Research on the Collaborative Development of ESG Performance and Innovation Capability in the Manufacturing Industry

A Case Study of Tesla, a New Energy Vehicle Company

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Abstract. As global attention to environmental protection and sustainable development continues to rise, the environmental, social and governance (ESG) performance of enterprises has become an important indicator of their comprehensive competitiveness. In the automotive industry, the environmental pollution and energy shortage caused by traditional fuel vehicles have become increasingly severe, and the transformation to new energy vehicles has become an inevitable trend. Innovation, as the core driving force for the development of new energy vehicle enterprises, has a complex and close relationship with ESG performance. On the one hand, enterprises' emphasis on ESGs prompts them to increase investment in green technology R&D, social responsibility fulfilment and corporate governance optimization, thereby stimulating innovation vitality and enhancing innovation capabilities, such as developing more efficient battery technologies to reduce environmental impact and promote global sustainable development. On the other hand, the continuous improvement of enterprises' innovation capabilities also helps to enhance their ESG performance and increase brand value and social recognition. This paper conducts a detailed analysis of Tesla, Inc., in the form of case studies to explore the connection between ESG performance and corporate innovation capabilities. Its aim is to encourage manufacturing enterprises to incorporate sustainable development and social responsibility into the core of their strategies during the process of innovative development and to regard ESG performance as a key dimension for measuring the quality of enterprise development. Ultimately, as the innovation capabilities of enterprises gradually improve, more enterprises attach importance to the sustainable development of society as a whole, and the ESG performance of enterprises may improve. Moreover, ESG performance may also be influenced by other external factors, not just the factor of innovation capability alone. This paper investigates the connection between ESG performance and enterprise innovation capabilities.

Keywords: ESG Performance; New Energy Vehicles; Innovation; Sustainable Development

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1 Introduction

ESG is an abbreviation of environmental, social, and governance. It is an emerging investment concept and enterprise evaluation standard that focuses on the environmental, social, and governance performance of enterprises rather than their financial performance. [1](EY ESG Research Group, 2024) The ESG performance of an enterprise mainly stems from three dimensions. The environmental (E) aspects mainly include climate change, the generation and disposal of emissions, the use of natural resources, energy conservation and environmental protection technologies, and employees' environmental awareness. The social (S) aspect mainly includes employees, customers, and the community. The governance (G) aspects mainly include the governance structure, policies, transparency, independence, and shareholders' rights [5](Wang Kai, Zou Yang, 2021).

In 1971, the U.S. Committee for Economic Development defined corporate social responsibility in three concentric circles, highlighting that enterprises should consider not only profits and economic growth but also other stakeholders' demands and social issues during development. In 2019, the influential US business round table issued a corporate mission statement, stating that shareholder interests are no longer the primary goal of an enterprise. Instead, the mission is to create a better society and boost all stakeholders' (customers, employees, suppliers, community, and shareholders) well-being.[6] [3](Wang Dadi, Huang Jie, 2021; Zhang Xiaochen, 2023) Joan Bavaria and Denis Hayes, the coordinators of the first World Earth Day, founded the Coalition for Environmentally Responsible Economics (CERES) in 1989. This is an organization that brings together investors, environmental organizations, and other public welfare groups and is committed to collaborating with enterprises to address environmental issues. [4](Mark Mobius & Carlos von Hardenberg & Greg Konieczny, 2021).

From 2015--2024, the number of domestic and foreign publications on ESGs has generally shown a rapid upwards trend. Among them, there was explosive growth from 2022--2024. Research on ESG information disclosure has become an academic hotspot in recent years. The growth rate of the number of publications on ESG information disclosure themes in China is faster, especially from 2022--2024, when it has significantly outpaced that of foreign countries. This is because since 2022, the frequent introduction of domestic regulatory policies has made ESG information disclosure a mandatory course for enterprises. The utilization of the capital market to help enterprises balance production and operation with energy conservation and environmental protection has become a major issue that urgently needs to be addressed by the academic community; it also reflects that domestic scholars are unwaveringly writing a grand article on green finance. [7](Du Yafei, 2025).

