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# 1. Introduction

Since the early 2000s, there have been several prototypes of electric cars (EVs) intended for mainstream usage. Recent technological advancements have resulted in an increasing number of electric cars being created (EV). EVs are better for the environment, and this study will analyse how the inquiry led to the discovery of their source. Three options will be examined for their viability in terms of economics, structure, and operation in the report. Online journals and on-site study have yielded excellent ideas that may be put into practice.

The marketing strategy may assist in identifying the firm's target market, as well as determining the value offer and the means through which it will be delivered. A company's marketing strategy must be evaluated and adjusted on a regular basis in order to determine which tactics are working and which are not. Without a strong marketing strategy, a company may not be around for long. A company's marketing initiatives, including media relations, are all part of a marketing strategy, as are the metrics used to evaluate their success. A company's marketing strategy is laid out in a marketing plan. The target demography, business image, policy platform, and measurement definitions are all included in the extensive marketing strategies. The marketing strategy must be constantly re-evaluated depending on the results of analytics that demonstrate which procedures are working and which ones aren't. Unlike TV advertising, which must be rotated in order to get any market penetration, internet marketing outcomes may be seen nearly instantly. The business plan comprises a marketing strategy as well as goals, beliefs, a mission statement, a budget, and other strategies that may be employed by any organization. In the case of the author, who previously created a marketing strategy for electric vehicles, the author will provide a thorough viability study in order to improve the marketing strategy.

# 2. Background

It was decided to undertake an on-site assessment of electric cars to see how they affect everyone in the workplace and how they may benefit businesses. Electric cars have been shown to be more ecologically friendly in several studies. They emit less greenhouse gases and pollute the air compared to cars driven by gas or diesel. This is based on the fact that they have to produce and generate power in order to function. Because electric automobiles don't emit carbon dioxide, they help to minimize air pollution in our cities and towns. In addition to reducing noise pollution, electric cars enjoy a quiet and pleasant ride. Additional to the above, electric automobiles have a lower maintenance cost than gasoline vehicles. Additionally, this might assist advance vehicle technology by promoting electric automobiles that are more ecologically friendly, therefore minimizing global warming and cutting emissions that is inhaled by all living creatures on the earth, according to the report.

It is the major objective of this research to evaluate the electric car's development potential to effectively implement the technology in the automotive sector and to examine the possibility of environmentally friendly development in the future for everyone. In the previous marketing strategy, we included all of the facts necessary to enter the electric vehicle (EV) business, as well as the pros and disadvantages of doing so. After doing a thorough analysis of PESTLE, SWOT, and other relevant factors, we came to a conclusion on what the company might offer to the table when it was properly executed.

# 3. Purpose

Reporting on how the company's electric vehicles affect the environment, as well as looking into possible solutions, is the goal of the feasibility study. There are three alternative solutions to this issue that will be examined in this study.

# 4. Research

Because of their lack of dependency on oil and the fewer moving parts they need for repair, electric automobiles are both cost-effective to run and environmentally friendly (petrol or diesel). However, rechargeable batteries are now the industry standard for electric vehicles (EVs) due to their longer lifetime and improving resource preservation, with that kind of a natural velocity profile of just 5% each month. Fires and explosions have occurred in Tesla's Model S as a result of heat escape from these batteries, despite efforts to strengthen the safety of these batteries. Because they have 99 percent fewer moving parts than automobiles with internal combustion engines, battery-powered electric vehicles need less frequent maintenance. In most cases, electric cars (BEVs) can be recharged continuously at residence, allowing them to cover most daily travels. It's possible that now the fusion reactors would need to be replenished in advance of a lengthy or hilly road journey, however power generation and traveling downward may help. It might take anything from 30 minutes to much more over 12 hours to recharge an electric automobile. Everything is subject on the charging station's speed and battery size (Hannan, et al., 2014).

As in (Gärling & Thøgersen, 2001) Electric vehicle range is a major challenge in the actual world, although it is getting resolved by the industry. using a mix of rechargeable and petroleum (or diesel) power rather than relying solely on an electric car. This means that they are more suited for long-distance travel, since you don't have to constantly look for charging stations to recharge your battery. However, PHEVs have many of the same drawbacks as gasoline-powered cars, such as the increasing price of fuel and the need for more servicing. Smaller batteries are also a feature of these devices, PHEVs have a lower maximum driving range. There are a variety of electric vehicles on the market (EV). Pure electric cars are those that operate solely on electricity. Some hybrid electric cars may also operate on gasoline or diesel, and they're named such because of it. There are two types of plug-in electric vehicles: those that operate only on energy, and those that need to be charged at all times. There are no emissions from this sort of vehicle since it doesn't operate on gasoline or diesel. When the battery runs low, the plug-in hybrid may switch to a standard combustion engine, allowing the driver to continue driving even if the vehicle is no longer powered by electricity. When driven only by electricity, these cars don't generate any pollutants like those produced by combustion engines. Recharging the battery of plug-in hybrids may be done using an electrical source (Sun, et al., 2019).

