

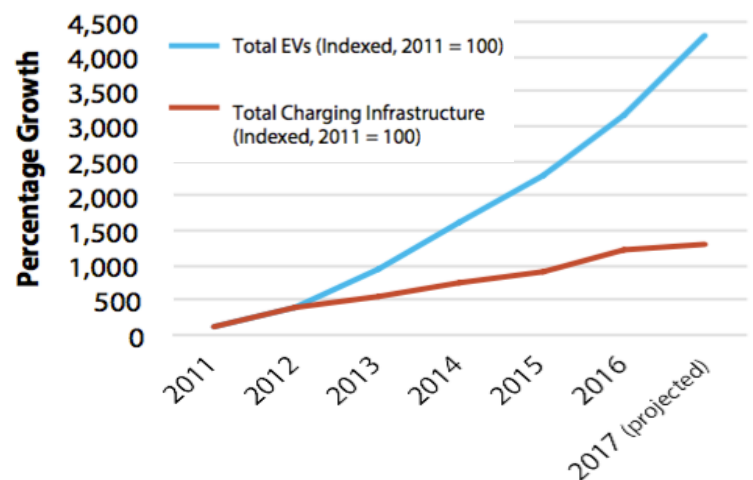
## DRIVING THE FUTURE: ELECTRIC VEHICLES

*Electric vehicles represent an exciting mobility revolution that will move Michigan's economy forward while enabling us to wean off foreign oil and reduce air and climate pollution in a cost-effective manner. From innovations in our electric grid, to improved battery storage and the integration of connected and autonomous vehicles, the next generation of the automobile is here. With electric vehicles becoming increasingly cost-effective, practical and in-demand, Detroit's largest automakers have rapidly accelerated plans to electrify their vehicle fleets. Now, as more than 600,000 EVs have been sold across the country to date, Michigan is among the top 10 states in electric vehicle sales and top 20 by share of the total vehicle market. State leaders have an opportunity to establish Michigan as a leader in the EV market by enacting policies that incentivize and strengthen this critical economic sector.*

### ELECTRIC VEHICLES NOW & INTO THE FUTURE

I. Electricity is cleaner and cheaper than conventional gasoline. EVs produce less carbon pollution than conventional cars and reduce climate change-inducing smog and air pollutants, improving public health and reducing ecological damage. Best of all, EVs will continue to get cleaner as renewable energy is added to the grid. With widespread adoption of EVs, drivers would save billions in fuel costs, offset our oil consumption by 1.5 million barrels a day by 2035,<sup>1</sup> and greatly reduce pollution produced by the transportation sector. An American Lung Association study found that state health costs from vehicle-related air pollution could be reduced by 88% with a majority EV fleet.

II. Michigan's economy stands to gain from increased EV demand. EV sales are growing—up 38% in Michigan over the past year.<sup>2</sup> Consumers' interest in EVs is on the rise, with 20% of Americans—or 50 million people—willing to go electric for their next vehicle purchase, up from 15% in 2017.<sup>3</sup> Among young adults, over 50% surveyed said they would buy an EV.<sup>2</sup> The Energy Innovation Energy Policy Simulator (EPS) forecasts rapid growth in EV market after 2026.



*Fig. 1 Growth of U.S. EV Sales and Public Charging Points 2011-17<sup>3</sup>*

III. Statewide EV policies need to be more ambitious and encourage cross-sector collaboration for Michigan to remain an EV market leader. Major utilities and independent power producers must invest in EV charging infrastructure, while automakers continue to develop new product lines and advance customer awareness. Supporting Michigan EVs will also require ensuring access to affordable electric rates for recharging. The Michigan Public Service Commission should provide a clear regulatory pathway for utility companies, and lawmakers should provide guiding policy and incentives to boost growth.

<sup>1</sup> Union of Concerned Scientists, Clean Vehicles Webpage -- <https://www.ucsusa.org/clean-vehicles/electric-vehicles>

<sup>2</sup> Plug In America, Electric Vehicles in Michigan Fact Sheet (April 2017), pp. 1-2.

<sup>3</sup> Edmonds, Ellen, et al. "1-in-5 U.S. Drivers Want an Electric Vehicle." American Automobile Association NewsRoom Webpage (May 2018).

<sup>4</sup> Miller, Alana, et al. "Plugging In: Readyng America's Cities for the Arrival of Electric Vehicles." *Environment America Research and Policy Center, Frontier Group*, 2018, pp. 10.