In recent years, the importance and status of ESGs have been continuously enhanced and have received increasing attention. The significance of ESG performance is particularly evident in several aspects. For enterprises themselves, those that pay attention to ESG are more likely to attract consumers, investors and outstanding talent, thereby enabling them to stand out in market competition and further enhancing their market competitiveness. For investors, ESG indicators provide important refer-

ences beyond financial information, help investors assess enterprise risk and long-term value more comprehensively, avoid investing in enterprises with significant ESG risk, and optimize investors' decisions. For society and the environment, ESGs prompt enterprises to reduce negative impacts on the environment and increase social well-being, such as by reducing carbon emissions and promoting employee welfare and community development, which is conducive to achieving global sustainable development goals.

The emergence of new energy vehicles plays an extremely important role in ESG performance. In terms of the environment, compared with traditional fuel vehicles, new energy vehicles such as electric vehicles and hydrogen fuel cell vehicles rarely produce exhaust emissions during use, significantly reducing greenhouse gas emissions and helping address climate change. Moreover, the development of new energy vehicles can promote green reforms in the power industry, facilitate the development of renewable energy, reduce reliance on limited fossil resources such as oil and natural gas, enhance energy utilization efficiency, protect biodiversity, and contribute to environmental improvement. In terms of society, new energy vehicles help create new job opportunities. The rise of the new energy vehicle industry has driven the coordinated development of related industrial chains, from upstream raw material supply to downstream sales and services, creating many job positions. In terms of corporate governance, the research and development of innovative technologies enables new energy vehicle enterprises to stand out in market competition; continuously increase R&D investment; conduct technological innovations, such as the innovation of battery technology and the improvement of intelligent driving systems; enhance product performance and quality; and drive the development of the entire manufacturing industry.

The aim of this paper is to take Tesla as an example to promote continuous innovation in the entire manufacturing industry, place greater emphasis on the ESG performance of enterprises, and contribute to the sustainable development of mankind. The research goal of this paper is to explore the connection between ESG performance and enterprise innovation capabilities. There are several hypotheses of this research. First, the stronger the enterprise's innovation capabilities are, the better the ESG performance. The second is that the stronger the enterprise's innovation capabilities are, the worse its ESG performance. The third is that the stronger the enterprise's innovation capabilities are, the more the enterprise’s ESG performance remains unchanged.

2 Tesla's ESG Performance and Corporate Social Responsibility

2.1 Analysis of Tesla's ESG Practices, Financial Performance of Corporate Social Responsibility and Sustainable Development Pathways

These concepts are vividly reflected in the new energy vehicle industry. New energy vehicle enterprises shoulder the heavy responsibility of promoting green transformation in the transportation field. Through continuous innovation, they not only need

to provide customers with more environmentally friendly and efficient travel solutions to meet their needs for high-quality travel but also need to ensure a good working environment and development opportunities for employees, motivate them to engage in technological innovation, cooperate closely with suppliers to jointly improve the sustainability of the supply chain, actively give back to the community, and contribute to local green development. At the same time, they also create long-term value for shareholders. By practicing corporate social responsibility, new energy vehicle enterprises contribute to the sustainable development of the entire society while achieving their own development.

As a leading enterprise in the new energy vehicle industry, Tesla is a U.S. electric vehicle and clean energy company with extensive global influence. Its main products include electric vehicles, new energy products, charging equipment, etc. Tesla is also an innovative enterprise that continuously innovates in technology, products, and other fields and pursues excellence. Next, I combine traditional financial indicators with ESG from Tesla's three major financial statements to analyse the relationship between ESG performance and corporate social responsibility.

2.1.1 Analysing the Relationship Between Tesla's ESG Performance and Corporate Social Responsibility from Income Statements (2021--2024).

