An Examination of Taxation Issues in China's New Energy Vehicle Sector: International Experience and Optimization Pathways

Bowen Liu

Anhui University, Hefei, China
1151404802@qq.com

Abstract. Since the 18th National Congress of the Communist Party of China, China's tax regime for new energy vehicles has undergone a systematic transformation—shifting from "isolated incentive mechanisms" to "end-to-end supply chain coordination" and from a "scale-oriented approach" to a "quality-driven approach"—and has gradually established a theoretical framework grounded in the deepening of Pigouvian tax theory, gradual tax neutrality, and full-lifecycle tax governance. However, the current tax regime still faces several challenges: a structural imbalance characterized by "emphasizing purchase over usage," insufficient long-term sustainability and precision in R&D incentive mechanisms, misalignment between central and local fiscal and taxation allocation mechanisms, and a lack of tax fairness between new energy vehicles and conventional fuel-powered vehicles in areas such as transportation infrastructure utilization, environmental compensation, and market competition. Building upon an examination of the evolutionary trajectory and theoretical innovations in China's new energy vehicle tax regime, this paper conducts a comparative analysis of the international experiences of Germany and Japan in providing tax incentives for new energy vehicles. It then proposes systematic recommendations for improving China's new energy vehicle tax regime across five dimensions: constructing a tax system that ensures full-lifecycle tax burden equilibrium; enhancing the sustainability and precision of R&D incentive mechanisms; restructuring the fiscal and taxation allocation and governance mechanisms to foster central-local coordination; recalibrating the tax burden disparity adjustment mechanism between new energy vehicles and conventional fuel-powered vehicles; and adapting international tax regime experiences to the domestic context. These recommendations aim to drive the evolution of China's tax system toward greater scientific rigor, systematic integration, and long-term sustainability, thereby supporting the achievement of the "Dual Carbon" goals and fostering high-quality industrial development.

Keywords: New energy vehicles; automotive taxation system; full life cycle; tax fairness; R&D incentives

© The Author(s) 2026
B. P. Siba et al. (eds.), *Proceedings of the 2026 5th International Conference on Public Service, Economic Management and Sustainable Development (PESD 2026)*, Advances in Economics, Business and Management Research 411,
https://doi.org/10.2991/978-94-6239-825-2_41

1 Introduction

Since the 18th National Congress of the Communist Party of China, New Energy Vehicles (NEVs) have become a core pillar of China's green transition and "Dual Carbon" strategy. From 2013 to 2024, annual production and sales surged from tens of thousands of units to over 12 million units, as the industry shifted from policy-driven demonstration to large-scale commercialization. Accordingly, the tax system has evolved from purchase-stage incentives (such as vehicle purchase tax and vehicle and vessel tax exemptions) to "full-lifecycle" support covering R&D, production, distribution, usage, decommissioning, and recycling. This evolution reflects a theoretical shift: the traditional Pigouvian tax logic of correcting negative externalities is increasingly supplemented by "positive externality subsidies," gradual tax neutrality, and "full-lifecycle tax governance."

However, the current tax system still faces four major structural contradictions. First, it "emphasizes purchase over usage": purchase incentives are significant, while usage-stage policy tools remain insufficient. Second, R&D incentives tend to be short-term: although the additional tax deduction rate has increased to 100%, enterprises doubt policy sustainability, and targeting for core technologies such as batteries and autonomous driving is inadequate. Third, central-local fiscal imbalances persist: local governments bear infrastructure construction costs, but VAT sharing rules do not fully match expenditure responsibilities with NEV-related tax returns, which easily leads to disorderly tax competition. Fourth, the unfair tax burden between NEVs and fuel-powered vehicles is becoming prominent, especially in road costs, environmental compensation, and market competition.

International experiences offer useful references. Germany focuses on long-term institutional certainty, extending the tax exemption period for zero-emission vehicles until 2035 and implementing accelerated depreciation for corporate EV purchases. Japan employs tiered and performance-based instruments, reducing or exempting acquisition and weight taxes based on environmental standards, and dynamically adjusting annual automobile taxes. Both combine predictable phase-out mechanisms, environmental differentiation, and usage-based burden sharing, rather than relying on indiscriminate subsidies.

Against this backdrop, this paper examines the evolution and contradictions of China's NEV tax system since 2012, compares the experiences of Germany and Japan, and proposes a five-dimensional optimization framework: (1) Constructing a full-lifecycle tax system that balances purchase and usage burdens; (2) Enhancing the long-term sustainability and precision of R&D incentives; (3) Restructuring central-local fiscal coordination and tax administration mechanisms; (4) Calibrating tax fairness between NEVs and fuel vehicles through adjustments in road costs, environmental compensation, and market competition; (5) Localizing international experiences to form a phased, environmentally graded Chinese model. By integrating positive externality incentives, gradual tax neutrality, and full-lifecycle governance, this study aims to provide a systematic tax pathway for high-quality industrial development and the achievement of the "Dual Carbon" goals.

2 The Development of China's New Energy Vehicle Tax System Since the 18th National Congress of the Communist Party of China

Since the 18th National Congress of the Communist Party of China (2012–present), China's tax system for new energy vehicles has undergone a systematic transformation—evolving from "single-point incentives" to "end-to-end coordination" and from a "scale-oriented" approach to a "quality-driven" approach. Centered on the core concept of "green and low-carbon development" and driven by both industrial upgrading and the dual carbon goals, this transformation has gradually established a comprehensive tax policy framework that covers all stages of the lifecycle—from R&D and production to consumption and usage.

2.1 Policy Evolution

1. Initial phase (2012–2017): Focused on the procurement process

In 2012, the Ministry of Finance, the State Taxation Administration, and the Ministry of Industry and Information Technology issued the "Notice on Energy-Saving Vehicle and Vessel Tax Policy," under which energy-saving vehicles were subject to a 50% reduction in vehicle and vessel tax, while new energy vehicles were exempt from such taxation. This marked the first time that energy type was used as a basis for adjusting the tax burden. As of October 2024, the State Taxation Administration has issued a total of 66 batches of the "Catalogue of Vehicle and Vessel Models Eligible for Vehicle and Vessel Tax Exemptions and Reductions." [1] Since September 2014, China has implemented a purchase tax exemption policy for new energy vehicles, exempting them from the vehicle purchase tax. As of March 2025, China has issued 15 batches of the "Catalogue of New Energy Vehicle Models Eligible for Vehicle Purchase Tax Exemptions and Reductions," covering the vast majority of new energy vehicle brands and models. The tax incentive policies implemented at the purchase stage have significantly reduced the cost for consumers to purchase new energy vehicles, effectively stimulating market demand for these vehicles. Given these vehicle and vessel tax and purchase tax exemption policies, an increasing number of consumers are opting for new energy vehicles when making purchases, driving a steady upward trend in sales within the new energy vehicle market. [2] Meanwhile, these policies have provided solid market support for the early-stage development of China's new energy vehicle industry, attracting more enterprises to participate in the production and research and development of new energy vehicles.

