



Michigan's Response to Electrify America's Zero Emission Vehicle (ZEV) Investment Plan

Prepared and Submitted by:
State of Michigan and Partners

Submitted by:
Valerie M. Brader, Executive Director
Michigan Agency for Energy
7109 West Saginaw Highway
Lansing, MI 48909

Primary Contact:
Robert Jackson
517.284.8333
JacksonR20@michigan.gov

ELECTRIFY MICHIGAN

Michigan – Where Big Ideas in Mobility Are Born

Michigan is the heart of automotive innovation and has been since the iconic Model T. The state is home to more automotive patents than any other state, leading in the forefront of areas like navigation and smart mobility.¹ Detroit is home to the Midwest Regional Office of the U.S. Patent and Trademark Office; it hosts the iconic North American International Auto Show, and it is known internationally as “Motown.” Michigan is committed to the future of mobility and nowhere is better at taking automotive technology from concept to consumer. It is fertile ground for investment in new mobility coupled with electrification. Investment in Michigan’s electric vehicle charging infrastructure will position Volkswagen to be at the heart of an iconic city’s leadership of a new era of human mobility and transport.

Michigan has the technological talent and infrastructure investment required to support strong automotive innovation, having the largest concentration of engineers in the nation.¹ As of 2014, Michigan had nearly 60,000 engineers, most of them associated with the automotive industry.² Michigan is also dedicated to the education of new automotive talent through programs such as the K-12 program Square One and its community colleges. Its world class universities include the University of Michigan, Michigan State University, and Wayne State University.¹ Not only is Michigan home to the largest number of auto engineers in the country, it is also home to 375 automotive R&D centers, 61 of the top 100 auto supplier headquarters, and 25% of all U.S assembly plants.³ In addition to being the home of the North American International Auto Show, the traditional platform for U.S. automotive leaders to debut their newest and greatest products to consumers, Detroit is also the home of the award ceremonies for American Truck and Car of the Year awards.

Michigan is dedicated to becoming a hub for mobility innovations. Michigan is home to two permanent autonomous vehicle testing sites. Mcity, opened in 2015, is a 32 acre site simulating urban and suburban environments. The American Center for Mobility will become a national advanced automotive testing and product development center on a 335 acre site at Willow Run. At this historical site, where World War II B-24 bombers were made by the likes

¹ <http://www.michigan.gov/snyder/0,4668,7-277-57577-385864--,00.html>

² <http://www.dbusiness.com/daily-news/Annual-2014/Study-Michigan-Tops-US-with-Number-of-Engineers-Per-Capita/>

³ <http://www.autonews.com/article/20160603/BLOG06/160609936/planet-m-aims-to-shift-michigans-orbit-from-manufacturing-to-mobility>

of Rosie the Riveter in a factory built by Henry Ford,⁴ all manufacturers will be welcome to test their automotive technologies, especially electric vehicles, in an all-weather environment. Michigan's cold weather poses unique challenges, making its vehicle testing sites ideal locations to validate vehicle technologies such as electric vehicles.¹

Michigan also recognizes its large network of roads as an opportunity and has moved towards electrification and support of new mobility technologies. With over 122,000 miles of roads, the state has the ninth largest road network in the nation. Of those miles, 36,500 miles are federally recognized as the most highly used portion of the system, carrying 96 percent of commercial traffic and 89 percent of all traffic in Michigan. This system of highways and roads is optimal for a network of fast-charge electric vehicle supply equipment originating in Michigan and extending south to Florida, west to California, and along some of the busiest international trade routes. Michigan's commitment to mobility technology shows in its infrastructure investment. It ranks 8th nationally for the number of public and private electric stations/charging outlets and 7th in the number of electric vehicle registrations (currently just under 10,000).⁵ Michigan also has the most freeway and surface street Vehicle-to-Infrastructure (V2I) technology in the country. This technology enabled "smart corridor" currently has 120 miles spanning I-96, I-696, I-94, and US-23 with additional deployments on I-69 and I-75 planned.¹

A strong electric vehicle presence in the future mobility market supports Michigan's vision. The state is dedicated to being where "big ideas in mobility are born." Southeast Michigan, as one of the continent's major logistics hubs and home of the nation's busiest border crossing, is particularly impacted by diesel emissions, making it an ideal place to focus attention to remedy their deleterious effects. Efforts to strengthen the electric vehicle market are consistent not only with Michigan's goal to make the state a mobility hub, but also with its energy goals for affordable, reliable, adaptable, and environmentally protective energy, including reductions in nitrogen oxides emissions and particulate matter.

