

# EXPO 2017 “NEW POWER CAR”

**NVME**  
New Energy Vehicles Manufacturing Technology Expo  
S H A N G H A I

**SHANGHAI INTERNATIONAL  
NEW ENERGY VEHICLES MANUFACTURING  
TECHNOLOGY EXPO 2017**

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Shanghai World Expo Exhibition & Convention Center



# Electric Powered Car

Advantages over vehicles with internal combustion engines (ICEs):

- ▶ **Energy efficient.**
- ▶ **Environmentally friendly.**
- ▶ **Performance benefits.**
- ▶ **Reduce energy dependence.**

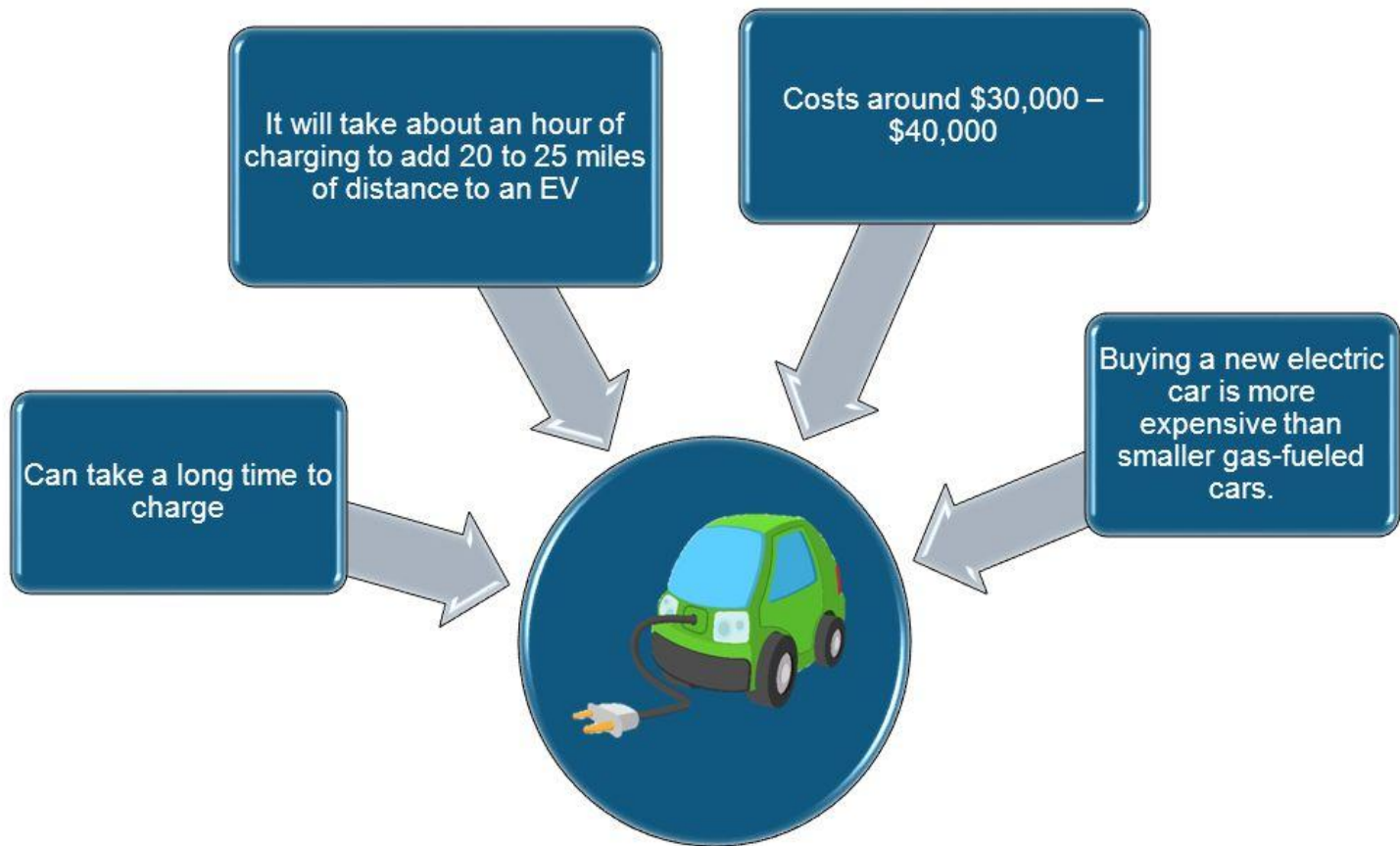
EVs do, however, face significant battery-related challenges:

- ▶ **Driving range.**
- ▶ **Recharge time.**
- ▶ **Battery cost:**
- ▶ **Bulk & weight:**

