MPSC
Michigan Public Service Commission

Issue Brief

Utility Electric Vehicle Pilot Programs

1. What is an electric vehicle?

Electric vehicles (EVs) run at least partially on electricity. Unlike conventional internal combustion engine vehicles that use gasoline or diesel, EVs use an electric motor powered by electricity from batteries or a fuel cell. The two most common EV types are battery electric vehicles that run exclusively on electricity, and plug-in hybrid electric vehicles that can run on electricity for a limited distance before switching to gas/electric hybrid mode. For more information about electric vehicles, please check out the Michigan Public Service Commission's (MPSC) 2017 EV Issue Brief.

2. What are the different types of EV chargers?

Level 1 is a 120-volt charger that can charge a plug-in hybrid or extended-range electric vehicle overnight but would likely take more than 24 hours to charge an electric-only vehicle. They will usually be built into the vehicle and can be used for "opportunity charging" when another type of charger isn't available.

Level 2 is a 240-volt charger, which an electric-car owner can purchase to charge their cars overnight at home. A Level 2 charger can charge a pure electric car in 8 to 10 hours. They are often installed for charging in public places.

Level 3 is known as DC Fast Charging (DCFC). These chargers primarily provide direct current at up to 500 volts. Level 3 chargers will be installed in public places and can provide an 80 percent charge to a full electric car in under a half hour.

3. Why is the MPSC involved with issues related to EVs?

The MPSC is an economic regulatory agency with a mission to protect the public by ensuring safe, reliable, and accessible energy and telecommunications services at reasonable rates for Michigan's residents. The MPSC is the primary state agency for regulation of investor-owned electric utilities. It reviews and approves utility rates and development plans. It also has hosted technical conferences on EVs. Expected growth of EVs could have an impact on customers' rates and electric distribution systems. This will depend on the nature, timing, and location of charging, as well as consumer adoption rates. The uncertainties in EV adoption rates require utilities to be proactive in understanding and mitigating potential impacts to the grid and related infrastructure costs. Effective planning is essential for Michigan ratepayers to ensure reliable energy supply at reasonable rates.

EV issues involve multiple state agencies. The Department of Environment, Great Lakes, and Energy, the Department of Licensing and Regulatory Affairs, the Secretary of State, and the Department of Transportation all regulate different parts of EV policy. For example, the state's road funding is derived from a combination of gas tax revenues and general fund dollars and increased adoption of EVs could decrease gas tax revenues thereby impacting dollars available to fix and maintain Michigan roads. Accordingly, state policy makers need to take a holistic approach to address EV regulation.

4. How do Michigan residents benefit from EV use?

If well-planned, executed with the right price signals, and coordinated with third parties on the placement of chargers, there is the potential for all customers to benefit from increased electrification of the transportation sector since EV adoption saves money for drivers, reduces carbon emissions, supports local industries, reduces foreign oil dependency, and provides greater electrical grid reliability.

5. How did the MPSC come to define its role with respect to EVs?

In April 2017, the MPSC issued an order in Case No. U-18368 to announce the beginning of the effort to collaboratively address EV issues through technical conferences because EV issues were emerging in cases before the MPSC. The MPSC sought to define its role regarding EVs in Michigan and especially within its regulatory jurisdiction. The first technical conference was held in August 2017. Multiple state agencies, utilities, auto industry representatives, EV charging equipment suppliers, environmental advocates, transportation planners, vendors, and other experts in the field participated in the technical conferences.

Following the technical conference, the Commission sought comments on whether utilities should initiate targeted pilot programs to further explore issues related to the deployment of EV charging stations, associated infrastructure, and pilot program designs to strategically identify and reduce barriers while informing future investment and regulatory strategies.

The MPSC held a second technical conference in February 2018 to further explore potential pilot programs by regulated utilities, including customer education, rate design and smart charging, grid impact, and deployment of EV charging infrastructure. The MPSC also provided guidance on what it would prefer to see in a regulated utility EV pilot program proposal. Following the second technical conference, the MPSC requested future regulated utility EV pilot programs to be included in utility rate cases.

6. Did any regulated utilities propose EV pilot programs?

Yes. Consumers Energy, DTE Electric, and Indiana Michigan Power Company requested MPSC approval of EV pilot programs in their most recent rate case proceedings.

7. Did the MPSC approve the EV pilot program proposals for Consumers Energy, DTE Electric, and Indiana Michigan Power Company?

Yes, the MPSC approved EV pilot programs for all three utilities.

