



2024

Environmental, Social and Governance (ESG) Report

CRRC Corporation Limited



About the Report

Information about the Report The Report is the 2024 Environmental, Social and Governance (ESG) Report released by CRRC Corporation Limited (hereafter referred to as "CRRC", "we" or "the Company") to the public. The Report is intended for all stakeholders of CRRC and is released on the principles of importance, quantifiability, balance, and consistency. It truthfully discloses CRRC's efforts in the ESG field in 2024, aiming to respond to the expectations of shareholders, customers, partners, employees, and other stakeholders, and to better fulfill social responsibilities in the future.

Reporting Period The Report is an annual report. Unless otherwise specified, the reporting period is from January 1, 2024 to December 31, 2024. To enhance the comparability and completeness of the Report, some data and content are appropriately traced back to previous years.

Scope of the Report Unless otherwise specified, the Report covers the practice of CRRC and its wholly-owned and holding subsidiaries in the ESG field. The information boundary is consistent with that of the Company's Annual Report.

Basis of Preparation This report is prepared with reference to the relevant requirements of the Shanghai Stock Exchange's *Guidelines No. 14 for the Self-regulation of Listed Companies – Sustainable Development Report (Trial)*, *Guidelines No. 4 for the Self-regulation of Listed Companies – Sustainable Development Report Compilation*, and *Guidelines for Environmental Information Disclosure by Listed Companies*; the Stock Exchange of Hong Kong Limited's *Appendix C2 Environmental, Social and Governance Reporting Guide*; the Ministry of Finance's *Corporate Sustainability Disclosure Standards – Basic Standards (Trial)*; the International Sustainability Standards Board (ISSB)'s *IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information* and *IFRS S2: Climate-related Disclosures*; the Global Reporting Initiative's *Sustainability Reporting Standards (GRI Standards)*; and the United Nations *Sustainable Development Goals (UN SDGs)*.

Data Sources Unless otherwise specified, the information and data used in the Report were all from the Company's statistical reports and related documents, as well as ESG information collected and audited by the Company. Unless otherwise specified, all the financial data herein is stated in RMB.

Report Language This report is published in both Chinese and English. The English version is a translation of the Chinese version. In case of any discrepancies, the Chinese version shall prevail.

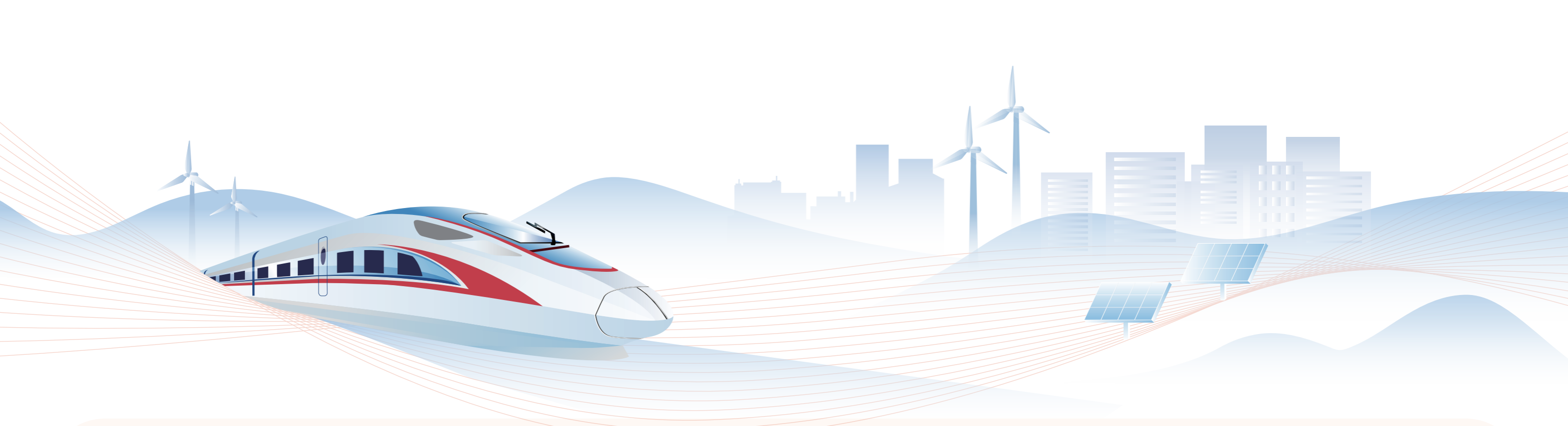
Report Access The Report is issued to stakeholders and the public in paper version and PDF electronic version. For further inquiries, or if you have any questions or suggestions regarding the Report and the Company's ESG efforts, please contact us through the following ways.

