



Environmentally friendly electric vehicle design

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ABSTRACT

Particularly for automobiles, the global automotive industry is expanding quickly. One of the most often used forms of transportation in Indonesia is the automobile. A variety of cars, including MPVs, SUVs, City Cars, and Sedans, each with the sophistication and benefits of its own type, are being supplied by producers of four-wheeled vehicles. With a focus on sustainability and minimalism, designers create designs for city cars. This essay's goal is to examine how the environmentally friendly City Car is used in cities. The writing uses analytic techniques, design sketches, and three-dimensional visual representations.

KEYWORDS: *city car; future; minimalize*

1. Introduction

The pollution from factory exhaust fumes is currently causing the air on Earth to become more and more contaminated, and car exhaust gases are the main source of this pollution. There are thousands of vehicles in Indonesia alone that still use fuel, which is not environmentally friendly and contributes significantly to air pollution, the main cause of which is global warming.

A rise in temperature that is averaged out across the entire surface of the planet, namely at the atmosphere, land, and ocean, is referred to as global warming. The findings of the study indicate that the last time the earth's temperature rose by 0.18 degrees Celsius inside a century. The increase in greenhouse gas output (emissions) in the atmosphere, including sulfur hexafluoride, carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons, is what is causing the earth's surface to warm up. Natural processes like climate change, which increases rainfall in some regions of the world and causes natural disasters and floods as a result, are brought on by global warming. In addition, a number of other regions of the world have seen extended dry seasons as a result of rising temperatures, leading to drought and water shortages.

These days, it's not unusual to see motorized vehicles cruising along the roadway. From two-wheeled to four-wheeled vehicles, from public transportation to private automobiles. Of course, the car with this powertrain creates smoke that contains CO₂, a byproduct of incomplete combustion, which might obstruct a person's ability to breathe. Automobile exhaust fumes can also contribute significantly to air pollution and environmental harm. The level of usage of motorized vehicles, by ignoring the influence on the environment, will eventually impair the environment in which man and his life are lived.

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The biggest impact on the environment and the entire world is due to pollution from motor vehicle fumes, which has been increasing quickly, according to environmental specialists. This adverse effect is the onset of global warming, often known as surface warming. Environmental specialists continue to disagree regarding the reality of the status of global warming, but the topic needs to be further researched and studied for the sake of human life.

A rise in the amount of carbon dioxide in the atmosphere can raise the earth's surface temperature because it is one of the greenhouse gases. carbon dioxide This gas is poisonous and can hurt your eyes, throat, and lungs. When carbon monoxide is inhaled into the bloodstream through breathing, it interacts with the hemoglobin to create COHb (carboxyhemoglobin). Oxides of sulfur When sulfur oxides are inhaled through the respiratory system, they will combine with water to generate sulfuric acid, which can irritate tissues and cause pain. Acid rain can also be produced by oxidized sulfur dissolving in raindrops.

Oxygen monoxide. When NO_x interacts with other pollutants, it produces the phenomena of smoke. Smoke impairs visibility, irritates the eyes, nose, and throat, causes plants to wilt, and degrades the quality of the material. Carbon Monoxide (NO). This drug impairs the respiratory system's airways and lungs, making them more vulnerable to infection.

According to a source, compared to industry, which only contributes 10–15% of air pollution, motor vehicle exhaust gas accounts for 60–70% of all air pollution. The remainder originated from other combustion sources, such as burning trash, forest fires, and other sources, while the remainder came from homes.

2. Methods

A qualitative study is one that follows an investigative pattern that gathers information from direct interactions between the researcher, the subject of the study, and the local population. Descriptive in nature, qualitative research frequently employs inductive analysis. A case study in the social sciences or other fields, such as science, psychology, or medicine, is an example of qualitative research.

Theory is only employed as a guide in qualitative research to ensure that it stays true to the facts of the situation. The theoretical underpinnings of qualitative research also serve as research context and discussion material. When conducting qualitative research, researchers use the facts they already have as the basis for their investigation while using theory as a source of reference. This process culminates in the formulation of a "theory." The final consequence of all inferences made in light of the information and assertions gathered during the study phase is the ensuing theory.

