

# Problems And Solutions in The Development of New Energy Companies - A Case Of BYD

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**Abstract.** Currently, under the background of global climate change, the new energy industry is developing rapidly, gaining various opportunities and facing heavy challenges at the same time. This research takes BYD Auto, a leading new energy company, as an example, and analyses the existing development problems of new energy companies in terms of costs, policies and competitiveness, including the high proportion of costs and expenses, structural imbalance, high dependence on policy, and insufficient competitive advantage of enterprises. At the same time, in view of the company's current development difficulties put forward to optimize cost control, transition to market-oriented operations, strengthen competitive advantages and other targeted strategies. The research aims to provide a reference for new energy companies to meet the relevant challenges and reveal the path of transition from scale expansion to high-quality development of the new energy industry through case studies, which also provide theoretical support for the optimization of the global energy structure and the transition to a low-carbon economy.

**Keywords:** New energy industry; BYD; case study.

## 1. Introduction

In the context of accelerated global climate governance and deep transformation of energy structure, the development of new energy is an inevitable choice for today's society. The superiority of new energy technology itself determines that it will become a new driving force for breaking down resource barriers and achieving green, low-carbon and sustainable development. With the double driving force of technological progress and market mechanism tends to be perfected, but also spawned a variety of new industrial ecology, becoming one of the key engines to drive global economic growth.

The rise of China's new energy industry epitomizes this global trend. Over the past decade, China has achieved great breakthroughs in new energy vehicles, photovoltaic power generation, energy storage technology and other industries, becoming one of the world's largest new energy markets and manufacturing centers. In this process, BYD Co., Ltd. (BYD) stands out by virtue of its whole industry chain layout and technological innovation ability. Since its establishment in 1995, BYD has gradually transformed from a battery manufacturer to a comprehensive new energy enterprise covering electric vehicles, rail transportation, solar energy and energy storage systems, with its sales volume exceeding 4 million units in 2024, ranking among the top five in the world. BYD's growth trajectory not only maps the scale expansion of China's new energy industry, but also highlights the strategic logic of technology autonomy and market internationalization in parallel.

However, behind the rapid development of BYD is also facing multiple challenges. Cost factors such as fluctuating raw material prices, high labor and R&D costs, and an imbalance in the expense structure tested its profitability; Under the background of policy subsidy retreat, too much reliance on policy makes the company urgently need to change the innovation-driven model; In addition, in terms of competitive advantages, there is still a gap between technological research and development and the industry's head enterprises, and problems such as insufficient brand recognition and overseas supply chain management risks constrain its pace of globalization. Taking BYD as an example, this study systematically analyzes the various problems faced by new energy companies in their development and proposes targeted countermeasures. On the one hand, this study can provide practical reference for similar enterprises to optimize their strategic layout and avoid development risks, and on the other hand, it can reveal the path of transformation of new energy industry from

scale expansion to high-quality development from a micro perspective, which provide theoretical support for the optimization of global energy structure and the transformation of low-carbon economy.

## **2. Existing Issues**

### **2.1. High Cost-to-cost Ratio and Structural Imbalance**

With the increase in raw material prices, labor costs and investment in research and development technology, BYD is faced with the problem of high cost-over-expense ratio [1]. Firstly, the escalation of bulk raw material procurement costs significantly increased the burden of business operations. Despite the implementation of a series of coping strategies, the continued expansion of the business scale has resulted in limited cost control, which has had a greater impact on profitability levels. Secondly, along with production capacity upgrading and business expansion, the company's manpower scale is expanding rapidly, which pushes up the recruitment and training expenditures and further raises the manpower cost. More notably, BYD's R&D investment grew sharply between 2017 and 2021, further eroding the company's profit margins while enhancing its technological reserves, creating a sustained challenge to overall profitability.