However, policies focused on the purchase phase have certain limitations. At this stage, tax policies pertaining to the usage phase of new energy vehicles remain relatively scarce, failing to fully leverage the guiding role of taxation across the entire life cycle of these vehicles. Furthermore, while preferential policies at the purchase stage have driven growth in market sales, their incentive effect on the R&D and innovation of core technologies within the new energy vehicle industry has been neither direct

nor particularly significant; as a result, the sector faces certain challenges in terms of subsequent technological advancement and sustainable development. [3]

2. Deepening Phase (2018–2022): Collaborative advancement across the entire industrial chain

During the deepening phase, in addition to maintaining strong efforts during the vehicle acquisition stage, an increasing number of preferential policies have been directed toward the upstream segments of the industrial chain, further strengthening tax support for the R&D phase. The super-deduction rate for corporate R&D expenses has been raised from 50% to 75%, and in recent years, it has further increased to 100%. Since 2018, relevant policies have also extended super-deduction benefits to R&D expenses incurred for key components of new energy vehicles, encouraging enterprises to increase their investment in core technology areas such as batteries, electric motors, and electric control systems. In the consumer sector, alongside the continued implementation of purchase tax reduction and exemption policies, additional measures—including trade-in subsidies and preferential consumer credit interest rates—have been introduced to further stimulate consumer purchasing intent. [4] For consumers purchasing new energy vehicles, the government provides cash subsidies of a certain amount to encourage them to trade in their old vehicles and purchase new ones. Financial institutions also offer more favorable loan interest rates, lowering the financial barrier to vehicle acquisition for consumers. During the usage phase, electricity rate discounts have been introduced for the use of dedicated charging stations for new energy vehicles, reducing their operating costs. Additionally, some cities have implemented preferential policies regarding parking and toll fees for new energy vehicles, enhancing their convenience and cost-effectiveness. The implementation of these policies has endowed new energy vehicles with significant advantages throughout their entire life cycle, further accelerating their widespread adoption and application.

The tax policy, which fosters coordinated advancement across the entire industrial chain, effectively addresses the limitations of the initial phase—which focused solely on the procurement stage—and drives the comprehensive development of the new energy vehicle (NEV) industry. From R&D and production to consumption and usage, every stage receives robust support and guidance, laying a solid foundation for the sustainable development of the NEV industry. [5][6]

3. Maturity Phase (2023–Present): Regulatory adjustments to relevant tax policies

After nearly a decade of development, China's new energy vehicle market has largely taken shape; however, this growth has also given rise to certain industry irregularities, creating an urgent need for government authorities to issue regulatory documents to address these issues.

On June 19, 2023, the Ministry of Finance, in conjunction with two other government departments, jointly issued the "Announcement on Extending and Optimizing the Vehicle Purchase Tax Exemption and Reduction Policy for New Energy Vehicles." Under this policy, new energy vehicles purchased between January 1, 2024, and De-

cember 31, 2025, are exempt from vehicle purchase tax; for such vehicles, the tax exemption amount does not exceed RMB 30,000 per vehicle. For new energy vehicles purchased between January 1, 2026, and December 31, 2027, the vehicle purchase tax shall be levied at half the standard rate; for these vehicles, the tax reduction amount does not exceed RMB 15,000 per vehicle. Additionally, the government has called for accelerating the formulation of the "Administrative Measures for the Recycling and Utilization of Power Batteries for New Energy Vehicles" to further enhance the recycling and utilization of battery systems.

These adjustments to policy frameworks have further strengthened the tax policy system for new energy vehicles, making it more scientifically sound and rational. The phased optimization of the purchase tax reduction and exemption policy not only extends the support provided to new energy vehicles but also incorporates appropriate adjustments based on market developments, thereby avoiding an excessive fiscal burden while encouraging enterprises to enhance their product quality and price competitiveness.

2.2 Theoretical Innovation

1. The theoretical elaboration of Pigouvian taxes

The traditional Pigouvian tax theory, as a cornerstone of environmental economics, emphasizes the use of taxation as a means to internalize the negative externalities arising from economic activities, thereby achieving equilibrium between social costs and private costs. China's tax system innovations in the new energy vehicle sector have moved beyond this traditional paradigm by innovatively integrating a "positive externalities incentive" mechanism into its tax design framework. [7] The "Catalogue of New Energy Vehicles Exempt from Vehicle Purchase Tax," implemented since 2014, holds significant symbolic importance; it breaks away from the traditional logic of punitive taxation and instead establishes an innovative "negative Pigouvian subsidy" mechanism through the exemption of purchase tax. The theoretical innovation of this policy lies in its recognition of the positive externalities generated by new energy vehicles throughout their entire life cycle in terms of carbon emission reduction. These positive externalities not only offset the negative externalities associated with the use of conventional fuel-powered vehicles but also bring additional environmental benefits to society.

2. Gradual implementation of tax neutrality

The concept of "tax neutrality" does not entail the immediate abolition of all preferential treatments; rather, it involves establishing dynamic and predictable institutional arrangements throughout a three-stage evolutionary process—namely, "technological neutrality → consumption non-neutrality → tax burden equilibrium"—with the ultimate goal of returning to neutrality. This policy uses the "cost parity between new energy vehicles and traditional fuel-powered vehicles" as the trigger threshold for achieving neutrality. ICCT research indicates that China is expected to reach this threshold within five years. [8]

Technological neutrality also plays a key role in facilitating the gradual convergence of the current round of new energy vehicle (NEV) tax regime toward tax neutrality. The core principle of this framework is that tax policies should not accord discriminatory or preferential treatment based on differences in powertrain technology pathways; instead, environmental performance and technological compliance should serve as both necessary and sufficient conditions for imposing taxes or granting incentives. In other words, pure electric vehicles, plug-in hybrid electric vehicles, and hydrogen fuel cell vehicles should be treated equally in terms of tax rates, tax bases, tax exemptions and reductions, as well as tax collection and administration procedures, provided they meet the nationally unified standards for energy consumption, carbon emissions, and safety. By eliminating the risk of "technological lock-in" and curbing the distortion of market competition caused by administrative discretion, this mechanism provides predictable, balanced incentives for diverse technological pathways. It not only strengthens corporate R&D competitiveness and process innovation but also accelerates the structural transition of the NEV industry from a policy-driven model to a market-driven one [9].

3. Full Life Cycle Tax Governance Theory

Full-lifecycle tax governance transcends the traditional "discrete-stage" taxation logic; instead, it employs a systems-theoretic approach to implement vertically integrated tax interventions across six major stages—R&D, production, distribution, usage, decommissioning, and recycling—aiming to internalize externalities at each stage and optimize resource allocation through a dynamic, closed-loop incentive framework. During the R&D phase, measures such as additional tax deductions for R&D expenses, the patent box regime, and accelerated depreciation are utilized to reduce the sunk costs and risk premiums associated with technological innovation, thereby incentivizing enterprises to overcome key bottlenecks in areas such as power batteries and power semiconductors; during the production phase, for enterprises that obtain green process certifications and achieve substantial emission reductions, preferential corporate income tax rates and VAT credit refund policies are implemented to correct the negative externalities arising from traditional production methods; [10] during the distribution phase, the purchase tax exemption policy and the differentiated vehicle purchase tax rate schedule are maintained, leveraging price signals to expand effective demand; during the usage phase, tax incentives are integrated with energy pricing, road usage rights, parking policies, and other mechanisms—for example, implementing an immediate refund policy on VAT levied on charging service activities, or granting exemptions from urban land use tax for land used for public charging piles—to lower ownership costs; during the decommissioning phase, enterprises that comply with the " Through these interstage incentives and information feedback mechanisms, this approach facilitates the institutional transition of the new energy vehicle industry from a linear economy to a circular economy.

