



The Role of Fiscal Policy in Promoting the Development of Emerging Industries — A Case Study of the New Energy Sector

Luyang Song

Beijing Huijia Private School, Beijing, China

songluyang@huijia.edu.cn

Abstract. With the global energy crisis and environmental pollution becoming increasingly severe, new energy has become a key industry for achieving green development and economic transformation. This paper focuses on China's new energy sector to explore the role of fiscal policy in promoting its development. It first analyzes the rapid growth of China's new energy industry, while acknowledging issues such as regional development imbalance and dependence on imported core technologies. Then, it examines specific fiscal policy measures such as subsidies, tax incentives, and government procurement. Using policy analysis and recent industry data, the paper evaluates the effectiveness of fiscal policies in supporting the industry. The findings show that fiscal policy plays a crucial role in developing the new energy sector and is an indispensable tool for promoting emerging industries. Finally, the paper provides policy recommendations for further improving the fiscal policy system to ensure both economic and green development in the new energy sector.

Keywords: Fiscal Policy, New Energy, Policy Subsidies.

1 Introduction

With global economic growth and population increase, the world is facing increasingly severe energy crises and environmental pollution. The exploitation and use of traditional energy sources have intensified the risk of depletion, and excessive exploitation has triggered problems such as global warming and frequent extreme weather, prompting countries to re-evaluate the sustainability of the new energy industry and commit to energy structure transformation toward cleaner, low-carbon development [1]. Against this backdrop, the new energy sector has rapidly emerged as a vital component of China's modernization. The continued advancement of clean energy technologies such as wind, solar, and biomass not only helps alleviate energy shortages and reduce environmental pollution but also promotes economic development. As an important part of emerging industries, the new energy sector integrates high technology and sustainability. It holds broad market potential and vast development space while also responding to national goals of low emissions and pollution control. It strengthens trade competitiveness as a global development priority.

© The Author(s) 2025

M. M. Husin (ed.), *Proceedings of the 2025 International Conference on Financial Innovation and Marketing Management (FIMM 2025)*, Advances in Economics, Business and Management Research 353,
https://doi.org/10.2991/978-94-6463-874-5_158

In promoting the new energy sector, fiscal policy — defined as the use of government spending and taxation to influence aggregate demand — plays an irreplaceable role in achieving macroeconomic objectives. Fiscal measures such as government spending and tax relief can regulate the new energy market by easing early-stage challenges like financing difficulties, limited R&D funding, and immature markets, thereby providing necessary external support and a favorable policy environment. Fiscal policy also directly influences demand, affects potential output, and exhibits multiplier effects. Thus, it significantly contributes to the growth of emerging industries by improving policy efficiency and accelerating industrial expansion.

This paper aims to explore the actual functions and mechanisms of fiscal policy in fostering the development of emerging industries, using the new energy sector as an example. It analyzes the impact of current fiscal measures and evaluates the effectiveness of different policy tools. The study hopes to provide a scientific basis and policy recommendations for the growth of China's new energy industry and emerging industries as a whole, contributing to green and economic development, while supporting the fiscal policy system's role in the development of new industries in a new era.

2 Development Status of the New Energy Sector

In recent years, as global energy and environmental problems have escalated, governments worldwide have continuously supported green and energy development. China's continued efforts in this area have significantly expanded the domestic new energy market, making it a key driver of economic growth. From a market perspective, the sector has rapidly expanded. As of the end of September 2024, China's installed renewable energy capacity reached 1.73 billion kW, up 25% year-on-year and accounting for 54.7% of total capacity. Wind and solar power installations reached 480 million kW and 770 million kW, respectively, surpassing coal-fired power in total capacity. The utilization rate of wind and solar exceeded 95%, indicating increasing efficiency [2]. Multi-energy complementary clean energy base projects in Gansu, Xinjiang, and Qinghai have expanded coverage [3].