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CONTENTS

About the Report	01
Message from the Chairman	04
Company Overview	06
ESG Governance	08

ESG Topic 1	
Value Creation – Effectively Supporting the Sustainable Development of the "Dual Tracks, Dual Clusters" Strategy	14
ESG Topic 2	
Industry Leadership - Fostering Collaborative Growth Among Linked Enterprises	19

Outlook for the Future	88
Appendix	89

01

Green CRRC

Environmental Compliance Management	24
Energy and Resource Usage	28
Emissions Management	33
Climate Change Response	39

02

People-oriented CRRC

Protecting the Rights and Interests of Employees	50
Promoting Talent Growth Together	55
Building Safety Assurance	60
Committed to Social Welfare	64

03

Win-win CRRC

High-quality Products and Services	68
Upholding an Innovation-driven Approach	70
Building a Sustainable Supply Chain	74

04

Excellence in Governance at CRRC

Optimizing Corporate Governance	80
Upholding Business Ethics	82
Standardizing Compliance Operations	85
Strengthening Risk Control	86
Upholding Party Leadership	87

Message from the Chairman

The year 2024 marks the 75th anniversary of the founding of the People's Republic of China and is a crucial year for achieving the goals of the "14th Five-Year Plan." CRRC has thoroughly studied and implemented General Secretary Xi Jinping's important speeches, instructions, and directives, as well as the key guidance from his three visits to CRRC, firmly carrying out the decisions of the Party Central Committee and the State Council, and comprehensively implementing the work requirements of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). Adhering to the general principle of seeking progress while maintaining stability, we have focused on the theme of "leading innovation" in Party building and the "13679" business strategy, consolidating consensus through the "five theories" and advancing the "seven establishments" to drive the "seven new breakthroughs," making solid strides toward high-quality development.



We have comprehensively improved quality and efficiency, further optimizing development quality. Anchoring our goals of "stable profit growth and continuous optimization of five key financial indicators," we have actively pursued the "12367" quality and efficiency enhancement initiative, with the theme of "value-driven innovation and first-class performance through reform." We have also deepened benchmarking efforts and improved overall performance. In 2024, CRRC achieved an operating revenue of ¥246.457 billion and a net profit attributable to shareholders of ¥12.388 billion, reflecting a year-on-year increase of 5.21% and 5.77% respectively. This signifies both qualitative improvements and reasonable quantitative growth, strengthening our corporate image in capital markets and enhancing our value creation capabilities for shareholders.

We have expanded our business markets, ensuring sustainable growth. Adhering to our strategic positioning of "One Core, Two Business Sectors, One First-Class Goal," we have accelerated our transformation into a system solutions provider. Seven series of new energy locomotives were launched globally; the high-speed sleeper trains of the Fuxing series were delivered for the first time; and various freight wagons designed for multimodal transport and cold chain logistics were delivered in scale. The scale of our urban transit "Product+" and "System+" businesses has grown for four consecutive years, with orders surpassing newly manufactured vehicles for the first time. We have accelerated the construction of integrated energy solutions, advancing wind, solar, and hydrogen projects, further optimizing our market structure and expanding the industrial chain. Our participation in major "Belt and Road" projects has yielded significant progress—our operational services for the Jakarta-Bandung High-Speed Railway and the Laos-China Railway received widespread acknowledgment, and CRRC's high-speed trainsets for the Hungary-Serbia Railway were successfully unveiled in Serbia. Additionally, we established the Digital Intelligence Business Unit, Digital Technology Company, and Cultural Technology Company, actively expanding into the digital intelligence industry, cultural and creative industry, and carbon industry.

