An Assessment of Sustainable Technology: Electric Cars

Search Strategy

The search strategy employed for this research product mainly focused on using the keywords to generate criteria to locate relevant literature. Some of the most significant keywords for this research paper were electric cars, electric motor, sustainable energy. and alternative energy. These keywords were connected to generate search queries using the Boolean approach. This approach uses the words AND and 'OR to create search queries that led to the literature necessary for this topic. As such, the criteria involved word combinations such as 'electric cars AND sustainability: Another criterion was 'electric cars OR electric motors AND alternative energy. The objectives of the search strategy were to create keyword combinations that when entered into the library database would yield relevant literature for research. Additionally, the plan involved focusing on scholarly and peer-reviewed articles that were valid as sources of information.

Main Argument for Sustainability

Electric vehicles have been hailed for their environmental benefits. These cars are part of the alternative energy revolution whose primary goal has been the reduction of carbon emissions. Currently, conventional fossil-fueled vehicles account for 90% of the road traffic (Egbue & Long. 2012). As such, they are responsible for a subs tantial amount of carbon emissions. According to data from the EPA, cars were the second largest emitter of greenhouse gases standing at 27% of all emissions. Greenhouse gases including carbon are liable for increasing terrestrial temperatures and climate change. The gases trap the terrestrial radiation within the planet's atmosphere and increase global temperatures. The result of this process is adverse

weather conditions and gradual climate change. These emissions are most notable in urban centers that have many vehicles and inefficient transport networks. Using electric cars is one way to offset the process of global warming by significantly reducing the levels of carbon and other GHGs in the atmosphere. Electric vehicles have a negligible carbon footprint, which makes them a preferred form of alternative energy and means of propulsion, especially in an urban environment. However, this argument has come under some criticism due to the indirect carbon footprint associated with electric vehicles (Barkenbus, 2017). These cars rely on the power grid to provide energy. As such, the process of power production is responsible for a carbon footprint. For instance, additional power in the United States is generated using coal, which has significant levels of energy production. Despite this criticism, electric cars outperform their conventional counterpart. Therefore, the popularization of electricity-powered vehicles represents progress in countering climate change.

The economic sustainability of electric cars is a source of significant controversy. On one side, these vehicles present a significant opportunity to save on fuel costs over an extended period ranging from seven years and beyond. Such savings may seem like a long-term investment for many consumers. This situation arises due to the significant price difference between electric vehicles and conventional engines. The high cost of implementing relatively new technology presents a unique challenge in managing the operational costs. The high costs of creating infrastructure such as charging stations further reduce the technology's sustainability. Furthermore, the costs of producing electric power trains are greater than the expenses of fossil fuel-powered automobiles that undergo mass production. This cost differential is transferred to the consumer. However, long-term use of the electric car leads to 50% savings in fuel. These savings offset the overall cost of the car in time. Additionally, government policies and

regulations play a vital role in increasing the financial sustainability of electric vehicles. Governments often offer incentives for people who buy electric automobiles by climate-conscious policies. For example. the US IRS provides tax credits of up to S7.500 for any purchase of an electric car (Muneer, Milligan, Smith, Doyle, Pozuelo & Knez, 2015). Countries such as Norway offer free parking and access to government charging stations to encourage purchases. Therefore, considering these incentives, fuel savings and utility leads to a more substantial margin for economic sustainability for electric vehicles. Additionally. the electrical energy provides an alternative to a finite source of energy. Fossil fuels comprise the approximately 90% of the energy supply. However, the existing oil reserves are limited meaning that it will not satisfy future demand. Electric energy provides an economically viable alternative that will ensure a continuity of economic development and help in avoiding an energy crisis.

Electric cars indicate a high level of social awareness, especially among the users. The electric vehicle represents a statement from the user that they are environmentally aware. These users also present qualities of social sustainability in urban spaces. Electric automobiles are mindful of the environment through lower emissions and noise pollution. To this effect, increased usage of electric vehicles suggests mindfulness of larger urban populations as well as the willingness to preserve a comfortable environment for others (Heinicke& Wagenhaus. 2015). As such, the use of electric vehicles anticipates and counters social challenges such as increased urban populations.

