



# Electric Vehicle Convenings Report and Next Steps

*September, 2018*



## Contents

Executive Summary.....	1
Organizations .....	2
Sponsors .....	2
Introduction .....	3
Electric Vehicle Convenings .....	5
Convening 1: Utility Pilot Programs and the Volkswagen Settlement.....	6
Convening 2: Customer Education and Awareness.....	7
Convening 3: Long-dwell and DC Fast Charging.....	9
Convening 4: Fleet Electrification.....	10
Convening 5: Rate Design.....	12
Recommendations for Future Actions.....	13

## Executive Summary

The convergence of the energy and mobility sectors represents a disruptive inflection point for transportation and electricity that – if harnessed – can give the state of Michigan an advantage by utilizing the state’s unique strength in the battery industry, electrified power train engineering, advanced energy industry, and - not least – automotive industry.

The transportation industry is changing rapidly. As mobility as a service, shared rides, and automated and connected transportation grow, the electrified powertrain is the platform for the transportation future. Buttressed by changes in the electricity sector including limited increases in load, time of use pricing structures, and reliability concerns, vehicle electrification is an emerging grid solution that can provide both increased electricity demand when there is excess capacity on the grid and, in the future, broad storage capacity. Data use, integration, compilation, and access form the union point between the increasingly interconnected and interdependent advanced energy industry and mobility sector. Data is crucial in the ongoing integration of advanced energy into the electric grid and will be just as important in developing an intelligent, nimble electricity system. This data integration is necessary to enable electric, autonomous, and connected vehicles and the resulting dynamic and beneficial load that they represent.

Recognizing the economic opportunity for Michigan as a leader in the burgeoning advanced mobility sector and understanding that automated, connected, and shared vehicles will not hit Michigan roads without wide-scale vehicle electrification, the Michigan Energy Innovation Business Council (Michigan EIBC) convened a series of meetings focused on electric vehicles (EVs) for stakeholders across the advanced mobility space. These convenings included stakeholders from industry, government, nonprofits, and a variety of other actors. The convenings addressed 1) utility pilot programs and the Volkswagen settlement; 2) customer education and awareness; 3) long-dwell and DC fast charging infrastructure; 4) fleet electrification; and 5) rate design.

Undertaken within Michigan’s broader context, the convenings were intended to complement and support a comprehensive effort to advance EV adoption in Michigan. Through this initiative, Michigan EIBC sought to bring together multi-disciplinary stakeholders to explore a future that is well-rooted and guided by Michigan’s past. The result is the tools to design a system that will sustain not just for a program, but for a new generation of mobility. Given significant stakeholder interest and in-depth discussions at the meetings, Michigan EIBC has identified recommended next steps. These include a gaps assessment of current key EV initiatives, a set of stakeholder discussions focused on key topics including coordination with auto dealers and site hosts, and the creation of a roadmap for the next state administration.

## Organizations

The Michigan Energy Innovation Business Council (Michigan EIBC) is a business trade association representing advanced energy companies doing business in Michigan. Michigan EIBC's mission is to grow Michigan's advanced energy economy by fostering opportunities for innovation and business growth and offering a unified voice in creating a business-friendly environment for the advanced energy industry in Michigan.

## Sponsors

Michigan EIBC's EV convenings were sponsored by Advanced Energy Economy, DTE Energy, Consumers Energy, the Michigan Agency for Energy, CLEARresult, the Ecology Center, and Lyft. Michigan EIBC greatly appreciates the support of each of these organizations.

## Introduction

Michigan is well positioned to play a leading role in the deployment of electric vehicles (EVs) and EV infrastructure. Not only is the state the center of the U.S. automotive industry and a hub for energy storage research and manufacturing, but Michigan is also the advanced mobility leader. Recent initiatives like the American Center for Mobility and Planet M, which support the mobility industry through collaboration, research, and marketing, are being coupled with the state's inherent research and development assets and engineering expertise to meet the mobility needs of the 21st century. Michigan is also home to a robust and growing advanced energy industry, which complements and is integrated with advanced mobility.