We have deepened technological innovation, strengthening development momentum. By integrating technological and industrial innovation, we are accelerating the growth of new productive forces. The release of the CR450 high-speed train prototype has garnered widespread attention, and our high-power hydrogen-powered switcher successfully completed a 10,000-ton traction test. The world's first heavy-duty rail freight wagon made of carbon fiber composite materials has rolled off the production line. Our hydrogen-powered intercity trains underwent successful test runs, and the world's first commercialized carbon fiber subway train has started operation. The "Qihang" 20MW floating offshore wind turbine was officially launched, and the 25MW ultra-high power semi-direct generator for deep-sea applications made its debut at the Hamburg exhibition. Meanwhile, our independently developed 118-meter onshore wind turbine blade set a new industry record. CRRC's Fuxing high-speed trains received the Grand Prize of National Science and Technology Progress Award, earning high praise from General Secretary Xi Jinping, who recognized China's high-speed rail technology as an international benchmark.

We have deepened reforms, enhancing our development vitality. By focusing on "optimization, simplification, and activation" and the "Three Incentives, Three Effects, and Three Capabilities" framework, we have ensured that the latest enterprise reforms achieves tangible results. We have comprehensively implemented "four key actions" to accelerate the construction of a world-class enterprise, leading to CRRC's inclusion in the first batch of the World-Class Industry Leading Enterprise Incubation Program. Our brand value continues to rank first in China's machinery manufacturing sector. The "Double Hundred" and "Technology Reform" initiatives have yielded remarkable results—our Zhuzhou Institute ranked first among central state-owned enterprises in the "Double Hundred Enterprise" assessment, becoming a benchmark for reforms. The initiative to improve the quality of our listed subsidiaries has been highly effective, earning us four major awards, including the Most Valuable Investment Award and the Golden Information Disclosure Award.

We have advanced digital transformation, making our development more robust. By deeply integrating digital technology with business innovation, we have simultaneously promoted industrial digitization and the digital industry. Our six major digital transformation projects and the "19+16" system engineering initiatives have successfully achieved all annual key milestones. We have steadily progressed in building our intelligent manufacturing system, establishing four digitalized workshops and 27 smart production lines throughout the year. CRRC Tangshan, CRRC Changchun, and Sifang Co., Ltd. were recognized as the first group of exemplary intelligent factories by China's Ministry of Industry and Information Technology. Additionally, we actively implemented the "AI+" initiative, launching CRRC's artificial intelligence development roadmap and the "Zhuolun" industry large model, while advancing 13 key AI-driven manufacturing applications.

We have coordinated management improvements, enhancing development resilience. By benchmarking against world-class standards, we continuously enhance our management systems, laying a solid foundation for high-quality development. We have deepened the implementation of the "Three Complete and Three Rights" process methodology and the COS management framework, achieving breakthroughs in project management. We launched the "1+10+N" dual-carbon action framework, initiated the integration of carbon and R&D systems, and conducted carbon accounting for key products, publishing our first carbon footprint report for pure-electric locomotives. Our ESG governance and management enhancement three-year action plan has been deepened, earning us a place on Fortune China's ESG Impact List for three consecutive years. Through comprehensive quality and safety initiatives—such as the "Three Complete, Four Rights, and Two Enhancements" quality benchmarking, the three-year quality and safety improvement campaign, and the new energy equipment quality enhancement program—we have maintained product quality and safety at stable levels. Additionally, we have further promoted production safety improvements three-year plan and key area safety management, improving safety and deepening the development of a healthy enterprise, to achieve the 'three-zero' goal of zero production safety liability accidents, zero new occupational diseases, and zero environmental emergencies.