Accepting this proposal will mean stepping into a pre-formed partnership with key stakeholders in state and local governments, Michigan's largest utilities, non-profits, and public-private partnerships to advance both the goals of the settlement and Volkswagen's business interests. Michigan, in partnership with DTE Energy (DTE), Consumers Energy, NextEnergy

⁴ <http://www.annarborusa.org/americancenterformobility>

⁵ U.S. Department of Energy – Energy Efficiency and Renewable Energy Alternative Fuels Data Center's data

Center, City of Detroit, City of Ann Arbor, Regional Transit Agencies, metropolitan cities, and other strategic stakeholders, propose an integrated vision for electrifying Michigan. The seven identified projects (P1-P7) below fit the investment criteria. Though each project can be discrete, they are complementary pieces of a larger unified vision. The partnership and cooperation represented in this proposal is essential and necessary for the successful investment, deployment, electrification, and transaction communication infrastructure needed for implementing charging stations and new mobility technology. We propose an integrated vision for electric vehicle infrastructure and support in Michigan focusing on the following:

- Supporting electric autonomous vehicle success in real-world settings,
- Developing a high speed, cross-Michigan network of charging stations on major transportation arteries with connections to air transport,
- Developing electric vehicle charging infrastructure in highly visible and high demand locations,
- Providing electric vehicle outreach and education to:
 - consumers,
 - businesses, industry, and policy makers,
- Implementing a clean fuel mass transit bus system for the Detroit metropolitan area, and
- Creating a smart park and ride hub for electrified transportation in metropolitan Detroit.

P1. Supporting Electric Autonomous Vehicle Success in Real-World Settings

VW's investment in Gett demonstrates its commitment to providing integrated mobility solutions for the future. Michigan has the same commitment to mobility innovation and supports it through its regulatory environment. In 2016, Michigan amended Public Act 231 and 251 of 2013 to allow automakers to test automated motor vehicles and protect original manufacturers from civil liability for damages caused by modified automated vehicles. This legislation responds to industry needs and sets the foundation for Michigan to lead in autonomous vehicle research.

Electric vehicles are the most suitable candidates for autonomous vehicles. As autonomous vehicles provide mobility solutions, range limitations are of little to no concern especially in urban environments, where such technology will likely be first deployed. The shorter urban trips are well within the range of current electric vehicles,⁶ making electric vehicles ideal candidates for autonomous vehicles. Due to the affinity between electric and autonomous vehicles, we propose adding electric vehicle charging stations at the American Center for Mobility (ACM) to test likely scenarios for electric autonomous vehicles in a real-world environment. Such testing will be essential for successful implementation of electric autonomous vehicles.

The ACM, located on 335 acres at the former Willow Run, is a non-profit testing and product development facility for future mobility solutions. Designed to focus on testing, verification, and certification of connected and autonomous vehicles, ACM will also help accelerate the development of voluntary standards. The site offers access to real world test environments, including a 2.5-mile highway loop and roadway simulating busy urban areas and interactions with rail and flight.

The ACM welcomes all automakers to test new mobility technologies at its iconic historical site and to transform the future of human mobility while remaining strongly grounded in automobile and national history. The site will also support testing vehicle communications across manufacturers, ensuring vehicles across the spectrum can communicate effectively and safely.

