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ELECTRIC VEHICLES

Shining a light on EVs in the U.S.



CHOICE

3 ways to power today's EVs

- **Hybrid (HEV)** — Powered by gasoline/diesel engine and an electric motor that uses energy stored in a battery. The battery is charged by the engine through regenerative braking, not by being plugged in.
- **Plug-In Hybrid (PHEV)** — Has a larger battery that provides better range. It can be charged by plugging into an electric power source, through regenerative braking, and by the engine. Can be fueled solely with gasoline as an option. Plugging in is recommended for maximum fuel economy.
- **Battery (BEV)** — Runs on electricity alone, powered by an electric motor that uses energy stored in a battery (larger than in HEV and PHEV). EV batteries are charged by plugging into an electric power source and through regenerative braking.

CHARGING

3 options for at home or on the road

Level 1
(40 miles overnight)

- Connector provided with EV
- Plug into 120 V wall outlet
- Ideal for longer charging periods
- Satisfies average daily commutes

Level 2
(25 miles per hour)

- Faster charging for longer drives
- Provides a full charge in:
  - 4-8 hours for BEVs
  - 1-2 hours for PHEVs

DC Fast Charge
(0-80% in 30-40 mins.)

- Fastest charging at public stations
- 3 types of connectors:
  - CCS Combo (65 mi./20 min.)
  - CHAdeMo (67 mi./30 min.)
  - Tesla Superchgr. (130 mi./30 min.)

HOW FAR?

Charting advancements in range and access

- **Distance** — All EVs now travel 100+ miles on a single charge. Latest BEVs = 200-300 miles.
- **Technology** — Advances allow new models to fully charge in less than an hour.
- **Lifestyle** — Average U.S. citizen drives 37 miles daily, easily handled by EVs.
- **Access** — Apple Maps is incorporating EV charger routing in iOS 14 update.

TRACTION

A short history of EVs and the U.S. market

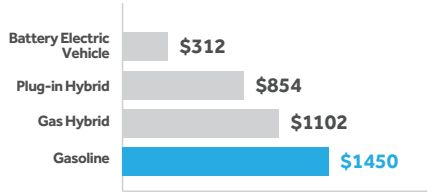
- **Past** — By 2018, one million EVs (mostly cars) were on the road.
- **Present** — A growing majority of all U.S. auto sales are SUVs and pickups.
- **Future** — Affordable BEVs in SUV and pickup models are coming as soon as 2021.

EV BENEFITS

Better products, lower costs, wider acceptance

- **Lower ownership costs** — Fuel for an EV costs about 70% less than for a gasoline vehicle. EVs also cost less to maintain since they have fewer parts (18,000) than internal combustion engine counterparts (30,000).

EV Annual Maintenance Costs



Source: NYC Dept. of Citywide Administrative Services

- **Safety** — EVs receive the same level of safety testing as performed on conventional vehicles sold in the U.S. They are designed to meet Federal Motor Vehicle Safety Standards. Batteries must meet specific testing standards, too, and are designed with safety features that deactivate electric systems if an issue arises.
- **Environment** — Electrifying transportation is imperative to achieve economy-wide decarbonization. When powered by renewables, EVs offer zero-emission transportation with the added benefit of less noise pollution.
- **Performance** — With no engine or transmission, once a driver steps on the pedal, the full acceleration and power of the EV is delivered. EVs have exceptional 0-60 speeds — they are simply more fun to drive.

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