

With regard to infrastructure installation, local power companies in TN (e.g., Electric Power Board of Chattanooga (EPB)) have expressed an interest in collaborating with Electrify America to establish a model for DC fast charging installations supported by batteries (and potentially solar) to provide grid services to distribution utilities and to share value for these services via distributed energy resource asset optimization.

2. Specific actions being taken to support EV adoption by taxi and ride-hail vehicles

TVA and Lyft are working to launch a 50+ EV ride-hailing pilot in the greater Nashville area, which will be backed by targeted experiential marketing campaigns to increase consumer education and awareness of EVs. Through this pilot, an estimated 100,000 individuals will be engaged per year. An estimated \$5-15K is needed to secure each vehicle in the pilot; Lyft has also noted that additional funding could support expansion of the pilot to other metropolitan areas within TN, such as Memphis, Knoxville, or Chattanooga. As Lyft looks to various markets

throughout the U.S., there is an opportunity for Electrify America to support and improve the viability of this project by sponsoring vehicles for the pilot or by expanding charging infrastructure availability within the Nashville area.

In addition to the abovementioned pilot, an all-electric ride-hailing company, Earth Rides, has recently launched in Nashville. Earth Rides utilizes a company-owned, employee-driven fleet of EVs, which currently services the greater downtown Nashville area. The Earth Rides fleet is expected to grow to 40 EVs by the end of 2021; the company aims to reduce emissions by capturing 15% of all ride-hailing services in Nashville by 2022 (6,000 individual rides a day).

3. Anonymized usage data from existing charging stations (raw data is available and can be provided upon request)

- [Average charger utilization per year \(kWh / plug\) across four TN State Park locations](#)
- [Utilization of 32 publicly available chargers owned by the Chattanooga Area Regional Transportation Authority \(ARTA\)](#)
- [Utilization of nine publicly available chargers in TN owned by TVPPA](#)
- [Utilization of publicly available chargers \(19 locations\) owned by the Metropolitan Government of Nashville and Davidson County](#)

4. Current/expected ZEV infrastructure plans or strategies for your community

The abovementioned EV Charging Infrastructure Needs Assessment concluded that additional EV charging infrastructure was needed on highway corridors to relieve range anxiety and to connect rural and urban areas; highway corridor charging was identified as the best candidate for public investment, whereas other EV charging use cases (e.g., community charging, workplace charging, residential or multi-unit dwelling charging) were identified as good candidates for private or public-private investment based on market attractiveness and anticipated utilization.

TDEC OEP has identified key primary (interstates) and secondary corridors (select U.S. and State highways) for EV charging infrastructure development. [EV Charging Infrastructure Opportunity Maps](#) highlight these corridors, as well as existing direct current fast chargers (DCFC), the location of State Parks, and Distressed and At-risk Counties.

Several State agencies, TVA, and other DET stakeholders are evaluating funding opportunities and ownership models to support implementation of a statewide, public EV charging network:

- The State has allocated the maximum allowable percentage (15%) of its Volkswagen Diesel Settlement Environmental Mitigation Trust allocation (\$6,177,588.45 in initial eligible project funds), which is administered by TDEC OEP, to fund light duty EV charging infrastructure (these funds are limited to three use cases – public, workplace, and multi-family housing).
- TDEC OEP is currently in discussions with TDOT to evaluate the feasibility of leveraging Highway Infrastructure Partnership (HIP) funding to support EV charging infrastructure along corridor-ready or corridor-pending alternative fuel corridors designated pursuant to 23 U.S.C. 151. As of August 2020, I-40, I-65, I-24, I-75, I-81, and I-26 in TN are all designated by the Federal Highway Administration (FHWA) as alternative fuel corridors for electricity.
- TVA has also expressed an interest in partnering to support EV infrastructure development within their service territory, and is working with TDEC to ensure that any TVA funding to be allocated in TN will be managed in coordination with TDEC's funding, so that both funding sources can be leveraged to optimize effectiveness and eliminate redundancy.

5. Specific EV charging infrastructure site locations / recommendations

High-value rural sites, such as the large gap area between Nashville and Jackson, pose opportunities to connect urban markets with other areas within the state. Additionally, expansion of L2 community chargers within the Chattanooga area could support “hometown” local adoption of the Volkswagen ID. Crozz following its release.