**Advantages**

**Disadvantages**



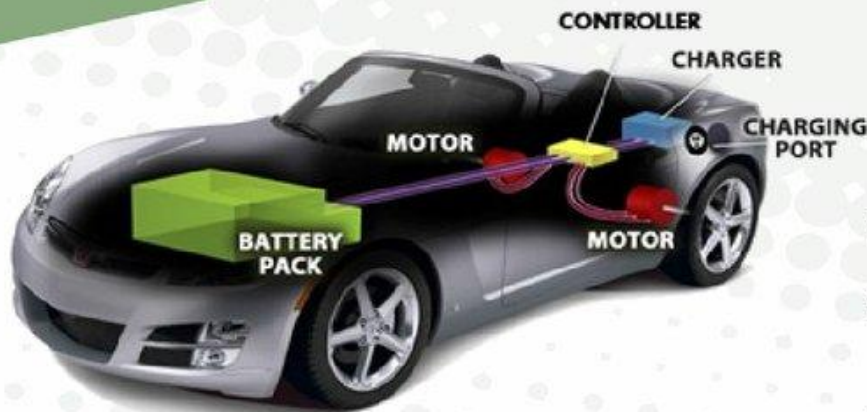


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# ELECTRIC CAR CONS

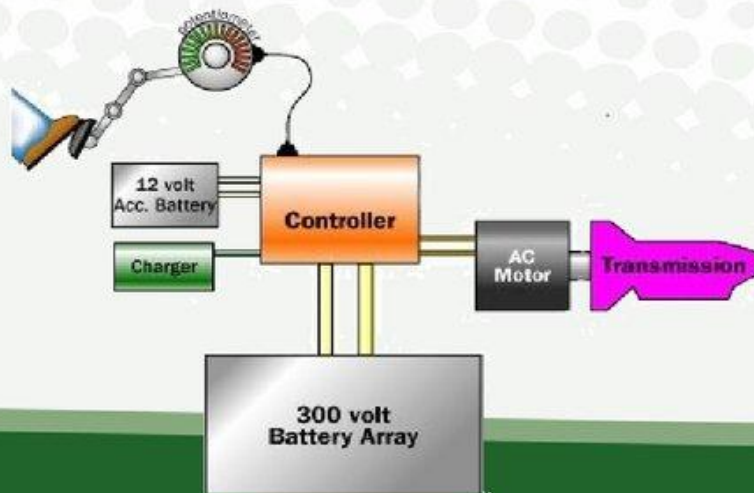


# Electric Cars



When the pedal is pushed;

1. The controller gathers energy from the battery,
2. Controller delivers the appropriate amount of electrical energy to the motor.
3. Electric energy transforms to mechanical energy.
4. Wheels turn, vehicle moves.



*The most economic car this-power car*



### GASOLINE-ONLY

Conventional cars run on gasoline and tend to be dirtier and more expensive to fuel than EVs.



381

<sup>(i)</sup>  
GRAMS  
OF CO<sub>2</sub>e  
PER MILE

AVERAGE EMISSIONS NATIONWIDE



### PLUG-IN HYBRID ELECTRIC

Plug-in hybrids use both gasoline and electricity and can be recharged from an outlet.



209

<sup>(i)</sup>  
GRAMS  
OF CO<sub>2</sub>e  
PER MILE



### BATTERY ELECTRIC

Battery electric vehicles run on electricity and are some of the cleanest and cheapest cars to drive.



154

<sup>(i)</sup>  
GRAMS  
OF CO<sub>2</sub>e  
PER MILE



# Электромобили



**Электромобиль** — автомобиль, приводимый в движение одним или несколькими электродвигателями с питанием от автономного источника электроэнергии (аккумуляторов, топливных элементов и т. п.), а не двигателем внутреннего сгорания. Электромобиль следует отличать от автомобилей с двигателем внутреннего сгорания и электрической передачей, а также от троллейбусов и трамваев.





# Gasoline Power vs. Electric Power

## Gas-powered car

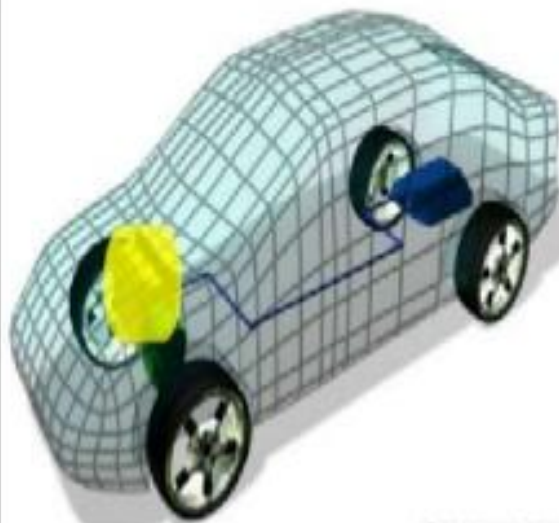
- ▶ It has a fuel tank, which supplies gasoline to the engine. The engine then turns a transmission, which turns the wheels.

## Electric-powered car

- ▶ On the other hand, it has a set of batteries that provides electricity to an electric motor. The motor turns a transmission, and then it turns the wheels.

### Typical Gasoline-powered Car

Move your mouse over the parts for a 3D view and description!



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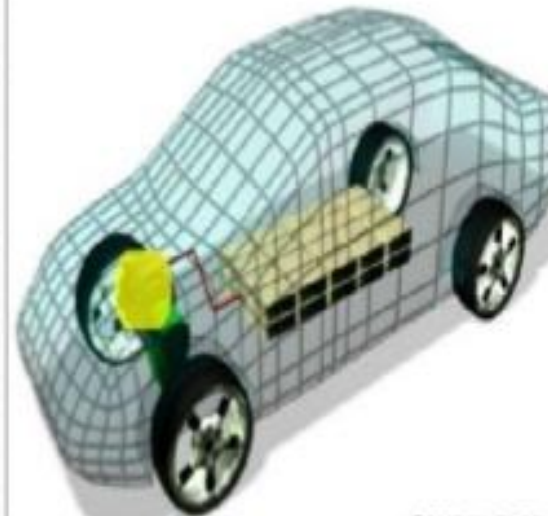


#### Four-cylinder Engine

Gasoline-powered car engines typically produce more than 100 hp and operate at speeds up to 8,000 rpm.

### Typical Electric Car

Move your mouse over the parts for a 3D view and description!



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#### Electric Motor

The electric motor can spin at speeds up to 15,000 rpm and has up to 100 KW of power, giving some electric cars a sports-car-like acceleration.

## **Charger**

- It contains a plug that connects electric vehicle batteries to an electrical source, providing the batteries with electrical energy.



# IN THE AWAKING CAR TIME SO WILL REFUEL