With room for expansion, the ACM can readily adapt to meet new and emerging technologies, allowing it to be a continually relevant and essential proving ground for mobility

⁶ <http://www.driverless-future.com/?p=598>

innovations across manufacturers. It will ensure holistic development of mobility infrastructure and technology across manufacturers, providing the necessary research grounds to refine, execute, and integrate new mobility technologies into society.

Refining electric autonomous vehicle technologies to seamlessly enter modern life will be essential in developing their market share as a future mobility solution. We propose adding electric charging infrastructure to ACM to test and refine electric autonomous vehicle response to scenarios such as:

- Going off to charge while owner shops or dines,
- Locating optimal charging locations given distance and time constraints, and
- Locating desired owner destinations, such as a type of restaurant, that are also near charging stations.

Michigan is the ideal place for Electrify America to invest now and in the long term. Not only does it provide a four season climate for testing and researching electric vehicles and mobility technologies, it also has a supportive regulatory environment. Michigan understands the need for mobility innovation and is dedicated to being a strong player in the future of mobility.

P2. High-Speed, Cross-State Network of EV Charging Stations with Air Transit Connections

Michigan's system of highways and roads is optimal for fast-charge electric vehicle infrastructure. With over 122,000 miles of roads, the state has the ninth largest road network in the nation. Of those, 36,500 miles are federally recognized as the most highly used portion of the system, carrying 96 percent of commercial traffic and 89 percent of all traffic in Michigan. Michigan's roads extend south to Florida, west to California, and across national borders along some of the busiest international trade routes. It is the ideal location for the start of a cross-country and cross-nation EV charging infrastructure.

The State of Michigan and its strategic partners encourage Electrify America to invest in a fast-charging infrastructure connecting the major transportation arteries within Michigan and the Detroit Metropolitan Airport. To make this concept viable, we propose a "fast station" scenario where drivers will find fast chargers at stations approximately 50 miles apart.

To make this investment sustainable, technology that supports all existing charging protocols and offers consumers with all vehicle types the ability to fast-charge between transit

routes is required. The system we propose utilizes energy storage systems to mitigate additional stress to the grid, reduce the need for costly electric infrastructure, and support future smart grid applications. By reducing “range anxiety” among potential electric vehicle consumers, we help reduce current market adoption barriers. This project is technically viable and could be feasibly completed in a period of approximately three years.

P2.1 Fast Charging with Energy Storage at Commercial/Retail Sites along Highway Corridors

We propose deployment of a network of Level 3 fast charge stations potentially located at commercial/retail sites along highway corridors. Each station will host three (3) or more charging units with a capacity of 50 kWh per unit, charging capabilities of 100 kW per vehicle, and be adaptable to future requirements. We anticipate the DC Fast Charge units will be located within our utility partners’ collective service areas.

We also propose using battery energy storage system (BES) units to provide adaptability toward future demand and to mitigate stress to the existing grid.⁷ Level 3 fast charging with BES not only allows quick charge in about 20 minutes, it also supports the electrical grid through eliminating the need for electric distribution system upgrades, providing support for future smart grid applications, and helping with load balancing through off-peak charging. By accommodating up to five vehicles, BES also allows adaptability to increased demand.

Infrastructure planning and development may initially occur along the I-94 corridor (including I-69, which is officially recognized by the Federal Highway Administration as part of the I-94 Corridor) allowing for significant impact within or connecting areas with high concentrations of NO_x emissions and plug-in vehicles.

P2.2 Connecting Electric Charging Infrastructure to Air Transit

To truly incorporate EVs into modern life, the electric charging infrastructure must also extend to air travel hubs. Not only will such efforts support EV customers taking air transport, it will also support air travelers renting EV cars. By interacting with EV rental cars and having positive experiences, consumers previously unwilling to change to an EV may become motivated

⁷ Level 3 Fast Chargers with BES are costly compared to slower charging equipment, but have the potential to eliminate significant electric distribution system upgrades that could be substantially higher in cost.

to purchase EVs. We propose adding EV charging infrastructure to the Detroit Metropolitan Airport and the Grand Rapids Gerald R. Ford Airport to connect air transport with the previously proposed fast charging electric infrastructure.