3 Problems in China's New Energy Vehicle Tax System

Since the 18th National Congress of the Communist Party of China, China's tax regime for new energy vehicles has been gradually refined, providing robust policy support for the development of the new energy vehicle sector in China. [11] In 2013, when the production and sales volumes of new energy vehicles were first incorporated into China's statistical system, annual production stood at only 18,000 units; by 2024, these figures had risen to 12,888,000 units and 12,866,000 units, respectively. However, in light of the demands of sustained and healthy economic and social development, there remains room for further development and refinement of China's tax regime pertaining to new energy vehicles, as detailed below:

3.1 China's New Energy Vehicle Tax System Results in an Imbalance: Greater Emphasis on Purchase Than on Usage

1. Unreasonable allocation of sectoral tax burdens

In China's new energy vehicle (NEV) purchase market, various tax incentive policies are in place to encourage consumer adoption. [12] For example, as of December 31, 2025, the Vehicle Purchase Tax is exempted for the purchase of NEVs, with the maximum tax exemption amount per vehicle not exceeding RMB 30,000; furthermore, NEVs are not subject to the Consumption Tax. These measures have significantly reduced the purchase cost for consumers and stimulated demand in the NEV market. However, in the usage phase, relevant tax policies remain relatively inadequate. Apart from the exemption of the Vehicle and Vessel Tax for NEVs, there are no specific tax incentives designed to recognize the energy-saving and emission-reduction benefits of NEVs during their daily operation, nor has a reasonable tax burden adjustment mechanism been established to guide consumers toward the rational use of NEVs. Moreover, there are no differentiated tax policies governing energy consumption (e.g.electricity usage) associated with the operation of NEVs, which prevents the full realization of the energy efficiency advantages that NEVs possess over traditional internal combustion engine vehicles. This inequitable distribution of tax burdens across different stages is detrimental to the healthy development of NEVs throughout their entire life cycle and makes it difficult to effectively guide consumers toward the long-term, rational use of NEVs after purchase. [13]

2. Taxation design deviates from green objectives.

China's current tax framework for new energy vehicles does not fully embody the principles of environmental sustainability. Current tax policies predominantly focus on incentives at the purchase stage, lacking systematic consideration of the environmental benefits associated with the entire life cycle of new energy vehicles. For instance, during the production phase, there are no tax incentives designed to encourage enterprises to adopt green manufacturing processes or use recyclable materials, which diminishes their motivation to raise environmental standards. protection standards. Similarly, there is a lack of appropriate tax incentive mechanisms for the recycling

and disposal of end-of-life batteries. If these batteries are not properly managed, they can cause significant environmental harm; however, well-designed tax policies could attract more enterprises and capital into the battery recycling sector, fostering the efficient circular utilization of resources. Furthermore, no specialized tax preferential policies have yet been introduced for the development of charging infrastructure for new energy vehicles. Therefore, tax policies should serve as a guiding force to attract additional investment into the construction of charging networks, thereby enhancing the convenience of using new energy vehicles and further supporting the achievement of green mobility goals. [14]

3.2 The Tax System's Incentive Role in Promoting the Research and Development of New Energy Vehicles Has Not Been Fully Realized

1. The additional tax deduction policy for R&D expenses is being treated as a short-term measure.

In recent years, China has increased the additional tax deduction rate for R&D expenses incurred by new energy vehicle (NEV) manufacturers and their upstream and downstream manufacturing industries from 80% to 100%. [15] However, as this policy is still in its early stages of implementation, relevant enterprises still lack long-term capital utilization plans. According to financial reports disclosed by these companies, in the first half of 2024, with the exception of the "new EV startups" (NIO: 22.24%, XPeng: 19.22%, Leapmotor: 13.81%, Zeekr: 13.08%, etc.), whose R&D expenses accounted for more than 10% of their operating revenue, the proportion for all other brands was below 7%; for some traditional automakers, this proportion was even below 4%, representing a significant gap compared to the international average. The short-term nature of the R&D expense additional deduction policy makes it difficult for enterprises to formulate long-term R&D strategies. When allocating R&D investment, companies may be hesitant due to the policy's uncertainty and may be reluctant to launch large-scale, long-term R&D projects. Furthermore, this short-term policy is not conducive to attracting external investment. When selecting NEV R&D projects for investment, investors tend to favor those supported by long-term, stable policy frameworks; the current short-term R&D expense additional deduction policy fails to provide investors with sufficient confidence, thereby hindering the acquisition of R&D funding within the NEV industry. Over time, this situation will constrain breakthroughs in core technology R&D within China's NEV sector and diminish the competitiveness of China's NEV industry in the international market.

2. Insufficient policy support for key sectors

Although China's new energy vehicles sector already holds a leading global position, the key factor constraining its further development remains breakthroughs in core technological areas. In the battery technology sector—where batteries serve as a critical component of new energy vehicles—the R&D costs are high, and technological iterations occur rapidly. For example, during the development of BYD's Blade Battery, more than 2,000 different electrolyte combinations were tested, with material

validation costs exceeding RMB 150 million. However, current tax policies have failed to provide adequate tax incentives or financial support tailored to the high-investment, high-risk nature of battery R&D enterprises. Specifically, there are no dedicated tax relief or additional deduction policies available for expenses incurred by battery R&D enterprises—such as the procurement of R&D equipment or the compensation of R&D personnel—which undoubtedly increases the R&D burden on these enterprises and diminishes their incentive to invest in battery technology R&D. [16] In the field of autonomous driving technology, which integrates cutting-edge technologies from multiple disciplines—including artificial intelligence and sensors—the R&D process is both challenging and time-consuming. However, under China's current tax regime, aside from the additional deduction for R&D expenses under corporate income tax, there are no targeted support measures available for autonomous driving technology R&D enterprises. This leaves these enterprises facing significant financial pressure during their technological innovation efforts, thereby hindering the further advancement of autonomous driving technology. [17][18]

3.3 The Central–Local Fiscal Coordination Model Has Room for Further Refinement

At present, the allocation framework for new energy vehicle (NEV) related tax revenues between central and local governments is not sufficiently scientifically designed. In terms of Value Added Tax (VAT) distribution, central and local governments split the revenue at a 5:5 ratio, which constrains the amount of tax revenue local governments can acquire from the growth of the NEV sector. Meanwhile, the expansion of the NEV industry demands large-scale investment in local public services and infrastructure; when local governments take on most of these costs for industrial development, they struggle to obtain matching fiscal returns from NEV-associated tax revenues. This situation has, to some extent, dampened the motivation of local governments to promote the development of the NEV industry. Additionally, there is a lack of an effective tax coordination mechanism between the central and local governments. During the development of the NEV industry, different regions vary in their industrial foundations and development priorities: some regions may focus on the manufacturing of NEVs, while others may place greater emphasis on the sales and service of NEVs. Due to the absence of a unified tax coordination mechanism, regions may introduce conflicting tax policies in pursuit of their own interests, leading to disorderly tax competition that hinders the overall development of the national NEV industry.

3.4 The Issue of Fairness Between New Energy Vehicles and Conventional Fuel-Powered Vehicles Has Become Increasingly Prominent

With the steadily increasing number of new energy vehicles (NEVs) on the road and the reciprocal relationship between NEVs and conventional fuel-powered vehicles—where one's growth often offsets the decline of the other—how to ensure tax

fairness between these two vehicle types has become an urgent issue requiring resolution.