Additionally, China's new energy vehicle production hit over 1 million units in 2018, over 5 million in 2022, and surpassed 10 million in 2024 — within just two years [4]. These figures reflect both the rapid development of the industry and growing consumer acceptance. From a technological standpoint, the shift from competing for traditional oil and gas to critical minerals like lithium, cobalt, and nickel has reshaped national competition. China's success owes much to high-tech talent and a complete industrial system. As the only country with all industrial categories under the UN classification, China's industrial support and domestic innovation have strengthened the new energy value chain. Hydrogen energy also saw significant progress: in 2024 [5]. China's hydrogen production and consumption reached 36.5 million tons, ranking first globally [6]. These factors reduced industry costs and boosted competitiveness.

However, the sector still faces unresolved issues. Core components like proton exchange membranes, compressors, and hydrogen circulation pumps remain reliant on

imports, with domestic products lagging in quality and efficiency [7]. This dependence risks “hollowing out” of core technologies, weakening national autonomy [8].

Additionally, downstream issues persist. A 2023 report by the China EV100 Association found that in rural areas, the penetration rate of pure electric vehicles was just 16%, compared to a national retail penetration rate of 34.2%, highlighting regional disparities and infrastructure limitations in less developed areas [9].

3 Demand for Fiscal Policy in the New Energy Sector

As a vital area of development for a low-carbon society, the new energy sector has strong needs for fiscal policy support, especially in the following areas: government funding, tax incentives, and policy guidance.

First, regarding funding, large investments are required in early stages, such as equipment purchases and infrastructure, especially for wind, solar, hydrogen, and storage. Firms often face restricted financing channels and long return periods [10]. High upfront costs and uncertain returns in sectors like manufacturing, new materials, and technologies place immense pressure on enterprises. Relying solely on external financing is often insufficient; government support is critical to sustaining early development.

Second, on tax incentives: fiscal policy plays a key role in reducing burdens and encouraging innovation. Given high R&D costs and low profits in early phases, tax relief alleviates pressure and promotes investment in innovation, talent, and equipment [11]. Support during midstream stages of production boosts efficiency and accelerates growth.

Lastly, policy guidance is essential for creating an orderly ecosystem. In nascent markets, disorderly competition can lead to welfare loss and resource waste. Fiscal policy helps allocate resources efficiently, improving productivity and guiding the industry from reckless expansion to structured growth. In summary, multi-dimensional fiscal support — funding, taxation, and systems — is vital for high-quality and sustainable development.

4 Specific Fiscal Policy Measures for the New Energy Sector

To accelerate growth, China has implemented several fiscal policies including subsidies, tax incentives, and government procurement. Subsidies played a critical role in the early stages. For example, the central government provided per-kWh subsidies for solar power — 0.25 yuan/kWh for conventional projects and 0.4 yuan/kWh for thin-film pilot projects, valid for one year [12]. The “Golden Sun” demonstration project provided up to 50% of the total investment [13]. Tax incentives reduce burdens and enhance competitiveness. Value-added tax (VAT) refunds of 50% were granted to wind power projects, lowering operational costs [14]. Key projects like new energy benefited from “three-year exemption and three-year half-reduction” corporate tax breaks [15]. Consumers also enjoyed purchasing tax exemptions for new energy vehicles from January 1, 2024, to December 31, 2025, capped at 30,000 yuan per vehicle [16].

Government procurement has also been vital. A Ministry of Finance notice called on government entities to take the lead in using new energy vehicles, requiring that at least 30% of annual government vehicle purchases be NEVs, and 100% of urban fleet vehicles [17]. Rental companies are also encouraged to offer NEVs. These mandates create strong and stable demand, securing orders for enterprises.