Detroit Metropolitan Airport (DTW) is Michigan's busiest airport and one of the largest air transportation hubs in the country. In calendar year 2014, DTW ranked 17th nationwide with approximately 32.5 million total passengers. EV charging installations at DTW will be key in connecting DTW customers from across the globe who use EV cars, whether their own or rentals, to Michigan and North American roadways. We propose installing 48 EV chargers to the existing parking infrastructure at DTW. These chargers will serve to address existing capacity concerns, promote additional onsite emissions reduction activity, and allow a seamless transition for air travelers using EVs in Michigan.

DTE and the Electric Power Research Institute assessed opportunities at Detroit Metro Airport (DTW) to reduce onsite emissions and optimize energy use. The study found full electrification of DTW's tarmac operations would eliminate more than 20,000 tons of diesel particulate matter. Full electrification of DTW's tarmac operations support much needed improvements in local air quality. Diesel and gasoline use contribute to SO₂ and NO_x emissions as precursors of PM 2.5. The Federal Aviation Administration has designated Detroit Metropolitan Airport as nonattainment for PM 2.5. Currently, Wayne County is designated attainment/maintenance for some PM 2.5 National Ambient Air Quality Standards (NAAQS). A portion of Wayne County near the international crossing is nonattainment for the 2010 SO₂ NAAQS. The seven county Detroit metropolitan area is expected to be designated nonattainment for the 2015 ozone NAAQS in October 2017.

The Grand Rapids Gerald R. Ford International Airport is the second most visited airport in Michigan. Currently, it is deficient in level 2 charging. We propose adding additional EV charging infrastructure to the airport. Such efforts will support the experience of current EV owners at the airport and support their travel to and from Lansing and Detroit. We also propose working closely with rental car companies to increase availability of EV transportation at the Grand Rapids airport to support growth of positive customer experiences with EVs and further customer demand.

By connecting Michigan cities with a fast-charging infrastructure among major transportation arteries, a consistent infrastructure for electric vehicles within Michigan will be

created. Due to Michigan's access to major national highways and its Canadian neighbor, EV charging infrastructure investment in Michigan's major transportation arteries also establishes a center of EV charging infrastructure extending south to Florida, west to California, and across national borders along some of the busiest international trade routes. The inclusion of the Detroit Metropolitan Airport and the Grand Rapids Gerald R. Ford International Airport as "stations" also seamlessly allows EV customers to access worldwide destinations. This reduces "range anxiety" among current and potential electric vehicle consumers not only in Michigan, but the world, leading to significant reduction in current market adoption barriers and likely catalyzing uptake of electric vehicles.

P3. Electric Vehicle Charging Infrastructure in Highly Visible and High Demand Locations

We aim to increase visibility for EV technologies within Michigan metropolitan areas and cities. For EV to enlarge their market share, it is essential to have electric vehicle charging infrastructure and increase electric vehicles visibility and acceptance. We seek funding to install charging stations in highly visible locations within areas of high emission impact in the state. By seeking high visibility for the investments, the partners hope to catalyze fast adoption of EVs, inspire private investment in EV infrastructure and vehicles, and motivate municipal adoption of policies and practices supportive of EVs.

We propose installing Level 2 fast charging infrastructure in highly visible commercial sites, multi-family residences, municipalities, and schools throughout Michigan. By focusing on high visibility and high demand locations, these EV charging installations will increase awareness of EV technologies, foster public education, and increase acceptance and demand for EV technologies. As Level 2 Fast Chargers typically take 3.5 hours to fully charge an 80-mile battery, they are ideal for consumers who park for at least one hour - at work; retail sites; entertainment and sporting venues; transit sites, and municipalities. The project hopes to create a cycle of private investment in zero emission vehicles (ZEVs) and infrastructure. It recognizes that initial motivation may be needed to assist in these efforts and also proposes providing funding support, such as vouchers or rebates, to private owners and businesses to further catalyze private investment. Michigan's two largest metropolitan areas, Detroit and Grand Rapids, will participate, as well as other municipalities. In Flint, we propose adding EV infrastructure to support the "Ride for Wellness" Federal program.