The automated, connected, shared future for mobility – in Michigan and across the globe – will be built on an electrified platform. This creates an immense market opportunity for Michigan's economy and for the state to be a dominant player in the development and deployment of EVs and in turn, in the automated, connected, and shared future of mobility. Beyond this market opportunity, greater EV use is predicted to save billions of dollars in reduced electricity bills, vehicle operating costs, and costs associated with greenhouse gas emissions.<sup>1</sup> However, the realization of these benefits depends upon actions by multiple stakeholders, including utilities, regulators, automakers, nonprofits, and the advocacy community, to improve customer awareness, deploy charging infrastructure, develop supportive policies, and enact effective rate structures. Only by building the necessary foundational EV infrastructure can Michigan become a leader globally, while also creating economic benefits for in-state residents and companies.

Just as advanced mobility gains increased traction, the intersection of mobility and vehicle electrification is becoming an increasingly important topic of conversation and work in Michigan. A variety of recent efforts demonstrate Michigan's continued leadership in this space and helped inform Michigan Energy Innovation Business Council's (Michigan EIBC) EV convenings. In 2010, the Michigan Public Service Commission (MPSC), under the leadership of Chairman Isiogu, initiated the Plug-In Electric Vehicle Preparedness Task Force. Although the Task Force successfully generated significant stakeholder input and built the foundation for needed EV-enabling policies, the broader automobile market shifted not long after and attention turned back to more traditional gasoline-powered vehicles.

More recently, discussion of EV infrastructure in Michigan was brought to the forefront by a 2016 Consumers Energy rate case (U-17990). Although the utility ultimately decided not to move forward with the EV program proposed in that case, it became clear to Consumers Energy and other parties across the industry that additional discussion and stakeholder engagement was critical to the success of EV awareness and deployment in Michigan. In August 2017, the MPSC held a technical conference on Alternative Fuel Vehicles. Experts from the investor-owned utilities, auto industry, charging equipment suppliers, environmental advocates, transportation planners, and vendors came together to discuss the state of EV technology and infrastructure, opportunities and barriers, and the role of regulators and stakeholder groups in advancing EVs in Michigan. This conference helped set the agenda for increased efforts on EVs.

***As the advanced mobility state, the answer to “what’s going on in Michigan?” needs to be that “we’re creating the premiere EV program in the nation.”***

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<sup>1</sup> M.J. Bradley & Associates. 2017. “Electric Vehicle Cost-Benefit Analysis: Plug-In Electric Vehicle Cost-Benefit Analysis: Michigan.” <https://www.mjbradley.com/content/mjba-analyzes-state-wide-costs-and-benefits-plug-vehicles-michigan>.

In October 2017, the MPSC opened a docket to seek comments on whether Michigan’s utilities should initiate a series of targeted pilot programs to explore, understand, and address issues related to the deployment of EV infrastructure. Michigan EIBC coordinated joint comments from 19 parties,<sup>2</sup> which supported the initiation of utility-led pilot programs for EV infrastructure deployment. The joint comments outlined three agreed upon principles supporting the case for EV pilot programs:

- 1) Transportation electrification is in the public interest;
- 2) Transportation electrification in Michigan is lagging and barriers need to be addressed; and
- 3) Electric companies are uniquely suited to help.

Beyond simply making the case for utility-initiated pilot programs, the joint commenters identified four potential near-term actions and areas of focus for such pilot programs:

- 1) Economic Rationale for Transportation Electrification and Electric Companies’ Role;
- 2) Smart Charging and Rate Design;
- 3) Customer Awareness and Education;
- 4) PEV Infrastructure Deployment.

Recognizing the growing opportunity for Michigan’s leadership in vehicle electrification and advanced mobility, Michigan EIBC initiated a series of five stakeholder convenings to build upon the MPSC’s commitment to encouraging utility EV pilot programs as well as clear stakeholder interest in supporting EV deployment. The convenings, which took place throughout 2018, were designed to support and inform utility pilot programs, facilitate stakeholder collaboration and education, and determine future steps to foster supportive policy outcomes and increase EV deployment in Michigan. Conducting this engagement effort under the Michigan EIBC umbrella enabled the inclusion of and support from a wide spectrum of stakeholders including utilities, regulators, state government officials, automobile manufacturers, advanced energy companies, environmental advocates, public transit authorities, municipalities, and others.

***The future of mobility is for vehicles to be automated, connected, electrified, and shared.***

As described in detail below, each of the five convenings focused on a specific sector of EV deployment including: 1) utility pilot programs and the Volkswagen settlement; 2) customer education and awareness; 3) long-dwell and DC fast charging infrastructure; 4) fleet electrification; and 5) rate design. Each meeting included presentations from in-state and out-of-state experts and in-depth discussion among participants, which enabled a greater understanding of the challenges, opportunities, potential solutions, and areas for future focus.

