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Policy Support and Green Transformation: Evidence from China

Zehui Tan

Shenghua zizhu academy, Shanghai, China, 200241
1326746802@qq.com

Abstract:

This article is based on the exploration of green transformation, observing that numerous countries have implemented substantial measures for green development and transition and have also established policies to in motivate and supervise them. Against this backdrop, my main focus is on researching how China can use policy support for green transformation, and testing whether policies are helpful for green industries. This paper evaluate the effectiveness of electric vehicle production and sales data, anecdotal information from government agencies, and incentive and punishment policies established by the government. It is found that these policies have significantly stimulated the development of green industries.. In summary, these policies have played a significant role, and China is fully committed to supporting and developing green industries on a large scale.

Keywords: Green Transformation, electric vehicle production, policy support

1. Introduction

Over the past couple of centuries, sustained economic growth has brought about many kinds of structural transformations in the world economy, such as industrial upgrading and service substitution. Probably the most prominent one is green transformation. Entering the 21st century, economic growth has gradually slowed in both developed countries and emerging market economies. This phenomenon shows that economic actors in the world begin to attach more attention to the quality of the economy, namely economic structure, instead of simply the size of the economy. This phenomenon has led to multiple structural transformations in the economy. One of the most obvious ones is industrial upgrading, for example, Vietnam has evolved from a relatively new agricultural economy into a new manufacturing giant; China has moved beyond producing low-tech, low-value consumer goods, such as fabrics and office stationaries, into developing its own own high-tech computers and chips. When the speed of economic growth slows down, but the quality of economy improves, there would be more focus on green transformation. Since the beginning of the 21st century, the concept of sustainable development has reached a global consensus. The establishment of United Nations Principles for Responsible Investment (UNPRI) in 2006 marked the beginning of systematical attention on environmental risks in capital markets. ESDG's investment has increased significantly since the beginning of the same period. [1] In 2016, for example, the size of global assets was more than 45 trillion dollars. In recent years, the Paris Agreement and the United Nations Sustainable

Development Goals (SDGs) have further tightened international carbon emission requirements [2]. Such evidence shows that both public sector and private enterprise begin to pay attention to this issue.

China also has gone through a cognitive process from "passively follow" to "actively lead" in this process. Report from 18th National Congress of Communist Party of China in 2012 mentioned that significant progress has been made in building resource-saving and environment friendly society[3], elevating environmental protection from a marginal concern to a national strategy. This conceptual change also marks that China's economy has evolved from high-speed development into high-quality development.

As mentioned above, at the end of 2010s, when most countries in the world were still promoting environmental protection concept, China had already set green transformation in its bones through systematic institutional design. Xinhua News Agency reported that China will "promote the peak and carbon neutrality to be included in the overall plan, take green transformation as the overall guide and low carbon energy development as the key, and accelerate the construction of green industrial system".

2. Incentive Policies

This section explores how China has gradually refined and enhanced subsidy mechanisms to advance green transformation, with a primary focus on supporting the new energy vehicle (NEV) industry. The government has also strengthened the management of battery and tram quality, thereby encouraging consumers and constraining enterprises.

In 2009, Chinese government successively issued two important policies to promote the development of new energy vehicle industry.Firstly, State Council proposed for the first time in Plan for Adjustment and Revitalization of Automotive Industry[4] to vigorously develop energy-saving and new energy vehicles and promote their application by launching national demonstration project and implementing supporting central financial subsidies successively. Subsequently, the Ministry of Finance, in collaboration with the Ministry of Science and Technology [5], issued Notice on Launching Pilot Projects for Energy Conservation and New Energy Vehicle Demonstration and Promotion. That is, Ministry of Finance issued a notice to launch pilot subsidy for new energy vehicles in public service sector. If launching pilot subsidy for new energy vehicles in public service sector in 2009 can be regarded as "internal testing stage", then the 2010 expansion of subsidies to private vehicles should mark the "public beta phase", and officially open the era of subsidy for new energy vehicles. During this period, subsidy policy focuses on battery, and specific subsidy standard is 3000 Yuan per kilowatt hour based on capacity of battery. At the same time, central government sets up maximum subsidy limit for single vehicle, 60000 Yuan for pure electric vehicle and 50000 Yuan for plug in hybrid vehicle.