For the Grand Rapids metropolitan area, we propose integrating fast charging infrastructure to support public, work place, and multi-family residential developments. Located on the west side of Michigan, Grand Rapids has the largest population outside the Detroit metro area and the highest concentration of plug-in vehicles in the State. One of our partners, Consumers Energy, has been instrumental in the development of the “Energy District” a 10-block area of city offering mixed use development for residents of all ages and income levels. There, they focus on cutting-edge technology for solar, battery storage, electric grid modernization, and innovative ways to deliver electricity to densely populated areas. We propose integrating DC Fast Charging and level 2 EVSE’s to serve public, work place, and multi-family developments. We recommend an “Electric Avenue” approach with DC Fast Chargers in public areas, and level 2 stations integrated to enable workplace and residential MUD charging. Not only is the site located one block off of I-96, a state highway connecting Lansing, Detroit, and Chicago, the environment is an excellent platform for education and awareness.

Though installations at schools provide educational opportunities in themselves as future consumers closely interact with EV technologies, the project also proposes providing EV outreach and education in school systems and for local municipalities. It will also encourage investment in EV support vehicles such as school buses, public safety vehicles, etc.

Lastly, the project will provide ongoing monitoring and maintenance of charging stations for the project period to ensure positive public interactions with the EV technologies in these highly visible and high demand areas.

By demonstrating the effectiveness and popularity of ZEVs, the project desires to motivate local officials to make further investments, leverage resources, and adopt policies and practices supportive of ZEVs. To this end, it will leverage existing municipal networks seeking clean-energy solutions and the non-profit groups supporting their efforts.

P4. Electric Vehicle Outreach and Education to Consumers

The State of Michigan and its strategic partners seek funding to coordinate EV outreach and education activities in Michigan. Outreach and education activities will occur statewide in a coordinated fashion with consistent branding and messaging through web-based, broadcast, print (including billboard), post mail, and in-person events implemented by a coalition of project

partners. Consumer outreach activities within Michigan will include ZEV information hotline to manage hotline calls within specific geographies and a coordinated marketing/outreach program with experienced partners.

We propose multi-channel education and outreach to educate Michigan consumers on the benefits of electric mobility such as: web-based, broadcast, print (including billboard), post mail, and in-person events. Topics for outreach and education events will focus on workplace charging, auto dealer training, renewable energy PEV charging, municipal/public PEV charging, and DC fast charging at fueling stations. Each event will include collateral handouts and displays to remain on-site following the events.

To increase consumer interaction with EV technologies, we also propose providing regularly scheduled EV ride and drive opportunities and charging demonstrations. These experiences allow interested, but still undecided, consumers to interact closely with EV technologies. Not only will they garner greater public understanding and appreciation for EV technologies, these experiences may motivate undecided consumers through positive interactions and education to purchase EV technologies.

These efforts will increase EV awareness, foster outreach and education, and promote the benefits of electric mobility with Michigan consumers. With greater awareness and understanding of EV technologies, these efforts will also facilitate investments in electric vehicle (EV) charging infrastructure and help realize a future with greater EV market penetration. Funding these efforts can help consumer demand reach a critical mass to push market growth for ZEVs to much higher levels.

P5. Electric Vehicle Outreach and Education to Businesses, Industry, and Policy Makers

Though zero emission options for travel are increasing and business models are being validated for connected and shared use vehicles, many entities are still unclear about the benefits of EVs. To this end, we propose outreach and education efforts with industry, property developers and managers, and policy makers to accelerate the development and use of smart-grid integrated electrified transportation within urban and suburban areas. Specifically, this project will:

- Demonstrate the business models for workplace, fleet, public, single and multi-family residential integration of EV's within the smart grid via multiple charging technologies and communication protocols,
- Create specific test plans with vehicle OEM's, EVSE manufacturers and electric utilities for demonstration,
- Develop events to promote best practices, identify challenges and solutions, and provided a view into the future,
- Create a V2B Mashup focused on emerging business models associated with the physical and virtual connection of vehicles to buildings,
- Provide strategy and planning for cities as they invest, build, and support zero emissions vehicle infrastructure, and
- Support multiple charging systems to demonstrate and support interoperability within communication protocols, charging technologies, and use cases thru existing platforms for workplace, fleet, public, and single family and multi-family residential.

