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RESEARCH ARTICLE

AN ANALYSIS FOR FUTURE IMPACTS OF ELECTRICAL VEHICLES TO THE ENVIRONMENT

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Abstract

Electric vehicles technology has been identified as being key technology in reducing future emissions and energy consumption in the mobility sector The 90s have brought us to an era of environmental crisis. We are faced with the problems of air pollution, both indoor and outdoor acid rain, water pollution, hazardous wastes, toxic landfills and leaking storage tanks in our soil, to name a few. Our rapid advances into the industrial and technological age have contributed to these problems. However, energy tools have been analyzed and verified in providing significant contribution in terms of environmental clean-up and a healthier World.

Introduction:-

In recent years, the relatively limited data in the sample, together with the fact that some of the vehicles are still announcements of which specifications might change in the coming year(s) , The developments in battery technology and other Electric Vehicles components are a critical issue in the future market uptake of EV's. Since these systems are very new and technologies are developing rapidly, a detailed forecast of the future development of these technologies is based on the opinions of experts at battery manufacturers, car manufacturers and research institute. Battery cost and performance still is the greatest challenge to the commercialization of all type of EV models. The impacts of EV market uptake are not limited to the transport sector, but also affect the electricity scooter. The environmental impacts, for example, depend for a large part on the interaction with electricity generation. Also, EV market uptake adds to the grid load, requires charging infrastructure and creates opportunities for smart charging. The interaction means that the developments in the electricity sector and related policy are very relevant to the EV developments. Now researchers have published the first in-depth environmental analysis of electric cars using lithium-ion batteries, and have found that they beat their gas-fuelled counterparts. According to the researchers analysis, about 15% of an electric vehicles total environmental burden coming from manufacturing , maintaining and disposing of lithium-ion battery. Most of those costs, about 50% , stem from mining and manufacturing the copper and aluminium used in the battery and its connecting cables. Extracting the necessary lithium produces only 2.3% of the battery's total environmental footprint. In the final stage, the impacts of Electrics were assessed for a number of scenarios that reflect various possible futures. To achieve this, the key variables that impact the development but are currently still uncertain are varied in these scenarios :

1. Cost of the vehicles and/or batteries, in combination with the vehicle and battery lifetime.
2. Customer response to cost and ranges of PHEVs, EREVs and FEVs.
3. Charging point availability and grid limitations to charging.
4. Government policy.
5. Battery and EV production capacity limitations.

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Background

International interest in electricity transportation, particularly electric vehicles and battery electric vehicles, has increased dramatically over the past several years. Electric Vehicles (EVs) are a promising technology for drastically reducing the environmental burden of road transport. More than a decade ago and also more recently, they were advocated by various sectors as an important element in reducing the CO2 emissions of particularly Passenger cars and light commercial vehicles, as well as emissions of pollutants and noise at the same time the electric passenger cars that are being developed are not yet competitive with the conventional vehicle technology. Costs are still high and battery technology is still being developed, and there exist many uncertainties with respect to crucial issues such as.

1. The battery technology (energy capacity in relation to a vehicle range, charging speed, durability, availability, and environmental impacts of materials).
2. Interaction with the electricity generation.
3. Cost and business case of large scale introduction.

The benefits to the environment of electric vehicles.

Comparing electric and gas powdered versions of the same car show the environmental benefits of electric vehicles and providing a fair assessment by comparing an electric vehicles version with gas and diesel powdered cars versions of the same car. And it makes clear that electric cars are indeed better for the environment . a life cycle. Assessment , a cradle to grave analysis including not only the emissions involved in using the car, but also the emissions from making it the resources consumed in manufacturing and a range of environmental impacts .It looked not only greenhouse gas emissions, but impact on acid rain, ozone pollution, algae blooms, consumption of water and materials such as steel and copper, and totally energy demand.

The study found that while the environmental impactof making electric vehicles is greater than for making gas and diesel vehicles, this is more than madeup for by the greater impact of gas and diesel vehicles while they are being used.(Other studies shows that electric vehicles beat gas powder once in terms of greenhouse gas emissions even if they are charged in regions that depends heavily on coal. Here's one such study. In some areas, hybrids are better choice than electric cars)Electric vehicles come out behind in two areas. They contribute slightly more to acid rain.

Electric vehicles and their impacts on Society environmental.