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<sup>2</sup> The joint commenters were ACTIA, Advanced Energy Economy, The Alliance for Transportation Electrification, Clean Fuels Michigan, Consumers Energy Company, DTE Electric Company, The Ecology Center, Edison Electric Institute, Ford Motor Company, General Motors, Greenlots, Michigan Electric and Gas Association, Michigan Energy Innovation Business Council, Michigan Environmental Council, Michigan League of Conservation Voters, Natural Resources Defense Council, Phoenix Contact, Siemens, and Sierra Club.



## Electric Vehicle Convenings

Approximately 140 stakeholders participated in the five EV convenings. As detailed in the below table, these stakeholders represented 74 organizations from a wide variety of sectors. Given the array of topics, some stakeholders attended multiple convenings or all convenings, while others participated on only one topic. The meetings were sponsored by Advanced Energy Economy, DTE Energy, Consumers Energy, the Michigan Agency for Energy, CLEARResult, the Ecology Center, and Lyft.

Participating Organization	
ABC Student Transportation	ITC Holdings Corp.
Advanced Energy Economy	LithSafe
Advantron Technologies, Inc.	MICHauto
Atlas Policy Consulting	Michigan Agency for Energy
Bedrock Detroit (Bedrock Management Services LLC)	Michigan Association for Pupil Transportation
CALSTART	Michigan Association of School Boards
CAR	Michigan Climate Action Network
ChargePoint	Michigan Conservative Energy Forum
City of Ann Arbor	Michigan Department of Environmental Quality
City of Grand Rapids	Michigan Department of Transportation
Clean Fuels Michigan	Michigan Economic Development Corporation
CLEARResult	Michigan Energy Innovation Business Council
ClipperCreek, Inc.	Michigan Environmental Council
Consumers Energy	Michigan League of Conservation Voters
Corrigan Oil Co	Michigan Municipal League
Dewitt Public Schools	Michigan State University
DTE Energy	Michigan Public Service Commission
eCAMION	Natural Resources Defense Council
Eco-Green-Energy, LLC	Oxford Community Schools
Ecology Center	Peracchio & Company, LLC
EEl	Phil Jones Consulting
Electrify America	Phoenix Contact E-Mobility
Enervee	Plug In America
Environmental Law & Policy Center	Plug Smart
EVGo	PlugInConnect
EVolution Electric Vehicle Systems	Powerlink Systems
5 Lakes Energy	Reach Strategies
Ford Motor Company	Rhombus Energy
General Motors	Siemens Energy
Greenlots	Sierra Club
Gretchen Whitmer for Governor	Southwest Detroit Environmental Vision
Great Lakes Energy	Spartan Renewable Energy
Great Lakes Renewable Energy Association	State of Michigan, Energy Office
Hino Motors	Toyota
Homeworks Tri-County	Tri-County Regional Planning Commission
Indiana Michigan Power (AEP)	Varnum LLP
Institute for Energy Innovation	Zeeland Public Schools

## Convening 1: Utility Pilot Programs and the Volkswagen Settlement

January 16, 2018

### Topics Covered

The first EV convening focused on EV pilot programs under development by DTE Energy and Consumers Energy as well as the funding provided to Michigan under the Volkswagen settlement.

### Summary

The first convening was attended by automakers, utilities, government agencies including the MPSC and Michigan Agency for Energy, Michigan EIBC member companies including Advanced Energy Economy, ChargePoint, CLEARresult, and 5 Lakes Energy, public schools and school transportation agencies, and other interested parties.

The meeting focused on the EV pilot programs that Michigan's utilities were in the process of developing. Camilo Serna of DTE Energy and Mike Delaney of Consumers Energy discussed the utilities' respective approaches to EV deployment. Serna explained that DTE Energy sees utilities' role in EV deployment as four-pronged: educating



Participants in EV convening



Al Freeman, Executive Advisor,  
Michigan Public Service Commission



Robert Jackson, Director, Michigan  
Energy Office

customers, designing rates, managing charging, and investing in and supporting charging infrastructure. As such, DTE Energy is prioritizing make-ready Level 2 and DC fast charging (DCFC) infrastructure, in which ownership is split between the utility and the site host; a residential approach to rates (including time-of-use and flat rates); and education, including an updated website, mailings, and education for potential site hosts.

