ELECTRIC VEHICLES

There are two types of electric vehicles, Plug-in Hybrid Electric Vehicles, which use gasoline and a battery, and Battery Electric Vehicles, which are all-electric.

HOW ELECTRIC VEHICLES (EVs) WORK:

Instead of an internal combustion engine, electric vehicles have an electric motor, which is powered by a large battery pack. There is no engine, transmission, or tailpipe!

BENEFITS:

Lower Maintenance Costs: With no oil changes, spark plugs, or exhaust systems, EVs have fewer moving parts and far less maintenance.

Reduced Operating Costs: Electricity is much less expensive than gasoline and the prices are also more stable than gasoline prices!

Energy Efficiency: Electric motors are more efficient because energy is not wasted, think about how much energy is wasted as heat coming off an internal combustion engine! Also, electric vehicles do not consume energy while at rest or while coasting and regenerative breaking recaptures energy while the vehicle slows down, too.

Lifespan: With fewer parts, EVs break down less. EV batteries have excellent warranties and are expected to outlast internal combustion engine drivetrains.

Fewer Harmful Emissions: EVs have no tailpipes, which means they do not emit any pollution while in use. Even with Michigan's current electricity mix, EVs are cleaner than driving a gasoline vehicle.

EVs AS DELIVERY SOLUTIONS:

- EVs are great for personal travel and can be used for fleet applications like last mile delivery.
- **BrightDrop**, a GM subsidiary, is offering electric delivery vans.
- **Wygo** uses EVs to deliver groceries in and around Troy, Michigan.

See next page for charging info!

For more information, visit cleanfuelsmi.org or reach out to us at info@cleanfuelsmi.org.

EV CHARGING:

Charging an EV can be as simple as plugging into an outlet. There are a few ways to charge:

- Level 1: Uses a 120 Volt AC outlet, which is standard in homes and buildings. It usually delivers 2-5 miles of range per hour, and a full charge may take 24 hours. It works great for overnight charging at home or charging at work after a short commute.
- Level 2: Uses a 240 Volt AC plug and often requires installation of charging equipment by a qualified electrician. Level 2 chargers deliver about 20 miles of range per hour. Used in homes workplaces, and public charging where people tend to stay for a duration of time.
- DC Fast Charging: 480 Volts and up, DC fast charging requires installation of high powered specialized charging equipment that can deliver 60-100 miles in 30 minutes. The vehicle must be compatible with the charging equipment. Often used in public locations on high traffic corridors.

Sources:
ChooseEV
U.S;. Department of Energy: Alternative Fuels Data Center
MotorBiscut
South East Michigan Council of Governments