

# *Audi China's Sustainability Initiatives: Aligning with China's Environmental Policies*

Yili Pan<sup>1,a,\*†</sup> and Haotian Xiang<sup>2,†</sup>

<sup>1</sup>*Business School, Rutgers University, New Brunswick, New Jersey, 08854, United States*

<sup>2</sup>*Hutton Honors, Indiana University of Bloomington, Bloomington, Indiana, 47406, United States*

*a. yp329@rutgers.edu*

*\*corresponding author*

*†These authors contributed equally.*

**Abstract:** Under the background of China's automobile market where the concept of environmental protection prevails, the representative traditional fuel vehicle company Audi is used to discuss the relationship between fuel vehicle companies and China's sustainable development policies. The purpose is to discover how traditional car companies should change their status quo in the twilight Chinese market of fuel vehicles. First, it is important to recognize the importance of China's sustainable development policy and corporate social responsibility and the government's high regard for it. The paper then examines Audi China's sustainability initiatives, including its efforts to reduce carbon emissions, improve energy efficiency, and promote electric vehicles. And this article also puts forward some suggestions on the measures that Audi China can take to deal with these challenges. And summed up the changes that Audi China should make under the environmental protection concept of the Chinese market.

**Keywords:** China policy, sustainable development, corporate social responsibility

## 1. Introduction

In recent years, sustainable development has become an important global concern. With the acceleration of urbanization and the rapid growth of motor vehicle ownership, China is facing serious air pollution problems. Motor vehicle exhaust is one of the main sources of urban air pollution, so the Chinese government has introduced a series of policies and measures to encourage the development of new energy vehicles, such as tax breaks, subsidies, and quota systems, to reduce the use of fuel vehicles and exhaust emissions [1]. As one of China's leading traditional fuel vehicle manufacturers, Audi China has responded to this pressure by implementing several sustainable development initiatives.

The literature first describes the differences in particulate matter emissions from gasoline and diesel vehicles and their impact on ambient air quality in China. Diesel vehicles emit more particulate matter than gasoline vehicles, contributing to air pollution. The study found that electrification of public transport can reduce air pollution and improve public health. At the same time, the fuel consumption and emissions of hybrid electric buses are lower than those of traditional diesel buses. The article follows by discussing government policies and incentives to encourage the adoption of new

energy vehicles and analyzes the challenges faced by the industry. The significant growth of the electric vehicle and high voltage vehicle market in recent years and the role of government policies in promoting their adoption are also explored. Finally, challenges facing the industry are described, including overcapacity, and slowing demand, and potential growth areas such as new energy vehicles and intelligent connected vehicles are discussed. Advanced production stages require technologies that reduce material requirements and pollutant emissions to reduce direct and indirect impacts.

The purpose of this paper is to analyze the relationship between Audi China and China's sustainability policies. This paper will examine Audi China's sustainability initiatives and how they align with China's environmental policies. The paper will also assess the effectiveness of Audi China's sustainability initiatives by measuring key performance indicators such as carbon emission reduction, energy efficiency, electric vehicle adoption, and stakeholder engagement. Through this analysis, the paper aims to provide insights into how the company aligns its sustainability goals with China's environmental policies and demonstrates its commitment to corporate social responsibility.

## **2. Case Study on Audi China**

### **2.1. Background Information of Audi China**

Since its establishment in 1988, the German automaker Audi AG, which specializes in the production of luxury automobiles, has had a presence in China. Audi China is a subsidiary of Audi AG. The company has become one of the most successful luxury automobile manufacturers in the country thanks to its extensive product lineup, which includes sports cars, sedans, and SUVs, among other vehicle types. In recent years, Audi China has made significant investments in the technology associated with electric vehicles and has introduced several electric models to the Chinese market. Audi China has formed strategic alliances with other domestic Chinese businesses to broaden its production capabilities and boost its market share. Due to the company's unwavering dedication to delivering superior goods and unparalleled support to its clientele, it has been recognized with prestigious accolades, including the "China Customer Satisfaction Index (CSI) Award" and the "China Service Excellence Award". In addition, Audi China has been making concerted efforts to lessen the damage it causes to the environment and to lend support to the communities that it operates in through various CSR programs [2].