Delaney explained that Consumers Energy is trying to pursue “smaller bets” given the uncertainty about the future deployment of EVs. Consumer Energy’s goals are to improve the customer experience, define the role of a regulated utility regarding PEV infrastructure, realize grid benefits while mitigating risks, and plan for future changes. Delaney emphasized home charging equipment installation, increasing customer awareness, and smart charging technology as focus areas for the utility. He also prioritized exploring rate options for DCFC, public charging, and workplace/multi-unit dwelling charging.

After these discussions, Robert Jackson of the Michigan Energy Office (MEO) and Debbie Swartz of the Michigan Department for Environmental Quality discussed the importance of effectively utilizing Volkswagen Settlement funds to replace older diesel vehicles and deploy EV infrastructure. To determine where EV charging stations should be located, MEO commissioned a study by Michigan State University. Jackson emphasized the need for Michigan to balance investment in EV charging infrastructure with neighbors in Ontario.



### *Key Takeaways*

- Stakeholders brought up a number of suggestions for the utilities including:
  - Consider working with public schools to educate students (and thus parents) on EVs, potentially using science classes, tech classes, or electric bus fleets as jumping-off points;
  - Consider working with municipalities’ and commercial businesses’ fleets and ride-share fleets to create opportunities for education;
  - Share best practices with other utilities. Serna noted that the Edison Electric Institute’s “passport” program allows utilities to share information and data around this issue, and that DTE also shares information with the Department of Energy, automakers, and oil companies;
  - Consider electric school buses as part of the utilities’ plans.
- The discussion at this convening also made it clear that enhanced coordination between the utilities and the MEO is necessary to ensure that efforts to fund charging infrastructure are effective and put to the best use.

## **Convening 2: Customer Education and Awareness**

March 22, 2018

### *Topics Covered*

The second EV convening centered around customer awareness and education. The goal for the meeting was to understand the venues where customers get their information about EVs, what gaps exist in their knowledge, and how those gaps could be addressed.

### *Summary*

Michigan EIBC hosted its second EV Convening at the Michigan Saves office in Lansing, Michigan. The meeting began with a panel discussion of automakers’ perspectives on consumer and dealer education with Britta Gross, Director of Advanced Vehicle Commercialization Policy at General Motors, and Lisa Teed, U.S. Marketing Strategy Manager with Ford Motor Company.

Gross said that despite significant growth, EVs are still primarily being driven by “early adopters” – people who are excited to try new technologies. The next step is to get general consumers interested in EVs. General Motors is focused on dealer education, providing online information, story-telling as a key for advertising, and large-scale public awareness campaigns.

***“This is a very unique opportunity to engage and co-create with others in the industry. I’ve learned so much from participating.”***

*— EV convening participant*

Teed discussed Ford’s perspective and customer education model, emphasizing that automakers and other interested parties should take current deployment into account when predicting future demand. Ford has found that customers want options in EVs, including longer ranges per charge, and a variety of car sizes and body styles. Teed emphasized that consumer education needs to focus on why there is a push for electrification and what EVs can offer them.

The second panel was a conversation on customer psychology and behavioral economics, in which Dr. Brandy Brown, a Senior Evaluation Consultant at CLEAResult, and Dr. Anne Niederberger, Vice President of Marketing and Development at Enervee, provided a third-party perspective on the importance of consumer education by utilities.

Brown discussed CLEAResult’s work with utilities and their customers on EVs. Brown explained that CLEAResult’s approach is to make EVs desirable and to meet the customer where they are, rather than expecting customers to seek out information. It is especially important to close information gaps by providing customers with accurate and helpful information, and to advise them during the product evaluation period.

Enervee is a data and behavioral science company that works to make it simple and compelling for people to buy clean and efficient energy products, including EVs. An Enervee survey found that most customers want clean vehicles and low fuel costs, but they don’t realize that an EV would give them those results. As Niederberger explained, we need to make people realize that an EV can be the car that has the features they desire. Niederberger described a website Enervee built that provides customers with information on different vehicles and allows them to compare their non-EV “dream car” to the closest EV match so they can see the benefits of buying an EV.