We have reinforced Party building, ensuring strong development support. Centered on the theme of "leading innovation" in Party building, we have guided high-quality development through high-quality Party leadership. We have deepened the "First Agenda" system, consistently using Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era to unite and strengthen our organization. Through rigorous Party discipline education, we have guided Party members and cadres to study, understand, and uphold discipline. We have also carried out special rectification efforts to address violations of the central government's Eight-Point Regulations and implemented measures to reduce bureaucratic burdens at the grassroots level. We have actively promoted compliance in "Two Regulations, One Opinion", reinforcing a culture of honesty and integrity within CRRC. Meanwhile, we have continued to enhance grassroots organizational effectiveness through the "Seven Priorities" initiative, strengthening leadership teams to encouraging Party organizations at all levels to focus on the core mission, serve the overall strategy, drive innovation and development, and continuously enhance Party building.

The achievements of 2024 would not have been possible without the care, support, and assistance of our shareholders, customers, partners, and all stakeholders. On behalf of the CRRC Board of Directors, I extend my heartfelt gratitude and highest respect to all friends from various sectors of society!

The year 2025 marks the 10th anniversary of General Secretary Xi Jinping's first visit to CRRC, the 10th anniversary of the establishment of the new CRRC, and the final year of the "14th Five-Year Plan" as well as the first year of planning for the "15th Five-Year Plan." Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, CRRC will fully implement the decisions of the 20th National Congress of the Communist Party of China, as well as the Second and Third Plenary Sessions of the 20th Central Committee, and the Central Economic Work Conference. We will adhere to the Party's overall leadership and the general principle of seeking progress while maintaining stability. We remain committed to our mission, unity, and hard work. We will uphold integrity while driving innovation and ensure the effective implementation of this year's objectives. By successfully concluding the "14th Five-Year Plan", we will accelerate the development of a world-class CRRC and high-quality growth, making greater contributions to China's modernization and national rejuvenation.

Company Overview

Company Profile

CRRC is an A+H-share listed Company established and merged by China CNR Corporation Limited and China South Locomotive & Rolling Stock Corporation Limited according to the principle of equality. (Shanghai Stock Exchange code: 601766 and HKEX Stock code: 1766). It has since developed into a leading global manufacturer of high-end equipment and system solutions provider, as well as a key enterprise in clean energy equipment.

Headquartered in Beijing, with over 150,000 employees, the Company has established more than 100 overseas subsidiaries or offices, providing products and services to 116 countries and regions worldwide. CRRC's core business segments include locomotives, high-speed trains (including intercity trains) and passenger coaches, freight, railway engineering, urban rail vehicles, urban transportation planning and design, urban transportation electromechanical system integration; electromechanical business, emerging industries; financial services; logistics and trade-related services, other modern services; and international business.

With the mission of "Connecting the World and Benefiting Mankind", CRRC adheres to the core values of "Abiding by Integrity and Responsibility, Insisting on Hard Work and Striving for Excellence". The Company integrates sustainable development into its operations and governance, creating a distinctive ESG management model that aligns economic and social benefits. Focused on a dual-track strategy of developing both rail transit equipment and clean energy equipment, CRRC is building a modern industrial system characterized by digitalization, high-end development, green transformation, internationalization, synergy, and strong branding. By 2030, CRRC aims to establish itself as a world-class enterprise recognized for its excellence in products, renowned brand, leadership in innovation, and modern governance, earning global respect.

