

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own motion,)
to open a docket that will be used to collaboratively)
consider issues related to both the deployment of)
plug-in electric vehicle charging facilities and to)
examine issues germane to the use of compressed)
natural gas as a motor vehicle transportation fuel in)
Michigan in a Commission-sponsored technical)
conference.)
_____)

Case No. U-18368

At the December 20, 2017 meeting of the Michigan Public Service Commission in Lansing,
Michigan.

PRESENT: Hon. Sally A. Talberg, Chairman
 Hon. Norman J. Saari, Commissioner
 Hon. Rachael A. Eubanks, Commissioner

ORDER ADOPTING GUIDING PRINCIPLES AND
COMMENCING A SECOND COLLABORATIVE TECHNICAL CONFERENCE

The purpose of this order is to summarize the comments that were submitted in this docket in response to the Commission's October 25, 2017 order (October 25 order) and to set forth guidance and next steps being taken by the Commission with regard to the emergence of plug-in electric vehicles (PEVs)¹ in Michigan and the deployment of associated infrastructure and technology.

¹ Although some of the persons below used the term "electric vehicle(s)" or "EV(s)" in their comments, for consistency sake, the Commission refers to all vehicles as PEVs in this order, since the Commission's concern is with those vehicles that plug into the grid.

Background

Based on the intention it expressed in its February 28, 2017 order in Case No. U-17990, pp. 48-49, regarding hosting a technical conference on PEVs, the Commission opened this docket on April 28, 2017 (April 28 order), to announce the beginning of, not only collaboratively addressing PEV-related issues on a statewide basis, but also examining issues pertaining to compressed natural gas (CNG) and its use as a fuel source for motor vehicles. In its April 28 order, pp. 4-7, the Commission thus set forth the parameters for a collaborative technical conference, later scheduled for August 9, 2017, to generate useful information regarding charging stations for PEVs and CNG fueling stations, along with insight into the role for regulated utilities in the deployment of such stations. The Commission additionally invited any person to submit comments or a letter of interest on the development of regulatory approaches or guidance pertaining to this topic. April 28 order, pp. 7-8.

Following comments from several persons and the Technical Conference on Alternative Fuel Vehicles, hosted by the Commission and the Michigan Agency for Energy (MAE) on August 9, 2017, the Commission issued the October 25 order to seek additional input on the adoption of PEVs in Michigan and the deployment of associated infrastructure and technology, in an effort to further ascertain the Commission's regulatory role in this arena and to provide further guidance to regulated electric utilities and other interested persons on this topic.² In that regard, the Commission, in addition to encouraging any other issues that commenters wanted to bring to the Commission's attention or suggest for future inclusion, specifically stated that it:

² Although the October 25 order focused on PEVs, which also remains the focus in this order, issues pertaining to CNG have not been abandoned in this docket.

. . . seeks comments on whether utilities should initiate a series of targeted pilot programs designed to further explore issues related to the deployment of PEV charging stations and associated infrastructure. If targeted pilot programs are appropriate as a means to guide future Commission and utility decision making, the Commission also seeks input on the focus of such pilots so that they could strategically identify and reduce barriers and inform future investment and regulatory strategies.

October 25 order, pp. 8-9.

In response to the October 25 order, and the specific information requested within, the Commission received 25 comments, summarized below.

Comments

1. John Glennie

John Glennie comments that electric vehicle service equipment (EVSE) should be centrally placed in a center median to allow four vehicles (or at least two) to access the charger, with cords long enough to reach the back of the vehicle, and rates should be by the kilowatt-hour (kWh), not by the connection.

2. Susan Cujar

Susan Cujar comments that PEV charging stations should be located at hospitals, senior citizen centers, and large medical practices.

3. Michigan Petroleum Association and Michigan Association of Convenience Stores

The Michigan Petroleum Association and the Michigan Association of Convenience Stores (MPA/MACS) recommends that the number of PEV charging stations in Michigan be increased. MPA/MACS states that there is a dearth of entities willing to work with existing gas stations and that it is not economically feasible for an existing wholesale or retail petroleum facility to invest in a PEV charging station on its own. MPA/MACS therefore seeks the Commission's help in connecting members of MPA/MACS with reliable business partners.

4. Roger Eberhardt

Roger Eberhardt comments regarding PEV charging at campgrounds and suggests that a pilot smartphone app should be developed to allow PEV owners to identify campgrounds with available PEV charging sites, an app which Mr. Eberhardt claims would result in a win-win situation for both PEV and campground owners alike.

5. Bruce Goodman

Bruce Goodman comments that he would like to see banks of fast charging stations along the freeways and that placing more Level 2 charging stations around towns will not move PEVs forward. Mr. Goodman further suggests pilot programs that require the utilities to work with the automobile industry to make sure that PEVs can provide grid support, making use of PEVs' battery storage capacity, and that tariffs should reflect this purpose.

6. Craig Toepfer

Craig Toepfer recommends that a pilot program be used to develop a photovoltaic and PEV time-of-use (TOU) schedule for residential customers who invest in solar energy and a PEV. Mr. Toepfer suggests that the term "net billing" be replaced with "smart TOU billing" and further recommends that public and private parking lots install solar panels for PEV charging purposes.

7. Brightfield Transportation Solutions, Inc.

Brightfield Transportation Solutions, Inc. (BTS), a technology integration company delivering business-to-business Solar Driven® charging solutions for the PEV marketplace, believes electrification of transportation provides challenges and opportunities, with many moving parts and possibilities to take the "correct" paths forward. BTS's comments, p. 1. In this endeavor, which BTS states will impact many aspects of our society and economy, BTS believes governmental agencies and utilities do have a role to play.

Regarding PEV charging infrastructure pilot programs, BTS recommends that PEV pilot infrastructure be made visible to PEV drivers and the public; energy storage, solar energy generation, back-end data systems management software solutions, and payment platforms be integrated and modeled; all solutions adhere to open standards; and statewide economic benefits be understood. BTS believes that there is no individual PEV infrastructure company that will fully solve these new challenges and opportunities facing the industry. Therefore, BTS recommends, for purposes of pilot programs, that “best-of-breed components are integrated in a thoughtful and forward-looking manner” through a “systems integration” approach. *Id.*, p. 2. BTS further believes that the data derived from PEV interaction will be valuable and thus recommends that such data be made available to the public. And lastly, BTS, in providing its thoughts on a possible type of PEV charging station, provides a depiction of one incorporating solar energy. *Id.*, p. 3.

8. Indiana Michigan Power Company

Indiana Michigan Power Company (I&M) states that utilities should initiate a series of targeted pilot programs designed to explore issues related to the deployment of PEV charging stations and associated infrastructure for many reasons. First, I&M believes targeted pilot programs will provide further guidance to the Commission and utilities for purposes of future decision making, will allow utilities to gain “hands on experience” to analyze potential EVSE impacts to the grid and to plan accordingly, will provide utilities with data and information to meet future customer needs, and are an important step in evaluating new technologies and consumer acceptance. Given their unique positioning and prior experience offering pilot programs and new technologies to their customers, I&M avers that utilities can help provide the data and information needed for future Commission action in this developing area.