### *Key Takeaways*

After the panel presentations, small groups discussed the best tactics to improve customer awareness. Each group came up with several ideas and then all participants voted for the best ideas:

- Build a “community” of businesses, NGOs, and government organizations to support the idea that Michigan, as the automobile capitol of the world, is leading the mobility revolution with EVs. This could be done using storytelling and learnings from the Pure Michigan campaign. (18 votes)
- Conduct more ride and drive events that include demonstration charging infrastructure so that customers are not only able to experience the cars, they are also able to experience charging. (10 votes)
- Create better incentives for dealers to become EV certified and sell more EVs. (8 votes)
- Leverage Michigan’s auto journalists, especially at upcoming events, to provide greater coverage of the EV industry. (8 votes)
- Seed youth with excitement about EV technology by leveraging social media and employment opportunities. (6 votes)
- Develop a contest for college students to create videos and social media to drive excitement around EVs. (5 votes)
- Create a state educational website focused on EVs. (1 vote)
- Improve the visibility of EVs, especially in the mindset of non-EV users, by developing apps that work together better. (0 votes)
- Reframe the “myths” about EVs by reframing the dialogue to a more positive message. (0 votes)



*Britta Gross, Director of Advanced Vehicle Commercialization Policy for General Motors, and Lisa Teed, U.S. Marketing Strategy Manager for Ford Motor Company discuss public awareness with Liesl Clark, President of Michigan EIBC.*

### Convening 3: Long-dwell and DC Fast Charging

June 14, 2018

#### Topics Covered

The third EV convening focused on DC fast charging, long-dwell charging, and charging infrastructure deployment.

#### Summary

Michigan EIBC's third EV convening was held at the Michigan Agency for Energy's office in Lansing. Jeff Mason, CEO of the Michigan Economic Development Coalition, kicked off the conversation with a discussion of how EVs fit into Michigan's economic development strategy. Mason described that the convergence of energy and mobility is an important strategic point for Michigan. Mason explained that, while the state of Michigan is working to create a climate where EVs and advanced mobility can flourish – including being home to the auto industry, a large advanced battery industry, and research and development facilities – there is still work to be done.

Next, Shanna Draheim, Director of Policy Development for the Michigan Municipal League (MML), and Jukka Kukkonen, founder of PlugInConnect, spoke on a panel about residential and workplace charging. Draheim explained that investments in advanced mobility, vehicle electrification and EV charging can make a city or community more attractive to potential residents and businesses. However, there are challenges for communities include zoning, equity in access to investments in infrastructure and mobility, and funding.



Participants in EV convening



Jukka Kukkonen, founder of PlugInConnect and Shanna Draheim, Director of Policy Development for the Michigan Municipal League discuss EV charging with Liesl Clark, President of Michigan EIBC.

Kukkonen began by describing PlugInConnect's efforts to help apartment complexes and workplaces invest in charging infrastructure. Kukkonen also explained how EV ownership and at-home charging can benefit utilities with increased load at times when demand is lower. He described several common utility EV programs, including time-of-use (TOU) rates and hourly pricing, charging infrastructure incentives, controlled charging programs, and workplace, apartment, and condo charging programs.

Later in the meeting, Robert Jackson, Director of the Michigan Energy Office, outlined the agency's efforts to determine where DCFC infrastructure should be located. He emphasized the importance of a public charging infrastructure including all parts of Michigan, rather than being limited to the larger cities.

Finally, MPSC Commissioner Norm Saari moderated a panel on accelerating DCFC deployment in Michigan with Marcy Bauer, Director of Program Operations for EVGo, and Sophie Shulman, Business Development and Partnerships Manager for Electrify America. Bauer touched on the importance of giving new EV drivers positive

***“This has been a great experience. The networking that has come from these meetings has already helped push our EV initiatives in the City of Grand Rapids.”***

*— EV convening participant*

first DCFC experiences to help break down barriers for the next level of EV adoption. Shulman stated that the major barriers to EV adoption are lack of infrastructure, speed of charging, and customer awareness. She discussed how Electrify America plans to build out the DCFC charging network across the country to help address these issues.

Electrify America’s Cycle 1 investment will create a robust DC charging network across 40 states and will consist of 484 DCFC stations with more than 2,000 DC fast chargers and over 2,800 Level 2 chargers. Shulman emphasized the importance of having accessible DCFC stations along

the highway, having multiple chargers at each station to account for maintenance issues and queuing, and partnering with businesses to give customers something to do while their car is charging.

