Electric vehicle life cycle cost analysis and frame modification technique.

Balaji R*[1], Muruga Lal Jeyan[2]
School of Mechanical Engineering
Lovely Professional University, Phagwara, Punjab, India.

Abstract:

The energy source in the universe are always plays a dramatic role in economy of the country. Some of the projects related to new energy source availability and renewable energy is going rapidly. If the alternative source found then the automobile sector going to face the consequence for their own productions. In this project we are going to remodify the existed automobile frames which can be use for both the fuel and electric source. The main theme of the report is to identify and change the availability of the frames with respect to electrical vehicle. After the literature five basic car outer frame design chosen and modification with respect to the battery size. Design with the modification made using CATIA.

Introduction:

The electric vehicle is a car with an engine or traction motor battery that is used for propulsion of the vehicle. EV's are usually known as PEV, HEV and FEV based on their energies. Sensitivity research was carried out to evaluate the main parameter affecting electric car users and electric power plant companies' costs and benefits. As electric vehicles battery costs are small, the higher their net profits. In the coming future, FEV marketing will rely on breakthroughs in the cost per kilowatt of fuel cells and on a requirement or energy policy for the development of infrastructural recharge systems for hydrogen fuel cells.

Literature review:

The work describes the benefit cost analysis of EV deployment in New York State. The benefit cost analysis consider adoption in three cases: Base case, behavior modification case and high infrastructure case across the region in the State. The analysis uses various cost test to analyse the impact of EV adoption and EV charging in each of the three cases. Base case assumes that EV owners continue to face flat residential rate and charges when and where it is convenient. Behavior modification case assesses the impact of implementing smart charging measures that provides financial incentives for the customers to charge outside of the peak hours and High infrastructure case assesses economics of increased deployment of direct current fast chargers. The result of the analysis describes the types of policy mechanism and utility intervention that removes hurdles to EV adoption in New York.

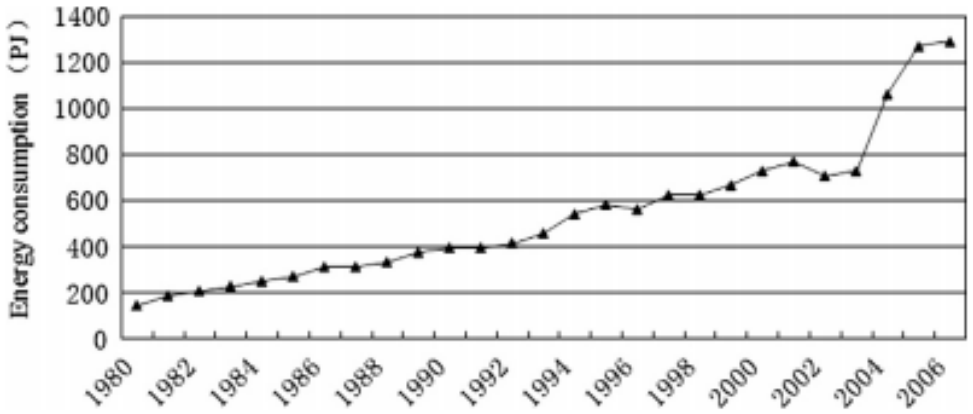

Figure 1. Energy consumption of China's waterway transport [1]

Design of Vehicle:

