

# Review Paper on EV 2K23 TROLLEY

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## Abstract

*Electric vehicles (EVs) are a promising technology for achieving a sustainable transport sector in the future, due to their very low to zero carbon emissions, low noise, high efficiency, and flexibility in grid operation and integration. This chapter includes an overview of electric vehicle technologies as well as associated energy storage systems and charging mechanisms.*

*Different types of electric-drive vehicles are presented. These include battery electric vehicles, plug-in hybrid electric vehicles, hybrid electric vehicles and fuel cell electric vehicles. The topologies for each category and the enabling technologies are discussed. Various power train configurations, new battery technologies, and different charger converter topologies are introduced. Electrifying transportation not only facilitates a clean energy transition, but also enables the diversification of transportation's sector fuel mix and addresses energy security concerns.*

*In addition, this can be also seen as a viable solution, in order to alleviate issues associated with climate change. Furthermore, charging standards and mechanisms and relative impacts to the grid from charging vehicles are also presented. And we, Ashwin R Patil, Harshal V Patil, Om V Sangle, Harshal A Patil. Our project was advised by Mr.Suyog P. Bhalerao Sir.*

**Keywords:** Please list your keywords here. They should be separated by middots, if possible. The first letter of each keyword should be capitalized.

## I. INTRODUCTION

EVs within the scope of smart cities are gaining recognition as alternative ways through which a low-zero carbon society can be pursued. Discussion of the concept of electro mobility and its interaction with the city and grid is made in order to point out the need for an integrated approach. In this context, the book tries to plot the plethora of possible pathways between what has already been achieved and what is still needed. This is achieved by exploring and assessing the ways through which EVs can be integrated into a city's transportation system and how this may create a complete set of new technologies and service offerings, offering at the same time a better quality of life.

The goal of this book is to constitute a valuable tool that can be helpful to stakeholders and decision-makers in the process of regional and strategic planning, with reference to sustainable transport design. It aims to be helpful along the way in policy, practical, conceptual, and visionary ways. Thus it aims to help in decision-making, with regard to the national and sustainable energy designs, and to demonstrate how EVs can best be utilized within cities. The book's objective is to provide useful insight to policy makers, urban planners, engineering consultancies, scientists, researchers, students, as well as citizens interested in supporting a smooth transition to the future energy landscape. Furthermore, the book aims to point out that the combination of external factors, such as stringent emissions regulations, rising fuel prices, financial incentives, intelligent load management, and exploitation of local renewables, can contribute to a decarbonized urban energy future.

EV2K23 TROLLEY will also used for various applications. Without any failure in it.

**1.1 Problem statement:**

**FOLLOWING ARE THE PROBLEM FACED**

**1. Running Cost**

COST FACTOR	PETROL	DIESEL	CNG
Fuel rate	110rs/lit 18 mileage	94rs/lit 20 mileage	96.50rs/kg 25 mileage
Fuel per km required	6.1rs per km	4.7rs per km	3.86rs per km
Total cost of fuel per 1000 km	6,100rs	4700rs	3860rs
Maintenance cost	2500/-	3000/-	20,000
Repair/replacement cost	30,000	45,000	15,000

TABLE 4.1 RUNNING COST

**2. Pollution cause**

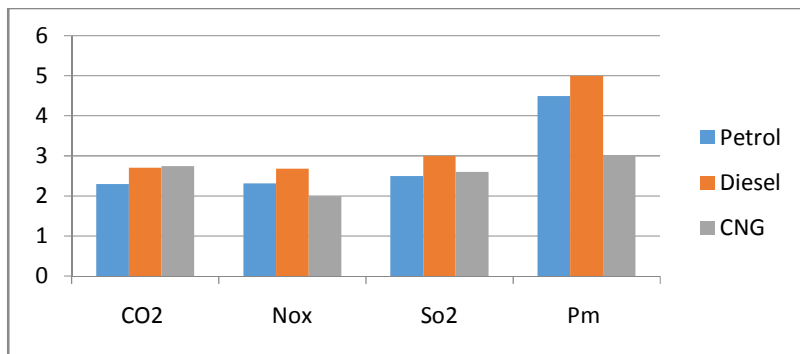


TABLE 4.2 POLLUTION CHART

**3. Safety**

1. No Anti-breaking system available
2. No seat belt available
3. No digital display
4. No airbag

**1.2 Solution statement:**

FOLLOWING ARE THE SOLUTIONS

1. Running Cost

COST FACTOR	BATTERY
Charging rate	50rs/lit 100 mileage
Charging per km required	2rs per km
Total cost of Charging per 1000 km	2000rs
Maintenance cost	1000/-
Repair/replacement cost	50,000/-