#### *Key Takeaways*

Matt Stanberry, Vice President of Market Development for Advanced Energy Economy closed the convening by highlighting issues for stakeholders to continue to think about, including the following:

- Policies around multi-unit dwellings and the importance of utility engagement;
- Building additional public-private partnerships;
- Building flexible, adaptable technology (i.e., future-proofing);
- Prioritization of locations for DCFC deployment and partnerships to enable deployment;
- Rate design and policy incentives for DCFC infrastructure deployment; and
- Public outreach and education.

#### **Convening 4: Fleet Electrification**

July 18, 2018

#### *Topics Covered*

The fourth EV Convening focused on fleet electrification.

#### *Summary*

Michigan EIBC’s fourth EV convening was held at the Michigan Agency for Energy’s office in Lansing. Glenn Stevens, the executive director of MICHauto, kicked off the meeting with an overview of the State of Michigan’s approach to vehicle electrification. MICHauto’s goals are to maintain Michigan’s competitiveness in the advanced mobility industry, position Michigan as the next-gen mobility center, and promote Michigan’s advanced mobility industry as one that is high-tech, mobile, and growth-oriented. Stevens noted that mobility has been an inflection point for Michigan and the world, and that the future of mobility is for vehicles to be automated, connected, electrified, and shared. He noted that Michigan is making strides to regain market leadership in this mobility of the future. The state leads in connected and automated vehicle research and is learning from other regions where expertise is lacking. In closing, Stevens argued that adoption of these industries is “absolutely critical” to the future of the auto industry in Michigan.



Next, Laura Sherman, Michigan EIBC's Vice President of Policy Development, moderated a panel on trends in fleet electrification with Sara Forni of Ceres and David Peterson of ChargePoint as panelists. Forni explained that electrification can help companies meet their climate and emissions goals, help with workforce recruitment and retention, provide companies with reputational benefits, improve workplace safety, give companies the benefit of consistent fuel supply and price stability, and provide cost savings. According to Peterson, although most current fleet electrification is light-duty vehicles, the next step will be heavy-duty transit buses, followed by mid-duty trucks and vans, and finally heavy-duty truck fleets. He discussed the benefits of integrating fleet operators' expertise – scheduling and logistics – with EV charging providers' expertise to find the solutions companies need.

The next panel focused on medium and heavy-duty fleet electrification, with Stuart Irwin of EVolution EV Systems, Rich Weiner of Schneider Electric, and David McEllis of the Environmental Law and Policy Center as panelists. Irwin gave an overview of medium and light-duty applications, highlighting that the largest commercial truck fleet deployments since 2010 were FedEx, DHL, PepsiCo/Frito-Lay, UPS, and utility companies like Consumers Energy. Weiner discussed Schneider's EMobility Fleets, noting that the total cost of ownership makes electric fleets worthwhile. McEllis discussed efforts to electrify school buses, which reduces air pollution and saves money on maintenance and fuel costs.



*Britta Gross, Director of Advanced Vehicle Commercialization Policy for General Motors, and Lisa Teed, U.S. Marketing Strategy Manager for Ford Motor Company discuss public awareness with Liesl Clark, President of Michigan EIBC.*

The final panel was moderated by Charles Griffith, Director of the Climate and Energy Program at the Ecology Center. Matt Patton, Public Policy Manager at Lyft and Mike Alaimo, Executive Director of Clean Fuels Michigan, discussed ride sharing. Patton explained that Lyft is focused on reducing congestion, even when that means recommending fewer individual Lyft trips in favor of shared trips. Alaimo indicated that incentives are virtually nonexistent in Michigan to electrify fleet vehicles. Clean Fuels Michigan is working on legislation to provide a partial sales tax exemption and R&D incentive to reduce costs of buying and developing EVs.

#### *Key Takeaways*

- Electrification of public transit fleets, municipal fleets, and commercial fleets can be cost-effective and beneficial to the community. However, given the up-front costs, more needs to be done to provide fleet managers with the information, data, and incentives needed to make large-scale electrification a reality.



## Convening 5: Rate Design

August 15, 2018

### *Topics Covered*

The fifth EV convening focused on rate design and a review of the proposed utility EV programs.