Technology demonstrations, such as those of multiple charging systems, will physically occur at a partner's facilities in the Detroit metropolitan area, but the project will support outreach and education to businesses, industry, and policy makers throughout Michigan.

Greater understanding of EVs from the business and governmental communities are required for establishing long term demand and EV infrastructure growth. Our proposed efforts will promote the business case for EVs with businesses, industry, and policy makers within Michigan.

P6. Clean Fuel Mass Transit Bus System for the Detroit Metropolitan Area

Michigan's metropolitan areas are experiencing unprecedented growth and development, spurred by a renewed interest in connecting our urban cities with surrounding suburbs. Our geographic presence on an international border offers a unique opportunity to attract more business and commerce. Today, as much as 92 percent of jobs in our region are inaccessible within a 60-minute transit trip. A comprehensive upgrade to our existing bus system, with the use of clean fuels – and linking these systems with other clean methods of transit (rail, rideshare, etc.) will further provide sustainable regional benefits.

Our goal is to increase the visibility of EV technologies significantly within Michigan's metropolitan centers and cities through all electric mass transit. Mass transit is vital to our region's growing economy. An investment in our region's mass transit bus fleet is inevitable, as many units within the regional transit entities are believed to be operating beyond the recommended lifecycle. We envision a comprehensive approach for creating a smarter, more efficient solution to our region's mass transit system, enabling Michigan to become connected to a nationwide network of smart-grid solutions.

We propose a clean fuel bus transit system for the Detroit metropolitan region. Together with our partners, we will identify locations for both electric charging infrastructure and transit routes. Likewise, an utility partner will help implement the charging infrastructure, assessment electric buses, and provide energy delivery.

We propose investing in EV fast chargers for the all-electric transit system. The extended-range electric bus can travel up to 180 miles between charges, with battery options from 129 kilowatt-hours to 321 kilowatt-hours and some can be recharged in approximately 1-3 hours. Rapid-charge capabilities offer a full charge in 10 minutes or less while on a route, which should assist in assuring efficiency for the transportation systems (i.e. not needing to procure more buses to serve the same routes) and alleviate any range anxiety.

The migration to an all-electric solution can provide for sustainable operating efficiencies beyond that of the conventional diesel bus. Electric buses have exceeded stringent performance testing and have a lifecycle of 6 years or more beyond that of a traditional diesel bus. While electric transit buses require a greater upfront capital cost, they are estimated to save between \$40,000 - \$50,000 per year in diesel costs, and even more in maintenance costs since there are fewer moving parts. Conventional diesel buses are said to average 3.86 MPG, whereas a typical 40 foot electric bus can achieve 22 MPG.

The change to an all-electric public transit system in the densely populated Detroit metropolitan area will also help address emissions concerns in the area. Given funding, we believe our project team can successfully realize an all-electric mass transit system for the Detroit metropolitan area. It is critically important that key stakeholders representing local transit agencies, utilities, and the State of Michigan collaborate, as we have here.

P7. Smart Park and Ride Hub for Electrified Transportation in Metropolitan Detroit

Currently, infrastructure for plug-in electric vehicles (PEV), battery electric vehicles (BEV), and plug-in hybrid electric vehicles (PHEV) charging is supported through relationships between individuals (charging at home), employers (charging at work), and utilities. The costs of installing and maintaining the charging infrastructure and the benefits received from that infrastructure are typically different for each in the context of public spaces, making the business model extremely challenging to support through a traditional return on investment (ROI) calculation (direct vs indirect ROI). Additionally, as multiple protocols and standards supporting interoperable grid integration of electric vehicles (EVs) are in early adoption, the tools required to determine the incremental value of EV's within the smart grid for individuals, businesses, and utilities need to be better understood.