On the topic of rate design, I&M contends that flexibility and creativity are key, in that no single rate has been proven to be the best for optimal PEV charging. I&M, however, does believe that TOU rate designs, along with other programs to encourage optimal PEV charging times, need to be included as options. Other rate design options that I&M suggests should be considered are reduced rates for customers who allow the utility to manage EVSE use, PEV tariffs designed to reflect EVSE use on a utility's cost of providing service, and those that would require the use of a second meter, when necessary.

In regard to grid impact, I&M relays that the current rate of PEV adoption in its service territory in Michigan does not evidence any immediate risks to its grid reliability. I&M, however, cautions that this needs to be monitored, as residential clustering of EVSE on the same transformer could cause potential overload. Nevertheless, I&M believes that pilot programs could investigate such scenarios before they become an issue, develop mitigation strategies, and provide information to the Commission for the development of future prudent regulatory policies and practices. I&M also discusses the benefits of larger-sized batteries in PEVs on the grid, claiming that the stored electricity within these batteries can possibly assist with voltage or frequency regulation or provide support for either the local distribution grid or the broader electric power market.³

For customer education, I&M states that it provides its customers with general learning and understanding of PEVs on its website.⁴ I&M also states that, in the past, one of its affiliates provided materials that offered a rebate for the purchase of a Nissan Leaf. I&M, however, believes that pilot programs would be the most ideal way to address customer education,

³ I&M mentions that these vehicle-to-grid (V2G) applications are currently being tested in other pilot programs throughout the United States and other parts of the world, which could serve as an example for future pilot programs here in Michigan.

⁴ <https://www.indianamichiganpower.com/environment/ElectricVehicles/>

particularly if utilities were able to partner with automakers to inform, educate, and incentivize PEV adoption and the efficacy of such partnerships were then tested.

As to the role of regulated utilities in the deployment of EVSE infrastructure and cost recovery, while some states allow utilities to own and operate EVSEs and others do not, I&M believes pilot programs on this topic are appropriate to determine which approach is best for PEV adoption in Michigan. For example, I&M states, in 2016, the California Public Utilities Commission approved \$197 million in cost recovery for vehicle charging infrastructure owned and operated by regulated electric companies. Without utility involvement, I&M asserts that market failure or barriers in certain areas are possible, discussing how, given the immaturity of the EVSE market, businesses might not be around to serve customers in the long run, thus making utilities in the best position to offer EVSE infrastructure and programs across all classes and markets. For utility involvement, with Commission support, I&M believes that pilot programs can help educate customers about benefits and provide informative data, including how utility involvement can assist with PEV infrastructure, lead to lower rates by spreading fixed costs over a greater number of kWh sales, lead to a reduction in environmental impacts, and potentially increase the demand for renewable generation. Given these benefits, which I&M contends are beneficial for all customers, I&M asserts that it is reasonable for all customers to share in EVSE-related costs to bring these benefits to the forefront. As far as the appropriate business model for the deployment of EVSE infrastructure, I&M, while providing different options, encourages the Commission to be flexible in pilot programs for exploring such business models. I&M also encourages the Commission to collaborate with the Michigan Department of Environmental Quality (MDEQ) to consider utilizing available funding for the deployment of EVSE infrastructure through the Volkswagen emissions settlement.

9. DTE Electric Company

DTE Electric Company (DTE Electric) believes that electrifying the transportation sector can reap significant benefits to both PEV drivers and the public at large, whether it be in the form of money saved on fuel and maintenance for an individual PEV, environmental improvements through reduced emissions, economic development opportunities in Michigan, overall energy independence in the United States, or spreading fixed utility costs over a greater volume of sales, resulting in lower rates for ratepayers.

Despite these significant benefits, however, along with technological advancements with batteries and additional PEVs being added to the market, DTE Electric points out that a lack of consumer education and “range anxiety” remain the primary barriers to PEV adoption in Michigan. To address this, DTE Electric asserts that a concerted effort by several stakeholders, including utilities, who are uniquely suited and positioned for this arena, and utilizing all types of funding sources, including utility investments seeking reasonable cost recovery, is necessary.

In this PEV realm, DTE Electric asserts that policy advancement and regulatory development are needed in four key areas: (1) rate design, (2) grid impact, (3) customer education and outreach, and (4) charging infrastructure.⁵

For rate design, DTE Electric states that it currently has five residential rate options for charging PEV vehicles at home and claims that its PEV TOU rate is effective in incentivizing behavior and shifting charging to off-peak hours. In that regard, DTE Electric indicates that it may recommend removing or increasing the cap on the number of customers who can select this option

⁵ DTE Electric indicates that recommended near-term actions and pilots regarding these four key areas are addressed in the joint comments it subsequently filed, in collaboration with other organizations.

(currently capped at 4,750 customers) in its next rate case. With the PEV rates that DTE Electric offers though, whether it be the PEV TOU rate or the PEV monthly flat fee, DTE Electric asserts that a second meter for billing purposes is currently required to meet statutory metering requirements,⁶ as the capabilities and appropriate protocols and practices are currently not in place for sub-metering to be employed at this time. DTE Electric does nonetheless claim that there is an added benefit to having a second meter, in that a second meter enables easier implementation of potential demand response (DR)/smart charging programs in the future, which could then prevent or delay capacity issues involving PEVs clustering in residential neighborhoods. And, with regard to non-residential charging, since demand charges for such use can impede deployment of PEV charging infrastructure, DTE Electric indicates that it has rate options for non-residential charging that do not include demand charges.

In understanding grid impact, DTE Electric believes it is the utilities who have the responsibility to make sure PEVs are properly integrated with the grid, to ensure minimal cost and reliability impacts, along with safe operation of the grid. For reference, DTE Electric states that, in California, integration costs for PEV load have been very low. DTE Electric, however, cautions that load for a single PEV could be comparable to that of an entire house, thereby emphasizing that proper management is necessary, particularly because of the increased demand on the grid and different usage patterns that PEVs present. In looking at residential neighborhoods, and considering the impact of PEV charging clusters, DTE Electric claims that it would take approximately 25% PEV penetration, when PEV charging occurs off-peak, for there to be any

⁶ DTE Electric highlights that a second meter is not required for its whole-home TOU or dynamic peak pricing (DPP) rates though.

disturbance to its current system.⁷ DTE Electric acknowledges that the PEV market is still in its infancy here in Michigan, thus making it impossible to address all potential system impact issues now, but states that it will continue to learn from other utilities and partner with other agencies/organizations to further educate itself about PEV grid impacts. For PEV infrastructure integration with the grid, DTE Electric asserts that knowing the location for PEV infrastructure is key for a utility to better serve its customers. DTE Electric therefore recommends legislative changes to require the Secretary of State's office and cities/townships to provide notification to the applicable utility when a PEV is purchased and PEV charging infrastructure is installed, which could then supplement the information that is obtained through self-reporting. And lastly, with regard to understanding PEV public charging behavior, DTE Electric states that, because PEVs have flexibility to charge at different times, locations, and power levels, smart charging technology pilots should be pursued, to allow a utility or third party to remotely control charging by slowing it down or turning it completely off, if needed. DTE Electric also suggests testing and piloting battery storage as a cost-effective means to address utility investments of charging stations in critical areas.