Numerous informants who are the subject of the investigation are used in qualitative research. The informants are often chosen at random based on predetermined criteria and asked to respond to broad questions posed by researchers. These inquiries can help with: To detect and determine a perception, to learn people's thoughts about a topic, and to gauge the degree of agreement among participants.

Methods of qualitative or dualitative research Naturalistic research methods are another name for research (naturalistic research). This research was carried out in a natural context, hence the name, and the data gathered will be qualitatively assessed.

Nana Syaodih claims that qualitative research departs from constructivism, which holds that reality has several dimensions, is interactive, and involves the sharing of social experience (a shared social experience) that can only be understood by certain people. The ethical guidelines for qualitative research are based on the rights of the people who participate in it. Specifically, that the informant's identity and the information shared take on value and require accountability. A written agreement (permission form) is typically produced between the researcher and the informant prior to the observation in order to uphold the code of ethics

3. Result and Discussion

As a result, I want to create a CityCar vehicle that uses solar fuel to generate electricity in order to meet consumer demand for an ecologically friendly vehicle and to aid in protecting the environment from various forms of pollution.

A compact electric vehicle will be created because it can adapt to the traffic conditions in highly populated areas, such as Jakarta, Bandung, and other major cities in Indonesia.

The electric car is a vehicle powered by an electric motor and powered by electrical energy stored in batteries or other energy storage containers. The electric car was very popular in the late nineteenth and early twentieth centuries, but its popularity waned as internal combustion engine technology advanced and gasoline-powered vehicles became more affordable. The 1970s and 1980s energy crises sparked some interest in electric vehicles, but this is nothing new. Electric vehicles received serious attention from new vehicle manufacturers in the 2000s. This is due to the soaring oil prices of the 2000s, as well as the fact that many people around the world are already aware of the negative impact of greenhouse gas emissions.

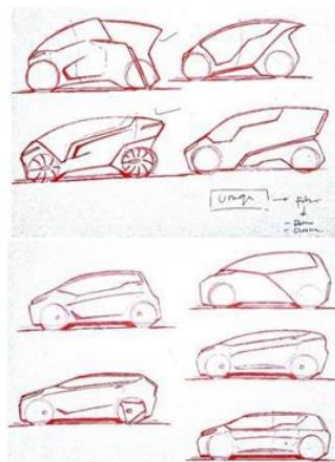
Environment



Gambar 2
Aspek lingkungan

This vehicle's design can be anticipated to contribute to environmental protection against different types of pollutants and pollution environment, as well as the creation of a green environment.

Process sketsa



Gambar 4.
Proses Sketsa

The steps of the sketch process begin with the creation of simple shapes, followed by brainstorming sketches, developing sketches, and finally a final sketch created to translate a concept into a chosen design

4. Conclusion

As a result of pollution from factory exhaust fumes and automobile exhaust gas, which is currently the main source of air pollution, the world's atmosphere is becoming increasingly dirty. Thousands of vehicles still use ecologically unfriendly fuels in Indonesia alone, which is a significant contributor to the most severe air pollution that can result in global warming. The average temperature of the earth's surface is rising due to global warming, specifically in the atmosphere from land to sea. The study's findings indicate that the earth's temperature has risen by up to 0.18 degrees Celsius over the past 100 years. The increase in greenhouse gas emissions, including those of carbon dioxide, methane, dinitro oxides, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, is what is causing the earth's surface to warm up. Due to current issues that are harmful to both people and the environment, an environmentally friendly vehicle needs to be created. I want to create a CityCar with solar fuel that is converted into electrical energy in order to meet consumer demand for an environmentally friendly vehicle and to help protect the environment from various forms of pollution. Which will be produced is a little electric car, as it can adapt to the street scenario in cities with dense populations and frequent traffic jams, like for instance Jakarta, Bandung, and dancing in major Indonesian cities. Due to its use of environmentally friendly fuel and materials, this car has an eco-friendly design

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