1. Transportation facility usage perspective

Both new energy vehicles and conventional fuel-powered vehicles utilize public transportation infrastructure, such as roads, yet their tax contributions differ significantly. Since the Road Maintenance Fee was abolished in 2009, it was replaced by a fuel surcharge—approximately RMB 1.5 per liter of gasoline. Taking 2023 as an example, road maintenance expenditures amounted to RMB 1.05 trillion, whereas the fuel surcharge contributed only RMB 700 billion, leaving a gap of nearly RMB 300 billion. During their operation, fuel-powered vehicles contribute substantially to the funding of public services, including road construction and maintenance, through taxes such as the fuel tax; in contrast, new energy vehicles contribute relatively little in terms of tax revenue during both their purchase and usage phases—particularly when electricity is used as the primary energy source, as road maintenance costs are not included in charging fees. This significantly reduces the revenue generated from the fuel surcharge on gasoline, which could lead to an imbalance in the funding of transportation infrastructure construction and maintenance in the future.

The actual road wear and tear is correlated with driving mileage and vehicle weight, but is independent of the vehicle's energy type. For driving mileage, the additional fuel tax levied on gasoline-powered vehicles can offset the associated road wear and tear; however, new energy vehicles cannot compensate for this wear and tear based on charging costs. Regarding vehicle weight, pure electric passenger vehicles are generally 20% heavier than their gasoline-powered counterparts of the same model; this increased wheel load pressure shortens the service life of asphalt pavements and accelerates pavement rutting and bridge fatigue. Furthermore, the vehicle purchase tax does not incorporate a vehicle weight coefficient, which means it fails to accurately reflect the actual road wear and tear costs.

2. Environmental compensation perspective

Although new energy vehicles (NEVs) emit fewer pollutants and lower levels of carbon emissions during operation compared to conventional fuel-powered vehicles, they still impose certain environmental impacts during their manufacturing and battery recycling phases. The current tax regime lacks an effective compensation mechanism to address the environmental costs associated with NEV production or the disposal of end-of-life batteries. In contrast, the environmental pollution caused by the production and operation of conventional fuel-powered vehicles has been partially compensated through various tax measures. Furthermore, the tax exemption policy does not differentiate between vehicle types—high-energy-consuming heavy-duty SUVs are subject to the same tax exemption as lightweight small cars. This disparity results in an inequitable allocation of tax-based environmental accountability between NEVs and conventional fuel-powered vehicles.

3. Market competition perspective

Differentiated tax policies may place new energy vehicles and conventional fuel-powered vehicles in an unequal competitive position within the market. Excessive tax incentives could give new energy vehicles a stronger price-based competitive advantage, thereby exerting a compressive effect on the conventional fuel-powered vehicle market. This could not only impact the development of the traditional fuel-powered vehicle industry but also disrupt the natural competitive order of the market. [19] Failure to promptly adjust the tax regime to ensure fairness between the two groups could lead to inefficient allocation of market resources, which would be detrimental to the long-term, stable development of the automotive industry.

4 An Overview of the Tax Systems for New Energy Vehicles Abroad: A Case Study of Germany and Japan

4.1 The German Tax System: Centered on Long-Term Incentives and Tax Policy Orientation

1. Extension of the tax exemption for private motor vehicles

The German federal government has explicitly extended the exemption period for the motor vehicle tax applicable to pure electric vehicles until 2035. According to a statement by Finance Minister Lars Klingbeil, the exemption policy, which was originally set to expire in early 2026, will be extended by five years; consequently, pure electric vehicles first registered before December 31, 2030, can continue to benefit from this tax exemption, with the maximum exemption period extending until the end of 2035. The scope of this policy has been further clarified: it now covers not only passenger vehicles for private use but also electric commercial vehicles (including electric trucks and electric buses) used in sectors such as logistics and public transport, all of which are subject to full exemption. No upper limit is imposed on the vehicle purchase price; instead, the "zero-emission powertrain" serves as the core criterion for eligibility. [20] From a policy design perspective, the federal government has positioned this measure as a "key institutional safeguard for achieving the goal of phasing out the sale of fuel-powered vehicles by 2035," rather than merely as a short-term consumer stimulus. The underlying rationale is to address consumers' concerns regarding the "uncertainty surrounding ownership costs" associated with electric vehicles by establishing a long-term, stable tax policy framework.

2. Accelerated depreciation and tax deductions for corporate vehicle purchases

To incentivize corporate investment, Germany has introduced significant tax incentives for businesses purchasing electric vehicles under its "Immediate Tax Investment Plan to Strengthen Germany's Economic Position." Key measures include accelerated depreciation: from July 1, 2025, to December 31, 2027, businesses purchasing new electric vehicles are eligible for a special accelerated depreciation scheme. In the year of purchase, 75% of the vehicle cost may be deducted from tax liabilities; in the following year, 10% may be deducted; and in the subsequent years, the deduction

amount will be reduced progressively each year. From a policy design perspective, this rule breaks away from the traditional "straight-line depreciation" framework applicable to fixed assets under Germany's Income Tax Act, significantly improving the initial cash flow for corporate investments through a "high upfront tax deduction" approach.

Second, the upper limit for the taxable price of corporate vehicles has been raised. During the same period, the gross vehicle price threshold applicable to corporate vehicle tax incentives has been increased from €70,000 to €100,000, enabling more high-end electric vehicle models to benefit from these tax incentives; for vehicle gross prices ≤ €100,000, the tax rate for private use is 0.25% per month (the standard tax rate is 1% per month); for amounts exceeding €100,000, the tax rate is restored to 1% per month. This policy applies to electric passenger and commercial vehicles owned by the enterprise or leased by the enterprise (with a lease term of ≥12 months), without any restrictions on the number of seats or maximum payload capacity.

4.2 Japan's New Energy Vehicle Tax Policy: Balancing Incentive Promotion with Tax Burden Management

1. Purchasing Process

Japan's purchase-stage taxation system is centered on a dual exemption framework consisting of the "Acquisition Tax" and the "Weight Tax," complemented by local-level consumption tax reductions and exemptions, thereby creating a tiered incentive structure: Under the Acquisition Tax (which is analogous to China's Corporate Income Tax), pure electric vehicles, hydrogen fuel cell vehicles, and plug-in hybrid electric vehicles that are first registered before March 31, 2026, and meet the "Environmental Performance Standards" stipulated by the Ministry of Land, Infrastructure, Transport and Tourism of Japan, are fully exempted from this tax; clean diesel vehicles are eligible for a 50% reduction. Regarding the Weight Tax, in conjunction with the Acquisition Tax, pure electric vehicles, hydrogen fuel cell vehicles, and plug-in hybrid electric vehicles are fully exempted from this tax; the exemption period is extended until April 30, 2026, and the cost of the first annual vehicle inspection is also reduced accordingly.

2. Ownership Phase

In the vehicle ownership phase, Japan employs a low tax rate system with dynamic adjustments. The automobile tax—also known as the annual ownership tax—is levied on a tiered basis according to vehicle type and weight; pure electric vehicles are uniformly subject to a minimum annual tax rate of ¥25,000, which is merely 20% of the tax rate applicable to traditional fuel-powered vehicles. However, amid the growing popularity of luxury electric vehicles, the Japanese government is exploring reforms to ensure tax system fairness, with plans to eliminate the minimum tax rate benefit for high-priced electric vehicles and instead implement a tiered taxation system based on vehicle value to address local government revenue shortfalls. Additionally, the Environmental Performance Additional Tax features a tiered exemption policy: new ener-

gy vehicles can receive tax reductions ranging from 0% to 3%, determined by their performance ratings based on two metrics—fuel efficiency (km/L) and CO_2 emissions (g/km).