As far as customer education, DTE Electric again reiterates the significant benefits to direct users and the public at large and states that utilities can use their current customer relationships to help develop an informed market and grow customer confidence in PEV technology. DTE Electric discusses current efforts to renovate its PEV website and materials that it is developing to share at locations where PEVs or PEV charging infrastructure are sold, along with efforts to improve its call center to address incoming PEV-related questions. Given the rapidly-evolving

⁷ DTE Electric notes, however, that this study needs to be updated, because it assumes lower charging rates than are currently available and will be available in the future.

PEV world, however, DTE Electric asserts collaboration with multiple stakeholders is necessary, from both the public and private sectors, including identifying potential site hosts to grow PEV charging infrastructure in Michigan.

On its last area of focus, PEV charging infrastructure, DTE Electric references a survey wherein a lack of charging stations is cited as a significant reason why a person would not purchase a PEV,⁸ leading to “range anxiety.” DTE Electric argues that a multi-source funding strategy is necessary to close the gap on this lack of PEV charging infrastructure,⁹ again stating the importance of utility involvement. In this regard, and in order to decrease the potential of the infrastructure later becoming a stranded investment, DTE Electric proposes a utility “make-ready” model, wherein a utility would only invest money where a site host, who would fund the actual PEV charging station, is willing to own and operate the charging station. DTE Electric’s comments, p. 16. DTE Electric believes this model will be the most practical way to close the gap on the lack of PEV charging infrastructure currently in Michigan and would also attract new investments and resources from third parties. And, as far as residential PEV charging, DTE Electric suggests a pilot residential rebate program, expressing three potential benefits involving the expanded adoption of its PEV TOU rate to help mitigate system impacts, enabling the future deployment of smart charging programs, and providing opportunities to engage customers and promote the right technology.

Lastly, DTE Electric indicates that there is broad stakeholder consensus that utilities should be taking on a lead role in this arena in the near-term, citing to two reports from Deloitte and the

⁸ Altman Vilandrie & Company Connected Cars Survey (2016).

⁹ DTE Electric specifically raises the potential opportunity to leverage available funding from the Volkswagen emissions settlement and Electrify America to deploy PEV charging infrastructure.

Natural Resource Defense Council (NRDC),¹⁰ along with support from The Brattle Group, Navigant, the Sierra Club, and several state commissions,¹¹ the last of which have allowed utilities to invest in this market and recover resultant costs from their customers.

10. Joint Comments from 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

Actia, Advanced Energy Economy, The Alliance for Transportation Electrification (ATE), Clean Fuels Michigan, Consumers Energy Company (Consumers), DTE Electric, 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, NRDC, Phoenix Contact, Siemens, and the Sierra Club (collectively, the Organizations) state that they agree on the following high-level guiding principles, as they relate to transportation electrification in Michigan: (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. Organizations' comments, pp. 2-4.

In further detail on their high-level guiding principles, the Organizations state that there are clear policy and regulatory cases justifying the electrification of transportation, discussing such things as operational benefits to PEV drivers, along with putting downward pressure on rates by PEVs utilizing excess distribution and generation capacity at night. In discussing lag and barriers,

¹⁰ Deloitte Insights, *Powering the Future of Mobility* (October 16, 2017) and NRDC, *Driving Out Pollution: How Utilities Can Accelerate the Market for Electric Vehicles* (June 2016).

¹¹ California, Washington, Oregon, Kentucky, Massachusetts, Ohio, and Utah.

the Organizations indicate that, despite advancements in PEV cost and supply, consumer awareness and knowledge of PEVs, range anxiety, and investments in charging infrastructure remain the chief barriers to the adoption of PEVs in Michigan. The Organizations, however, claim that Michigan can address range anxiety by supporting the accelerated deployment of PEV charging infrastructure that provides equitable, reliable, and consistent access in various locations. The Organizations indicate that they are in further agreement that transparent pricing and the use of open standards for communications and payment is in the public interest, and, since private investment in this arena is not enough, the Organizations assert that public and utility investments should be utilized to complement private funding sources. The Organizations also believe that customer understanding can be improved if all stakeholders improve a customer's journey, from initial consideration to ownership and operation, through education and outreach. The Organizations indicate that electric companies are uniquely suited to integrate PEV infrastructure, discussing such things as electric companies' ability to manage flexible PEV load via various means, electric companies' ability to invest through reasonable cost recovery, and electric companies leveraging their established customer relationships to inform the market and grow customer confidence.

For potential near-term actions and pilots, the Organizations suggest the following: (1) economic rationale for transportation electrification and electric companies' role, (2) smart charging and rate design, (3) customer awareness and education, and (4) PEV infrastructure deployment. Organizations' comments, pp. 4-6.

In further detail on the economic rationale for transportation electrification and electric companies' role, the Organizations suggest compiling studies that provide economic rationale, to

gain a deeper understanding of value and to develop a broader view of costs/benefits for investment purposes.

For smart charging and rate design, the Organizations discuss such things as an investigation into available technologies to bypass the need for a second meter, a potential phase-in strategy to balance interests, and refining current PEV TOU rate structures.

With regard to customer awareness and education, the Organizations suggest the consideration of basic understanding of PEV ownership, along with lifetime benefits; collaborating with auto manufacturers, dealerships, and other interest groups; and interactive website tools.

And lastly, as to PEV infrastructure deployment, the Organizations suggest public-private collaboration to support deployment in various areas, leveraging various sources of funding and resources; collaboration with cities, employers, developers, property managers, and retail locations; and residential incentives for the PEV TOU rate.

In concluding their comments, however, the Organizations stress the importance of flexibility in policy decisions and regulatory development in this newly-developing PEV market here in Michigan.

11. Consumers Energy Company

Consumers asserts that Michigan must prepare for a transformed transportation system, and because PEVs provide benefits to owners and society, Consumers believes that regulators and utilities need to be proactive to identify and remove barriers that have broad social impacts, with a focus on being responsive to changes. Consumers avers that this can be done through integrating PEVs with the grid in a manner that is safe and minimizes costs and reliability impacts.

