

# PowerMIDrive Program Overview

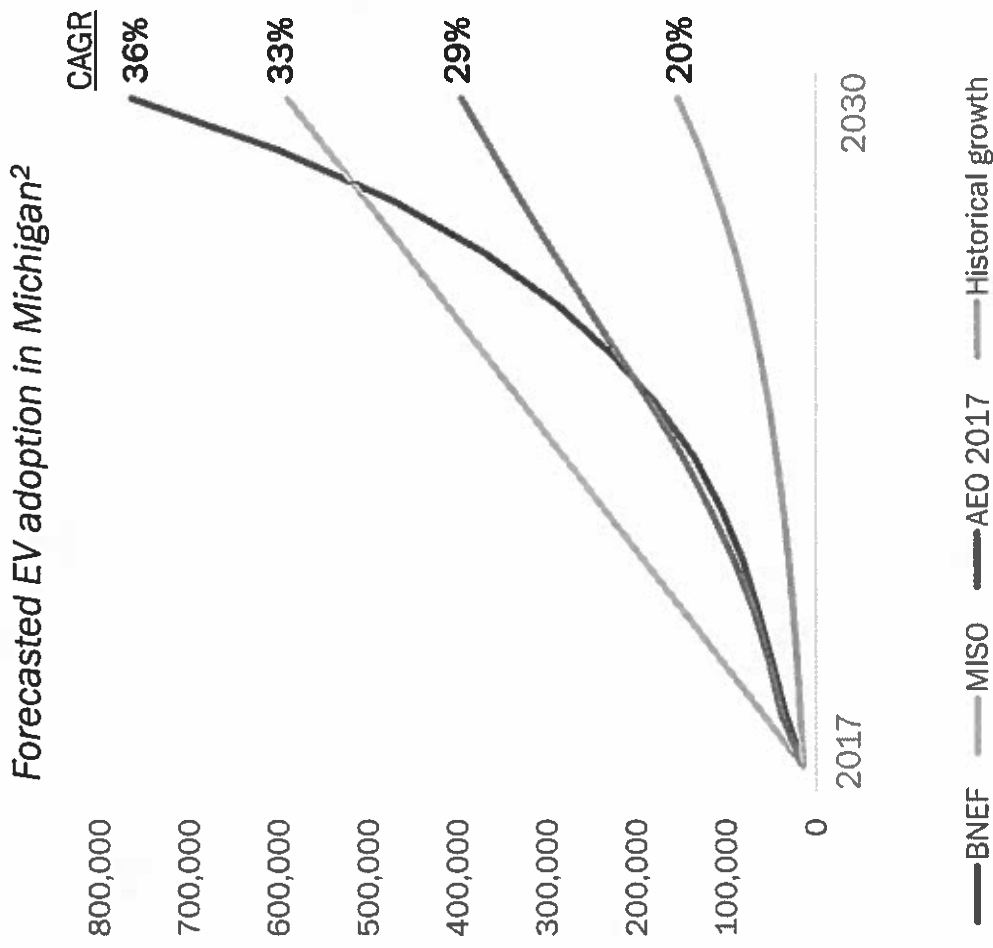
House Energy Committee

June 5, 2019

**Consumers Energy**

*Count on Us*

Electric vehicle growth forecasts vary but all point to rapid growth from a relatively small base today