Tesla's income statements over the past four years (Table 1) indicate that, from 2021--2024, the total operating expenses of Tesla have been increasing annually. Among them, the R&D expenses invested by Tesla have been growing at a rate of at least over 13% every year. Taking Tesla's main product, electric vehicles, as an example, from Tesla Roadster in 2008 to Model Y produced in 2020 and then to the prereleased Cybertruck, electric vehicle products have been continuously innovating and improving in terms of driving range, acceleration time per 100 kilometers, peak power, etc. During these years, Tesla has been increasing its investment in research and development, which has greatly improved human society. First, in terms of the environment, increased R&D revenue allows companies to invest more in advanced battery technologies, such as the development of high-energy-density batteries with long lifespans. This not only improves the performance and range of new-energy vehicles but also reduces the environmental impact during battery production and disposal. Moreover, with more funds available for R&D, the efficiency of electric drive systems can be increased, leading to less energy consumption per kilometer travelled. Since new-energy vehicles, especially electric vehicles, produce little to no tailpipe emissions during operation, the more they are developed and popularized (facilitated by increased R&D revenue), the fewer pollutants such as carbon monoxide, nitrogen oxides, and particulate matter are released into the atmosphere; thus, one way to make further contributions to protecting the environment (environment) and realize the sustainable development of human society is to increase investment in research and development.

Moreover, as shown in Table 1, from 2021--2024, with the continuous development of its innovative technologies, Tesla's operating revenue has also increased, from $6,523,000,000 in 2021 to $7,076,000,000 in 2024. In 2022, Tesla's operating revenue reached as high as $13,656,000,000. These data further reflect that the recog-

nition of enterprises in the social market is also increasing, having a positive impact on the society (social) in which the enterprise is located. For example, as Tesla's R&D revenue has grown over the years, its vehicles have become more energy efficient, and the cumulative reduction in emissions from a large number of Tesla cars on the road has been significant.

Table 1. Tesla's income statements from 2021--2024

Period Ending:	12/31/2024	12/31/2023	12/31/2022	12/31/2021
Total Revenue	$97,690,000	$96,773,000	$81,462,000	$53,823,000
Cost of Revenue	$80,240,000	$79,113,000	$60,609,000	$40,217,000
Gross Profit	$17,450,000	$17,660,000	$20,853,000	$13,606,000
Operating Expenses				
Research and Development	$4,540,000	$3,969,000	$3,075,000	$2,593,000
Sales, General and Admin	$5,150,000	$4,800,000	$3,946,000	$4,517,000
Non - Recurring Items	$684,000	--	$176,000	$227,000
Other Operating Items	--	--	--	--
Operating Income	$7,076,000	$8,891,000	$13,656,000	$6,523,000
Add Income/expense Items	$2,264,000	$1,238,000	$254,000	$191,000
Earnings Before Interest and Tax	$9,340,000	$10,129,000	$13,910,000	$6,714,000
Interest Expense	$350,000	$156,000	$191,000	$371,000
Earnings Before Tax	$8,990,000	$9,973,000	$13,719,000	$6,343,000
Income Tax	$1,837,000	-$5,001,000	$1132,000	$699,000
Equity Earnings/Loss	-$62,000	$23,000	-$31,000	-$125,000
Minority Interest	--	--	--	--
Net Income - Cont. Operations	$7,091,000	$14,997,000	$12,556,000	$5,519,000
Net Income	**$7,091,000**	**$14,997,000**	**$12,556,000**	**$5,519,000**
Net Income Applicable to Common Shareholders	**$7,091,000**	**$14,997,000**	**$12,556,000**	**$5,519,000**

(Table 1 source: https://www.nasdaq.com/market-activity/stocks/tsla/financials)

2.1.2 Analysing the Relationship Between Tesla's ESG Performance and Corporate Social Responsibility from its Balance Sheets (2021--2024).

A preliminary understanding of the relationship between Tesla's ESG performance and corporate social responsibility through income statements revealed that its balance sheet also reflects, to some extent, the relationship between Tesla's ESG performance and corporate social responsibility.