## ELECTRIC VEHICLES BY THE NUMBERS

- A 2017 report from M.J. Bradley & Associates found significant potential for electric vehicle growth and subsequent savings for consumers. Michigan ratepayers could expect savings of \$2.6 billion on their electricity bills by 2050 and reap \$5.7 billion from reduced greenhouse gas emissions. EV owners can also expect to save an incredible \$23.1 billion in fuel and maintenance costs over the lifetime of the vehicle.<sup>5</sup>
- Annual EV sales are expected to exceed 1.2 million by 2025, a 7% share of total annual vehicle sales and a 900% increase from 2017 vehicle sales.<sup>3</sup> In Michigan, total EVs are expected to exceed 600,000 by 2030, with projections estimating 1-3.9 million EVs by 2040, and 1.7-5.4 million in 2050 according to some estimates. This equates to as much as 10.8 percent of in-use light duty vehicles in Michigan in 2030, rising to 41.5 percent in 2040 and 55.7 percent in 2050.<sup>6</sup>
- Fuel cost savings for EV owners range from \$440 to \$1,070 per year, depending on the electricity provider, rate plan, and local cost of gasoline. For Detroit residents, median fuel savings are expected to be \$770 per year.<sup>7</sup>
- Clean fuel mobility is big business, contributing 69,000 jobs to Michigan's economy. Michigan also leads the nation in clean transportation patents, research facilities, and spending on clean fuel innovation.<sup>8</sup>

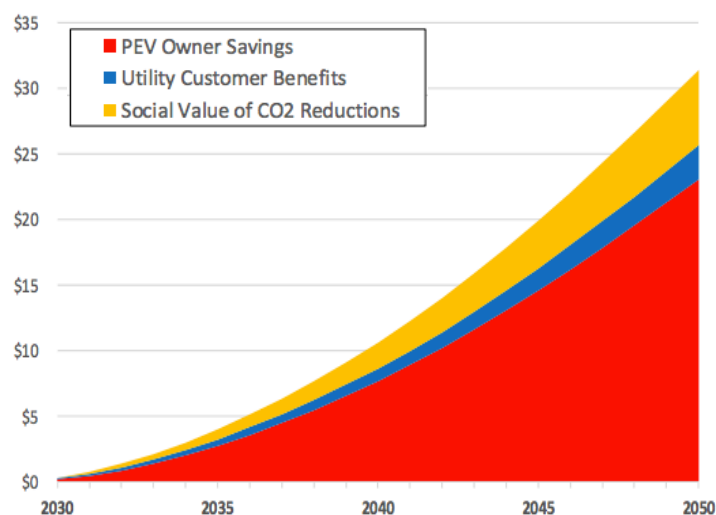


Fig. 2 NPV Cumulative Net Benefits from Plug-in Vehicles in Michigan (\$ billions)—Bloomberg Scenario, Off-Peak Charging<sup>5</sup>

## STEPS TO ADVANCE ELECTRIC VEHICLES IN MICHIGAN:

- I. Michigan's Legislature and U.S. Congressional delegation should *incentivize* the use of EVs and the expansion of charging networks, while the Department of Environmental Quality should *maximize* the amount of VW Environmental Mitigation Trust dollars funding EV charging infrastructure.
- II. The Michigan Public Service Commission (MPSC) should *encourage* infrastructure investments at sites best situated to accelerate clean vehicle adoption (i.e. workplaces, highway corridors and multi-unit dwellings) and should *foster* a competitive market by supporting investments adding to existing and planned infrastructure.
- III. The MPSC should *implement* well-designed time-of-use charging rates that will maximize fuel cost savings and improve the utilization of the grid, thereby reducing electricity costs for all ratepayers.

<sup>5</sup> M.J. Bradley & Associates (July 2017). "Electric Vehicle Cost-Benefit Analysis: Michigan" -- <https://www.ndrc.org/sites/default/files/mi-pev-cb-analysis.pdf>

<sup>6</sup> Midwest Energy News, Michigan is Primed for an electric Vehicle Future

<sup>7</sup> U.S. Department of Energy Alternative Fuels Data Center -- <https://www.afdc.energy.gov/>

<sup>8</sup> Clean Fuels Michigan, Benefits of Clean Mobility in Michigan—Talking Points and High Level Findings (May 2018).