As per (Kempton & Letendre, 1997) This gasoline or diesel-powered vehicle's electric battery is replenished by regenerative braking. Driving in "EV mode" is as simple as pressing a button to convert from gasoline to electric power. Fuel or diesel are the only options since electricity isn't an option. Electric vehicles (EVs) are indeed a comparatively recent phenomena in the automotive industry. Regardless of the fact that certain manufacturers have developed their whole automotive model around being preventative and using energy, there are a number of manufacturers that produce hybrid vehicles. Contamination and carbon emissions may be exacerbated by the usage of automobiles. A great method to help the environment is to drive an electric car. Additionally, if you acquire an electric car, you may be eligible to receive government subsidies for your efforts to reduce your carbon footprint. Because the benefits significantly exceed the costs, you should buy a more expensive automobile. However, there are still two aspects to consider when deciding whether or not to buy an electric car. Inside the automobile, rechargeable batteries provide the vehicle's power source. In addition to powering the vehicle, these batteries also keep the lights and wipers on. There are more batteries in an electric automobile than in a gasoline-powered vehicle. There are several types of batteries that may be used to start a gasoline engine. All that differs is that with electric cars, there are more of them to power the engine as opposed to gasoline-powered automobiles (Sanguesa, et al., 2021).

As in (Sciarretta & Guzzella, 2007) By owning an electric car, you could save a great deal of money on gas. If you live in today's technology-driven society, an electric car is a smart investment. You'll never ever have to worry about leaving out of petrol again since electric cars are fuelled solely by the electricity you produce. Fuel prices is at a all high, which means that driving a gasoline-powered car might have a negative impact on your finances. To go back on the road with an electric car, you won't just had to stop at the petrol station first. Charging an electric car is as simple as plugging it into an ordinary wall socket. They may be fuelled at reasonable costs, and many new automobiles will reward you with rebates from the government for making the switch to a more environmentally-friendly vehicle. Automobiles powered by electricity may also help you save money on a daily basis. An electric automobile has no negative influence on the environment, so you may reduce your carbon footprint while still contributing to the economy. Even though the benefits of electric vehicles are now well established, consumers should weigh them against the advantages and disadvantages of the technology before making a major purchase.

The technology for electric refuelling stations is currently being worked on. On long journeys or while holidaying that don't have access to electric fuelling stations, you may have difficulties locating a charging station while visiting a new in a rural or suburban zone. If you're not cautious, electric automobiles might potentially be a drain on your utility account. Electric vehicles might be risky investments if you don't do your homework before buying one. There is a speed and range restriction to electric vehicles. An electric vehicle's normal range is between 50 and 100 miles and will have to be charged. Even if it improves inside the coming, people can't use them for long distance trips right now (Peças Lopes, et al., 2011).

After assessing all of the information gathered from both online and on-site research, the following options are presented.

# 5. Alternative Solutions

## Solution 1

Installing charging stations on residential streets, rather than simply in retail malls, might have an enormous impact, according to the study's authors. Additional high-speed charging stations along major roads and the availability of additional automobiles for those who require a vehicle beyond the range of their electric vehicles might considerably improve the potential for vehicle electrification, according to their findings.

### Economic Feasibility

The sticker price for electric vehicles may surprise you since they are so new. Even the cheapest models may cost up to $40,000. Luxury cars may cost upwards of $80,000, depending on the model. Electric automobiles still cost $10,000 to $50,000 upwards of gas-powered vehicles, even though technology continues to advance and the costs of making electric vehicles are reducing.

### Structural Feasibility

This Requires to make new facilities through Dundee city which also makes a effect on existing areas such urban area which is hard to make a EV Shed plus there will be more cost incur due to new structural design to be implemented in the public, furthermore the firm EV shed should comply with government policies.

### Operational Feasibility

When you're not cautious, electric automobiles might potentially be a drain on your utility account. Electric vehicles might be risky investments if you don't do your homework before buying one. In certain cases, electric automobiles need a large charge to work correctly, which might have an impact on your monthly power cost.

## Solution 2

Scientists have devised a new way for identifying charging options that are well-suited to the needs of the general public on a regular basis. Users' everyday traveling behaviours as well as requirements, as well as GPS tracking device data, were utilized in the study, together with survey findings on individuals' current aggressive driving and requirements. A key element of municipal, regional, and federal programs aimed at mitigating climate change is a significant increase in the number of people who own electric automobiles.

### Economic Feasibility

Electric vehicles demand a steady supply of electricity to operate, thus towns with chronic power problems should avoid introducing them. More power use would put them at risk of running out of electricity on a regular basis. For most electric automobiles, the batteries must be replaced every 3 to 10 years, depending on the kind and use of the battery. The majority of electric vehicles on the market today are tiny and only have two seats. If there is a third person, it may be difficult for the other two passengers to travel comfortably. Thus, such facts will make a reduced function for the economy such as importing new batteries and usage of excessive power due to recharging capacity.