Product development dominates BYD's production cost components, neglecting cost considerations for marketing, service, and infrastructure activities. In the process of promoting the new energy vehicle business, BYD will focus a lot of resources and funds on product innovation and technology research and development, compared to the new energy vehicle marketing and promotion investment is relatively limited. In the past, sales performance was mainly dependent on its own brand awareness and support from its loyal customer base, with a low percentage of new user groups attracted through product marketing. Currently, the public's knowledge of new energy vehicles is not yet comprehensive, and strengthening the marketing of new energy vehicles is especially critical for BYD. In addition, the lack of marketing capability also prevents BYD from effectively communicating product differentiation to consumers, which is not conducive to the smooth implementation and promotion of its differentiation strategy [2].

### **2.2. Stronger Dependence on Policy**

Since 2017, the government has gradually reduced subsidies for new energy vehicles, which has had an impact on the Company's overall profitability. Except for 2020, when new energy subsidies account for slightly less than 50% of net profit, BYD relies on new energy subsidies for more than 80% of net profit in the following four years. At the same time, as evidenced by the decrease in the number of sales at the beginning of 2017, the absence of subsidies began to affect the financial dynamics of the market, leading to a decrease in consumer confidence or a change in market priorities [3]. With the government's lack of expertise, its guidance and policy formulation may deviate from the right track, unintentionally ignoring BYD's actual needs and development trends, thus hindering the smooth advancement of its innovation activities [4].

### **2.3. Lack of Competitive Advantage**

Currently, BYD's new energy vehicles are mainly low-end and mid-range models, mainly targeting price-sensitive consumers and emphasizing the cost-effectiveness of the vehicles. As for the domestic market, which BYD is mainly oriented to, the market positioning of other new energy vehicle manufacturers is often also the low-end market, in terms of price and BYD's many models with a small gap, to a certain extent, squeezing the market [5]. Meanwhile, in the high-end brand market, BYD has a weaker brand premium compared to internationally recognized brands such as Tesla and Mercedes-Benz. In addition, its overseas market expansion is limited by geopolitics, cultural differences and localized service capabilities, leading the lower internationalization process. BYD's shortcomings in intelligent technology are obvious, and it still needs to improve in terms of updating technology as the basis of competition. And compared to the overall automotive market, despite significant year-on-year growth in sales of electric vehicles, their penetration accounted for only 3.84%

of total passenger vehicle sales in 2018, with mileage limitations, long charging times, and the risk of spontaneous combustion recognized as the top three concerns for customer adoption [6].

### **3. Solutions**

#### **3.1. Optimize Cost Control**

In terms of raw material costs, BYD can further control the upstream resources through vertical integration strategy, accelerate the global layout of lithium ore, nickel and cobalt and other key raw materials, or sign long-term agreements with suppliers to stabilize the purchase price, as far as possible to eliminate global fluctuations on the impact of raw material prices. At the same time, BYD should actively promote material technology innovation, research and development of sodium-ion batteries as a supplement to lithium iron phosphate batteries, to reduce the dependence on high-priced lithium resources. In the production chain, BYD should continue to improve the scale effect, through the platform design to improve the common rate of parts and reduce the manufacturing cost of a single car model. In addition, it should continue to deeply apply intelligent manufacturing technology to further reduce the proportion of labor costs and improve production efficiency.

BYD's R&D investment needs to be more focused on core areas of strength, such as blade battery and CTB body technology, to avoid the waste of resources caused by repetitive R&D. At the same time, technology licensing or joint R&D modes can be explored, such as cooperating with universities and research institutes to share the cost of basic R&D, or exporting electric technology to other car companies for additional revenue. At the marketing level, BYD needs to increase its market promotion efforts to change consumers' inherent perception of its "low-end brand". For the high-end market, marketing strategies should emphasize technological innovation rather than relying solely on price-performance competition. In addition, BYD can also market through digital means, thus improving customer acquisition efficiency and reducing marketing costs.

BYD can introduce a more refined and programmed cost assessment system, incorporating the cost-expense ratio into the KPI assessment items of each department to ensure the rationalization of resource allocation in R&D, production and marketing. At the same time, the implementation of the "amoeba management" model, the division of business units into independent accounting units, incentives to the team to take the initiative to optimize the cost structure. In terms of human resource management, quality can be increased and efficiency improved through automated configuration of positions, while BYD establishes the concept of cost leadership for the whole staff by carrying out a variety of cost control learning and training, regular cost exchanges and benchmarking activities to improve per capita output and reduce the overall pressure on labor costs [7].