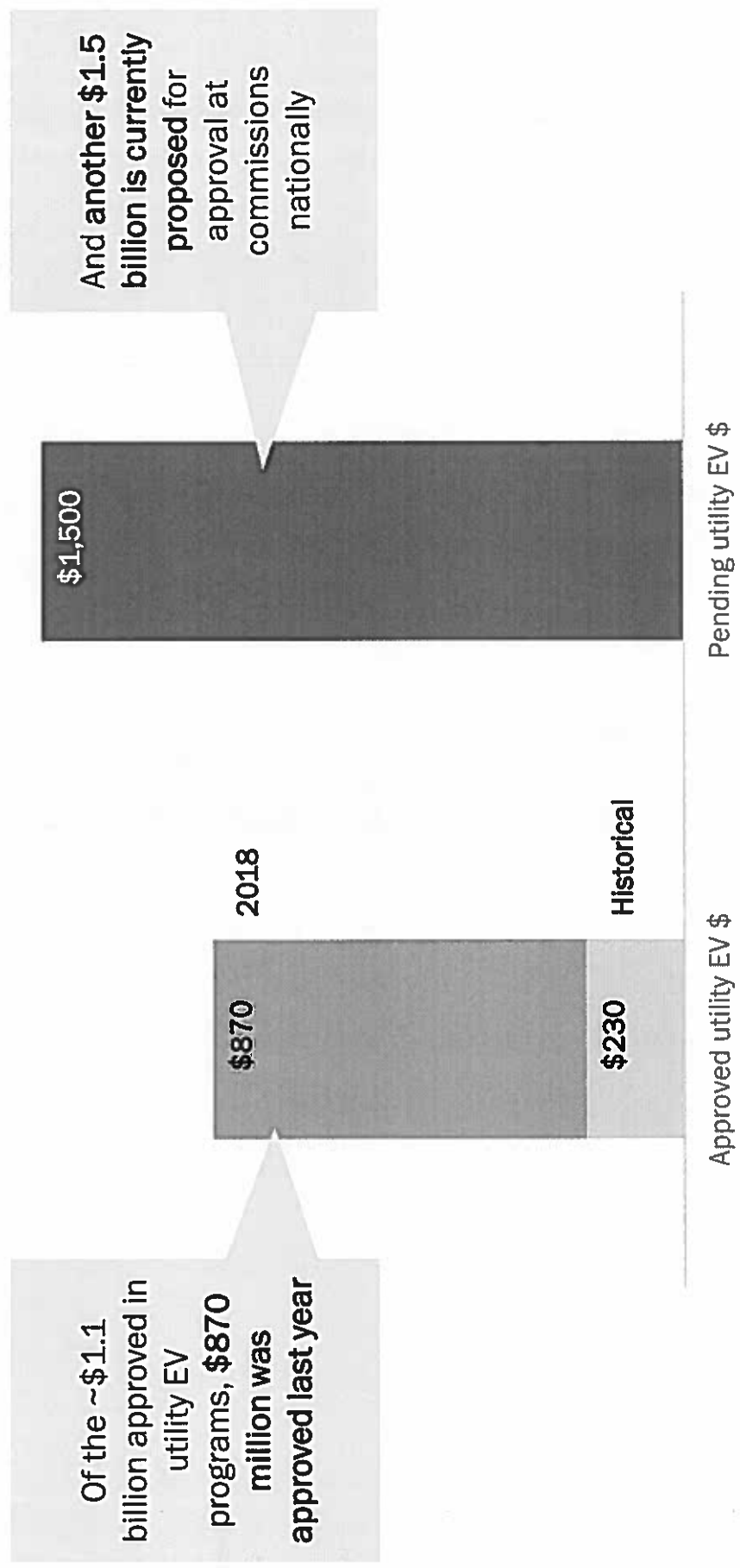


- Michigan EV forecasts vary through 2030, but all show positive growth rates
- The U.S. EV market is still small (1% of market), but growing quickly (36% YOY)<sup>1</sup>
- Primary factors of growth:
  - Lower battery costs
  - Faster charging speed
  - EV investment and policy
  - Parallel trends in autonomy, connectivity, and ride-sharing