Business Interest In Electric Cars

Electric cars provide a transport option that is cheap to maintain. These vehicles run on electricity. which is readily available. As such., it offers an opportunity for investors to minimize the costs of operation in industries that rely on transportation. For example, a logistics

organization can invest in electric trucks to transport cargo. The result is low costs of maintenance since the vehicles rely on electricity for propulsion. Using electric cars will offer financial savings compared to using conventional vehicles that require expensive fossil fuels for mobility (Kaplan, Gruber, Reinthaler & Klauenberg. 2016). The primary concern with this approach is the high initial costs of purchase. However. investors can take advantage of incentives from the government to reduce the initial costs. Additionally, lower emissions lead to higher carbon credit rating leading to additional tax breaks or income (Rudolph, 2016). As such, businesses that rely on transport as a core part of the supply chain stand to gain in cost-effective operations. example, drivers of ride-sharing apps have lower costs of services since the driver does not incur costs of fossil fuels. In cases where free charging stations are available, the driver does not bear any fuel costs. Therefore, the core advantage of using electric cars is larger revenue margins.

Another business interest is associated with the social image created by using electric vehicles as part of the value chain. A company's brand is a valuable aspect of the organization that is responsible for customer appeal. As such, incorporating the use of electric vehicles in operations as well as the publication of this fact can lead to increased sales. The strategy involves expanding a company's participation in corporate social responsibility (Greenberg. 2015). In addition to economic savings, these vehicles present the organization as an environmentally conscious entity. Additionally, it also passes the implied message that the organization's products have a minimal carbon footprint thereby increasing public appeal. This strategy taps into the environmentally conscious trend prevailing today. Therefore, electric vehicles improve the organization's image and promote sales.

Key Questions

This section will provide some of the issues surrounding the use of electric vehicles. These questions relate to uncertainties in the industry's future.

1. How will the disposal of electric car batteries occur in an environmentally sustainable way against increased consumption?

2. How much infrastructure development is necessary to make electric cars the standard in the transport sector?

3. Are the existing lithium and cobalt supplies enough to cater to mass production and consumption of electric vehicles?

4. Will alternative energy generation in the future support electric cars to eliminate 100% carbon emissions evidenced by the indirect carbon footprint?

Communication Plan

The communication process is essential to any group project. This project will rely on a vital but straightforward communication process. Each member of the group is expected abide by the plan to foster smooth group operations and achieve the primary purpose, which is to contribute towards the completion of the paper.

Objectives include:

1. Increase member availability around the clock to promote academic cooperation and interaction.

2. Improve member participation in the project by rapid sharing of information.

3. Enhance accountability and flexibility in project tasks.

The stakeholders in the project include the six members. The success of this academic exercise hinges on the participation of these individuals. As such, it is necessary to maintain open channels of communication among the group members. These individuals are expected to

interact and frequently cooperate for the completion of the project. Therefore, failure to communicate willbe a barrier towards the successful accomplishment of the paper. The instructor is a crucial aspect of the communication plan. Their primary role is to provide direction to the students as well as critical appraisals of academic work. Consistent communication with the instructor guarantees useful guidance for the creation of a high-quality report.

The information shared by the stakeholders is specific to their role in the project. For instance, the instructor will communicate deadlines for the completion of the project. The instructor will also share guidelines for the paper. Team members will share academic information concerning the topic. Each member will handle a particular section of the project. It is the role of the group leader to inform the members of their respective positions in the task. This communication will set expectations for every stakeholder in the process. The central method for sharing information is email. The members are expected to share their sections via email to the group leader who will compile the work and create a single document. Email presents a popular form of media sharing making it convenient for the project. Communications about the project will occur on a group chat on the most popular instant messaging forum. This group forum will promote transparency in interactions as well as increase convenience of reaching every member using a single message. Urgent contact can occur through phone calls.

The final aspect of the communication plan is the most important. Monitoring the progress of group members will facilitate completion of the work within the required deadline. As such, the group leader will need to implement measures to promote and guarantee effective participation. The work breakdown schedule will be essential to this process. It will outline the function of every member of the group as well as deadlines for the completion of respective tasks. This schedule will increase member awareness of the project expectations. Informed group

members will be in a position to respond to meet the expectations. Additionally, frequent reminders of tasks and their deadlines will help keep group members aware of their responsibility to deliver their portion of work. Finally, transparent accountability for work done will help identify non-participative members and facilitate individualized penalties. The threat of such sanctions will motivate members to fulfill their obligations.