5 Recommendations for China

Drawing on international experience in the taxation systems for new energy vehicles in Germany and Japan, and grounding these insights in China's actual industrial development landscape and its dual-carbon strategic objectives, this paper proposes academic recommendations for refining China's new energy vehicle taxation system across five dimensions—optimization of the tax framework, deepening of R&D incentives, restructuring of central–local governance mechanisms, redefining tax fairness, and the localization of international best practices—thereby driving the evolution of the tax system toward greater scientific rigor, systematic coherence, and long-term sustainability.

(1) Establish a tax system that ensures a balanced tax burden across the entire life cycle, thereby addressing the structural imbalance characterized by "prioritizing acquisition over utilization."

Moderately reduce universal tax incentives targeting the procurement phase and shift the policy focus toward the usage phase. Implement a VAT refund policy for new energy vehicle (NEV) charging services; exempt public charging station construction land from urban land use tax to lower the operating costs of NEVs; introduce differentiated energy-related tax policies tailored to NEV electricity consumption, offering tax incentives for households and businesses that use clean electricity to charge their NEVs, thereby highlighting the energy efficiency advantages of NEVs; [21] establish a tax burden adjustment mechanism based on usage patterns, leveraging taxation as a lever to guide consumers in rationally planning their driving ranges, thereby achieving refined tax governance during the usage phase of NEVs.

During the production phase, new energy vehicle manufacturers that have obtained green manufacturing certification (e.g.ISO 14051, PAS 2050) or utilize recyclable materials shall be eligible for preferential corporate income tax rates and the VAT credit refund policy, thereby incentivizing them to transition toward green production practices; during the end-of-life phase, the implementation of supporting tax policies under the "Administrative Measures for the Recycling and Utilization of Power Batteries for New Energy Vehicles" shall be accelerated; recycling enterprises that meet the required resource recovery rate shall be eligible for preferential measures—including immediate VAT refunds upon collection and reduced corporate income tax base calculations—for comprehensive resource utilization, thereby facilitating the reverse integration of the power battery recycling industry chain; in the field of charging infrastructure development, special tax incentive policies shall be introduced, extending the scope of additional tax deductions to R&D expenses incurred in the construction and operation of charging stations; and tax exemptions or reductions on property tax and urban land use tax shall be granted to private capital investments

in the construction of charging networks, aiming to attract diverse capital sources to participate in infrastructure development.

(2) Deepen the long-term and targeted nature of R&D incentive mechanisms to break through bottlenecks in core technology development.

Translate the 100% additional tax deduction policy for R&D expenses in the new energy vehicle (NEV) industry and its upstream and downstream supporting industries from a short-term pilot program into a long-term institutional arrangement; clarify the medium-to-long-term implementation timeline and a dynamic adjustment mechanism for this policy to eliminate policy uncertainty surrounding corporate R&D investment; streamline the application and review processes for the additional tax deduction on R&D expenses; and establish an information-sharing mechanism between tax authorities and industry regulatory authorities to reduce the compliance costs incurred by enterprises; [22] enhance the investment confidence of external capital in NEV R&D projects through policy institutionalization and broaden the financing channels for R&D funding; implement targeted tax support measures for critical segments of the value chain to address specific technological bottlenecks; develop a catalog of tax incentives for the R&D of core technologies in the NEV sector—such as batteries, electric motors, electronic control systems, and autonomous driving—to ensure targeted policy support; apply accelerated depreciation to R&D equipment purchased by power battery R&D enterprises, and include the salaries of R&D personnel and material verification costs entirely within the scope of the additional tax deduction for R&D expenses, aligning this measure with the high-investment and high-risk nature of battery R&D; provide immediate VAT refunds or corporate income tax reductions for software and hardware investments in autonomous driving technology R&D, and grant tax incentives for R&D collaboration projects involving cutting-edge technologies such as artificial intelligence and sensors to alleviate the financial burden associated with interdisciplinary R&D; and grant a one-time corporate income tax reduction to enterprises that achieve significant breakthroughs in core technology R&D, thereby incentivizing them to pursue disruptive technological innovations; [23]

(3) Restructure the fiscal and taxation allocation and governance mechanisms that foster central-local collaboration to stimulate the vitality of local industrial development.

Led by the Ministry of Finance and the State Taxation Administration, regional implementation guidelines for new energy vehicle (NEV) tax policies shall be developed to clarify the boundaries, criteria, and approval procedures for local tax incentives, thereby preventing malicious tax competition among local governments in order to attract enterprises to establish operations in their jurisdictions; a national NEV tax policy information-sharing platform shall be established to facilitate policy coordination between the central and local governments as well as among different regions, thereby supporting the development of a unified national market; performance evaluations shall be conducted on the implementation of NEV tax policies by local governments, and the evaluation results shall be linked to fiscal transfer payments to guide local governments in transitioning from "tax incentive competition" to "industrial ecosystem cultivation"; Simultaneously, clarify the tax collection and administra-

tion responsibilities of central and local governments to improve policy implementation efficiency; delineate the authority and responsibility list for NEV tax incentive review, collection and supervision between central and local governments, establish a "central-local coordination, local accountability" collection and administration model; delegate preliminary review authority of NEV tax incentives to local tax authorities, with central tax authorities in charge of policy supervision and final review; simplify the application and review process of tax incentives to ensure enterprises can enjoy them timely and fully; establish a central-local tax collection and administration cooperation mechanism to solve overlapping responsibilities and gaps, cut administrative costs, and improve overall collection and administration efficiency.[24]

(4) Reconfigure the mechanism for adjusting the substantial disparity in tax burdens between new energy vehicles and internal combustion engine vehicles, thereby achieving tax fairness and industrial synergy.

1. Establish a "use-based payment" tax burden allocation system based on the usage costs of transportation facilities.

Based on the core influencing factors of road wear and tear—namely driving mileage and vehicle weight—restructure the tax allocation mechanism for transportation infrastructure. Introduce a vehicle weight adjustment coefficient into the vehicle purchase tax system and implement a tiered reduction or exemption policy for pure electric passenger vehicles that exceed the weight limit by more than 20%, ensuring that the tax burden aligns with the cost of road wear and tear; explore incorporating road maintenance costs into the pricing framework for new energy vehicle charging services, and utilize tax instruments such as Value Added Tax (VAT) and Consumption Tax to implement "mileage-based taxation," abolish the universal exemption from vehicle and vessel tax applicable to pure electric passenger vehicles, and establish a tiered vehicle and vessel tax collection mechanism based on vehicle weight and driving mileage, ensuring fairness in the tax burden imposed on new energy vehicles versus fuel-powered vehicles regarding the use of transportation infrastructure.