In answering the Commission's first question from its October 25 order, Consumers indicates that it believes it should initiate a series of targeted pilot programs related to PEV infrastructure,

which it admits it's already making a path toward. To that end, Consumers sets forth four PEV infrastructure priority areas to focus on: (1) customer experience, (2) utility role, (3) grid optimization, and (4) infrastructure deployment. Consumers indicates that it will use a data-driven process to address these issues, with exact solutions and pilot constructs being decided during the process. And, since infrastructure decisions have decade-long impacts, Consumers states that it will have a larger strategic plan and use best practices, research, and pilots to take small steps and test assumptions to ultimately tailor a grid that is resilient to future change.

Before addressing its four PEV infrastructure priority areas in greater detail, however, Consumers discusses the momentum that is building behind transportation transformation,¹² market and system obstacles that prevent full PEV expansion, the role of utilities, and the PEV-related services it is currently providing to its customers.

Touching on some of the discussion within these topics, Consumers asserts that PEV growth has been hindered by customer-facing market challenges, such as range anxiety, customer education, and the diversity of stakeholders not accustomed to working together. Consumers believes that, for benefits to the grid and society in general to be realized, utilities, who know the grid system best and can install infrastructure and manage flow, would naturally take a lead role in the deployment of PEV infrastructure—although exact roles for all key stakeholders would still need to be determined. In the deployment of PEV infrastructure, Consumers suggests four deployment options for consideration: (1) business as usual, (2) “make ready,” (3) charger only, and (4) full ownership. Consumers comments that actions taken with regard to PEVs will either have a positive impact, such as helping to increase grid utilization and efficiency through off-peak

¹² Further details on this momentum are discussed within Appendix I to Consumers' comments. *See, Appendix I: Momentum is Building for a Transportation Transformation* within Consumers' comments, pp. 13-21.

charging, through incentives or smart charging technology, or through the V2G approach, or a negative impact, in the worst-case scenario leading to higher system peak loads and creating localized stress. In either event, Consumers asserts that utilities have the system-level view and technical capabilities to address these issues. As far as economic and societal benefits, which Consumers further details in its comments, including referencing a study,¹³ Consumers states there are three categories on which research is aligning: (1) cost savings to PEV owners, (2) financial benefits to customers, and (3) value to society. Consumers indicates that it supports a regulatory approach that synchronizes utility incentives with customer interests to minimize cost and fully utilize the grid. Consumers thus believes innovative pilot and regulatory approaches, similar to energy efficiency programs, should be considered and claims that its goal with pilot programs is to “nimble respond to changes, learn faster, and reduce cost upfront” Consumers’ comments, p. 5.

Consumers provides a historical perspective of PEV-related services that it has provided since 2010 and states that, today, it offers PEV rates, information about PEVs on its website, and a phone number for additional PEV information. Nevertheless, Consumers believes that greater stakeholder engagement and customer education is needed for the PEV market to advance in Michigan. To achieve this, Consumers claims that it is working with an automaker, joined ATE, is co-leading a PEV initiative to collaborate with stakeholders throughout the United States, and is monitoring related initiatives, projects, and funds.

Returning to its four PEV infrastructure priority areas that it is focusing on, Consumers first provides an overview of its three-step approach to forming strategies to address such priority areas

¹³ Ceres Business for Innovative Climate and Energy Policy Network (Ceres) and M.J. Bradley & Associates, LLC (MJB&A), *Accelerating Investment in Electric Vehicle Charging Infrastructure* (November 2017).

and illustrates an exemplary pilot program that could be employed for at-home PEV charging installation. Specifically on its approach to strategy formation, Consumers states:

Because we are working in an area rife with assumptions and low on experiential knowledge, every effort should be made to ensure we are operating with lean, innovative principles: test quickly, make ‘small bets’, and maximize learning and flexibility rather than focus, prematurely, on final answers and conclusions.

Consumers’ comments, p. 7 (emphasis omitted).

Given that the company is in the early stages of strategy formation, Consumers provides a high-level action plan to address its priority areas and, starting with improving customer experience today, identifies areas to explore, including rate designs that are simple and straightforward, utility companies working individually or with third parties to provide better education and serve customers, considering whether a second meter is necessary, and the role and effect of demand charges.

With regard to defining the role of regulated utilities regarding PEV infrastructure, Consumers avers that utilities have a role to play in this area—to help the public realize the benefits of PEVs and to ensure optimal deployment of PEV infrastructure with the grid. Consumers claims areas to explore include avenues beyond traditional ratepayer-funding, global or localized market failures or barriers, additional or specific criteria for Michigan to consider, the competitive market outlook for charging infrastructure in Michigan and nationally, and cost/benefit analyses.

To realize grid benefits from PEVs while mitigating risks, Consumers states, in the near-term, the grid currently has unused capacity to support PEVs. Consumers, however, asserts that the grid will need to be prepared to identify and mitigate vulnerabilities in a world with higher PEV saturation. In this vein, Consumers posits several areas to explore, including optimizing the flexible load from PEVs using rate design, smart charging, or other methods; potential grid impact

of charging infrastructure/PEV adoption at various locations within the distribution system; and time-varying or dynamic rates to shift charging behavior.

For areas to explore to build a PEV infrastructure system that adequately meets today's needs but is also robust enough for future changes, Consumers suggests how to best deploy charging infrastructure (Level 1, Level 2, and DC fast chargers (DCFCs))¹⁴ to meet customer needs today and future trends, including all-terrain vehicles, needs to be considered, along with tailored solutions for different use cases, such as multi-unit dwellings (MUDs).

In concluding its comments, Consumers requests assistance from the Commission as it adjusts its approach to pilots and solutions to address PEVs, specifically indicating that “[l]essoning [sic] the burden on pilot programs would help foster and accelerate innovation” and suggesting potential paths such as a “[r]ate design ‘sandbox’ to iterate on experimental rate designs” and “[i]nnovative regulatory treatment.” Consumers’ comments, p. 12 (emphasis omitted).

12. Electric Vehicle Charging Association

The Electric Vehicle Charging Association (EVCA) believes we are at a “critical moment” in PEV adoption and that a coordinated effort between public and private stakeholders is needed on this front “to ensure adequate and equitable fueling infrastructure.” EVCA’s comments, p. 1. EVCA states that every automaker has announced investments in PEVs and, in referencing an article by MJB&A,¹⁵ conveys that ratepayers can save billions on their electricity bills by 2050. EVCA further discusses a major investment for PEV charging infrastructure in Michigan

¹⁴ Level 1 charging recharges a PEV battery from a standard 120-volt household outlet and takes about 8-15 hours to fully charge the battery; Level 2 charging recharges using 240 volts and takes about 3-8 hours; and DC fast charging, also referred to as Level 3 charging, allows for high power transfer and can charge a PEV battery to approximately 80% in minutes versus hours.