Audi China was able to sell over 647,221 automobiles in China in 2021-2022, making it the second-largest premium car brand in the country [3]. This was accomplished despite the impact of the COVID-19 pandemic, which occurred during that period. Audi China has been increasing its product line with the debut of many electric models, such as the e-Tron, e-Tron Sportback, Q4 e-Tron, and Q4 Sportback e-Tron, in order to meet the growing demand for electric vehicles [4]. To further improve the overall quality of the client experience, the corporation is also making investments in charging infrastructure and digital strategies.

### **2.2. Environment Policy in China**

China has put into place several environmental regulations meant to lower carbon emissions and enhance air quality in the country. In China, automobile corporations are mandated to adhere to environmental policies to mitigate their ecological footprint. The Chinese automobile industry is subject to a few significant environmental policies, including the Corporate Average Fuel Consumption (CAFC) regulations, the New Energy Vehicle (NEV) quota system, and the emissions standards for vehicles [1,5].

---

<sup>1</sup> Source: Audi combined and sustainability report. (2022)

The regulations set forth by the CAFC mandate that automobile manufacturers adhere to specific fuel efficiency benchmarks for their fleet of vehicles. The NEV quota system mandates that manufacturers must meet a specific threshold of electric or plug-in hybrid vehicle production to be eligible for government subsidies and to evade penalties. The regulations pertaining to vehicular emissions restrict the quantity of pollutants that can be discharged from automobiles, encompassing nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM).

The impact of the Chinese government's environmental policies on the automobile industry in China has been substantial. The NEV quota system has resulted in a significant increase in the production of electric and hybrid vehicles, which stands out as one of the most noteworthy impacts. The implementation of the system has incentivized automobile manufacturers in China to increase their production and sales of fuel-efficient and eco-friendly vehicles. Consequently, the market has witnessed an increase in competitiveness, as automotive companies have allocated resources towards the exploration and enhancement of fuel-efficient technologies, to comply with the established standards. The advancements have resulted in the emergence of novel technologies, including hybrid powertrains, lightweight materials, and enhanced aerodynamic features. In addition, the regulations implemented by the CAFC have compelled manufacturers of automobiles to allocate resources towards the development of technologies that enhance fuel efficiency, thereby fostering a culture of innovation within the industry. The implementation of emissions standards has yielded a decrease in atmospheric contaminants such as nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM), thereby enhancing the air quality in urban areas throughout China [6].

In order to ensure the sustainability and environmental responsibility of its operations in China, it is imperative that China adheres to the following policies. Considering its status as a luxury automobile manufacturer, Audi bears a responsibility to take the lead in advocating for sustainable mobility and mitigating carbon emissions. Through adherence to these policies, Audi can exhibit its dedication to sustainability and attract eco-friendly consumers in the Chinese market. Non-compliance with the policies may lead to penalties, revocation of government subsidies, and harm to the reputation of Audi. In addition, it is noteworthy that the Chinese government has intensified its efforts to enforce environmental regulations, thereby exposing Audi to potential legal and financial ramifications in the event of non-compliance. Consequently, adherence to these policies is imperative for Audi China to secure enduring prosperity and make a meaningful contribution to a sustainable future.

### 2.3. Analysis on Audi China's Operation Strategy

The year 2022 has witnessed a sequence of worldwide crises that have impacted the automotive industry. The Chinese economy was notably affected by the implementation of the zero covid strategy and embargo, alongside the scarcity of semiconductors and the adverse consequences of production shutdowns and curfews. The phenomena were also manifested in the sales performance of Audi China, which exhibited a gradual growth rate. The implementation of a revised approach to mitigate the spread of COVID-19 towards the conclusion of 2022 instigated a notable shift in the market, which commenced to exhibit signs of recovery following a significant period of closure [3,7].

