Addressing Barriers to Electric Vehicle Adoption

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Overview

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Adoption Constraints

What’s holding back the large-scale adoption of EVs?

- **Customer Knowledge and Perception** – Consumers expect to be able to drive EVs in the same manner that they drive internal combustion engine (ICE) vehicles
- **Cost** – Consumers expect a price point similar to that of ICE vehicles and expect to pay the same or less as standard fuel
- **Range Anxiety** – Consumers expect to be able to “fuel” their vehicle anywhere and anytime
EV Programs

• Partnerships, education, and program expansion
  – Develop strategic partnerships to establish roles and responsibilities in the advancement of EVs
  – Utilize and expand MidAmerican EV fleet, install charging infrastructure to allow fleet travel across MidAmerican’s service territory, and implement employee charging program

• Incentive program:
  – Vehicle purchase incentive: provide $500 toward the purchase of a qualifying new EV
  – Non-residential charger incentive: provide $1,500 toward the purchase of a qualifying charging installation (workplace, retail, commercial, etc)

• Support the development and deployment of DC fast-charging infrastructure throughout MidAmerican’s service territory
Iowa DC Fast-Charging Network

• In Fall 2019, MidAmerican began the installation of 18 DC fast charging sites located throughout its service territory; five (5) sites have been constructed as of May 2020, with all sites scheduled for completion by Fall of 2020

• Proposed site locations were identified to provide access to charging for customers traveling along major corridors and for rural and underserved areas of MidAmerican Energy’s service territory

• Proposed sites were located approximately 50 miles apart to reduce range anxiety
  – Although range for many EVs available for purchase is higher, the 50 mile target recognizes reduced range due to colder weather, use of climate control, terrain, and driving habits
  – Limiting the distance between chargers also provides more options for customers, further reducing range anxiety

• MidAmerican will own and maintain the charging infrastructure; the charging infrastructure at each site will have the following specifications:
  – Two DC fast chargers, either rated at 50 kW for rural areas or areas in which drivers will spend longer periods of time, or rated at 150 kW for high-traffic corridors and urban centers;
  – The chargers will provide CCS Combo and CHAdeMO connectors for universal use by EVs available for purchase in the US;
  – Each site will be networked to provide MidAmerican Energy and the site host information on use patterns, electric usage, charger operating status, and diagnostic information
  – The site will be designed to accommodate expansion at a future date
Iowa DC Fast-Charging Network
Looking Forward

• MidAmerican’s objective: Promote the benefits of EV adoption to our Illinois customers and communities by addressing range anxiety, cost and public knowledge barriers.

• Next steps:
  – Through UIC EV Workshops, identify methods by which utilities can directly address EV adoption barriers within the Illinois communities where they serve
  – Develop and deploy pilot projects which will allow utilities to deploy proposed solutions, identify lessons learned, and study more thoroughly EV-specific rates prior to adoption of long-term programs

• Support community discussions around the future of electrified transport and application-specific electrification
  – Fleet electrification
  – Electrified transit and trucking
  – Ultrafast Charging (~350 kW and above)
  – Agricultural applications