With the depletion of the earth's ozone layer and the shortage of our oil supply becoming an issue, we have had to look at alternative fuel vehicles. that will not harm the environment, but will still provide us with a reliable source of transportation. As more and more power plants become clean, as more people realize what electric vehicles can do for the environment, electric vehicles use will increase and our environment will become much nicer.

Electric vehicles have been thought of as one answer to our dependence on fossil fuel burning vehicles. Their main appeal is that they produce no air pollution at the point of use, so provide a way of shifting emissions to less polluted areas. Unfortunately, also out of a sight are the environmental consequences of manufacturing and recycling the lead-acid batteries electric vehicles require to run on .A recent drew attention to the problem of lead batteries in electric cars. Smelting and recycling the lead for these batteries will result in the substantial release of lead to the environment.

Not only are electric cars comparatively slower and far more restricted in the distance they can travel, but release more lead into the environment as well. Even when precautions are taken, there are still significant hazards. Lead processing facilities release lead into the air and waterways, and lead in solid waste leaches slowly into the environment. Clearly, electric cars, despite their good for the environment image, create far more of a problem that leaded gas cars and unleaded gas cars. In addition, if a large number of electric cars are produced, the demand for lead for batteries will serge , requiring more lead to be mined. Manufacture needs to be halted until an alternative, safer power source is found. These rules out current alternatives such as a. Nickel-cadmiumand nickel metal hydrides batteries, which are also highly toxic and far more expensive, Researchers speculate that lithium -polymer technologies may eventually be used.

Electric vehicles have more than technical hurdles to overcome, some experts fear that the vehicles environmental impact is no lighter than those of gas powered vehicles And the biggest concern center on the vehicles all important batteries, still the largest contributor to electric vehicles. Total environmental burden comes from recharging the battery. Overall electric vehicles are starting to change the way people think about with the advancement of battery

technology and alternative fuels, these vehicles are producing fewer emissions and going further than ever before. We need to start relying on these technologies to start reducing our carbon footprint. As the ears continue to pass, these vehicles are going to start changing the way we live and operate in society.

Throughout modern times we have witnessed much advancement in technology. These advancements are results of research and data collected about our word and society , helping us to better understand the most efficient ways we can work. With this increased knowledge, we have become more aware of the footprint humans leave on the environment, In an effort to better our environment with this knowledge, we have become a more environmentally conscious world .One major advancement we have seen in the environmentally friendly technology include the electric vehicle. Electric vehicles have brought about many advantages and impact including diseased emissions, minimal gas usage. And increased safety.

Car emissions have been attributed to global warming and the deterioration of a healthy atmosphere. With more drivers purchasing electric vehicles, we have been able to decrease these harmful emissions By using electricity or a combination of electricity and gas electric vehicles operate with fewer pollutants.

Although the environmentally beneficial factors that come into play with electric vehicles, drivers always enjoy the advantage of minimal gas usage. Electric vehicles rely only on electric powers to operate. Any outlet with the proper voltage. can be used to charge up your electric car. And get you from point A to point B while completely, eliminating your gas expenses. Similarly to the electric vehicle, the electric vehicle runs different than your traditional car. The electric vehicle use both electric and gas with no external power source needed.

With the knowledge of modern society, there is no reason why we should not all be doing everything we can do to better our environment. Electric vehicles have immense advantages and impacts that make for a savvy choice in car with decreased emissions, minimal gas usage, and. Increased safety, the electric vehicles, is surely a smart consideration or purchase.

Advantage and disadvantages of electric vehicles.

What is an electric car?

The electric car (EV) is relatively new concept in the world of the automotive industry, although some companies have based their entire model of cars around being proactive and using electricity. Some also offer hybrid vehicles that work off both electricity and gas. Car produces a lot of carbon emissions that are ejected into our natural atmosphere, leaving us vulnerable to things like pollution and greenhouse gases. In order to help positively the environment we live in, an electric car is great step forward . By buying an electric car, you can also receive government subsidies for being environmentally conscious. Although you may end up paying more for your vehicle, the positives greatly overshadow the negatives. However, there are still two sides to consider when you are thinking about investing in an electric vehicle .

EV's get their power from rechargeable batteries install inside the car. These batteries are not only used to power the car, but also used for functioning of lights and wipers. Electric cars have more batteries than normal gasoline car. It's the same kind of batteries that are commonly used when starting up a gasoline engine.