We propose the development and operation of a Smart Park and Ride Hub for Electrified Transportation (“the Hub”) to provide electrified personal and shared vehicle use and support multi-modal transportation. The Hub will create a dedicated parking/infrastructure, designed for future applications supporting shorter range (first mile/last mile) commuting to and from downtown/midtown Detroit. It will include:

- Smart/connected charging systems integrated within the smart grid for individuals, businesses, and utilities,
- Connections to logistics hubs and international crossings to maximize diesel reductions in heavily impacted residential areas (e.g. Southwest Detroit), and
- Best practices supporting charging of e-bikes and e-scooters in vehicle-sharing application.

The Hub will provide charging of personally owned and fleet (for hire) PEVs, which will decrease congestion within Downtown and Midtown Detroit to support the use of public transportation, while also supporting multi-modal options via shared use of e-bikes and e-scooters.

The Hub will provide additional scale and opportunity to validate use case and business models in a public site with additional users in real world operations. To support city planning efforts for EV infrastructure, the Hub will provide data and information to quantify business models for public investment in multi-model transportation. This will lead to opportunities for the city of Detroit's Department of Transportation, Suburban Mobility Authority for Regional

Transportation, the Regional Transit Authority, and M-1 Rail to leverage these partnerships for future expansion.

The Hub may accelerate development and use of smart-grid integrated, electrified, shared, and public transportation technologies and systems within economic and cultural centers across the country. Not only will it increase use of electric transportation, it will also define the business models for public and private investment and operation. By linking infrastructure to support electrified transportation with shared use vehicles and public transit, this project will generate interest in other cities around the country and will help accelerate EV investment and use.

Michigan - A Partner in Realizing Electrify America's Mission

Michigan is the ideal partner to help further Volkswagen Group of America's vision of "powering electric mobility from coast to coast and everyday stops in between." Like Volkswagen, Michigan is strongly invested in the future of mobility. Not only does it have a supportive regulatory environment, it has created dedicated mobility research centers and has already begun investment in new mobility infrastructure. However, further investment from Volkswagen will elevate the current EV infrastructure to support higher EV penetration within Michigan and beyond.

The proposed projects all help realize Volkswagen Group of America's vision and more. Together, these projects will create an integrated charging infrastructure for electric vehicles within Michigan. Due to Michigan's geographic location, extensive roadways, and world class airports, the impact of Volkswagen's investment in Michigan's EV charging infrastructure will far exceed Michigan's borders. All travelers within the state's borders benefit from exposure to successful implementation and use of EV infrastructure and technology. An extensive EV charging infrastructure in Michigan also creates a nucleus for EV infrastructure development extending south to Florida, west to California, and north to Canada.

Michigan and its strategic partners thank Volkswagen for its consideration of its proposals and hope to partner in creating stronger EV charging infrastructure, educating Michigan's residents and visitors on EV benefits, and strengthening demand for EV technologies. Volkswagen's investment will not only lead to the realization of Volkswagen

Group of America's vision to electrify mobility. It will also hold great symbolism as icons of automotive history join together to explore and realize a new era of mobility.

Electrify Michigan Partners

The following is a list of current partners for the Electrify Michigan projects.

State of Michigan

- Executive Office of Governor Rick Snyder,
- Michigan Agency for Energy,
- Michigan Public Service Commission,
- Michigan Department of Environmental Quality,
- Michigan Department of Transportation, and
- Secretary of State.

Michigan Economic Development Corporation

DTE Energy

Consumers Energy

NextEnergy Center

City of Detroit

City of Ann Arbor

Greater Lansing Area Clean Cities

Regional Transport Authority of Southeast Michigan

Southeast Michigan Council of Governments

American Center for Mobility