2. Refine the adjustment mechanism for extreme environmental tax burdens based on total life-cycle environmental costs.

Deepen the dual mechanism of "positive externalities incentives" and "negative externalities internalization" within the Pigouvian tax theory by incorporating environmental costs associated with the production of new energy vehicles and battery recycling into tax system design. Establish an environmental performance grading system for new energy vehicles, integrating indicators such as energy consumption, carbon emissions, and battery recycling rates into the criteria for determining tax incentives; maintain high-proportion tax incentives for vehicle models that meet low-carbon production and high battery recycling rate requirements, while appropriately reducing the extent of tax exemptions or reductions for vehicle models with high energy consumption or low environmental performance—such as heavy-duty SUVs; refine the environmental tax framework for conventional fuel-powered vehicles by increasing the consumption tax rate for high-emission fuel-powered vehicles, thereby achieving parity in the internalization of environmental costs between new energy vehicles and conventional fuel-powered vehicles; and provide environmental tax exemptions or reductions to enterprises that adopt low-carbon production processes to

address the environmental costs associated with the production phase of new energy vehicles, thereby promoting green development across the entire industrial lifecycle.

(5) Localize and adapt international tax system practices to establish a diversified, collaborative policy incentive framework.

1. Draw upon Germany's extensive experience in long-term tax incentives to refine a sustainable market-based incentive mechanism.

Integrate the tax incentive policies for new energy vehicles (NEVs) with China's strategic development objectives for NEVs by 2035, and formulate a tiered tax incentive framework—such as granting tax exemptions or reductions on vehicle and vessel taxes for NEVs registered before 2030, and implementing a tax system based on environmental performance tiers after 2030—to stabilize the expectations of both consumers and enterprises and further enhance the appeal of NEVs; simultaneously, draw inspiration from Germany's accelerated depreciation policy for corporate electric vehicles by introducing an "early-stage high-proportion deduction" accelerated depreciation scheme for enterprises purchasing NEVs and their supporting infrastructure, allowing the deduction of more than 70% of the vehicle cost in the year of purchase, thereby improving the initial cash flow for corporate investors; raise the price ceiling for corporate vehicle tax incentives and extend the scope of corporate income tax deductions to include high-end NEV models, aligning with the high-end transformation trend of China's NEV industry.

2. Draw upon Japan's experience with a tiered and dynamically adjusted taxation system to establish a flexible tax framework.

During the vehicle procurement phase, a tiered tax incentive system based on vehicle performance should be established to replace the current universal tax relief approach; new energy vehicles should be classified into different tiers based on indicators such as energy consumption, driving range, and battery recycling rate, with differentiated purchase tax incentives implemented accordingly; during the vehicle ownership phase, the dynamic adjustment mechanism used in Japan's automobile tax system could be adopted—specifically, by abolishing the minimum tax rate benefit for high-priced, high-energy-consumption new energy vehicles and instead imposing taxation based on the vehicle's value and its environmental performance rating to address local government revenue shortfalls; for small and medium-sized enterprises (SMEs), a combined policy offering both additional tax deductions for R&D expenses and tax incentives for the purchase of new energy vehicles should be introduced to lower the entry barrier for SMEs to participate in the development of the new energy vehicle industry.

6 Research Conclusions

This study systematically reviews the evolution and theoretical innovations of China's new energy vehicle (NEV) tax system since the 18th National Congress of the CPC, identifies its structural contradictions, compares tax incentive practices in Germany and Japan, and proposes targeted optimization paths aligned with China's industrial development stage and the "Dual Carbon" goals. The main conclusions are as follows:

First, China's NEV tax system has completed phased transformation and yielded unique theoretical outcomes. It has gone through three stages—initial purchase-focused incentives, industry-wide coordinated deepening, and dynamic policy optimization—achieving a shift from single-point incentives to full-chain coordination and from scale expansion to quality upgrading. Theoretically, it has innovated the negative Pigouvian subsidy mechanism for positive externalities, established a gradual path toward tax neutrality, and developed a full-lifecycle tax governance framework, contributing a Chinese approach to global NEV tax policy.

Second, the current tax system faces four structural constraints. There is a pronounced imbalance of "emphasizing purchase over usage" with insufficient incentives for green production, battery recycling and charging infrastructure. R&D tax incentives lack long-term stability and targeted support for core technologies like power batteries and autonomous driving. The central-local fiscal allocation mechanism is mismatched with administrative responsibilities, risking disordered regional tax competition. Tax fairness between NEVs and conventional fuel vehicles remains inadequate in terms of infrastructure cost sharing, environmental compensation and market competition.

Third, international experiences offer differentiated references. Germany builds long-term institutional certainty by extending tax exemptions and implementing high upfront accelerated depreciation for corporate purchases. Japan adopts a flexible tiered tax system with dynamic adjustments based on environmental performance and vehicle value, balancing industrial incentives and tax equity.

Fourth, China's NEV tax system requires systematic optimization across five dimensions: build a full-lifecycle tax system with balanced burdens; enhance the long-term and targeted nature of R&D tax incentives; improve central-local fiscal coordination and governance; refine the tax burden adjustment mechanism between NEVs and fuel vehicles for fairness; and adapt international experiences to establish a diversified incentive framework.

Overall, NEV tax system optimization is a systematic institutional reform rather than simple tax adjustments. Coordinated advancement of the above five dimensions will promote a more scientific, integrated, and sustainable tax system, supporting high-quality development of the NEV industry and the realization of the "Dual Carbon" goals.

References

1. Ma Jun, Xu Yixuan. Improving the Direct Tax System: Current Status, Challenges, and Reform Recommendations [J]. Tax Research, 2026, (04):39–48. DOI: 10.19376/j.cnki.cn11-1011/f.2026.04.015. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gu8b92q6DLSF_VGTdkH8uyrNjjx9yeTNBToTQbtvWvzpweH7GXNHn1G5RTe4CF45qqnpH-DhBcj88bWz3SIboCu7hwoLVgY-YZfs2KlX8pCCmkZ4lIZz6PYyq97cLewDM53TtI51q6SvbgNtRaOQljTkT7BDH91fo3BCthCXyS3bw==&uniplatform=NZKPT&language=CHS.
2. Lü Difeng, Li Dengfeng, Wei Lixiao. Competition and Sales Cooperation in the New Energy Vehicle Supply Chain under the Purchase Tax Reduction Policy [J/OL]. Chinese

Journal of Management Science, pp. 1–15 [2026-05-24]. https://doi.org/10.16381/j.cnki.issn1003-207x.2025.0458. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GthdnX4D6njN7SG7c4sMBiYdD5Gjh1-3Yy43BBgH3vHIWi7Kz4zqjoC6enn6ND4bnFU6aHOwVXE6mhXmdO043eGmzW-Ti8mjeTIOwwXaapiPGfzalOZ09w9bcX4noLz2DInP0M2HbUgQP-o23nwkiiNy2p1ZQfcijC60MyQuDZDhXw==&uniplatform=NZKPT&language=CHS.