#### **3.2. Accelerating the Transition to Market-based Operations**

BYD needs to get rid of the "subsidy-driven" innovation model, from policy-driven to market-driven R&D system [8]. On the one hand, BYD can deepen its efforts in areas of strength, such as further optimizing the energy density and low-temperature performance of blade batteries, to consolidate its leading position in the power battery market; On the other hand, R&D costs can be reduced through open technology cooperation, while enhancing technological discourse and reducing the impact of policy orientation. By accelerating the construction of technical barriers that are difficult to be replaced, BYD is able to maintain its premium capacity by virtue of its product power even in the absence of subsidies.

In the context of the subsidy slump, BYD can explore profit channels other than vehicle sales. For example, it can expand the power battery external supply business and provide battery products for Tesla, Toyota and other car companies to smooth out the profit fluctuation after the subsidy cancellation; developing the energy services business and utilizing its strengths in batteries to open up the B-side market; promote software payment models to generate ongoing revenue through OTA upgrades, autopilot subscription services.

In order to avoid a disconnect between policy guidance and market demand and enterprise development direction, BYD can also take the initiative to participate in the development of industry standards, and provide feedback to government departments on actual needs through technical white papers, industry alliances and other forms. For example, joint colleges and universities to set up relevant cooperative research institutions, focusing policy support resources on basic materials, chips and other “neck” areas. In cooperation with local governments, inclusive support such as land and taxes can be sought in lieu of direct subsidies, and a win-win situation can be achieved through the joint construction of test sites. In addition, BYD can establish a flexible “policy risk early warning mechanism” to assess in advance the impact of policy changes on the supply chain and technology routes, and adjust its strategy in a timely manner.

### 3.3. Strengthening Competitive Advantage

The core competencies of future innovations are based on customer experience, creating new eco-competitive advantages and thus improving eco-innovation from pre-sales, in-sales and after-sales services, as well as enhancing brand and product power through active R&D [9]. BYD needs to further optimize its high-end product matrix and shape its differentiated competitive advantages through technological breakthroughs. For overseas markets, the strategy of “high-end before mass” can be adopted, prioritizing the launch of high-end models to establish brand awareness, and then gradually strengthen the penetration of the low-end market, and enhance technical features such as range and charging speed to improve consumer satisfaction [10]. At the same time, BYD needs to accelerate the localization of overseas layout, such as in Europe, Southeast Asia and other places to build factories to avoid trade barriers, and maximize the adaptation of local demand. In addition, BYD should improve its after-sales service system, cooperate with local dealers to enhance user trust, and gradually break through geopolitical and cultural differences restrictions.

## 4. Conclusions

In the context of global climate governance and low-carbon economic transformation, new energy industry as a strategic emerging industry has ushered in significant development opportunities, but also faces multiple challenges. This research takes the industry benchmark enterprise BYD Auto as the research object, and analyzes the existing development bottleneck of new energy enterprises through a multi-dimensional perspective: facing the double pressure of raw material volatility and lack of scale effect on the cost side; on the policy end, it is constrained by the challenge of adapting to subsidy rollbacks and upgraded technology standards; at the market end of the encounter with the intensification of international competition and the urgent need for breakthroughs in core technology. In response to the above dilemma, the study proposes systematic solutions such as building a cost control system for the whole industrial chain, promoting the transformation of market-oriented operation mode, and deepening the synergy between technology research and development and brand value. This paper not only provides theoretical basis for the strategic optimization of new energy enterprises such as BYD, but also has reference value for improving the industrial policy support system and promoting the sustainable development of new energy industry.

Due to the lack of empirical research mainly relying on the company's internal data for theoretical qualitative analysis, quantitative models will be used in the future to further analyze and study the company's problems.

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