ELECTRIC VEHICLE TECHNOLOGIES

WHAT IS AN ELECTRIC CAR?

Electric cars have a longer history than most people suspect. In fact, electric vehicles existed before the internal combustion engine was developed. The first production electric car created a sensation when it was exhibited in Chicago in 1892. Electric vehicles set many speed and distance records in the early 1900s. The second decade of the twentieth century was the electric car's heyday, with six thousand EVs (electric vehicles) produced by twenty different companies. Reportedly, women of this era preferred EVs because they started easily and were "clean and quiet." However, the inventions of the electric ignition and the radiator turned the tide against electric cars.

The Oil Embargo of 1973 led to a renewed interest in electric vehicles as governments around the world wanted to reduce dependence on OPEC (Organisation of the Petroleum Exporting Countries) oil. Additionally, concern for the environment led to calls for cleaner modes of transportation. By 1977, Japan had 13,000 EV's in operation, Great Britain had 70,000 and the United States had 3,000. However, as petrol prices decreased, so did interest in further development of EVs.

Electric motors convert electricity into mechanical motion, with most working by electromagnetism. They use batteries to power their motors.

HOW DOES ELECTROMAGNETISM WORK?

ELECTRIC MOTORS STORE POWER IN BATTERIES. THEY THEN USE THIS POWER IN THE FORM OF VOLTAGE AND CURRENT. IN AN ELECTRIC VEHICLE, AN ELECTRIC CURRENT FLOWS THROUGH COILS OF WIRES IN THE MOTOR. THIS CAUSES THE COILS TO GENERATE MAGNETISM, KNOWN AS ELECTROMAGNETISM. WHEN THIS MAGNETISM REACTS AGAINST A MAGNET OR A SECOND COIL OF WIRE, IT PRODUCES A FORCE. THIS IS KNOWN AS AN ELECTROMAGNETIC FORCE AND IT IS HARNESSED TO ROTATE THE ROTOR (THE ROTOR IS THE MOTOR'S CENTRE SHAFT). THIS RESULTS IN THE CREATION OF A MECHANICAL FORCE THAT CAN BE USED TO MOVE A VEHICLE.

Some of the drawbacks for electric vehicles are the limited range of their power source, cost and maintenance. But if you use electricity from renewable sources (such as wind or solar power) you can run your electric car with zero emissions.

WHAT IS A HYBRID VEHICLE?

A hybrid car uses more than one power source, almost always an internal-combustion engine driving a generator to provide power to an electric motor. In the hybrid design the engine replaces batteries that would normally be used in an all-electric car.

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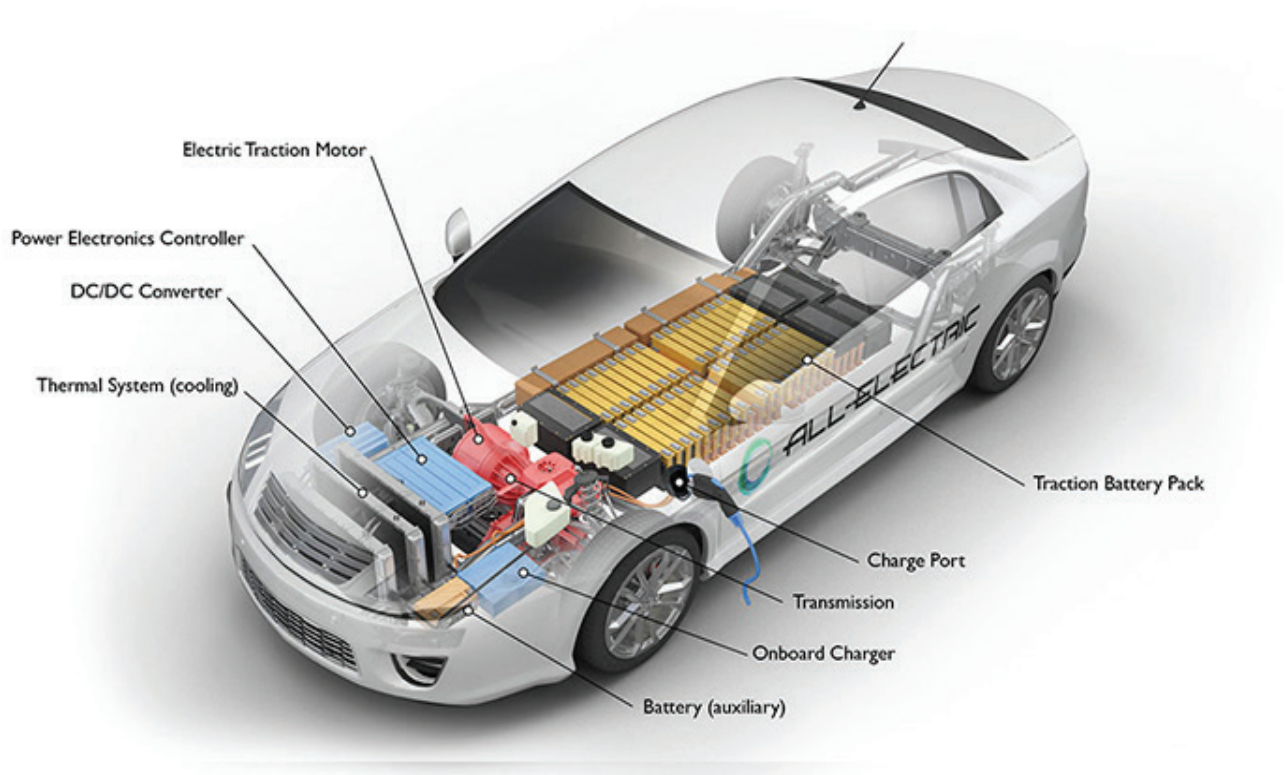
ELECTRIC VEHICLES	PETROL VEHICLES
NO EXHAUST EMISSIONS	HAS EXHAUST EMISSIONS, MAINLY CO2
RELIES ON A SOURCE OF ELECTRICITY (CAN BE RENEWABLE, SUCH AS WIND OR SOLAR)	RELIES ON SOURCE OF OIL (E.G OPEC)
350KM RANGE (DEPENDING ON MODEL AND DRIVING CONDITIONS)	500KM RANGE (DEPENDING ON MODEL AND DRIVING CONDITIONS)
RECHARGING TIME – 30 MINUTES TO 14 HOURS (DEPENDING ON MODEL)	REFUELLING TIME – 5 MINUTES
IT COSTS $4.50 IN ELECTRICITY CHARGES TO TRAVEL 100KM	IF FUEL IS $1.50 PER LITRE, IT COSTS $15.90 TO TRAVEL 100KM



Source: https://www.afdc.energy.gov/vehicles/how-do-all-electric-cars-work