As shown in Table 2, for the past four years (2021--2024) Tesla's fixed assets were $25,411,000,000 in 2021, $31,146,000,000 in 2022, $39,894,000,000 in 2023, and $46,577,000,000 in 2024, showing an upwards trend year by year. In terms of long-term liabilities, Tesla was $62,131,000,000 in 2021, $82,338,000,000 in 2022, $106,618,000,000 in 2023, and $122,070,000,000 in 2024, increasing annually. Moreover, in the shareholder equity (capital surplus) section, Tesla was $329,000,000 in 2021 and $35,209,000,000 in 2024, increasing by 107 times within a few years.

Table 2. Tesla's balance sheet from 2021—2024

Period Ending:	12/31/2024	12/31/2023	12/31/2022	12/31/2021
Current Assets				
Cash and Cash Equivalents	$16,139,000	$16,398,000	$16,253,000	$17,576,000
Short-Term Investments	$20,424,000	$12,696,000	$5,932,000	$131,000
Net Receivables	$4,418,000	$3,508,000	$2,952,000	$1,913,000
Inventory	$12,017,000	$13,626,000	$12,339,000	$5,757,000
Other Current Assets	$5,362,000	$3,388,000	$2,941,000	$1,723,000
Total Current Assets	$58,360,000	$49,616,000	$40,917,000	$27,100,000
Long-Term Assets				
Long-Term Investments	--	--	--	--
Fixed Assets	$46,577,000	$39,894,000	$31,146,000	$25,411,000
Goodwill	$244,000	$253,000	$194,000	$200,000
Intangible Assets	$150,000	$178,000	$215,000	$257,000
Other Assets	$10,215,000	$9,944,000	$9,538,000	$9,163,000
Deferred Asset Charges	$6,524,000	$6,733,000	$328,000	--
Total Assets	$122,070,000	$106,618,000	$82,338,000	$62,131,000
Current Liabilities				
Accounts Payable	$23,197,000	$23,511,000	$23,460,000	$15,744,000
Short-Term Debt/Current Portion of Long-Term Debt	$2,456,000	$2,373,000	$1,502,000	$1,589,000
Other Current Liabilities	$3,168,000	$2,864,000	$1,747,000	$2,372,000
Total Current Liabilities	$28,821,000	$28,748,000	$26,709,000	$19,705,000
Long-Term Debt	$5,757,000	$2,857,000	$1,597,000	$5,245,000
Other Liabilities	$10,495,000	$8,153,000	$5,530,000	$3,546,000
Deferred Liability Charges	$3,317,000	$3,251,000	$2,804,000	$2,052,000
Misc. Stocks	$704,000	$733,000	$785,000	$826,000
Minority Interest	$63,000	$242,000	$409,000	$668,000
Total Liabilities	$49,094,000	$43,742,000	$37,225,000	$31,374,000
Stock Holder's Equity				
Common Stocks	$3,000	$3,000	$3,000	$3,000
Capital Surplus	$35,209,000	$27,882,000	$12,885,000	$32,000
Retained Earnings	--	--	--	--
Treasury Stock	$38,371,000	$34,892,000	$32,177,000	$29,803,000
Other Equity	-$670,000	-$143,000	-$361,000	$54,000
Total Equity	$72,973,000	$62,634,000	$44,704,000	$30,189,000
Total Liabilities & Equity	$122,070,000	$106,618,000	$82,338,000	$62,131,000

(Table 2 source: https://www.nasdaq.com/market-activity/stocks/tsla/financials)

The continuous increase in fixed assets indicates that Tesla is continuously increasing its investment in production facilities and equipment. Combined with its business nature, it is likely used to expand the production scale of new energy vehicles and build and upgrade related clean energy facilities. This is an important measure for enterprises to achieve business growth and enhance market competitiveness. Moreover, the increase in long-term liabilities, from a positive perspective, indicates

that the financing capacity of the enterprise has improved and that external parties have confidence in its future development prospects and debt repayment ability and are willing to provide long-term financial support. From a negative perspective, this may reflect that the enterprise has short-term capital turnover difficulties or expands the production scale by increasing long-term debt to pursue higher profits, indicating certain financial risks. Moreover, the significant growth in capital surplus indicates that Tesla's equity financing activities are very active. The large amount of new shareholders' investment and the portion exceeding the par value of the capital stock are many, which shows the market's confidence in Tesla and its favourable view of the company, enabling the company to attract more equity funds for development.