Since 2013, there has been a significant surge in the number of pilot cities, and subsidy policies have officially entered the second phase. In this round, the subsidy plan has been optimized and upgraded from the previous single subsidy for battery power to the tiered subsidy for range, with a total of three levels: the maximum is 60000 Yuan, and the minimum is 35000 Yuan.

Subsequently, in April 2015, the Chinese government introduced a historic policy to promote new energy vehicles. The third subsidy policy has been implemented nationwide since 2016. The most notable technological advancement in this time period policy for subsidies is the first rigid target introduced for the maximum driving speed of pure electric vehicles.

The policy adjustments made in the following year further refined the technical requirements and focused on introducing a bottleneck technical indicator affecting battery performance, namely, battery energy density. The policy also suggests that not exceeding 50% of central subsidy standard should be paid, which means that no over-subsidy will happen.

Since 2017,the subsidy policy has been basically improved and now the subsidy policy for new energy vehicles is very comprehensive.

In order to further optimize the consumption structure of new energy vehicles and promote industrial upgrading, it has decided to implement phased reduction and exemption limits on the purchase tax of new energy passenger vehicles. Specific arrangements are as follows: if you buy a new energy passenger vehicle between January 1, 2024 and December 31, 2025, you can enjoy full exemption from purchase vehicle tax, but the maximum amount of tax reduction is 30000 yuan; If you buy it between January 1, 2026 and December 31, 2027, you can enjoy a 50% tax reduction, and the maximum amount of tax exemption is 15000 yuan.

This policy is implemented to address the current market segmentation, promote the iteration of vehicle technologies, and facilitate the coordinated development of new energy passenger vehicles and commercial vehicles.

From the actual effect, vehicles with selling price not exceeding 300000 yuan can enjoy the discount and exemption, and the amount exceeding 300000 yuan should pay the purchase tax according to the prescribed tax rate. According to 2022, the models priced at 300000 yuan or less occupy 87% of the total production of new energy passenger vehicles, indicating that the vast majority of consumers are not affected in their vehicle purchase decisions.

In general, this policy has promoted the steady develop-

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ment of high-end market guidance, while the overall stability and consumption continuity of the industry are not affected.

The policy also details quality standards for new energy vehicles. New energy vehicle manufacturers should bear quality responsibility for energy storage devices such as power batteries, drive motors and motor controllers offered to consumers. The requirements are: the service period of passenger cars shall not be less than 8 years, and those of commercial vehicles (including buses, special purpose vehicles, trucks, etc.) shall not be less than 5 years.

Autos manufacturers and power battery manufacturers should bear the main responsibility for the recycling and utilization of power batteries together.

The term of "passenger vehicles not less than 10 years or 150,000 kilometers and commercial vehicles not less than 8 years or 300,000 kilometers" in the draft for soliciting opinions is more reasonable. Currently, the actual service life of power batteries in new energy vehicles circulating in the market can hardly ensure high efficiency and stability for 10 years. It is neither rational nor technology-based to blindly pursue an ultra-long service life, which also paves the way for car companies to reduce after-sales service links for maintenance costs. It is a win-win adjustment for all.

The government further steps up supervision over product quality in the new energy vehicle market and implements a tiered subsidy policy with more incentive-based - offering higher financial support preferentially for battery products with higher energy density and stronger endurance.

We will also improve supervision efficiency and order in the review and disbursement process of subsidy funds, strengthen supervision and inspection, further improve the system, and ensure that financial subsidies are returned in a timely and accurate manner to physical enterprises that focus on research and development and practical innovation, and help the industry accelerate technological upgrading and achieve sustainable development.

"The relevant person in charge of the Ministry of Finance" said that the Ministry of Finance constantly innovates and improves its policy system, and implements comprehensive policy measures such as fiscal fund guidance, tax regulations and government green procurement in service to the carbon peak and carbon neutrality promotion work, and give full play to the incentive and constraint effect of tax policies.