The advocacy of free and fair trade in China has resulted in Audi's recovery, growth, and prosperity. As such, Audi intends to persist in its support of this principle moving forward. Nonetheless, it is a verifiable fact that the current geopolitical climate is growing progressively intricate. Audi has strategically prioritized its business operations around three key pillars, namely Europe, North America, and China. The present discourse centers on an analysis of Audi's fundamental approach to driving their business in China, with a view to securing their long-term competitiveness in the region. Furthermore, Audi China is fortifying its operations by implementing supply chain diversification strategies in suitable areas, as indicated by source [8]. The establishment of closed material cycles presents potential opportunities in this regard.

The 2022 Annual Sustainability Report of Audi highlights the company's primary research focus on the reduction of CO<sub>2</sub> emissions, aligning with the sustainable development objectives outlined in China's environmental policy. Audi has undertaken a proactive approach to achieve carbon neutrality in its plants by 2025. The company is collaborating with its suppliers to reduce carbon emissions in the supply chain. A notable measure taken by Audi is mandating its suppliers to generate battery cells utilizing renewable energy sources. Audi's overarching objective is to achieve a 40% reduction in carbon dioxide (CO<sub>2</sub>) emissions by the year 2030, across the complete life cycle of Audi's vehicles, relative to the reference year of 2018. As an entity engaged in the production of automobiles, the automaker wields significant influence in advancing the cause of sustainability [3].

The primary obstacle faced by the majority of automobile manufacturers is the need to adhere to a variety of fluctuating international regulations and laws pertaining to vehicular emissions. This phenomenon also poses a potential hazard that Audi may fail to comply with the average CO<sub>2</sub> emission benchmarks for its fleet across various regions of the globe. The transition to electric vehicles poses potential hazards, including those associated with the pace of the shift and the accessibility of Audi's electric car models, as noted in reference [9].

Furthermore, potential hazards may ensue because of incomplete progress in the advancement of electric vehicle charging infrastructure. The Chinese government has prioritized the resolution of a multitude of challenges and crises to align with the country's sustainable development policy.

### 3. Suggestion

It is important for Audi to increase its investments in the research and development of new types of vehicles that run on alternative energies. In the Chinese market, Audi must swiftly switch its emphasis from conventional fuel vehicles to a variety of new energy vehicles, including pure electric models and plug-in hybrid models, and gradually push them to all regions of the nation. The mentioned initiative aligns with the Chinese government's policy direction of promoting the advancement of alternative energy automobiles. Additionally, it serves to bolster Audi's market standing and reputation in China. Concurrently, Audi must establish collaborative partnerships with select domestic Chinese automotive enterprises in order to secure the support and assistance of the Chinese government. One potential avenue for collaboration is to establish a partnership with auto companies under the Huawei umbrella. In the event of a successful collaboration between Audi and Huawei in the realm of electric vehicles, Audi is optimistic about the possibility of garnering robust backing from the Chinese government, and potentially securing a significant share of China's automotive market, akin to Tesla [10].

Simultaneously, a plethora of alternative recommendations exist for Audi. One potential strategy for enhancing overall customer satisfaction and loyalty is to focus on improving post-purchase support and assistance. This may involve implementing measures to bolster after-sales service offerings, such as providing more comprehensive technical support, streamlining the returns process, or offering personalized follow-up communications to ensure that customers feel valued and supported throughout their entire experience with the brand. According to the industry report, the provision of after-sales service is a crucial determinant of both the consumer's car purchasing experience and the brand image. Audi has the potential to enhance the caliber of its post-purchase services by offering more proficient and expedient after-sales support, thereby providing customers with a more comprehensive support system.

