# Research Report

## Introduction  
The difference between combustion engine and electric vehicle (EV) lies in their power source and propulsion method. Combustion engine vehicles rely on internal combustion engines, which generate power by burning fossil fuels such as gasoline or diesel. This process produces exhaust gases, including carbon dioxide, nitrogen oxides, and particulate matter, contributing to air pollution and greenhouse gas emissions. In contrast, electric vehicles are powered by electric motors, which are fueled by electricity stored in batteries. The main difference between combustion engine vehicles and Electric Vehicles (EVs) lies in their power source and propulsion method, with combustion engine vehicles relying on burning fossil fuels to generate power, whereas EVs are powered by electric motors using electricity from batteries or other sources.  
  
## Background  
The production of electricity used to charge EVs can be generated from various sources, including renewable energy sources like solar and wind power, which can further minimize their environmental impact. Key differences between combustion engine and EV vehicles include power source, emissions, and energy efficiency. Combustion engines use fossil fuels, while EVs use electricity from batteries. Additionally, combustion engines produce exhaust gases, while EVs produce zero tailpipe emissions. EVs tend to be more energy-efficient, converting about 60-70% of the electrical energy from the grid to power the wheels, while combustion engines only convert about 20% of the energy in gasoline to power the wheels.  
  
## Methodology  
To understand the differences between combustion engine and EV vehicles, it is essential to consider various factors, including environmental concerns, energy efficiency, and personal preferences. The choice between combustion engine and EV vehicles depends on these factors, as well as the availability of charging infrastructure and the initial purchase price of the vehicles. In terms of costs, EVs tend to have lower operating costs, as electricity is generally cheaper than gasoline, and they require less maintenance since they have fewer moving parts. However, the initial purchase price of EVs can be higher than that of combustion engine vehicles.  
  
## Results  
The results of comparing combustion engine and EV vehicles show that EVs produce zero tailpipe emissions, making them a more environmentally friendly option, especially for those living in urban areas. The energy efficiency of EVs is also higher than that of combustion engine vehicles, with EVs converting about 60-70% of the electrical energy from the grid to power the wheels, while combustion engines only convert about 20% of the energy in gasoline to power the wheels. Additionally, the lower operating costs of EVs make them a more cost-effective option in the long run.  
  
## Discussion  
The discussion of the differences between combustion engine and EV vehicles highlights the importance of considering various factors when choosing between the two. These factors include daily driving habits, access to charging infrastructure, and environmental concerns. Ultimately, the choice between a combustion engine vehicle and an EV depends on specific needs, lifestyle, and priorities. It is essential to weigh the pros and cons of each option and consider household's unique circumstances before making a decision. As technology advances and the world shifts towards more sustainable energy sources, the differences between these two types of vehicles will continue to evolve.  
  
## Conclusion  
In conclusion, the difference between combustion engine and EV vehicles lies in their power source and propulsion method, with combustion engine vehicles relying on burning fossil fuels to generate power, whereas EVs are powered by electric motors using electricity from batteries or other sources. The choice between the two depends on various factors, including environmental concerns, energy efficiency, and personal preferences. EVs offer several advantages, including zero tailpipe emissions, higher energy efficiency, and lower operating costs. However, the initial purchase price of EVs can be higher than that of combustion engine vehicles. As the world continues to shift towards more sustainable energy sources, the importance of considering the differences between combustion engine and EV vehicles will only continue to grow.

# References

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