¹⁵ MJB&A, *Plug-in Electric Vehicle Cost-Benefit Analysis: Michigan* (August 2017).

stemming from the Volkswagen emissions settlement; and because Michigan's current fleet of PEVs will grow in the next few years, EVCA asserts that Michigan must be proactive in setting policies that anticipate such growth, which EVCA claims will take a concerted effort between public policies, proactive utility effort, and private capital commitments. And lastly, EVCA suggests the following best practices to structure PEV charging infrastructure deployment pilot programs, referencing the real-life application of these programs in Massachusetts, Ohio, and California: (1) incentives structured through rebates, grants, and competitive programs; (2) public-private partnerships that support industry competition, with a variety of acceptable business models for program participation; and (3) a balanced approach between the various dwell-time use cases for PEV charging, such as Level 2 and DC fast charging infrastructure.

13. Clean Fuels Michigan

Clean Fuels Michigan (CFM) recommends that PEV charging infrastructure be developed in a way that will create downward pressure on the cost-of-service (COS) to ratepayers. CFM strongly urges use of all funding sources, along with use of the utilities' unique ability to educate consumers. CFM states that utilities should be allowed reasonable cost recovery for the costs of developing an informed market and urges the Commission to determine best practices for rate design, TOU rate structures, and residential incentives. CFM recommends use of funds provided by the Volkswagen emissions settlement and made available by Electrify America.

14. Haukur Asgeirsson

Haukur Asgeirsson comments that Michigan should partner with Ontario to connect to Ontario's DCFC stations and that DCFCs should be explored.

15. REinvent Detroit

Johnathan B. Smith, on behalf of REinvent Detroit, proposes to re-start the Detroit Public Lighting Commission and recommends that PEV charging stations be stationed in Detroit at pre-set intervals.

16. Ceres Business for Innovative Climate and Energy Policy Network

Ceres, a coalition of major employers and large electricity customers in the United States, comments that, based on a recent study by MJB&A,¹⁶ Michigan ratepayers can expect up to \$2.6 billion in savings on their electricity bills by 2050 and can reap \$5.7 billion in benefits associated with reduced greenhouse gas emissions, and PEV owners can expect savings on fuel and other costs estimated at \$23.1 billion by 2050 as well, if sufficient growth in the PEV market occurs. Ceres also posits, in citing the report by Ceres and MJB&A,¹⁷ that the benefits of increased investment in PEV infrastructure outweigh the costs by more than three to one. Ceres states that it supports pilot programs that increase customer awareness, address the high upfront costs of EVSE, enable a robust charging network, and encourage cross-sector coordination. Ceres also encourages siting PEV charging infrastructure on business property.

Ceres encourages the Commission to adopt pilot programs that make off-peak charging attractive to businesses through the use of day-ahead hourly rates, rebate programs that track charging behavior, and education and outreach. Ceres posits that businesses are more likely to electrify (either their fleet or through providing charging stations) if there are incentives for smart charging systems and if the incentives are paired with renewable energy and storage options. Ceres suggests that tariffs should recover costs via methods other than through demand charges

¹⁶ *Ibid.*

¹⁷ *See*, n. 13.

and that rebates could be offered based on battery capacity. Ceres recommends that PEV charging be seen as a grid-responsive resource rather than as a volatility issue and states that benefits from the growth of PEVs can be provided to all ratepayers, regardless of whether they own a PEV.

17. Michigan State University

Michigan State University (MSU) comments that replacing every gasoline-fueled vehicle with a PEV in Michigan would require about a 40% increase to Michigan's current electric generation. MSU comments that PEVs present the potential to decarbonize the transportation system, along with increasing renewable energy sources and improving grid storage capacity. MSU indicates that pilot programs should allow for the study of how different program designs impact user enrollment and behavior and that data collection should track households across charging locations and vehicles, rather than focus on isolated PEV charging stations. MSU suggests that utility billing data could be linked with vehicle registration data as a source of information. MSU further recommends that pilot programs are randomized in order to provide rigorous empirical evidence of the costs and benefits associated with different PEV policies.

18. Crystal Mountain

Crystal Mountain supports the development of PEV pilot programs, commenting that PEVs will ultimately save ratepayers money through reduced greenhouse gas emissions and other environmental benefits. Crystal Mountain urges the Commission to create transparency with respect to the utilities' accounting of the costs and benefits associated with utility-funded EVSE infrastructure to ensure that benefits flow through to ratepayers, utility investments in this area do not result in increases to rates, and funding for these investments is sourced from other stakeholders who stand to benefit from PEV infrastructure. Crystal Mountain comments that the Commission should facilitate TOU rates that reward off-peak charging and are predictable.

Crystal Mountain also suggests that, in light of a projected increase in demand resulting from PEVs, Michigan should open transmission pathways in order to increase the import of clean energy and take advantage of load diversity. Crystal Mountain argues that the Michigan local clearing requirement is high at 95% and reduces the ability to take advantage of cleaner and cheaper imported alternatives.

19. City of Ann Arbor

The City of Ann Arbor indicates that it strongly supports PEV charging and suggests that pilot programs should be located in the Ann Arbor and Washtenaw County area, due to the area's higher-than-average ownership and lease rate for PEVs compared to the rest of the state. Ann Arbor argues that cities are key to moving PEVs forward and that cities need to be protected from bearing all of the upfront and ongoing costs of construction and maintenance.

20. Alliance for Transportation Electrification

ATE indicates that it believes there is a substantial PEV infrastructure gap impending in Michigan and across the United States, since automakers have announced an increase in PEVs in the next couple years. Because of this, and because the PEV charging infrastructure for this growth is not currently in place, ATE contends there is an urgency to address this as soon as possible, an urgency in which the Commission and utilities play a role and one that will require open standards and interoperability to be successful.

Due to the approaching challenges and regulatory issues associated with the electrification of transportation, ATE states that it encourages the Commission to keep this docket open to address these issues, with the Commission ideally providing clear guidance to utilities prior to the filing of EVSE tariffs or programs. In the alternative, however, if such clear guidance cannot be provided at this time, ATE urges the Commission to either (1) schedule another technical workshop in the

next couple of months to address more specific issues, including potential conceptual filings, similar to the approach taken by the Maryland Public Service Commission in its PC44 process, or (2) engage in a disciplined stakeholder process with defined goals and timelines, prior to a utility filing, similar to the process employed by the Washington Utilities and Transportation Commission.

With regard to market transformation, ATE contends that there currently are market failures preventing the PEV industry from advancing more quickly, one being the lack of a clear stand-alone business case for a network of DCFCs, to alleviate range anxiety, and a second being the lack of an incentive or clear business model to serve MUDs. ATE avers that utilities, through a collaborative approach, can help this PEV market transformation develop into a more stable industry with scale and lower costs, similar to the market transformation process that utilities played a role in in the past with regard to compact fluorescent lamp and light emitting diode bulbs.

To achieve this, ATE believes that traditional cost/benefit analyses may need to be supplemented with additional types of analyses, to consider EVSE assets in connection with the grid, a type of analysis that is a new, complex undertaking, which ATE states will rely on several important assumptions. ATE also believes that the Commission should consider a holistic, portfolio (aggregate) approach when reviewing and considering EVSE infrastructure in a utility's filing, instead of considering EVSE infrastructure on a stand-alone basis, something ATE contends is being done by Commissions across the United States, certainly in the Pacific Northwest.