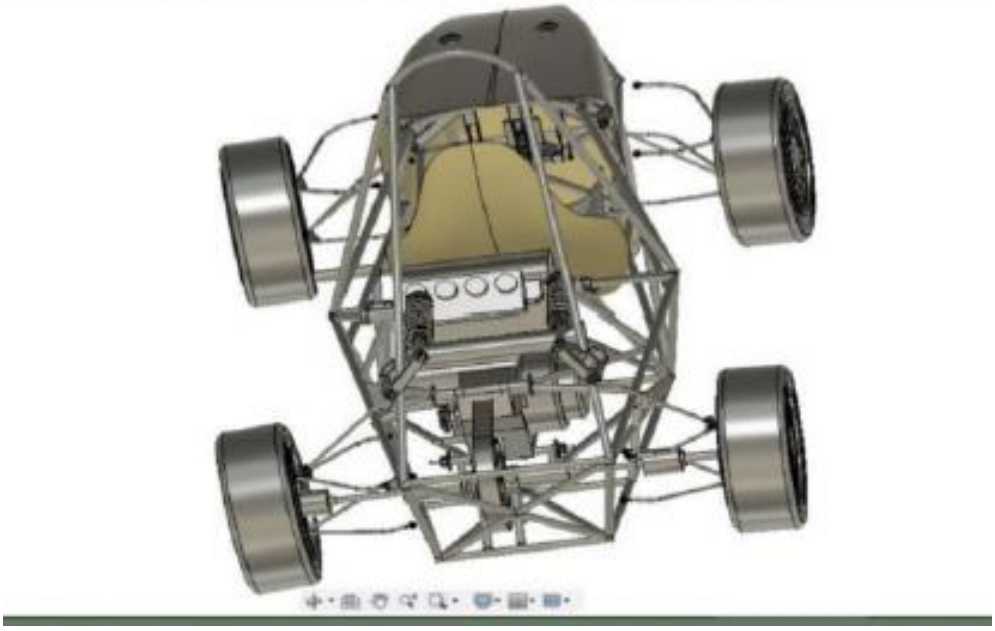

Figure 2: Design of Go-cart vehicle sample one

Figure 3: Design of Go-cart vehicle sample two

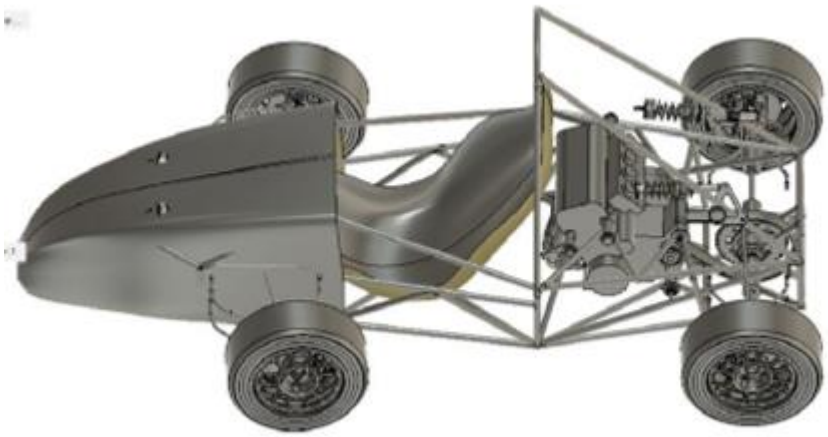

Figure 3: Design of Go-cart vehicle sample four

Figure 3: Design of Go-cart vehicle sample five

Conclusion:

Therefore, electric cars are the zero emission vehicles which mechanically achieve 90 percent energy conversion efficiency over the maximum rank of power output and speed and are environmentally friendly and also electric motors. In addition, the cost of operation varies greatly depending on where the infrastructure is lacking which is a major problem in the third developed world. Due to the reasons of lack of infrastructure there is less people in adoption of electric vehicle. We presented a design of chassis of IC engine vehicles in which it replaced by engine to motor and batteries so that cost will be reduced and customer will easily adopt electric vehicles. Government should also provide incentives to adopt more electric vehicle Electric vehicles is only the solution for today and also for future to make pollution free and clean environment in our planet. There is no other choice rather than to use clean sources of energy which is electric vehicle itself for other creatures in the nature and for ourselves also and also protect the nature

Reference:

.1. Wang YF,Li Kp,Zhang YR, "Transport energy consumption and saving in china," in Renew sustain energy.

2. Kucukvar, M.Egilmez,G.Tatari,O 2014, "A .Evaluating environmental impacts of alternative

construction waste management approaches using supply- chain-linked life cycle analysis. Waste management,"

3.AECOM,Economic feasibility of Electric vehicle 2009

4.Piloto-Rodriguez R,Sinchez-Borroto Y,Melo –Espinosa EA,Verhelst S.(2017), " Assessment of the diesel engine performance when fuelled with biodiesel from algae and microalgae An overview".

5.D.F. Dominkovi,I.Ba,A.S.Pedersen,G Kraja,"The future of transportation in sustainable energy system: opportunities and barrier in a clean energy transition".