6. Information regarding ZEV policies and related efforts

Local Governments:

- On June 5, 2019, the Metropolitan Government of Nashville and Davidson County enacted [BL2019-1598](#) to establish a fleet transition schedule so that all motor vehicles owned by the metropolitan government will be ZEVs by the year 2050. More immediately, 25% of the vehicles in the metropolitan government fleet shall be low-or-zero-emission vehicles by 2025.
- The City of Knoxville has established a goal of [reducing City operations emissions 50% by 2030 and community emissions 80% by 2050 \(relative to 2005\)](#). The City has convened more than 40 local leaders and technical experts to participate in the Mayor's Climate Council. On July 29 and Aug 11, 2020, the Council [met to discuss transportation-related strategies](#) to reduce community greenhouse gas emissions. The Council will review, prioritize, and further define mitigation strategies with a target completion of January 2021. The findings of the Council will inform and guide the City of Knoxville's Sustainability Work Plan and chart the path to achieving the City's 2050 community goal.
- The City of Memphis and Shelby County has established the following EV-related goals in its [Climate Action Plan](#):
 - Convert the city's transit fleet to electric transit buses by 2050;
 - Increase passenger vehicle traffic using EVs to 5% by 2025, 30% by 2035, and 50% by 2050;
 - Increase freight travel using EVs to 3% by 2025, 20% by 2035, and 50% by 2050; and
 - Reduce emissions from local government fleet vehicles 15% by 2020, 45% by 2035, and 80% by 2050.

In July 2020, Shelby County was [selected to receive a \\$500,000 award from U.S. DOE](#) to electrify key fleet vehicles in order to capture cost savings and to advance its climate and innovation goals.

- All four of TN's major urban areas (Nashville, Memphis, Knoxville, and Chattanooga) have deployed or are in the process of deploying all-electric transit buses.

Utilities:

- In August 2019, the Knoxville Utilities Board (KUB) launched a [\\$400 rebate program](#) for residential electric customers that have installed a Level 2 charger at their home.
- TVA has begun internal reviews of various utility-related policies tied to EVs. This includes rate design options for public charging as well as regulatory rules for utility ownership of EV charging and kWh sales through charging stations.
- Seven States Power has partnered with multiple local power companies to develop and install publicly accessible EV charging stations throughout the Valley, including in [Cookeville](#), [Baileyton](#), [Greeneville](#), and [Sevierville](#).

State:

- TDEC incorporated the development of a statewide, public EV charging network into its 2020-2024 Strategic Plan. As detailed in the infrastructure section above, this network is expected to cover primary (interstates) and secondary corridors (select U.S. and State highway routes) and will connect rural and urban areas. TDEC will seek to supplement existing public electric vehicle charging infrastructure to achieve what we are calling "Fast 50" designation on these corridors, such that non-proprietary fast charging sites (with minimum power levels of 50 kilowatts or higher) will be located no more than 50 miles apart along a given corridor or route.
- The I-40 Alternative Fuel Corridor Deployment Planning project, which is funded by FHWA and is being led by TDOT, supports EV corridor planning efforts along I-40 through North Carolina, TN, and Arkansas. TDEC OEP, TVA, and TN Clean Fuels supported TDOT and the other state Departments of Transportation (DOTs) to complete the first phase of the project, which was focused on the collection of stakeholder feedback and identification of corridor gap-filling opportunities.
- The TN Department of General Services' Division of Vehicle and Asset Management, which oversees procurement of State-owned vehicles, is currently working on a statewide vehicle implementation plan for the State fleet. This plan is expected to be finalized and submitted to the Governor in calendar year 2020.

Other:

- TN Tech University (TTU) is leading a U.S. Department of Energy (DOE)-funded project to [develop a rural EV testbed](#) in order to demonstrate and evaluate EV applications over a diverse range of activities with the rural and largely economically distressed Upper Cumberland region of TN.
- TTU was also recently awarded funding through a U.S. DOE project that will develop a medium-duty electric truck demonstration testbed in both Texas and TN to evaluate and improve the operational performance of Class 4-6 e-Trucks in various applications.

7. Education and access suggestions

Following the completion of a series of consumer research initiatives as well as an iterative design-thinking process, TVA has recently embarked on an EV consumer education path to drive EV adoption across its seven-state region for the 10 million people it serves. TVA's comprehensive suite of EV Consumer Awareness efforts provide an avenue for Electrify America to sponsor brand-neutral education and access activities in three broad categories:

- **Awareness:** consumer marketing, digital engagement (e.g., online video series), and experiential events (e.g., enhanced virtual and in-person educational opportunities)
- **Access:** efforts focused on removing barriers with dealerships to improving charging infrastructure availability
- **Amplification:** leveraging current EV communities and the existing energy that EV owners have as evangelists of the movement through an EV ambassador program

TDEC OEP and the abovementioned stakeholders appreciate the opportunity to provide comments on Electrify America's \$2 billion planned investment in ZEV infrastructure and awareness. Should you have any questions regarding these comments, please do not hesitate to contact us. We thank you for your time and consideration and look forward to working with you in the months ahead.

Sincerely,



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CC: EPB, CARTA, City of Knoxville, Earth Rides, KUB, Memphis and Shelby County, Metropolitan Government of Nashville and Davidson County, TDOT, TN Clean Fuels, TN Department of General Services, TTU, TVA, TVPPA