ATE, focusing again on urgency, acknowledges that some may call upon additional studies and analyses on EVSE deployment issues but cautions that "we cannot afford to become paralyzed and inactive now waiting for further studies to be done before utilities make filings or the Commission provides further guidance." ATE's comments, p. 4. In this vein, ATE believes that

there is sufficient information available in this docket and to the public to allow all to move forward and approve pilots and other programs. ATE reiterates that the infrastructure gap is real and growing and respectfully submits that the Commission's current approval procedures will not be able to keep up with the rapidly-evolving PEV market today. ATE therefore, in calling the Commission's general rate case process "far too protracted," urges the Commission "to consider another process that could 'fast-track' the normal administrative processes and get [EVSE deployment] decisions—both regulatory and policy—resolved faster." *Id.*, p. 5.

As far as specific replies to program design and tariff issues, ATE, while also mentioning its participation in the joint comments filed by DTE Electric, states that it believes any other sale for resale provisions in tariffs, aside from those already decided, can and should be resolved easily through an administrative process. ATE believes that time-varying rates can be an essential tool to offer customers incentives and disincentives to charging PEVs at appropriate times and also encourages the Commission to examine other creative rate design proposals from other utilities in the California and Oregon jurisdictions, such as Southern California Edison, Portland General, and Pacific Power.

And lastly, on the topic of pilot programs, with again stressing the importance of urgency, ATE offers the idea that utility ownership pilot programs could develop a performance-based ratemaking approach, with metrics that are vetted by stakeholders prior to filing, to ensure that the Commission could review the efficacy of such investments.

21. General Motors LLC

General Motors LLC (GM) comments that Michigan urgently needs to expand its PEV charging infrastructure. GM recommends a network of highly-visible charging stations, including highway corridor DCFCs, workplace charging, MUD charging, and public charging at key

destinations, such as airports and hotels. GM asserts that utilities are uniquely positioned to play a key role in consumer awareness and must play a central role in PEV infrastructure planning.

22. Greenlots

Greenlots, a provider of grid-focused PEV charging software and services, contends that transportation electrification “represents the single greatest opportunity to increase the utilization of the electric grid to the benefit of all utility customers.” Greenlots’ comments, p. 2. According to Greenlots, however, this opportunity is stunted by barriers—the most significant being the lack of PEV charging infrastructure, on account of numerous issues compounding this deficiency, such as the lack of a private market business model for owning and operating charging stations, low utilization rates and load factors for the PEV charging infrastructure, low levels of PEV adoption, and batteries within the vast majority of PEVs that can only support local driving. Based on this, Greenlots claims that “[t]he end result is that the fundamental economics simply do not support sufficient private investment to get the market to where it needs to be to support current and future drivers and their [P]EV purchasing decisions.” *Id.*, p. 3. Greenlots believes further strain will come from the need to have a “gas station model” for fueling activity in the future, where there is currently no working business model for such activity, and with a market moving toward the need for high power DC fast charging, Greenlots contends higher costs and greater grid integration is going to be a challenge (and an opportunity). Greenlots also claims deploying PEV charging infrastructure in certain sectors of the market, such as MUDs, workplaces, and disadvantaged communities, adds to the PEV adoption barriers here in Michigan.

As to the role of a regulated utility in the deployment of PEV charging infrastructure, and alluding to the market failure issues it mentioned above as a chicken and egg causality dilemma, Greenlots indicates that utilities are uniquely situated to break through this. Greenlots further

believes that providing utilities with flexibility in this endeavor will help to motivate and excite them in their involvement in this arena.

Regardless of the regulatory strategy employed by the Commission on this topic, whether it be through pilots or a broader portfolio approach, Greenlots contends that there must be balance and sufficient consideration with regulating service and accelerating market transformation, which Greenlots believes will allow a competitive market to develop.

To this end, and in light of the infancy of the PEV market here in Michigan currently, Greenlots asserts that it is necessary for utilities to own and operate PEV charging infrastructure, including the PEV charging stations—an action Greenlots believes will accelerate the market, support competition and choice, and grow private investment. Greenlots avers that leveraging utilities' full involvement, assets, and capabilities will also help educate ratepayers about the benefits that can be realized through this technology transformation and provide the reliability that ratepayers expect from all other utility services. Greenlots further asserts that the nature of EVSE assets is “a natural extension of existing utility infrastructure . . . [that] fit[s] very well within the core competencies and capabilities of utilities.” *Id.*, p. 6.

On the topic of rate design, Greenlots discusses the benefit PEV load can have on reducing system-wide energy costs, referring to the magnitude and flexibility of PEV load, but states that such benefits will not happen automatically and cautions that such load, if poorly managed or if not managed at all, could create or compound existing constraints on the grid or exacerbate peaks to the system. To address this, Greenlots believes that the development of rates and programs that send accurate price signals, such as TOU rates, are essential. If TOU rates are offered for PEV charging stations with longer dwell times, Greenlots further asserts that managed charging should be offered in tandem to address charging behavior that could result in secondary peaks. And, to

provide PEV-specific rates without the installation of a second meter, Greenlots suggests that utilizing embedded meters within the networked equipment for EVSE itself can be an alternative option. In this context, Greenlots further contends that demand charges, which can also be a barrier to transportation electrification goals, should be taken into consideration.

In specifically discussing the grid, and suggesting an appropriate option for a pilot program, Greenlots claims that pairing EVSE with storage technologies and distributed solar can further mitigate impacts and ensure benefits to the grid by shifting load, increasing utilization, and providing ancillary services back to the grid.

In the context of customer education, as something that Greenlots believes should be a core part of any pilot program, Greenlots states that the key is leveraging utilities' existing deep customer and community relationships to create the greatest impact, and investing in customer marketing, education, and outreach can be an effective means to overcome psychological barriers and create interest. With customer education, Greenlots further asserts the importance of prominently locating PEV charging stations in highly visible public locations, along with cohesive turnkey utility EVSE programs.

Greenlots argues that closed proprietary networks stifle innovation and competition and could lead to stranded investments that do not meet the evolving needs of PEVs in the future. Greenlots therefore asserts that open standards and interoperability are needed for this endeavor. In this regard, Greenlots discusses the open charge point protocol (OCPP), stating that it is the leading and freely available universal communication protocol that enables interoperability of hardware and software, and one that is the de facto network protocol/standard throughout Europe, the United States, and 75 countries worldwide; and is required by Volkswagen as part of its \$2 billion Electrify America investment and mandated by leading utilities in their investments. Greenlots

does, however, caution that, given the lack of regulatory oversight, application of this open standard may be viewed by some as inadequate to guarantee full flexibility and ongoing choice. Nevertheless, it is Greenlots' belief that, "[a]s competition is the driver of innovation, and innovation is what leads to customer choice, [closed proprietary networks] can have profoundly negative impacts on hardware and software markets and products." *Id.*, p. 12. To avoid this stifling outcome, Greenlots suggests, in analogizing the selection of platforms for managing and operating DR programs and distributed energy resource optimization into distribution system operations, that utilities could engage in a competitive request for proposal process for a vendor to manage a charging station network in a utility's network using OCPP, an approach Greenlots claims has a number of advantages.

