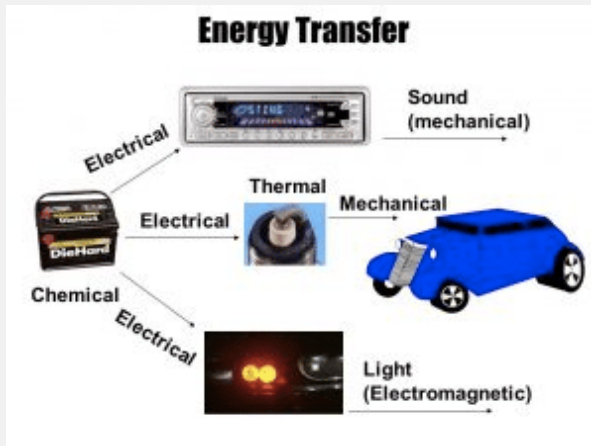


CONVENTIONAL CARS

A conventional gas vehicle uses an internal combustion engine fuelled by gasoline/diesel to power the wheels. electricity can be used but it's not functioned to move the vehicle.

Energy wasted in a conventional car is quite common as 70% of sound and thermal energy produced by the motor engine is wasted. Only 12-30% of those energies are actually used to move the car.

Energy Transformation:



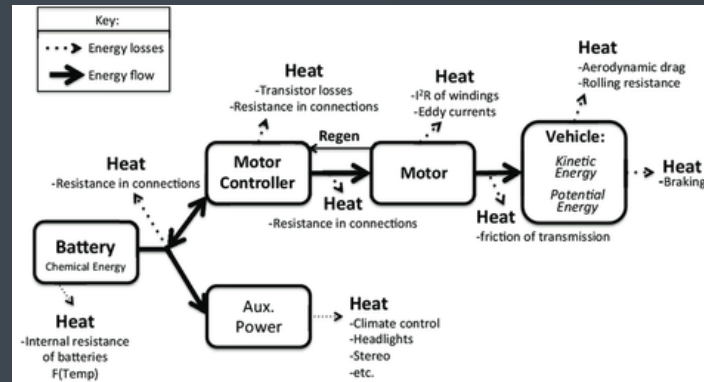
One of the energy transformations that occur in a conventional car is that the combustion engine converts potential chemical energy in gasoline and oxygen into thermal energy which is then transformed into the mechanical energy that helps move the vehicle by causing pressure to the pistons which helps the car move.

ELECTRIC CARS

A battery powered vehicle doesn't have a gasoline or diesel powered engine as it's powered by an electric motor and uses electricity as fuel. Instead, it has an electric motor, power electronic and a battery pack. To refuel, the vehicle must be plugged into an outlet.

Energy wasted in an electrical car occurs by the 80% of heat energy and auxiliary components created from the engine.

Energy Transformation:



Energy transformation in an electric engine occurs by the engine receiving and transforming electric energy into mechanical energy through electromagnetic interactions. The conductive element used makes a movement when it enters the magnetic field and it ends up receiving the electric current from it.



Intergrated
Sci. - Task 9:

COMPARISON OF CONVENTIONAL AND ELECTRIC CARS

ENVIRONMENTAL IMPACT OF: *A CONVENTIONAL CAR*

A usual passenger vehicle would produce about 4.6 metric tons of carbon dioxide per year. As well as other greenhouse gases that are produced such as methane and nitrous oxide from the tailpipe and the hydrofluorocarbon emissions from the air conditioners. Although small in comparison to carbon dioxide, the impact of the emissions mentioned previously can have higher global warming potential.

AN ELECTRIC CAR

Electric cars use more energy to function, there had been a large reduction of emissions created. Also reusing and recycling batteries from electric cars is a good way to manage the amount of batteries created for electric cars.

Although, research has found that emissions are also created when electric cars are being constructed. This is due to the lithium ion batteries which are an important part of the car. More than a third of carbon dioxide emissions are created from the energy used to make the electric car itself.

PROS & CONS: *CONVENTIONAL CAR:*

The Positives:

- Economic price tag
- Low maintenance cost
- Better power
- Better agility (acceleration and speed)
- Familiar driving experience as the combustion engine has been around for over a century
- Fuel is more accessible because of frequenting gas stations in urbanised areas

ELECTRIC CAR:

The Positives:

- They don't produce atmospheric pollution.
- Its use makes it possible to avoid the use of fuel and save oil, with the purpose of using it in other things.
- The maintenance and cost of the "fuel" are much less than the conventional one.
- A car gets an efficiency of 77% when the electricity comes from renewable sources.
- The batteries technology has improved in order to offer an almost similar autonomy to some of the small displacement of internal combustion vehicles.
- Almost all homes have electrical outlets to recharge slowly, so recharging anywhere is not a problem, plus charging stations are on the rise.

The Negatives:

- Harmful emissions
- Low mileage
- Often leaves toxic waste (leftover oil/fluid that isn't biodegradable)
- Income of gases prices may increase because of unsustainable resourcing of fuels as well as purchase of fuel from other countries
- Some cars may require parts that are no longer in production because of newer and more functional models
- There's minimal cargo space as it's usually taken up by items such as gas storage tanks or leisure items such as a golf bag.

The Negatives:

- The battery charge/high price for the batteries with the longest duration.
- Sometimes the electricity used to recharge the batteries is made by polluting raw materials such as coal.
- Less autonomy than a conventional car, because of frequent recharging.
- The high cost of initial purchase.
- The small accessibility that exists in terms of full recharges (in some countries).
- Some models have a high cost.

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