1. McKinsey  
 2. BNEF, MISO data through M.J. Bradley, AEO, team analysis

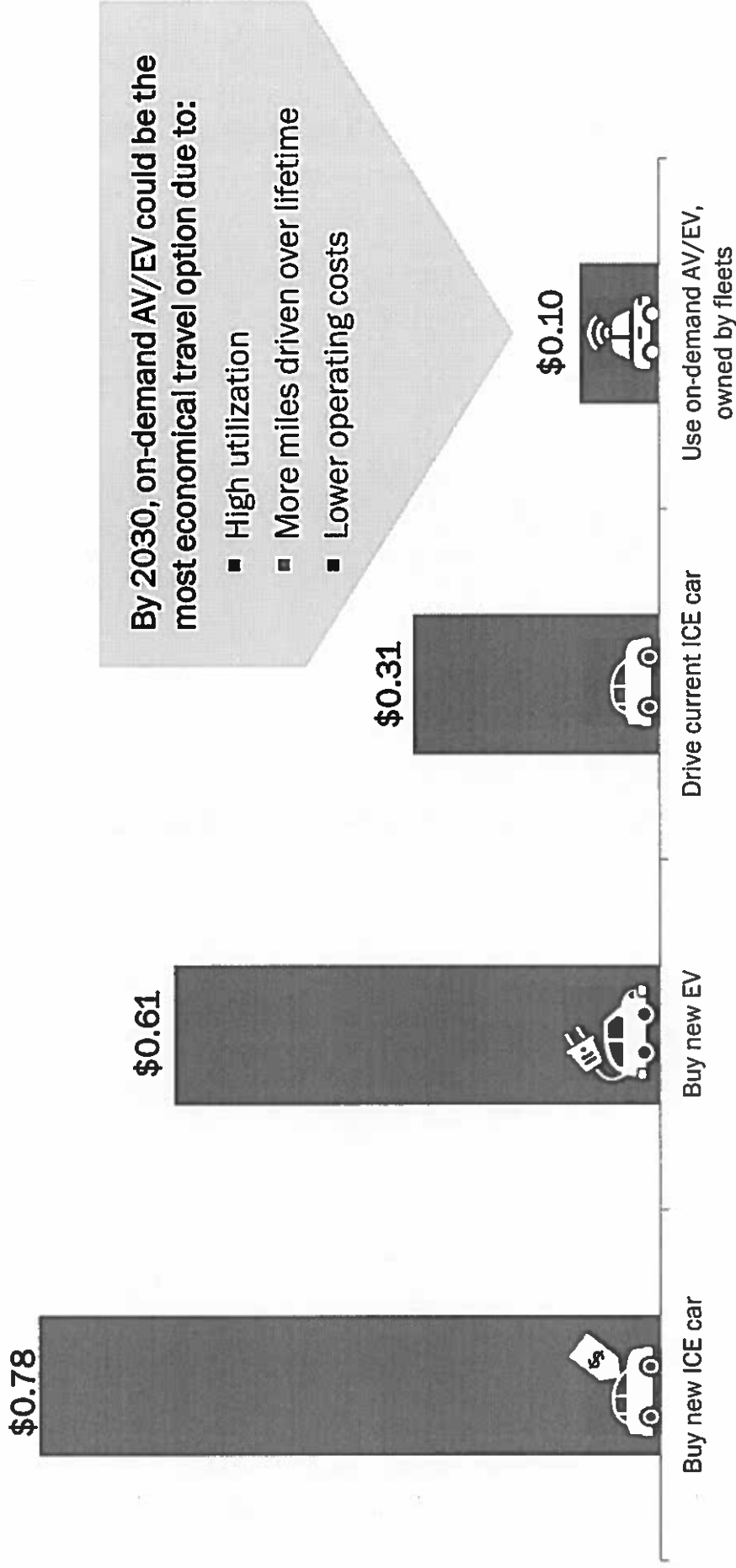
Approved utility investment in electric vehicle programs also suggests momentum

Utility EV program funding (\$ millions)



Parallel trends in autonomy, connectivity, and ridesharing are bolstering EV momentum, with AV/EV poised to be the true needle-mover