3. Tang Mingyang, Song Bo. Reflections on the Relationship Between the Development of China's New Energy Vehicles and Energy [J]. Automotive Practical Technology, 2019 (22). URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GthdnX4D6njN7SG7c4sMBiYdD5Gjh1-3Yy43BBgH3vHIWi7Kz4zqjoC6enn6ND4bnFU6aHOwVXE6mhXmdO043eGmzW-Ti8mjeTIOwwXaapiPGfzalOZ09w9bcX4noLz2DInP0M2HbUgQP-o23nwkiiNy2p1ZQfcijC60MyQuDZDhXw==&uniplatform=NZKPT&language=CHS.
4. Cheng Yang. Analysis of the phased effects of tax incentives for the new energy vehicle industry [J]. Automotive Magazine, 2025(07). URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GtNUGh_HG0lpmArnv3Dkh7A3Gvq7TrUORHiDFRlhkcUkRTxuX-tdqfxzLCGld81K1KvIOlXGOAm35mNkJn7FmnEy6ncn__Ot1ecX9f733FKtMJpJbg99uIxqjnr4ejZqwTY1WVf1RlOZa3IqF_4b-_Q_3ZK0VE3q1LofS0LtqU8hA==&uniplatform=NZKPT&language=CHS
5. Huang Jiangyu, Wang Mingzhu, Li Zetong. The Logic and Adaptive Pathways for Tax Policy Support in Promoting the Development of the New Energy Vehicle Industry from a Global Governance Perspective [J]. Economic Research Reference, 2025(06). URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvT161mnC27nQ_-l0iGf6p0TdxafhdZbe9TGZe2Ne6WBZlPpecydqeJ_OcH0nrQ3h-l_u4xuO34hGjaAT4q91dGntnHK5PObRMZl3VDOsXUDBZtYeJRp29RnD7dM2VqtnSdsTW4VcSuouykunssFjH2bHKH4o3VhfLGmQkc3ba6zg==&uniplatform=NZKPT&language=CHS.
6. Yin Xiaona, Xiao Xiang, Jin Dongsheng. A Study on the Vehicle Purchase Tax Exemption and Reduction Policy for New Energy Vehicles [J]. Fiscal Science, 2024, (07):121–127. DOI: 10.19477/j.cnki.10-1368/f.2024.07.006. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GundjBljBivs8jLpszYZNs_WLH4oBse6F_das_IKgD0WaXABIX0DAVfygI9qmvSQf8ILGPHclIRG4aDL5cHKtA0P9DvOTE-OpFZcCzAi8Su9vriLN73CKG12OwUAYQ_8m0dOi-uW4yMuMDjlvfu4_kSF1GhVrsr0lus8fZ3DiaUJbw==&uniplatform=NZKPT&language=CHS.
7. Yu Shuguang, Li Chuanchuan, et al. Fiscal Subsidies and Consumption Stimulus: Evidence from Local New Energy Vehicle Purchase Subsidies [J]. Quantitative Economics and Technology Research, 2025,42(12):24–44. DOI: 10.13653/j.cnki.jqte. 20251028.002. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvEp1OmcVNssd8NaYTgjH15BI50VGUxqFbKFIPCFDfclf4HCuFuRKltT-fcUOR4Wgw0_zbn19kpIm3VC7_8OgpxdPJc_varuA8z8a702ggJg8P2UCgbOakxVow-aR1JsuwViwUsZJGhO7xHWuufe4k0hfh9N6k8_1GcOZGtBraZwQ==&uniplatform=NZKPT&language=CHS.
8. Liang Chen, Zhang Qiongxuan. Fiscal and Tax Incentives, Firm Heterogeneity, and Innovation Efficiency in New Energy Vehicle Enterprises: A Study Based on Fuzzy Set Qualitative Comparative Analysis [J]. Journal of Tianjin University of Commerce, 2025,45(05):65–73. DOI: 10.15963/j.cnki.cn12-1401/f.2025.05.005. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GtrYeimYTTNmzn8Ilqdj6Utv

M2h2PeavjwMPiKKDWLXJZCmuAHLs1OV-0_lf64tkXMqhXhSYp0tKi8oBVpmH_aui EWoT4wBWTrSt7Hy8o30P9S4D0v000uKy9JYYKO5c2-wZfcFHkRz2rO-pvmpWFPOpJ CqrIxXFjoFwTZ-SF2XkA==&uniplatform=NZKPT&language=CHS.

9. Li Rong, Qiu Renxiang. "Green" Multiplier: The Carbon Reduction Effect of Fiscal and Tax Policies for New Energy Vehicles [J]. Economic Research, 2025,60(04):157–174. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvP8NSFO2n7dQwJdyl3K8tl-i6ibWcGQNX9nc8k_2etyQSeE_EGz9NdPY4_RSyEvYW4jxe9uVbjGSyqhS_KvzmPI9A903n-awsCk7yxutntEDfUUOlQSLkNM4fPT5jT82dP2rMiNmE50pDXbex8eycyOQryehjucHCM9FmDuNoYWg==&uniplatform=NZKPT&language=CHS.
10. Bai Xuejie, Meng Hui. Emerging Industries, Policy Support, and the Absence of Incentive and Restrictive Mechanisms: A Case Study of the New Energy Vehicle Industry [J]. The Economist, 2018(1):50–60. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GsQ11x7cJSqDh6UWngk99YV-HAlH7gOETmYlIjAJJzIdk-SxbKCf8wirMIv8uBAHdcdBkwlFdSAjgQq_YNCfticupoVQhzYeR2f7EsHQ97QIz0R8MJr8csSEqKVPO4npyQRi97lxqkvhxQ75vO7Fq6n4nEg5wS3byLN0nhCek6vgw==&uniplatform=NZKPT&language=CHS.
11. Ministry of Finance, State Taxation Administration, and Ministry of Industry and Information Technology. Announcement on Extending and Optimizing the Vehicle Purchase Tax Exemption and Reduction Policy for New Energy Vehicles [J]. Shanxi Finance and Taxation, 2023(7):58. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GviO4Bw5VEqMXAzMR0B1hPLxvpekxGnxaYcFrr5IuqNOVpaL_mjTVp535MA-6uI8oLab9QRlq4JJoVaGiWRssA6AXfe2zf3mhh_gNrrrQXlGPwnggUGqEp5p4_TyC2Ruab-nNjOLROOqbTeDPrTDE2ubuQNUHsfVBvxAO2xKfnZNw==&uniplatform=NZKPT&language=CHS.
12. Chen Xiao, Li Li. A Study on Tax Policies to Promote the Development of China's New Energy Vehicle Industry [J]. Times Finance, 2021(22):42–44. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvY6WPb4haVboknFliVnQuxkI4P3jRcF7pvh_ZB2sCTpBYV31DmD8mJDNZmkOiqSFuhVInb-zr6AGxz_iK0urIBVdAMXPPE_3K4iQA==&uniplatform=NZKPT&language=CHS.
13. Ding Yun, Zhang Tianhua. A Study on the Fiscal and Tax Policy Effects on Promoting the Development of the New Energy Vehicle Industry [J]. Taxation Research, 2014(9):16–20. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gv5TMlPr-NnWF6luGzU38vCaHkD3z9bYfWBmBIwGTPXRRyqFOIs08hP5VdeflkG1yRFRWutYAse7lvLQhVASbmXjjcY-mA_I57dxq97dqvBRdKb-KdiKZs3sZiDhE3gIooLe5jAar8h31XnWIbieZ5034RUUGDbGb-aLGS-knVjC8A==&uniplatform=NZKPT&language=CHS.
14. Dong Liming, Shao Jun, Wang Yue. A Study on the Impact of Tax Incentives on R&D Investment in Information and Communications Industry Enterprises: A Comparative Analysis from the Perspectives of Turnover Tax and Income Tax [J]. Tax Research, 2020(9):126–131. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvBzjHuy2qHBddJQlNvKp0covYx-KEz0WbnqcXzHaD1JBexwuHTwOKiZbyooeWCpAWy5LWVnI06Ai3BUY7pkEZuuhqRp33vuSxess7FCFkPzf5Mm7Fhu6ojsAo81ngJFpcWOe5coQGH0BREVeQWnYP3ZyoDGhX583SYz4KbbM6kxA==&uniplatform=NZKPT&language=CHS.
15. Gao Xiuping, Peng Yuelan. An Empirical Study on the Effectiveness and Temporal Dynamics of China's Fiscal and Tax Policies for New Energy Vehicles: Based on an Empirical Analysis of New Energy Vehicle Listed Companies on the A-Share Market [J]. Eco-

nomic Issues, 2018(1):49–56. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GtFNse10hSHIt-dRxfJcdM8W_hn9OiJ5v4qal3f5vbY85ldr_UMCcnnYv4clIEFkYQsHOTjtLTVVdBIjcuyBTjInAFcepuzHk-sDtdsUheMNvhMK0ZkDvPtHrjspX7IR_kOGaKYFl_dmTVWMx4nVhLhy3_gASF2__nVRBHLhwnGBg==&uniplatform=NZKPT&language=CHS