The presentation of these data is closely related to ESG performance. In terms of the environment (environmental), the increase in fixed assets is used for investment in clean energy facilities and environmental protection equipment, directly reflecting Tesla's efforts in environmental protection, meeting the requirements of the ESG environmental dimension, helping to reduce carbon emissions and promote the development of clean energy, and reducing the negative impact of enterprise operations on the environment. In terms of society (social), the increase in long-term liabilities positively reflects the recognition of society (including financial institutions and investors) by Tesla, indicating that the enterprise has established a good reputation and image in society and can obtain external support. Moreover, the development of enterprises may create more job opportunities and economic value for society, making positive contributions to social development. In terms of corporate governance (governance), active equity financing activities reflect Tesla's ability in corporate governance, attracting investors and reasonably managing the equity structure to ensure the stable development of the enterprise. The growth of capital surplus also reflects the effectiveness of the enterprise in financial and capital management, is conducive to the long-term sustainable development of the enterprise, and is in line with the ESG concept of corporate governance.

In conclusion, the financial data of Tesla over the past four years are closely related to ESG concepts in terms of the environment, society, and corporate governance, reflecting enterprises' performance and efforts in ESG practices to some extent.

2.1.3 Analysing the Relationship Between ESG Performance and Corporate Social Responsibility from Tesla's Cash Flow Statement (2021--2024).

As one of the three most important financial statements, the cash flow statement also reflects, to a certain extent, the relationship between ESG performance and corporate social responsibility.

As shown in Table 3, the depreciation items of Tesla in the operating activities section from 2021 to 2024 are $2,911,000,000, $3,747,000,000, $4,667,000,000 and $5,368,000,000, respectively, showing a trend of year-to-year growth. It can be seen from Tesla's capital expenditure data that in enterprise investment activities, the capital expenditure data for 2024 are $11,342,000,000. Moreover, in financing activities, the net borrowing amount of Tesla shows an upwards tren

In terms of depreciation, the amount continues to increase annually, indicating that the scale of a company's long-term assets is expanding continuously and that the

speed of asset renewal and replacement might also accelerate. Together with Tesla's business, this implies that the company is continuously investing funds in the acquisition and renewal of equipment and assets related to production and operation. In terms of capital expenditure, a high capital expenditure indicates that the company is actively engaging in investment activities. As a new energy vehicle company, these funds are likely to be invested in fields closely related to the new energy industry, such as the construction of new factories and the research and development of new technologies, to promote the company's business development and technological upgrading. However, the increase in net borrowing is a double-edged sword. On the positive side, more borrowing provides strong financial support for technological innovation, helps the company increase R&D investment, accelerates the process of new technology R&D, and consolidates its leading position in the electric vehicle market. Moreover, sufficient funds help enhance a company's competitiveness, increase marketing efforts, and expand its global market share. On the negative side, an increase in net borrowing increases a company's financial risk, requiring it to bear more interest expenses and principal repayment pressure. If the market environment changes or business performance declines, firms may face financial difficulties or even debt default risks. It also increases the pressure on the company's capital utilization efficiency, and it must ensure the effective use of funds and invest in high-return projects.