3. The market scale of fuel vehicles is on the decline

The high oil prices of fuel vehicles have become cheaper compared to new energy vehicles due to price subsidies. Moreover, some regions will ban fuel vehicles from the road, leading to many fuel vehicle manufacturers exiting the market. This implies that the consumption of fuel vehicles will decrease significantly, and many manufacturers will voluntarily withdraw from the market.

There are other policies or phenomena that encourage people to consume new energy vehicles, such as increasing oil prices.

According to the "China Petroleum and Chemical Industry Federation", it is estimated that China will consume about 764 million tons of crude oil in 2024, a decrease of about 1.0% compared with the previous year [6]. The following two factors have caused the consumption of crude oil in China to show a slight decrease compared with the previous year: first, the change in energy demand caused by the domestic economic structure's deep adjustment, and second, the continuous promotion of the process of new energy substitution.

Recently, the "Ministry of Industry and Information Technology of China" recently issued a new order. The new regulations further specify the requirements for fuel consumption limits for fuel vehicles according to curb weight per 100 kilometers. For vehicles with a mass greater than 2.51 tons, the fuel consumption limit is 4.7 liters per 100 kilometers.This regulation will be implemented from 2026.

Domestic crude oil consumption has structural differences: the demand for transportation fuel oil is weak, and the demand for chemical raw material oil is increasing. The consumption structure of "reduced transportation and increased chemistry" shows that China's energy consumption is trending towards high-quality and diversified development.

According to the new regulations issued by the "Ministry of Industry and Information Technology", all newly registered fuel vehicles will be phased out gradually starting from 2026. Specifically, the new regulations will be implemented in the following aspects:

1. Major cities are strictly limiting the issuance of license plates for fuel vehicle registration and vigorously advance the registration of new energy vehicles, aiming to accelerate the promotion of green travel.

2. To quickly promote the green transformation of transportation, all gasoline powered vehicles that do not meet the strict environmental requirements shall not be listed and sold on the market.

3. Road fuel vehicles shall be subject to periodic exhaust emission testing. Vehicles that fail the test shall be fined in accordance with the law.

Starting from around 2025, official vehicles will first be subject to a "dress" and gradually exit the fuel era towards the pure electric and hybrid era.

From 2025 to 2030, the "compulsory mode" of banning

the sale of fuel vehicles will be gradually implemented in medium and large cities and characteristic functional areas.

Looking at the whole world, referring to the timetable for the 2025 to 2040 banning sales of gasoline vehicles established by many European countries[7], China is also advancing steadily in the direction of a comprehensive ban on sales around 2040.

In this process, Hainan Province will become China's first "pilot zone", with the goal of achieving full coverage of new energy vehicles across the entire island by 2030 [8]. After the implementation of the pilot program, each province and city will also take into account the situation in the province and gradually promote it. The period of transition will inevitably provide enough preparation time for the industry and society. In fact, the policy has already been implemented gradually. China has already issued the regulations for the implementation of the National VI emission standards. Vehicles that do not meet the standards cannot be sold. At the same time, car companies are also accelerating their pace - transforming into new energy is no longer a "multiple-choice question", but a "must answer question" for survival and development.

Not only are regions moving to ban the sale of fuel vehicles, but some car companies also announced that they would stop producing fuel vehicles. BYD announced that it would stop producing fuel vehicles in 2022; BAIC and Changan plan to stop selling traditional fuel vehicles in 2025; The Porsche 718 petrol version will stop accepting orders as of September 2025.

In addition, the specific content of the "dual point" mechanism is as follows. The main content of the dual point system is that each car company must reach a certain fuel consumption level when producing fuel vehicles. If the fuel consumption level is not up to standard, the car company will be deducted from the penalty points; On the contrary, if a car company wants to get positive points, it must meet the requirement of fuel consumption. The country hopes to adopt a market-oriented approach through this mechanism to encourage car companies to reduce fuel consumption as soon as possible and achieve energy saving and emission reduction.