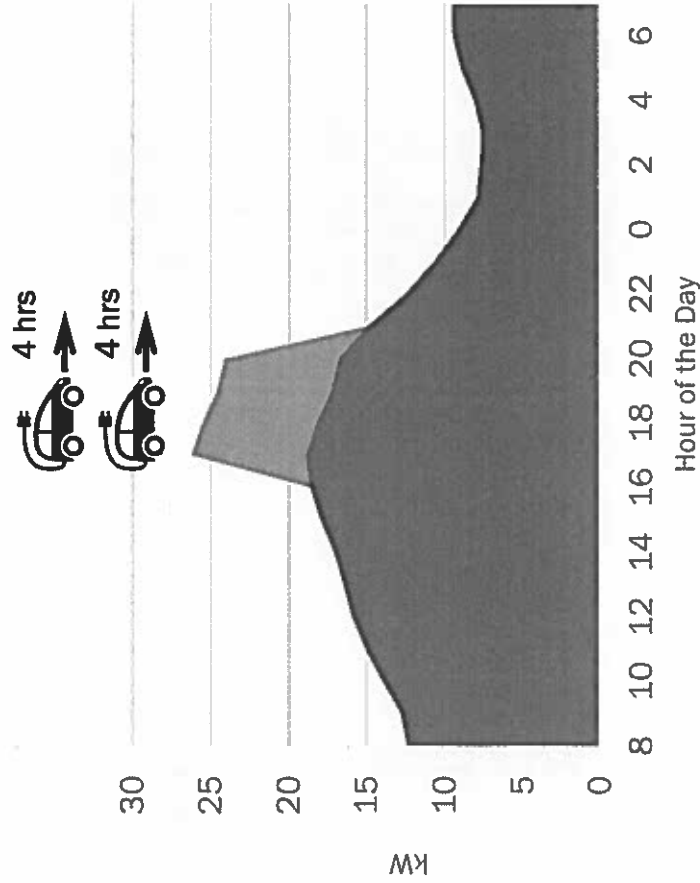
Cost-per-mile analysis in 2030, across car travel options<sup>1</sup>



# Due to their flexible load potential, EVs could be a burden or benefit to the grid, depending on vehicle charging behaviors

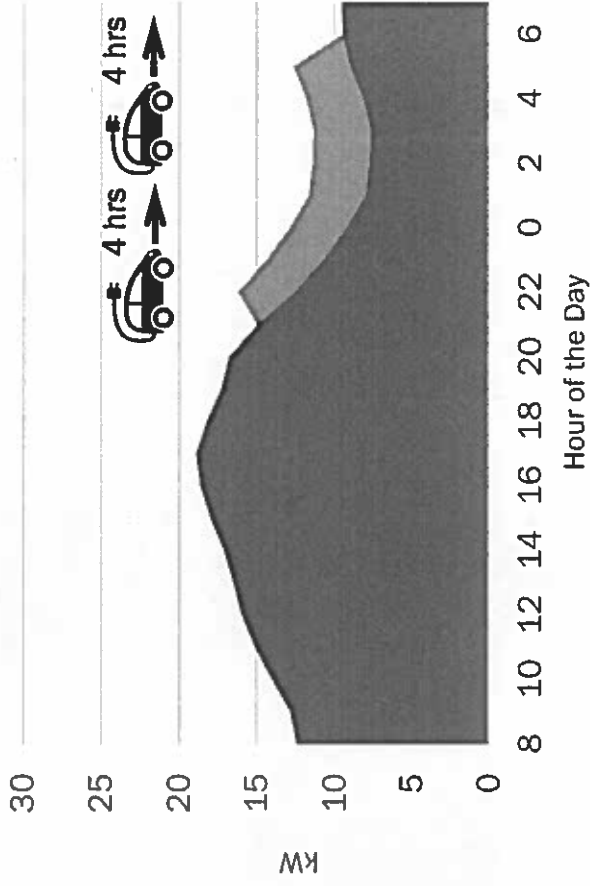
## EVs as a grid burden<sup>1</sup>

An unprepared grid will be burdened by increased load demand at peak times, such as when drivers return home in the evenings



## EVs as a grid benefit

A grid prepared with smart charging and off-peak incentive rates can adjust EV loads to off-peak hours, optimizing the grid<sup>2</sup>