TABLE 4.3 RUNNING COST

2. Pollution cause

Ev batteries do not cause any air pollution or noise pollution also

3. Safety

1. Anti-breaking system available
2. Seat belt available
3. Digital display
4. Airbag

1.3 Methodology of the Project

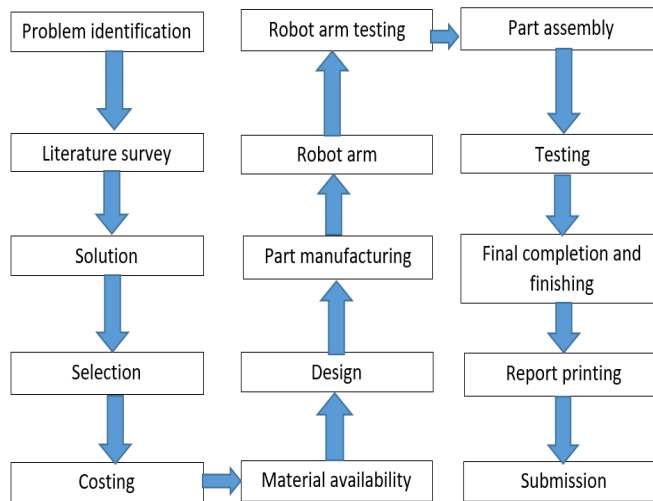


Fig 1. Block diagram for methodology of project [1]

1.4 Objective of Project

- To build up a vehicle that utilizes Renewable Energy.
- Electric vehicles use electricity **to charge their batteries instead of using fossil fuels like petrol or diesel.**
- To Transport various things and industrial materials.
- To maintain safety and traffic rules of the vehicle.

## **II. LITERATURE REVIEW**

Today, as fuel prices rise and the overall supply of petrol, diesel and oil decreases worldwide. With the advance research and improvement in electric vehicle and advancements in battery technology, the electric vehicle has a bright future ahead. The vehicle will operate in a similar capacity to the average of conventional vehicles so as to maintain familiarity to consumers. India prepares to shift towards EVs by 2030. The government is examining the battery substitution option model to overcome the challenges in EV adoption.

The Government of India has announced that all vehicle (probably car and two wheeler) need to be electric by 2030. Therefore, to make option of battery operated model we done this work. Electric Trolley need minimum maintenance and it can be serve as a solution to the problems of shortage of fuels and increase of pollution. Apart from contributing to clean environment; it can also lead to empowerment of people from lower socio-economic backgrounds. These vehicles will have increased much popularity due to the comfortable and economic mode of transport they provide to the fellow customers.

Electric Trolley is loader vehicle, with three wheels and use electric power from batteries to run. It use an electric motor as engine which draws electric power from the rechargeable batteries installed in the trolley body. These batteries operated vehicles are perfect for both small and large distant transport, both cargo and people. Main advantage is that they are perfect for running on narrow streets because of their small size. But the biggest reason for their popularity is low operating cost and zero pollution. It is like normal trolley or loader but powered by electric motor instead of petrol or diesel motor. It is best for pollution free, environmental friendly transport system.

It is one of the preferred modes of transport because of its low maintenance cost, low fuel cost, eco-friendly, no noise pollution, easy to drive and last but not the least livelihood. Without putting much physical efforts that's manpower and without investing much amount of money, the earning is quite good for an electric trolley driver and hence it is an important means of livelihood for many the vehicle will be powered by independently controlled Motors that waive typical mechanical power transmission devices.

Battery run trolley could be a low emitter complementary transport for the low-income people, who suffer most from a lack of transport facility, if introduced in a systematic manner according to experts. Electric trolley have the potential to reduce the fuel oil consumption for transportation which may lead to both economic and

Environmental benefit. Electric trolley are energy efficient than other forms of motorized public road transport vehicles in the country.

## **III. COMPONENTS USED**

1. BLDC MOTOR
2. LEAD ACID BATTERIES
3. CONTROLLER
4. WIRING HARNESS
5. METAL RODS
6. METAL SHEET
7. FORK
8. BRAKING SYSTEM
9. SUSPENSION SYSTEM
10. DRIVE SYSTEM
11. WHEELS

## **IV. OTHER ACCESSORIES USED**

1. FRONT LIGHT
2. INDICATORS
3. HORN

4. DISPLAY
5. LOCK
6. SEAT BELT
7. AIR BAG

## **V. ADVANTAGES AND LIMITATIONS**

### **5.1 ADVANTAGES: -**

1. No fuel consumption.
2. Less running cost due to use of electric batteries.
3. Lower maintenance cost.
4. Environmental friendly.
5. Reduce greenhouse emission.
6. Multi purposes used.
7. More efficient.
8. Fully safely drive.
9. Low cost

## **VI. APPLICATION**

1. For transportation.
2. For vegetable supplier with proper ventilation.
3. For industrial application.

## **VII. FUTURE SCOPE**

Now as electric vehicles are there in market so in future to decrease pollution and have a well safety of the user in that case our project is best And can lead in future.

## **VIII. CONCLUSION**

This book contains basic information of electric vehicle. It gives introduction of electric vehicle and their need for controlling the emission. The working of this system is fully noise free. It is smoother than gasoline powered vehicle and also it saves the non-renewable recourses. Especially Automobile sector move towards the Hybrid electric vehicle and also in future, the progress will be going on to improve life span of battery.

This book also gives us idea about how to manufacture e- vehicle with less manufacturing cost and profitable vehicle to the customer.

## **IX. REFERENCES**

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