16. Liu Dingrong. A Study on the Implementation Effect of the "Additional Tax Deduction for R&D Expenses" Policy for Enterprises [J]. Journal of Science and Technology Management Research, 2013,33(5):35–40,53. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gsh8HZeYJ5y-XuJt7blQUdP9vf1y87mdcKKT0ExEZjBa3gw1iLbrASdqPiLxuRjpddJws9ny-1MezDOBwXMpPCYOcKSbmH6X6tk_iuzwptlKgSIRpDmAz8MA9f0w-MFj9V5unX5CT9Ve_SJhDxCL2G4gBfmlbfnVAsAo5qC2FUlIw==&uniplatform=NZKPT&language=CHS.
17. Yang Hongtao, Liu Fenpei, Zuo Shuwen. Analysis of the Implementation Outcomes and Influencing Factors of the Additional Deduction Policy for R&D Expenses: A Case Study of Private Technology Enterprises in Shanghai [J]. Science and Technology Progress and Strategies, 2015,32(6):132–135. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gt2SAXHR6ggA69N2yUsGZOkAM-7lVA0f7NXli0Wm_ddGQqx4SJw6JLBNAMmhFZDdVLoPZciLpEzXFxU2ay0lCNeHMbOCDUGkAs-JfpCRJl9vH1p0x8rbiBzpINc3Y9KLhbo1L4BN5k-tDNmjps1oEit4mszi4tajeU5gTWIatFEArQ==&uniplatform=NZKPT&language=CHS.
18. Zhao Tong, Fan Jin, Zhou Yingheng. An Analysis of the Influencing Factors on the Implementation Effectiveness of the Additional Deduction Policy for Corporate R&D Expenses – Based on a Survey of 330 Sample Enterprises in Jiangsu Province [J]. Journal of Science and Technology Management Research, 2014,34(18):8–14. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GtO8mFDEVOfUNWYQJIchKyXTsdfk9jPlCbGEyTATIugYawI2r3QPNu2ZjhxUuqu7WMRrViQNa9nBUn3k-6Py3VGzlZLogyd0DRYwCPnjeXsWdPcEeOzdnVlTm1te9KBgm_u76cEYHN-3rHjAy2I_M1wtyvzerPJgMljahv6ZC2Z7A==&uniplatform=NZKPT&language=CHS.
19. Gao Yue, Xu Qing. A Study on the Effectiveness of R&D Tax Incentive Policies: A Quasi-Natural Experiment on the Reform of the Additional Deduction Policy for Corporate R&D Expenses [J]. Industrial Economics Review, 2020,11(3):139–147. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gt6bmqhGjyCB3bzeqAM5subyt2dNJGDSyyGAI5guTd298HAeKJet1Us_zCeBQuTD6DrA8NPFOmqZjFAUaRuIvI1iNn5DLL2NRj4UY6v-1VE70U4mluAHptU-xCW4qA5yHLMG9mVmN5rAcQHnCKUYFunxWyZ_-mRG5FuBxJEAa0SiQ==&uniplatform=NZKPT&language=CHS.
20. Fang Donglin. Analysis of Tax Incentive Policies to Promote the Development of the New Energy Vehicle Industry [J]. Tax Research, 2022(12):99–104. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GsiOzdLf6MKVDGhvA_MzKbTxPp7NqnToDLfTuUnrdOy2NagW9l2ZaMY9FYZHirEyppeWSELGiqZAPexbJX76_8aIQnCdquBcl3YOzBtgY431yK57_WF5b4fPPJbLadv1aQWrwDTtvfle42stmYeT_xSYEpdKHR7z6LKDKXBYLDcOA==&uniplatform=NZKPT&language=CHS.
21. Huang Jiangyu, Wang Mingzhu, Wang Wanru. Green Fiscal and Tax Policies and the Development of the New Energy Vehicle Industry [J]. Taxation and Economic Research, 2025,30(01):70–84. DOI: 10.16340/j.cnki.ssjjyj. 2025.01.004. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvADlaWI9E2uxWAagqapSaPc7qezYPI1l1AOcuP0E8qtFzihR0YJLQlholq-GZzqtpTvfGii6BlWt8LZqbRfQOBeb8EAd_7TDiT1wRI-O40koUUtCqJQwEvUNvvp9evU59348m04KNZkpLxlK2EBECCmozpppDTu5KUREsuiFPxmQ==&uniplatform=NZKPT&language=CHS.

22. Shen Kaiyan, Shi Bingchen, Fu Dajun. The Impact of Environmental Regulation and Tax Incentives on the Innovation Efficiency of Chinese New Energy Vehicle Enterprises [J]. Journal of Beijing Institute of Technology (Social Sciences Edition), 2024,26(06):84–97. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gv9YTIL9Pp-ORtssSB7AauIYT2TgXgtlAwj8noaAG6hIK65uwZ-e3-KSqUderIumPwqKtcS0TcmTkQMU7k54wZ6PMzqrEJZblV-kHYkLoJYF7zxZ-jXsXTZgT8rJokWirP1w9aTs52aEYGP_65WFBrhjWEyC96kIu-Vfs7M8-weOQ==&uniplatform=NZKPT&language=CHS.
23. Dai Hui. A Review of the Effectiveness of New Energy Vehicle Subsidy Policies and Suggestions for Future Adjustments [J]. Price Theory and Practice, 2021(9):28–30 + 50. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1Gs8aDgZ1HDtv1l2dnRA5flrbqHN4yqQp3VSVgNlv-9d9ywmQTB5yq-JvakmNBKv3vwdqT6JTg7ZvJqLlfDOwJ6FfUSe25SgC0PXRcA6491jrgWGEkJ3RyYJT9do_x13HzuO7OUxRMrAfrN5RbmnlQyI690W2S2zu1QzS-xP0HXq3g==&uniplatform=NZKPT&language=CHS.
24. Li Shening, Zhang Zhe, Li Xining. An Analysis of Sustainable Fiscal and Tax Policies to Promote the Development of the New Energy Vehicle Industry [J]. Journal of Xi'an University of Finance and Economics, 2019,32(4):46–52. URL: https://kns.cnki.net/kcms2/article/abstract?v=nXt_PYYM1GvxIz3I_NRqcdL0R-2pvugBzcLdl_FTAGNjw9P5coAThrsYhd0LgT85tXfK1xZypqkYvROFe0Gbq9W_EjDCpiU7n4eNnKGECJhtqzccWat1MVfsrmwXb_trSy0P-I1jq9y7eqb8ufppAOaBFoXffNCrGVTJ819q8cY8tXT6c7MMOA==&uniplatform=NZKPT&language=CHS.

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.