### *Summary*

Michigan EIBC's fifth EV convening was held at the Michigan Agency for Energy's office in Lansing. Michigan EIBC President Liesl Clark opened the convening by describing the preceding meetings, which, in addition to covering specific topics, served to emphasize that EVs are crucial to the deployment of automated, connected, and shared vehicles. To start the programming, Chris Nelder, Manager of Vehicle-Grid Integration at the Rocky Mountain Institute described key considerations when designing rates for EV charging. Nelder outlined important goals for EV rate design, including that charging should be profitable, it should be cheaper than gasoline, Level 2 charging should be considerably cheaper than fast charging, and grid services provided by EV charging should be incentivized. EV charging stations should also have dedicated tariffs and meters (preferably within the charging station or vehicle). Nelder went on to identify the key challenges and issues facing EV rate design. According to Nelder, DCFC is currently a market failure due to 1) high capital costs, 2) low utilization rates, and 3) significant demand charges for the infrequent large loads. Nelder made it clear that while public DCFC infrastructure will play a critical role in a network of vehicle charging, most utility tariffs are not designed for DCFC operators, particularly when it comes to demand charges. Demand charges are especially problematic at low utilization rates, which could account for 90% of the bill. Nelder emphasized that Michigan needs to implement time-of-use rates without demand charges when adoption is low, deploy a network of DCFC charging, and drive investment from the private sector using the VW settlement funds.



*Liesl Clark, President of Michigan EIBC*



*Chris Nelder, Manager of Vehicle-Grid Integration at the Rocky Mountain Institute*

Robert Jackson next provided an update on MEO's study of EV infrastructure needs. This effort has focused specifically on engineering design considerations but has not included a policy analysis yet. Some of the key take-aways include that DCFC is critical to building the necessary infrastructure to meet the needs of Michigan's drivers and economy. The next steps include the drafting and circulation of an EV charging infrastructure roadmap based on the work MEO has invested to this point. The report will be ready later this year and will inform the spending of the VW settlement funding. Jackson shared that the strategy for the deployment of the VW settlement funds is to allocate the money over the course of three years in equal amounts.

Finally, a panel discussion provided an update on utility initiatives and pilot programs on EVs. The panel featured Camilo Serna, Vice President of Corporate Strategy of DTE Energy, Scott Weber, Director of Alternative Energy Solutions of Consumers Energy, and Sam Hogg, Director, Business Origination at Wolverine Power Supply Cooperative. Serna began with an overview of DTE Energy's proposed EV program, which includes \$1.6 million for customer education, \$1.5 million in residential rebates for charging infrastructure, and \$10 million for rebates for public charging infrastructure including DCFC and Level 2 using a make-ready model. Scott Weber of Consumers Energy then outlined Consumers' proposed program and approach to EV deployment. Weber explained that Consumers program includes rebates for residential charging infrastructure, rebates for public Level 2 and DCFC charging infrastructure using a make-ready model, as well as public education. Sam Hogg of Wolverine Power then shared the status of EV infrastructure deployment for Wolverine Power. He highlighted some of the benefits and synergies for EV infrastructure and utility cooperatives. At Wolverine Power, the move toward EVs needs to be something that members of the cooperative want. Hogg emphasized the need for rebates for customers, demonstration projects, and the implementation of time-of-use rates. Hogg also cited DCFC as a challenge that Wolverine Power is moving forward to address cautiously.

#### *Key Takeaways*

To close the convening, Liesl Eichler Clark led a discussion of important next steps coming out of the five EV convenings held by Michigan EIBC. Clark highlighted that EVs are clearly an industry that is growing and will serve as the underpinning for advanced mobility solutions, of which Michigan is positioned to be a leader. EVs can be a grid tool that provides smart, dynamic load, but they must be properly integrated. As the transition to EVs occurs and has implications for transportation and electricity markets, stakeholder conversations and buy-in are needed for success. Reflecting back information from the various conveners, Clark identified key next steps, including the development of more stakeholder convenings that focus on particular policy outcomes, a roadmap for the next administration driven by a gaps assessment, and the need to take real action around customer awareness.