5 Conclusion

From the current situation, fiscal policies such as subsidies, tax incentives, and government procurement have played a significant role in promoting the vigorous development of the new energy industry. The subsidy policy is like a timely rain, directly reducing the cost of research and development and large-scale investment for enterprises, allowing them to invest more funds in technological innovation and capacity expansion. Tax incentives are like a shot in the arm, effectively increasing the profit level of enterprises, enhancing their competitiveness in the market, and enabling them to stand firm in fierce market competition. Government procurement provides stable market demand for new energy products, ensuring the widespread application of new energy technologies in various fields and creating a positive and favorable environment for industry development.

However, behind the rapid development, China's new energy industry also faces some challenges that cannot be ignored. The problem of uneven regional development is particularly prominent, with some regions experiencing rapid development of the new energy industry while others are relatively lagging behind, which to some extent affects the overall development efficiency of the industry. In addition, the dependence on imported components also restricts the industry's ability to develop independently.

To address these challenges, the government should further strengthen policy support for core technologies and components, encourage enterprises to increase research and development investment, enhance domestic innovation capabilities, and strengthen autonomy. Looking ahead to the future, with the increasing global attention to energy transition and continuous technological progress, China's new energy industry is expected to play a greater role in the global energy transition, achieve the dual goals of economic and green development, and contribute Chinese strength to global sustainable development.

Reference

1. Xie, W.: Development trends and challenges of new energy power generation technology. ResearchGate, (2024)
2. Liu, Y.: Ministry of Science and Technology: China's science and technology system reform achieves important breakthroughs. Science and Technology Daily, (2024)
3. Guan, H., Zhao, S., Yang, Y., Zhou, L., Chen, M.: Research on the development potential of hydrogen energy industry in the three provinces of northwest China. In: E3S Web of Conferences 525, (2025)

4. The State Council Information Office: The State Council: Developing new quality productive forces as a strategic move, persistently and conscientiously implemented. Central People's Government Portal (2024)
5. The State Council of the People's Republic of China: Several opinions of the General Office of the State Council on deepening the integration of industry and education. Central People's Government Portal, (2019)
6. National Energy Administration: Notice on further regulating the management of new energy power generation projects. National Energy Administration (2025)
7. Wang, W.Y.: National Energy Administration promotes diversified development of energy storage. Shanghai Securities News, (2025)
8. Zhou, M., Zhang, K.: Supply chain resilience in China's new energy sector. *Journal of Cleaner Production* **428**, 139402 (2023)
9. Wu, Y., et al.: Spatial disparity in clean energy adoption: Urban-rural divide and policy implications. *Nature Energy* **8**(11), 1024-1035 (2023)
10. Xu, J., Li, S.: Financing constraints and renewable energy investment: The moderating role of fiscal subsidies. *Energy Economics* **135**, 107521 (2024)
11. Chen, T., et al.: Tax incentives and R&D intensity in emerging industries: Evidence from China's new energy sector. *Technological Forecasting and Social Change* **202**, 123789 (2025)
12. Zhong, X.Y.: National Energy Administration actively promotes optimization of energy storage allocation policies in new energy sector. Solarbe Photovoltaic Network, (2024)
13. Government Offices Administration of the State Council, National Development and Reform Commission, Ministry of Finance: The 14th Five-Year Plan for energy and resource conservation in public institutions. Central People's Government Portal, (2021)
14. Liu, S., et al.: Fiscal incentives and renewable energy innovation: Quasi-experimental evidence from China. *Energy Economics* **127**, 107483 (2024)
15. Ministry of Finance of the People's Republic of China: Announcement on continuing and optimizing the vehicle purchase tax reduction and exemption policy for new energy vehicles. Ministry of Finance of the People's Republic of China, (2023)
16. Zhao, R., Wang, Y.: Public procurement as a catalyst for green technology diffusion. *Technological Forecasting and Social Change* **198**, 123456 (2025)
17. Zheng, Q., Huang, R.: Industrial policy and technological catch-up in strategic emerging sectors: Lessons from China's hydrogen economy. *Research Policy* **53**(5), 105012 (2024)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