In terms of the environment, the growth in depreciation reflects the company's investment in long-term assets, possibly including environmental protection equipment and clean energy production facilities, demonstrating investment in environmental protection, which is in line with the environmental dimension of the ESG. Capital expenditures are used for green investment projects, such as building new electric vehicle factories and researching and developing new energy technologies, which help reduce carbon emissions, promote the development of the new energy industry, contribute to environmental protection, and fulfil the ESG environmental concept. In terms of society, through technological innovation and market expansion, Tesla promoted the popularization of electric vehicles, reduced the use of traditional fuel vehicles, helped improve air quality, reduced the impact of traffic pollution on public health, and promoted the sustainable development of society as a whole, corresponding to the social dimension of the ESG. In terms of corporate governance, an increase in the amount of net borrowing creates risks and opportunities, requiring the company to have good corporate governance capabilities, to reasonably plan the scale of debt and the use of funds, to balance risks and returns, and reflects the importance of corporate governance in the financial decision-making and risk management of ESG in the enterprise. If a company can effectively manage borrowing and achieve technological innovation and market expansion, it also reflects the effectiveness of corporate governance.

Overall, these data reflect Tesla's performance and impact on ESG performance from different perspectives. While a company is pursuing business development, it also has positive or challenge-related correlations with the environment and society.

Table 3. Tesla's Cash Flow Statement from 2021--2024

Period Ending	12/31/2024	12/31/2023	12/31/2022	12/31/2021
Net Income	**$7,091,000**	**$14,997,000**	**$12,556,000**	**$5,519,000**
Cash Flows - Operating Activities				
Depreciation	**$5,368,000**	**$4,667,000**	**$3,747,000**	**$2,911,000**
Net Income Adjustments	**$2,321,000**	**-$4,137,000**	**$2,102,000**	**$2,275,000**
Changes in Operating Activities				
Accounts Receivable	**-$1,083,000**	**-$556,000**	**-$1,124,000**	**-$130,000**
Changes in Inventories	**$937,000**	**-$1,195,000**	**-$6,465,000**	**-$1,709,000**
Other Operating Activities	**-$3,863,000**	**-$4,604,000**	**-$5,283,000**	**-$3,654,000**
Liabilities	**$4,090,000**	**$4,137,000**	**$9,160,000**	**$6,160,000**
Net Cash Flow - Operating	**$14,923,000**	**$13,256,000**	**$14,724,000**	**$11,497,000**
Cash Flows - Investing Activities				
Capital Expenditures	**-$11,342,000**	**-$8,899,000**	**-$7,163,000**	**-$6,514,000**
Investments	**-$7,445,000**	**-$6,621,000**	**-$5,813,000**	**-$132,000**
Other Investing Activities	**----**	**-$64,000**	**$1,003,000**	**-$122,000**
Net Cash Flows - investing	**-$18,787,000**	**-$15,584,000**	**-$11,973,000**	**-$7,868,000**
Cash Flows - Financing Activities				
Sale and Purchase of Stock	**$1,108,000**	**$646,000**	**$496,000**	**$699,000**
Net Borrowings	**$2,863,000**	**$2,116,000**	**-$3,866,000**	**-$5,732,000**
Other Financing Activities	**----**	**----**	**----**	**----**
Net Cash Flows - Financing	**$3,853,000**	**$2,589,000**	**-$3,527,000**	**-$5,203,000**
Effect of Exchange Rate	**-$141,000**	**$4,000**	**-$444,000**	**-$163,000**
Net Cash Flow	**-$152,000**	**$265,000**	**-$1,220,000**	**-$1,757,000**

(Source of Table 3: https://www.nasdaq.com/market-activity/stocks/tsla/financials)

3 Relationships between Tesla's ESG Performance, Corporate Mission and Innovative Spirit

3.1 Tesla's Corporate Mission

Tesla's corporate mission is to "accelerate the world's transition to electric mobility by offering a wide range of increasingly affordable electric vehicles." Tesla has always been pursuing and expecting that in the 21st century, with innovative electric vehicle technologies and concepts, it can rewrite the historical process again, drive the global transportation energy transformation, and make sustainable electric mobility the mainstream mode of future travel.