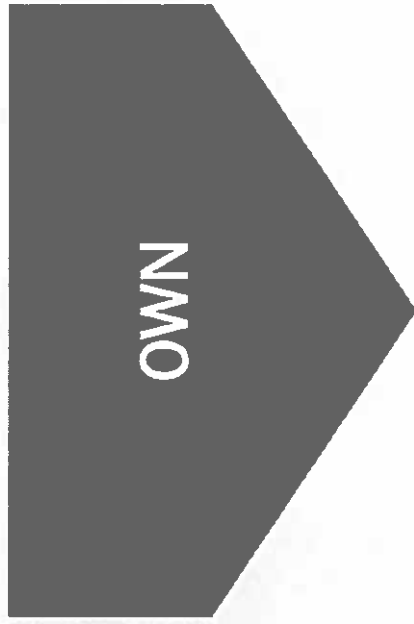
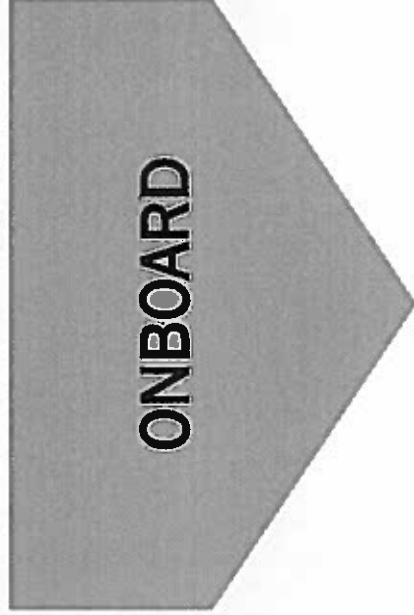
Further work is needed to understand localized distribution system impacts in areas with very high concentrations of EVs

1. Analysis assumes a neighborhood with ten households, two EVs and a 3.6 kW/h vehicle charge rate  
 2. In theory, vehicle to grid (V2G) capabilities would also increase grid benefits by utilizing EVs as a mobile battery and pulling power when needed; however, there are additional considerations (e.g. grid flow, battery life) that make V2G a longer-term prospect

# There are multiple opportunities to improve today's EV customer journey

## Illustrative customer pain points

- Lack of awareness
- Gap in dealer incentives
- Installing a home charger
- Adjusting home electric rates
- Completing a long-range trip
- Understanding maintenance



# Today we are launching **PowerMIDrive**



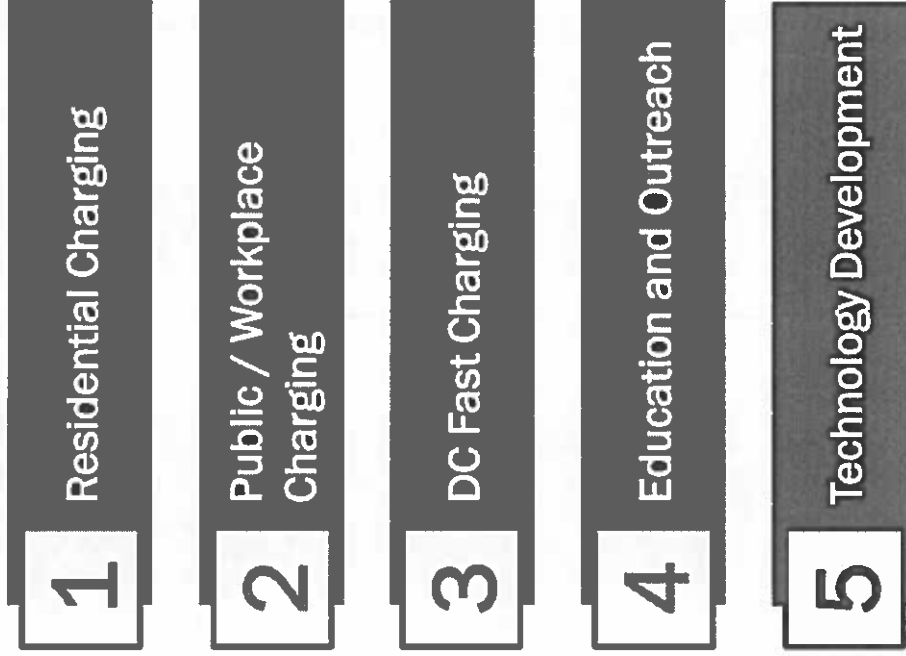
## OBJECTIVE

Enable Michigan drivers to own and use EVs by deploying foundational infrastructure across our territory

## OVERVIEW

- **Three-year program** of initial infrastructure investment designed to seed the EV market in the CE territory
- **Run as rebate programs**, with rebate terms dictating maintenance, equipment choice, and utility data/demand response access
- **Emphasis on learning**; track utilization, customer behavior, and market response to determine future steps to take

## FIVE COMPONENTS:



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# THANK YOU

Questions?