And lastly, for guidance for the Commission, Greenlots believes that, given the early point at which we are at for the PEV market here in Michigan, there is significant benefit to exploring different models to employ in this arena. And, in the development of different PEV strategies and programs, Greenlots encourages the Commission to provide clarity to utilities so that they can plan for implementation with a more certain framework but to also provide a modest structure that affords utilities flexibility, including cost recovery for PEV charging infrastructure, together with PEV charging stations. For further guidance, Greenlots provides examples of approaches taken in California, Oregon, and Washington, in which, in all three states, approval of utility proposed pilot programs involving some form of direct investment by utilities in EVSE has occurred. Greenlots asserts that narrower approaches, such as rebate-only programs and employing a make-ready model, can limit the impact, cost effectiveness, and net benefits of utility EVSE programs. And for additional guidance, Greenlots believes that the Commission should consider the issue of PEV equity with regard to disadvantaged communities; non-light duty market segments and the market

barriers that exist there; and a transportation future that is autonomous, electrified, connected, and shared.

23. Joint Comments from the Natural Resources Defense Council, Ecology Center, Sierra Club, and the Environmental Law and Policy Center

The NRDC, Ecology Center, Sierra Club, and Environmental Law and Policy Center (collectively, the Commenters) support accelerating transportation electrification and posit that Michigan can be a leader in this movement. The Commenters state that regulators have the opportunity to shape the future in a way that maximizes the benefits to consumers and that regulators should not attempt to address every policy and program design question before beginning to authorize utility investments. The Commenters state that TOU rates have already shown that they are effective at shifting load to off-peak, citing a study of the 340,000 PEVs operating in the service territories of the three largest California electric utilities.¹⁸ The Commenters aver that dynamic rates may not be appropriate for all charging applications, especially public chargers, where simple TOU rates published on an app such as PlugShare would be preferable. The Commenters further urge the Commission to ensure that utilities have robust programs that will drive significant participation.

The Commenters recommend that pilots test both PEV-only TOU rates, that rely on a separate or sub-meter, and whole-home TOU rates, that rely on a single meter, to see which is more cost effective and easier to use. The Commenters note that a second meter can be cost prohibitive; however, the Commenters state that sub-meters can be embedded within the EVSE or the PEV itself. The Commenters state that transportation electrification load should not be exempt from

¹⁸ Synapse Energy Economics, Inc., prepared on behalf of the NRDC, *Electric Vehicles Are Not Crashing the Grid: Lessons from California* (November 2017).

demand charges, that demand charges are not generally cost-based, and that demand charges can frustrate the ability of a charging site owner to recover costs.

The Commenters urge the Commission not to be deterred by the prospect of short-term adverse impacts on the grid, again citing the California study which showed *de minimis* adverse impacts.¹⁹ The Commenters further cite the MJB&A study showing that, with high PEV penetration and use of off-peak charging, transportation electrification should bring about \$31 billion in statewide benefits for Michigan by 2050.²⁰

The Commenters argue that, even now, new car buyer evaluations of PEVs are largely based on ignorance, and utilities can overcome this problem with robust education and outreach plans. The Commenters contend that car dealers cannot explain utility rates, and they urge the Commission not to delay this educational effort by requiring extensive economic analyses. The Commenters further state that workplaces, MUDs, and fast public chargers are particularly underserved, as the market is currently essentially a single-family-home market. The Commenters note that a single approach to the pilots will not succeed and that different program designs should be tried in different markets. The Commenters also urge the use of all sources of funding, including the Volkswagen emissions settlement, and partnerships with automakers, chargers, and other stakeholders. The Commenters posit that the utilities can then use the increased revenue from transportation electrification to fund more infrastructure.

The Commenters state:

The Commission should encourage a portfolio of pilot programs that will test different models tailored to priority market segments. Likewise, the Commission should avoid a protracted regulatory review process with prescriptive criteria, as doing so would defeat the purpose of inviting pilot proposals. We suggest the

¹⁹ *Ibid.*

²⁰ *See*, n. 15.

Commission evaluate utility pilot portfolios holistically and consider the following foundational questions:

- Is the portfolio targeting high-priority segments likely to increase [P]EV adoption?
- Is there an element of load management?
- Does the portfolio prioritize the safe installation of electrical infrastructure?
- Are there reporting requirements that will provide data to inform future program design?
- Will the portfolio increase access/foster an equitable market?
- Will the portfolio meaningfully educate and engage customers?
- Will [P]EV drivers realize the fuel cost savings that motivate [P]EV purchases?

Commenters' comments, pp. 14-15. The Commenters recommend that utilities be encouraged to adopt pilots for electric school buses and transit buses, noting that school buses represent the single largest category of mass transportation in the United States. The Commenters further recommend that Michigan utilities sponsor a DC fast charging siting study to examine the deployment of such stations. The Commenters contend that utilities are uniquely positioned to deal with the market coordination (chicken and egg) problem associated with the high upfront cost of DCFCs and the lack of interest in PEVs without DCFCs in place. The Commenters also recommend that utilities expand their home charging rebate programs and look at new rates, advanced metering infrastructure opportunities, DR, and the problem of second meters.

24. ChargePoint, Inc.

ChargePoint, Inc. (ChargePoint), a PEV charging company, states that it has the largest PEV charging network in the world, with 42,000 independently owned charging spots (800 in Michigan), including 645 fast charging spots. ChargePoint states that it sells PEV charging equipment and the network services that enable the equipment and allow customers to manage

their EVSE infrastructure using cloud-based software. ChargePoint contends that PEV load can result in downward pressure on rates from the increased electrical throughput associated with charging. ChargePoint suggests that “utilities are ideally situated to ensure that the associated new load is incorporated in a safe, reliable, and efficient manner,” and “the right program design can encourage the installation of more charging stations around the state in a manner that complements, and does not duplicate or conflict with, the private market.” ChargePoint’s comments, p. 5. ChargePoint notes that the private sector is already actively selling charging stations around the state.