8. Why did the MPSC approve EV pilots?

The experimental nature of these pilots will test technology innovations, rate design, customer response, and other factors. Pilot program data and lessons learned will help position the utilities and the MPSC to make more informed decisions over the long term.

Both Consumers Energy and DTE will demonstrate their EV pilot programs while Michigan-wide EV adoption is still low in order to be able to improve the programs over time. This allows the electric utilities to proactively plan and avoid reactive adjustments to a growing EV market that would require complicated and expensive solutions.

An unplanned for or unforeseen increase in load growth could result in each utility needing to invest in expensive incremental generation or distribution and transmission support. These costs would be passed on to ratepayers. However, if EV adoption and the resulting grid impacts are managed correctly, it could result in a more efficient use of excess generation and distribution during off-peak hours to benefit of all ratepayers. Additionally, EV batteries have the potential to serve a vital role for energy storage in the future which, if understood and implemented properly, could lead to additional benefits for ratepayers.

9. How will the approved EV pilot programs be evaluated?

Both Consumers Energy and DTE Energy will file yearly status reports during the pilot program. Additionally, each utility will hold annual stakeholder meetings to evaluate potential future program changes. Indiana Michigan will incorporate their findings in their next rate case filing anticipated to be filed this summer.

Consumers Energy (PowerMIDrive)

➢ What is PowerMIDrive?

PowerMIDrive is Consumers Energy's three-year EV pilot program scheduled to begin June 2019. It is a foundational infrastructure program and will support the growing EV market in Consumers Energy's footprint. The MPSC approved the program in Case No. U-20134. More information can be found at https://www.consumersenergy.com/residential/programs-and-services/electric-vehicles

➢ What type of incentives are there in PowerMIDrive program?

As part of the pilot, Consumers Energy will offer a Nighttime Savers rate for EVs. It encourages charging between 7:00 p.m. and 6:00 a.m. This is called time-of-use (TOU) metering and is a method of measuring and charging a utility customer's energy consumption based on when the energy is used. Utility companies charge more during the time of day when electricity use is higher less during off peak hours.

Consumers Energy will also offer rebates. For residential customers installing an at home Level 2 charger, Consumers Energy will offer a $500 per vehicle rebate for participating ratepayers. For Direct Current Fast Charging (DCFC) chargers, there is up to a $70,000 rebate.

➢ What is the cost to ratepayers for Consumers Energy's PowerMIDrive pilot program?

Consumers Energy estimates the program cost at $7.5 million, half of which will be spent in the first year.

➢ Will Consumers Energy's PowerMIDrive pilot program benefit ratepayers?

Yes, PowerMIDrive is estimated to provide a net benefit to the grid of approximately $2,000 per electric vehicle. Doubling the numbers of EVs in its service territory during the pilot could bring a gross system benefit of $15 to $18 million.

DTE Electric (Charging Forward)

➢ What is Charging Forward?

In Case No. U-20162, the MPSC approved DTE Electric's Charging Forward three-year electric vehicle pilot. The Charging Forward program will help DTE understand the market and its customers, learn about EV load and its relationship to overall system load, and understand EV impacts on the electrical distribution system. Several metrics will be tracked to gauge impact of the Charging Forward program and improve the Company's understanding of the EV market.

➢ What is included in the Charging Forward pilot program?

Charging Forward will include education and outreach to residential and commercial customers via, among other things, social media, newsletters, email, and direct mail.

To support residential charging, DTE Electric will offer approximately 2,800 rebates to residential customers who: (1) install a Level 2 charger; (2) enroll in year-round TOU rates, and; (3) agree to enroll in future, currently undeveloped, demand response programs. DTE Electric will end its EV flat monthly rate and transition customers to a new rate by end of 2019.

DTE Electric will offer rebates of up to $20,000 to public charger site hosts. However, site hosts will be responsible for the charger costs.

➢ How much will Charging Forward cost?

The company's proposal will cost approximately $13 million through the end of 2021.

Indiana Michigan Power Company

➢ What is Indiana Michigan's EV pilot program?

In Case No. U-20282, the MPSC approved changes to Indiana Michigan's plug-in electric vehicle charging tariff. The new tariff change does not change rates but rather adds a submetering option which allows the utility to measure EV charging load separate from the customer's overall load. The customer's bill will now include an adjustment based on TOU calculations for when they charge their EV. This charging data will be collected and analyzed for Indiana Michigan's next rate case.

For more information, visit:
MPSC Website
Electric Vehicles Issue Brief

May 2, 2019