The audience also identified the following topics for further engagement:

- The need to educate and engage with auto dealerships
- Support for cities and communities in promoting EVs
- Possible business models for DCFC charging and the need to engage site hosts

***“MI EIBC EV Convenings have brought together an important group of industry leaders that can help determine a vision of the EV industry to help inform and deliver the message to Lansing of what is needed to make MI successful in this rapidly changing industry!”***

*— EV convening participant*

## Recommendations for Future Actions

The five Michigan EIBC EV convenings – in addition to other efforts including PlanetM, the American Center for Mobility, and the Governor’s Council on Future Mobility – have underscored the progress and development of the mobility industry, and the increasingly important nexus between EVs and automated, connected, and shared vehicles. The convenings also facilitated productive dialogue and networking among stakeholders. Finally, they served to fill a gap in understanding and coordination, demonstrating the need for a continuing venue to enable the sharing of ideas and collaboration moving forward.

The impacts of the Michigan EIBC EV convenings have been tangible. The convenings, which took place throughout 2018, were designed to facilitate stakeholder collaboration and education, support and inform utility pilot programs and strategies for Volkswagen settlement spending and determine future steps to foster supportive policy outcomes and improve EV deployment in Michigan. Progress has been made toward each of these objectives. First, the convenings were met with strong interest and filled a gap by connecting topics and stakeholders from across the advanced mobility space.

More than 140 stakeholders attended, representing 74 organizations from across the advanced mobility spectrum. Responses to a survey conducted after the fourth convening were overwhelmingly positive, with several respondents citing the need for continued multi-party efforts to organize and coordinate the industry. Second, the convenings have advanced the dialogue around timely actions by DTE Energy and Consumers Energy. Both utilities have proposed EV pilot programs, citing information and discussion at the Michigan EIBC EV convenings as informing the companies’ plans.<sup>3</sup> Finally, the convenings identified both a need for a more focused effort to achieve legislative and regulatory outcomes and a need to improve customer awareness and education about EVs. As the advanced mobility state, the answer to “what’s going on in Michigan?” needs to be that “we’re creating the premiere EV program in the nation.”

***Automated, connected, and shared vehicles will not hit Michigan roads without wide-scale vehicle electrification.***

Building on these convenings and the input from attending stakeholders, Michigan EIBC recommends the following next steps:

Building on these convenings and the input from attending stakeholders, Michigan EIBC recommends the following next steps:

### 1. Gaps Assessment

The convenings provided a survey and discussion of the most pressing considerations around vehicle electrification, but they also pointed to gaps that exist around current efforts and initiatives toward EV deployment. The Volkswagen Settlement efforts, Electrify America dollars, and the DTE Energy and Consumers Energy EV pilot programs are the most tangible drivers for action on EVs currently in Michigan. These initiatives and how they are deployed are crucial to deployment of EV infrastructure in the near term and are equally important in setting the stage for future, more widespread efforts. As such, a detailed assessment of remaining gaps in ongoing initiatives needs to be undertaken with participation from stakeholders. A gaps assessment can also support communication needs such as ensuring continuity of programs for EV customers.

### 2. Topical Future Discussions

The first five EV convenings prioritized education and discussion across a wide-range of subjects. These

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<sup>3</sup> See, for example, testimony of Witness Camilo Serna in U-20162 (e.g., p. CS-9).  
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t00000023OLKAA2>.

presentations and the resulting discussions – formal and informal – yielded the beginnings of important policy and regulatory conversations amongst stakeholders.

Michigan EIBC recommends a new series of discussions focused on specific topics identified by stakeholders as critical:

- 1) gaps assessment (as described above) to further develop stakeholder conversations;
- 2) policy and regulatory priorities;
- 3) discussion with dealers and dealer organizations;
- 4) discussion with potential site hosts for DCFC infrastructure.

There are many players who will contribute to the building of this future for Michigan and two important pieces to the puzzle seem to need immediate attention. The first is growing the stakeholder team to include auto dealers to provide insight into the economic drivers for that industry and what role the dealers see themselves playing in the future of mobility. The second is exploring potential business models for DCFC site hosts. Given the challenging economics for DCFC site hosts, there is not yet a clear path forward on this topic. It is important to explore options for DCFC site hosts by engaging with stakeholders including possible providers, real estate firms, and commercial facilities managers.

Each of these discussions would not only be informative for stakeholders, but also, the conversations would lead to specific objectives and needs that can be addressed.

### **3. Roadmap for Next Administration**

The gaps assessment and stakeholder convenings will help inform a roadmap developed for the next state administration focused on key policy and regulatory priorities, best next steps, and opportunities to ensure that Michigan is a leader in the automated, shared, connected, and electrified mobility future.