ChargePoint encourages the Commission to set forth clear criteria for evaluating proposals. ChargePoint suggests that utility pilots should require that charging stations provide DR capabilities, two-way communications, and embedded metering. ChargePoint supports charging without requiring a second utility meter, along with new rates for faster charging “to evaluate how alternative commercial rate structures can reflect the COS while avoiding penalizing [P]EV charging site hosts for low utilization as [P]EV adoption increases.” *Id.*, p. 8. ChargePoint states that traditional rate structures were not designed with faster charging in mind and can act as a barrier to deploying more stations. ChargePoint maintains that demand charges associated with a fast charger can result in triggering high peak demand rates too easily, and the next generation of DCFCs using 400 kilowatts will exacerbate this problem. ChargePoint states that Oregon, Massachusetts, and California regulators are currently considering alternative and hybrid commercial rates to address this issue. ChargePoint also suggests that the Commission focus on being able to identify unplanned load growth and on providing access to charging to disadvantaged communities and MUDs.

With regard to direct deployment, ChargePoint states:

A potential program design for a utility pilot would target the utility's involvement on the installation of the electrical infrastructure on the customer side of the meter up to, but not including, the [P]EV charging station itself. This is commonly referred to as the "make ready." The utility would construct, own and maintain the electric infrastructure from the distribution transformer through the customer meter up to the charging station.

Id., p. 10. ChargePoint also suggests the issuance of rebates for a set percentage of project costs.

ChargePoint claims that this utility incentive would support the purchase and installation of smart PEV charging equipment that would also meet core functions for the utility, such as collecting data and providing load management, asserting that such rebates could be similar to those offered for energy efficiency measures. ChargePoint states that cost recovery for the utility could include return of and on the investment, just return of the investment, or just be performance-based.

25. Zeeland Public Schools

Zeeland Public Schools (ZPS) suggests that two or three Michigan school districts should develop a model plug-in electric school bus pilot program and that consideration should be given to electrifying school bus fleets throughout the state in order to improve air quality. ZPS states that it is ready to pilot and develop a model program for electric school buses and already has a system in place for tracking its fleet's performance. ZPS indicates that it will engage with the Michigan Association of Pupil Transportation, MDEQ, MAE, and the Michigan Department of Technology, Management, and Budget in developing its program and states that cooperation from Consumers and DTE Electric is critical to the issues of "the costs and installation of charging stations, training of staff to maintain them, [and] testing bidirectional inverters and grid connections." ZPS's comments, p. 5.

Discussion

To begin, the Commission would first like to thank those that took the time and effort to respond to the October 25 order. The diversity of comments submitted, along with the stakeholders themselves, were very impressive and resulted in useful information being shared and submitted in this docket.

The Commission envisions that interested persons will continue to collaboratively work together to discuss PEVs and their further adoption in Michigan. To help provide a foundation for those discussions, the Commission would like to reiterate that its specific role and involvement in this endeavor, albeit being a facilitator through this docket, parallels its mission—in relevant part, to protect the public by ensuring safe, reliable, and accessible energy services at reasonable rates for Michigan's residents. Through the lens of this mission, the Commission finds the guiding principles set forth by the broad coalition of stakeholders in this docket to be reasonable and appropriate.

Based on the comments submitted and the adoption of these high-level principles, the Commission finds that a second collaborative technical conference, targeted at further exploration of potential pilot programs to be initiated by regulated utilities, as possible deliverables, will be most beneficial to all at this time.

With this second collaborative technical conference, which will be facilitated by the Center for Automotive Research and held at the Commission's Lansing offices in February 2018,²¹ the focus will be on the presentation and discussion of four to five selected, fully-developed targeted pilot programs for regulated utilities to potentially initiate that address one or more of the following:

²¹ Notification of the specific date for the second collaborative technical conference, once determined, will be filed and served in this docket and made available to the public on the Commission's website.

1. Customer Education
 - Suggested topics include visible locations, websites, utilizing current customer bases, and partnering with various stakeholders.
2. Rate Design and Smart Charging
 - Suggested topics include rate options, demand charges, and sub-metering versus a second meter.
3. Grid Impact
 - Suggested topics include residential clustering and utilizing renewable energy and storage options for the grid's benefit.
4. Deployment of PEV Infrastructure
 - Suggested topics include business models, funding/cost recovery, standards, and location.

Additionally, with these potential pilot programs, and those the Commission foresees will actually be submitted by regulated utilities for Commission approval in the near future, if ratepayer funding is proposed as a funding source, the Commission expects a detailed cost-benefit analysis to be included, with any benefits specifically concentrated on those to ratepayers as utility customers, not as a part of society in general. Further, when evaluating potential or actual pilot programs for Commission approval,²² the Commission will be considering such things as:

1. Does the pilot program include an element of load management?
2. Does the pilot program prioritize safe installation?
3. Does the pilot program have reporting requirements that will provide data to inform future program design?
4. Does the pilot program include new technology?

Lastly, the Commission would also like to note that it is mindful and agrees that flexibility, creativity, and transparency are some of the key drivers to success here. Therefore, this docket will remain open for the foreseeable future, and the Commission's guidance in this order is

²² To the extent pilot programs do not require Commission approval, the Commission encourages utilities to proceed while collaborative discussions in this docket are ongoing.

intended to provide focus for potential pilot programs for regulated utilities to initiate, not prescriptive guidelines that must be adhered to at this time.

THEREFORE, IT IS ORDERED that:

A. The Commission's Executive Secretary shall electronically serve copies of this order on all electric and gas utilities regulated by the Commission, the parties in Case Nos. U-17990 and U-18014; the former Michigan Plug-in Electric Vehicle Preparedness Task Force stakeholders; representatives of the Michigan Agency for Energy; the National Governor's Association; the Michigan Economic Development Corporation; the Michigan Department of Transportation; the Michigan Department of Technology, Management, and Budget; the Michigan Department of Environmental Quality; and on all subscribers to Commission's own motion dockets.

B. Any person interested in presenting and discussing a fully-developed targeted pilot program, within the parameters set forth in this order, shall submit a letter of interest and a brief summary of the pilot program to Al Freeman at 7109 W. Saginaw Hwy, Lansing, Michigan 48917 or via email at freemana5@michigan.gov by January 15, 2018.

C. Upon finalization of the proposed second collaborative technical conference to be hosted by the Commission in February 2018, the Commission's Executive Secretary shall post a Notice of Second Collaborative Technical Conference in this docket and electronically serve such notice on the interested persons described in Ordering Paragraph "A" of this order and on any interested person who files a letter of interest requesting to participate in the conference.

The Commission reserves jurisdiction and may issue further orders as necessary.

MICHIGAN PUBLIC SERVICE COMMISSION

Sally A. Talberg, Chairman

Norman J. Saari, Commissioner

Rachael A. Eubanks, Commissioner

By its action of December 20, 2017.

Kavita Kale, Executive Secretary

P R O O F O F S E R V I C E

STATE OF MICHIGAN)

Case No. U-18368

County of Ingham)

Lisa Felice being duly sworn, deposes and says that on December 20, 2017 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).



Lisa Felice

Subscribed and sworn to before me
This 20th day of December 2017



Steven J. Cook
Notary Public, Ingham County, Michigan
As acting in Eaton County
My Commission Expires: April 30, 2018

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