### Structural Feasibility

In cities, poor air quality is mostly attributable to car emissions, which may be greatly decreased by adopting electric vehicles (EVs). However, since batteries have a far less thermodynamic efficiency than gasoline, EVs can only be widely used if their power generation ratios are significantly raised. Batteries with strong structural loads and adequate design might be a potential option. Using a multipurpose structural power source like this might reduce the weight of EVs while ensuring their crashworthiness.

### Operational Feasibility

Given existing conditions, it will be impossible unless costs are significantly reduced to provide an instant excellent value proposition. Electric vehicles are still expected to cost two-and-a-half times as much as their gasoline/diesel-powered counterparts, according to industry experts.

## Solution 3

Several individuals are attracted to electric automobiles because of this one selling feature. When it comes to reducing your carbon footprint, nothing beats an electric vehicle (EV). A closed-circuit electric engine means that an electric automobile does not release any one of the chemicals that are often connected with climate change. It's fantastic for the environment since there is no need for gasoline or fuel in a completely electric vehicle.

### Economic Feasibility

Electric automobiles are environmentally friendly, according to studies. These vehicles produce less gas emissions as well as harmful emissions than other types of vehicles. In addition, their ability to produce and generate electricity is taken into account. Electric vehicles have the potential to make a substantial difference in urban air pollution reduction efforts. Because they don't have an exhaust pipe, pure electric cars don't produce greenhouse gases into the atmosphere. This has a significant impact on air pollution. Pedestrians and bikers will enjoy cleaner streets thanks to electric automobiles, creating rural urban areas more pleasant places to live. It takes an average of 1.5 million ounces of CO2 to save one electric vehicle off the road for an entire year.

### Structural Feasibility

High-voltage battery packs and circuitry, control modules and inverters are packed inside electric vehicles, all of which may catch fire in the event of an accident. Short circuits, broken insulation, and leaky battery cells may all result from a car accident that damages battery cells. There is a risk of cell temperatures rising rapidly, which might cause thermal runaway and perhaps catastrophic fires.

### Operational Feasibility

Damage tolerance and technical efficiency may be evaluated using a combination of virtual and vehicle assessment. Many of Exponent's engineers assist manufacturers comprehend and analyse the consequences of battery incursion or other types of failure. We can assist battery pack manufacturers in predicting and assessing the design crashworthiness by doing failure mode and effects analysis (FMEA) of battery protection systems and finite element analysis (FEA) of the rechargeable battery. Using this method, crash-testing prototype automobiles may be done at a lower cost, and the time it takes to get from idea to production can be cut (Thomas, 2012).

# 6. Recommendations

## EV dispersal

Electric vehicles (EVs) are becoming more common in both developed and developing countries. In wealthier countries, the government has taken the lead in pushing next-generation eco-friendly cars. Electric vehicles (EVs) have the potential to provide new income streams for enterprises large and small. The public has high aspirations for electric cars due to various pilot projects and other EV-related initiatives. But widespread distribution is still elusive. To put it another way, EVs are prohibitively costly owing to issues including limited lifespans and inadequate charging infrastructure, leading to a lack of industry trust. The above-mentioned concerns have been overcome, and EV adoption has advanced.

## Initiate a Program to Accept Electric Vehicles

However, Dundee City must be ready to install multiple EVs and accompanying infrastructures when they become accessible globally. A lack of regulations has led to the private sector adopting electric cars (EVs). For the prevention of electric vehicle abuse and proper information dissemination, a basic framework is required. Depending on the EV, the development situation may differ drastically across regions. However, larger EVs (greater than sedan type) presently cannot compete with ICE vehicles due to high battery prices. Governments in developed countries actively support electric automobiles. Imported cars are often taxed in underdeveloped countries. In Dundee City, lowering the tax rate on electric cars has the same effect as a subsidy. Many studies have been done on large buses, which are vital in public transit. But it needs government assistance to be sustainable. Thus, it is critical to examine the many development trajectories for electric vehicles. However, it is not viable without substantial governmental support. Consequently, it is vital to analyse the diverse growth paths for each kind of electric vehicle (Chan & Chau, 1997).

# 7. Conclusion

The vast majority of transportation, energy, and environmental system problems can be solved using this viability report. To avoid wasting money, it is important to plan and analyse probable future problems. All that is required for a successful marketing strategy in Dundee City and the worldwide market has been covered in this article by the Author. This will help the future of EV in any city and country to understand what change an electric vehicle can help make a great and better world for everyone. This viability report and the marketing plan helped the author to understand what changes in technology have made significant impact on the environment plus the global market ratio.

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