Another strategy for enhancing customer satisfaction is to increase the benefits offered in maintenance or cleaning services. As an illustration, routine no-cost maintenance and complimentary cleaning services. The provision of information to customers that selecting Audi as their preferred automobile brand can result in significant savings on car maintenance expenses is likely to enhance their inclination towards purchasing Audi vehicles. The impact of brand marketing on consumer decision-making in the automotive industry is a significant consideration. It has been suggested that Audi may

benefit from augmenting its brand marketing endeavors, implementing more compelling marketing initiatives and promotional campaigns within the Chinese market, and amplifying its brand identity and recognition [3,11]. In the current Chinese market, Audi automotive enterprises have established themselves as a brand specializing in light luxury vehicles. The current Audi lineup may not offer a sufficient range of luxury models to satisfy the preferences and expectations of affluent consumers. The financial strain imposed by Audi renders it inaccessible to individuals of lower economic standing, thereby limiting its appeal to a predominantly middle-income demographic. In order to appeal to high-income demographics, Audi may consider introducing a range of upscale luxury series. Conversely, to attract low- and middle-income demographics, the company may explore the development of more affordable and budget-friendly models. Thus, Audi can expand its market segmentation by offering a wider range of options for affluent consumers, while simultaneously alleviating the financial strain for those with more limited budgets.

#### 4. Conclusion

Traditional fuel car firms face enormous problems in the Chinese auto market, where the government places a high value on reducing air pollution and encouraging the development of new energy cars. Audi China, being a prominent representative of traditional fuel vehicle manufacturers, presents a compelling case for examining the strategies that such companies must adopt to sustain their presence in the Chinese automotive industry. The aim of this article is to identify potential measures that traditional fuel vehicle companies can implement. Concurrently, Audi has implemented various initiatives such as reductions in pricing and supplementary post-purchase advantages. A potential strategy for Audi to leverage government support and subsidies in China's new energy vehicle market could involve establishing partnerships with local companies, such as Huawei New Energy Vehicles.

The present study is subject to certain limitations. The initial stage of data collection is of utmost importance, as numerous policies are still in their nascent stages of implementation, and therefore, their impact on Audi China remains relatively limited. Consequently, the present study encounters challenges in gathering a sufficient amount of precise data to formulate more precise prognostications and recommendations. Second, some of the analysis and recommendations in this article are only applicable to traditional fuel vehicle firms in the Chinese auto market and cannot be applied to other nations or areas since policies differ and cannot be generalized. The present article is delimited to examining the influence of the latest policies implemented in the Chinese automobile industry on conventional fuel vehicle enterprises. Therefore, other extraneous factors will not be taken into consideration. Henceforth, forthcoming evaluations of conventional fuel vehicle enterprises will incorporate a broader range of variables, including news, word-of-mouth, and social media, among others, to conduct a more exhaustive analysis and gather more precise information on the influence of Audi China in this tumultuous data.

#### References

- [1] Zheng, S., Liu, J., Chen, Y.: *The strictest standards are coming strongly, and automobile companies are facing the test of survival - sub-interpretation of China VI emission standards* *Southwest Automotive Information* ,11 (2018).
- [2] Audi in China, <https://www.audi.com/en/company/profile/locations/china.html>, last assessed 2022/12/30
- [3] Audi. 2022 combined and sustainability report. (2022).
- [4] Knapp, F.: *Challenges for Audi in the e-mobility business in China (Doctoral dissertation, Technische Hochschule Ingolstadt)*. (2021).
- [5] Li, X., Nam, K.: *Environmental regulations as industrial policy: Vehicle emission standards and automotive industry performance*. *Environmental Science & Policy*, Volume 131. (2022).
- [6] Chuancai Securities.: *Quantitative analysis of the impact of policies on the new energy vehicle industry*. (2019, October 9).

- [7] Yijie Liu, Yi Liu, Jining Chen.: *The impact of the Chinese automotive industry: scenarios based on the national environmental goals. Journal of Cleaner Production, Volume 96. (2015).*
- [8] Mao, S., Zhang, Y., Bieker, G., Rodriguez, F.: *Zero-emission bus and truck market in China: A 2021 update. (2023).*
- [9] Xie, J.: *Assessment of carbon emission and primary energy input of a gasoline combustion-powered 2.0 T SUV in China. Environ Monit Assess 195, 141. (2023).*
- [10] Ye T.: *It is difficult to implement China VI in advance How commercial vehicle companies take on. Commercial Vehicle News. (2018).*
- [11] KPMG.: *China's automotive industry: an unstoppable wave of electrification. (2022).*