3.2 Connection between Tesla's ESG Performance, Corporate Mission and Innovative Spirit

Tesla's corporate mission fully reflects the company's emphasis on the Earth's environment (E), human society (S) and corporate independence (G). Tesla continues to pursue innovation, and its innovation is not limited to the technical level but also

unique in its business model. It adopts a direct sales model, establishing a close connection with consumers directly and reducing intermediate links.

Taking the direct sales mode has many benefits. For customers, first, it simplifies the car purchase process. In the media reports of the 3·15 International Consumer Rights Day, as a consumer, Mr. Yan said that when buying a Tesla, there is no need to find acquaintances, bargain, or rush between different 4S stores to compare prices and configurations as when buying a traditional fuel vehicle. Tesla implements a unified national selling price. Consumers can easily browse, configure, and purchase cars on official websites or mobile apps, similar to online shopping. When going to the store, they need to focus only on the product itself. The whole process is simple, straightforward, and worry-free. Second, the direct sales mode optimizes consumers' after-sales service experience. Tesla has provided remote diagnostic services to more than 760,000 customers, saving each customer an average of approximately 1 hour of waiting time after arriving at the store. Mr. Yan also mentioned that when it was time to replace the car's air filter, the service advisor directly came to his company building to replace it. He did not even go downstairs throughout the process and could view the process, make payments, and give evaluations through his mobile phone. Some car owners said in an interview that they do not have to worry about being overcharged at Tesla's after-sales service centers, and there will be no one calling to harass and induce them to consume for maintenance. For a company, this type of sales mode can further enhance brand loyalty. Tesla interacts with consumers through social media platforms. CEO Elon Musk has many followers on Twitter. His personal charm and influence attracted many fans and potential customers for Tesla, successfully creating a loyal user community. Owing to their recognition of and love for the brand, consumers are more willing to choose Tesla's products, which play an active role in brand promotion and form word-of-mouth communication. In addition, sales growth should be promoted at the same time.

It not only provides consumers with a more transparent and convenient car-purchasing experience but also enables the company to collect user feedback more quickly to optimize products and services.

From Sina Technology News on April 2nd: According to data from the China Passenger Car Association, in the first quarter of 2025, Tesla's Shanghai factory delivered over 172,000 Model 3 vehicles and refreshed Model Y vehicles, with domestic sales reaching 137,200 units, setting a new record for the first quarter since 2022. On the same day, Tesla released its global production and delivery report for the first quarter of 2025, which revealed that the installed capacity of energy storage products reached 10.4 gigawatt-hours, a year-over-year increase of 157%. With the commission of the Shanghai Energy Storage factory, the energy storage business will continue to grow at a high speed.

According to the China Passenger Car Association (CPA), Tesla's Shanghai factory delivered over 78,800 vehicles in March. The latest data show that from March 24 to March 31, Tesla China's weekly sales reached 21,000 units, setting a new record for the highest weekly sales in 2025 for the fifth consecutive week. As of March, Tesla's cumulative sales in China in 2025 have surpassed those of the same period in 2024.

Since its delivery began, the refreshed Model Y has continued to hold the top spot in domestic passenger car sales.

(Sales Data Source:https://baijiahao.baidu.com/s?id=1828304475880004877&wfr=spider&for=pc)

It is precisely with this all-round and persistent innovative spirit that Tesla has not only promoted the vigorous development of the electric vehicle industry but also subtly changed people's travel habits, reduced the dependence on traditional fossil fuels, alleviated environmental pollution problems, and injected a strong impetus into the sustainable development of human society, enabling great strides in the path of scientific and technological progress and green development.

4 Tesla's Corporate ESG Strategy and Sustainable Development

4.1 ESG Strategies at the Corporate Level

ESG strategies can be divided into corporate and business levels. Corporate-level strategies include the ESG integrated strategy, the ESG balanced strategy, and the ESG focused strategy. [2](Sun Zhongjuan, Chen Jinyu, 2024) Comprehensiveness, long-term orientation, systematicness, stakeholder orientation, and data-drivenness are the characteristics of enterprise-level ESG strategies.