Advantages of an Electric Car

An electric car is a great way for you as a consumer to save a lot of money on gas. However, there are so many different reasons why you should invest in an electric car in the modern day of technology.

1) No gas required. Electric cars are entirely charged by the electricity you provide, meaning you don't need to buy any gas ever again. Driving fuel based cars can burn a hole in your pocket as the price of fuel have gone all time high.
2) Savings :These cars can be fuelled for very cheap prices, and many new cars will offer great incentives for you to get money back from the government for going green. Electric cars can also be a great way to save money in your own life.
3) No emissions: Electric cars are 100% eco friendly as they run on electricity powered engines. It does not emit amid toxic gases or smoke in the environment as it runs on clear energy source. They are even better than hybrid cars as hybrids running on gas produce emissions . You will be contributing to a healthy and a green climate.

4) Safe to Drive : Electric cars undergoes same fitness and testing procedure test as other fuel powered cars .In case an accident occurs one can expect. airbags to open up and electric supply to cut from battery .This can prevent you and other passengers in the car from serious injuries.
5) Cost effective: Earlier, owing an electric car would cost a bomb, but with more technological advancement, both cost and maintenance have gone down. The mass production of batteries and available tax incentives has further brought down the cast, thus making it morecosteffective.
6) Low maintenance : Electric cars runs on electrically powered engines and hence there is no need to lubricate the engines. Therefore the maintenance cost of these cars has come down . You don't need to send it to service station often as you do to a normal gasoline powered car.
7) Reduced noise pollution : Electric cars put curb on noise pollution as they are much quieter.Electric motors are capable of providing smooth drive with higher acceleration over long distances.

Disadvantages of an electric car?

Although the evidence of the positives have become very clear, there are also some downsides that each individual needs to consider before they decide to make an electric car there next big investment These reasons are:

1. Recharge points: Electric fuellingstations are still in the development stages Not a lot of places you go to on a daily basis will have electric fuelling stations for your vehicle, meaning that if you are on a long trip and run out of a charge, you may be stuck where you are.
2. Electricity is in free:. Electric cars can also be a hassle on your energy bill if you are not considering the options carefully. Sometimes electric cars require a huge charge in order to function properly, which may reflect poorly on future electricity bill each month.
3. Short driving range and speed: Electric cars are limited by range speed. Most of these cars have range about 50-100 miles and need to be recharged again. You just can't use them for long journey as a ofnow, although it is expected to improve in future.
4. Longer recharge time :. While it takes a couple of minutes to fuel your gasoline powered car , an electric car take about four to six hours to get fully charged therefore you need dedicated power station as the time taken to recharge them is quite long.
5. Silence as disadvantage: Silence can be a bit disadvantageas people like to hear noise if they are coming from behind them . An electric car is however silent and can lead to accidents in some cases.
6. Normally two seaters, most of the electric cars available today are small and two seated only. They are not meant for entire family and a third person can make journey for other two passengers bit uncomfortable.
7. Battery replacement : Depending on the type and the usage of battery, batteries of almost all electric cars are required to be changed every three to ten years.
8. Not suitable for city is facing shortage of power :As electric cars need power to charge up, cities already facing acute power shortages are not suitable for electric cars. The consumption of more powerwould hamper their daily power needs.
9. Some governments do not provide money saving initiative in order to encourage you to buy an electric car.
10. Some base models of electric cars are still very expensive because of how they are and the technology it took to develop them.

Just because there is a variety of factors doesn't mean they have to be overwhelming. Doing a fair bit of research into different models and maybe even hybrids will help you to make an accurate decision moving forward. However, no matter how you look at it, and electric car can save Our precious environment.

Conclusion:-

The emissions impact of electric vehicle adoption on individual and statewide greenhouse gas emissions profiles is clearly ascertained. Emissions profile for all vehicle types will decrease overtime and these reductions have the most significant impact on electric vehicles technology advancement. A battery electric vehicle yields approximately a 90% reduction in greenhouse gas emissions over its vehicle lifetime compared to a conventional vehicle. Electric vehicle adoption on the fleet level yields an important emission reduction. The mass adoption scenarios presented demonstrates how encouraging electric vehicles adoption can greatly reduce statewide and regional greenhouse gas emissions provided healthier environment.

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