However, it can also be seen from the new regulations that the production cost of fuel vehicles will increase significantly. In the end, it will also affect the purchasing price of consumers. Especially in the trading of carbon credits, the cost of each carbon credit may reach as high as 3000 yuan, which will cause the cost of producing fuel vehicles to increase dramatically. For consumers, the implementation of new regulations may mean an increase in the price of fuel vehicles. Especially in the process of technology upgrade and compliance, the automobile manufacturers may transfer the additional costs to consumers.

4. Conclusion

Against the backdrop of economic growth promotes green transformation and the acceleration of green transformation in recent years, different countries have implemented different policies to promote the development of green industries. This is not limited to developed economies. The Chinese economy and other developing economies have invested significant resources in achieving sustainable development and carbon neutrality worldwide.

Mainly because new energy vehicles can reduce pollution, improve air quality, reduce carbon emissions, and enable people to live in a better environment. In addition, they can reduce dependence on oil and ensure the country's energy. Due to the fact that electric and hydrogen powered vehicles do not cause any pollution to the environment during operation, their impact on the environment is minimal. Promote innovation and technological progress, such as increasing the range and charging efficiency of new energy electric vehicles. Manufacturers will further research more environmentally friendly and effective methods to improve battery efficiency and address safety issues, thereby accelerating the development of a broader market for new energy vehicle production.

Therefore, China promotes the large-scale development of wind and photovoltaic industries through electricity price subsidies and value-added tax reductions, and provides tax incentives to qualifying energy storage enterprises. Vigorously promote green industries. The green transformation was initially driven by organic economic growth, but research has found that only through the implementation of strict government subsidy policies and a reduction in the market share of fuel vehicles can greater results be achieved.

References

[1] (No date) Sustainable development goals | unfoundation.org. Available at: https://unfoundation.org/what-we-do/issues/sustainable-development-goals/ (Accessed: 22 September 2025).

[2] Meschede, C. (2020) The Sustainable Development Goals in scientific literature: A bibliometric overview at the meta-level, MDPI. Available at: https://www.mdpi.com/2071-1050/12/11/4461#:~:text=Global%20partnerships%2C%20transnational%2C%20and%20interdisciplinary%20research%20are%20essential,amount%20of%20research%20items%20directly%20addressing%20the%20goals. (Accessed: 22 September 2025).

[3] Hu, J. (no date) Xinmin, Summary of Comrade Jintao Hu's Report at the 18th National Congress of the Communist Party of China. Available at: https://xmwb.xinmin.cn/xmwb/resfile/2012-11-08/A02/A02.pdf (Accessed: 22 September 2025).

ISSN 2959-6130

[4] Renewable Energy Law of the People's Republic of China - National Energy Administration Available at: https://www.nea.gov.cn/2017-11/02/c_136722869.htm (Accessed: 22 September 2025).

[5] Official Launch of the Pilot Work for the Demonstration and Promotion of Energy-Saving and New Energy Vehicles. Available at: https://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/200901/t20090124_110786.htm#:~:text=%E4%B8%BA%E6%8E%A8%E5%8A%A8%E8%8A%82%E8%83%BD%E4%B8%8E%E6%96%B0%E8%83%BD,%E8%8C%83%E6%8E%A8%E5%B9%BF%E8%AF%95%E7%82%B9%E5%B7%A5%E4%BD%9C%E3%80%82 (Accessed: 22 September 2025).

[6] China Energy Big Data Report (2025) – Natural Gas Chapter - Xinhua Energy Network https://www.nnobu.com/nnobu/801.html

[7] Vijayenthiran, V. (2025b) EU grants reprieve on emissions deadlines, but 2035 ice ban stays, CarBuzz. Available at: https://carbuzz.com/eu-confirms-emissions-rules-2035-ice-ban/#:~:text=The%20European%20Union%20is%20set%20to%20ban (Accessed: 22 September 2025).

[8] Regulations on the Prevention and Control of Air Pollution in Hainan Province - Local Regulations - Government Website of Hainan Province Available at: https://www.hainan.gov.cn/hainan/dfxfg/201902/2b5bc1e228cd4677b9d8c79fb1816f6c.shtml (Accessed: 22 September 2025).