Tesla adopts a combination of multiple strategies in its corporate ESG strategy. At the corporate level, Tesla combines an integrated ESG strategy with an ESG-focused strategy. Tesla deeply integrates the environmental, social, and governance factors of ESG into a company's overall operation and development strategy. For example, in terms of the environment, the production of electric vehicles and energy storage products reduces carbon emissions. At the social level, its supercharging network provides convenience for car owners, promotes the popularization of electric vehicles, and pays attention to employee benefits. Moreover, Tesla focuses highly on the environmental (E) dimension. With the mission of "accelerating the world's transition to sustainable energy," it invests heavily in the research and development of electric vehicle technologies and the construction of energy storage factories, and its product and business layout revolve around sustainable energy.

4.2 The ESG Strategy at the Business Level

The ESG business-level strategies include the ESG cost leadership strategy, the ESG differentiation strategy, and the ESG focus strategy.[2](Sun Zhongjuan, Chen Jinyu, 2024) Profitability, as a key objective, strong market orientation, high flexibility, emphasis on brand building, and a focus on the combination of short-term and long-term strategies are the characteristics of commercial-level ESG strategies.

At the business level, Tesla combines the ESG differentiation strategy with the ESG focus strategy. Through technological innovation, such as advanced battery technologies and autonomous driving technologies, Tesla has differentiated its elec-

tric vehicles from competitors in terms of performance, range, etc. At the same time, its energy storage products also have unique technical advantages and market positioning, standing out in the field of energy storage and management. In addition, Tesla has focused on the high-end electric vehicle market and the energy storage market, providing high-performance and high-quality products and services for specific customer groups with high pursuit of environmental protection and technology and meeting the ESG needs and expectations of these customers.

To summarize, ESG strategies are divided into corporate-level strategies (including integrated, balanced, and focused strategies with characteristics such as comprehensiveness) and business-level strategies (including cost-leadership, differentiation, and focus strategies with features such as profitability as a key goal). Tesla combines relevant strategies at both the corporate and business levels.

Tesla's ESG strategy shapes its market position by differentiating its products through technological innovation, targeting high-end markets and enhancing brand image. Simultaneously, it promotes sustainable development. The production of electric vehicles and energy storage products reduces carbon emissions, and its mission of promoting sustainable energy accelerates the global transition to a more sustainable energy future.

5 Conclusion

In the current era, the development assessment of enterprises has expanded beyond traditional financial metrics and operating profits. The emergence of ESG performance as a critical dimension is especially important for manufacturing enterprises, a cornerstone of economic development. Historically, the manufacturing industry has consumed vast resources and exerted substantial environmental impacts, necessitating a shift in development mindsets. Tesla serves as an exemplary model. By consistently innovating in electric vehicles and energy storage, it has not only greatly reduced carbon emissions in transportation but also minimized its own production-related energy consumption and pollutant emissions via innovative processes and technologies.

Other manufacturing industries can draw several lessons from Tesla. They should adopt clean energy in production, enhance resource utilization efficiency, and reduce waste and pollutant discharge. Moreover, similar to Tesla's emphasis on supply chain sustainability, they should work with suppliers to ensure sustainable development across the entire supply chain, such as the clothing industry's requirement for suppliers to use eco-friendly fabrics. Manufacturing enterprises need to integrate the concept of environmentally sustainable development throughout the product life cycle, from research and development to production, sales, and, subsequently, sales services.

In summary, ESG performance is directly proportional to an enterprise's innovation ability. The greater an enterprise's innovation ability is, the better its ESG performance will be. By emulating Tesla and taking these actions, manufacturing enterprises can achieve a harmonious balance between economic and environmental benefits,

enhance their overall competitiveness, and embark on a path of sustainable development, meeting the evolving demands of the modern era.

Moreover, this paper has certain limitations. Currently, relevant analyses have been conducted only on Tesla. Researchers have not studied well-known automobile brands domestically or compared their similarities and differences. In the future, I will continue to investigate the relationship between a company's ESG performance and its innovation capabilities and diversify the analysis objects.

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