The company currently has over **150,000** employees

It has established over **100** overseas subsidiaries or branches globally

It provides products and services to **116** countries and regions worldwide

Honors and Awards

	Honor	Awarding Institution
ESG-Related	Included in the "Top 100 ESG Pioneer Index for Central State-owned Enterprises Listed Companies"	SASAC Social Responsibility Bureau of the State Council
	Listed in the "Top 100 ESG Pioneer Listed Companies in China"	China Media Group Financial Channel
	Recognized in the Fortune China ESG Impact List	Fortune Magazine
Information Disclosure	Grade A in Information Disclosure Evaluation (for the ninth consecutive year)	Shanghai Stock Exchange
	2024 Golden Bull Award for Most Valuable Investment	China Securities Journal
	2024 Golden Information Disclosure Award	League of American Communications Professionals (LACP)
	2024 LACP Vision Gold Award	
Brand Leadership	No.1 in Brand Value in China's Machinery Manufacturing Sector	Xinhua News Agency, Zhejiang Provincial Government, China Brand Building Promotion Association, China Appraisal Society
	Outstanding Achievement in the First Group of the Central SOEs' Brand Leadership Initiative	SASAC of the State Council
Innovation and R&D	Fuxing High-Speed Train awarded the National Science and Technology Progress Award (Special Prize)	Central Committee of the Communist Party of China State Council of the People's Republic of China
	Key Utilization Technology and Application for Ultra-Large Capacity Wind Energy Conversion System awarded the National Science and Technology Progress Award (Second Prize)	
	Key Technologies and Applications of Large-Scale Lithium Battery Energy Storage for New Power Systems awarded the National Science and Technology Progress Award (Second Prize)	
	Key Technology for High-Voltage Large-Capacity DC Breaking Semiconductor Devices and Series DC Circuit Breakers awarded the National Technological Invention Award (Second Prize)	

ESG Governance

Board Statement

As a leading enterprise in China's rail transit equipment manufacturing industry, CRRC closely follows industry trends and market dynamics. With a stable and forward-looking business strategy, we continuously strengthen the safety and reliability of our products and services, supporting the secure development of the industry while firmly advancing our sustainability goals. Upholding the principles of green and low-carbon development, we are accelerating business upgrades and technological innovations to enhance core competitiveness, expand integrated new energy rail transit solutions, and foster a new paradigm of high-quality development. By fulfilling our social responsibilities and demonstrating corporate commitment, we aim to meet society's expectations for efficient and environmentally friendly transportation. Driven by innovation, we leverage technological advancements to upgrade rail transit equipment, meet public travel demands, and support the modernization of logistics systems. We also embrace an open development approach, actively implementing the Global Development Initiative and participating in the Belt and Road Initiative. Guided by our mission—"Connecting the World and Benefiting Mankind"—we are committed to driving global transportation development.

CRRC has established and improved an effective sustainability governance mechanism, enhancing the quality of ESG governance. By regularly analyzing and assessing material ESG issues and risks based on internal and external environments and stakeholder engagement, we see it as key work for management and supervision, integrating ESG principles into corporate strategy and operational management to ensure sustainable economic, social, and environmental development.

This Report comprehensively details CRRC's ESG practices and achievements in 2024 and has been reviewed and approved by the Board of Directors. All board members affirm that this report contains no false statements, misleading representations, or material omissions and take full responsibility for the authenticity, accuracy, and completeness of its contents.



ESG Governance System

CRRC has integrated the concept of sustainable development into its strategic management, focusing on a three-year action plan for ESG system development and management enhancement. With continuous efforts in three key areas—strengthening system development, standardizing information disclosure, and enhancing brand influence—the Company is progressively building an ESG management system that meets international standards while reflecting CRRC's unique characteristics. Under this framework, 24 subsidiaries have formulated action plans, clarifying and breaking down specific tasks, effectively driving the high-level development of ESG management within the Company.

Governance

CRRC continues to improve its ESG governance system by establishing a three-tier ESG governance structure with a top-down approach and clear roles and responsibilities, ensuring the effective implementation of ESG initiatives.



Three-Tier ESG Governance Structure

Decision-Making Level

The Board of Directors serves as the highest authority on ESG matters. It has established the Strategy and Sustainability Committee, which is responsible for formulating sustainable development plans and reviewing, evaluating, and supervising major ESG issues such as environment, health, and safety.

Management Level

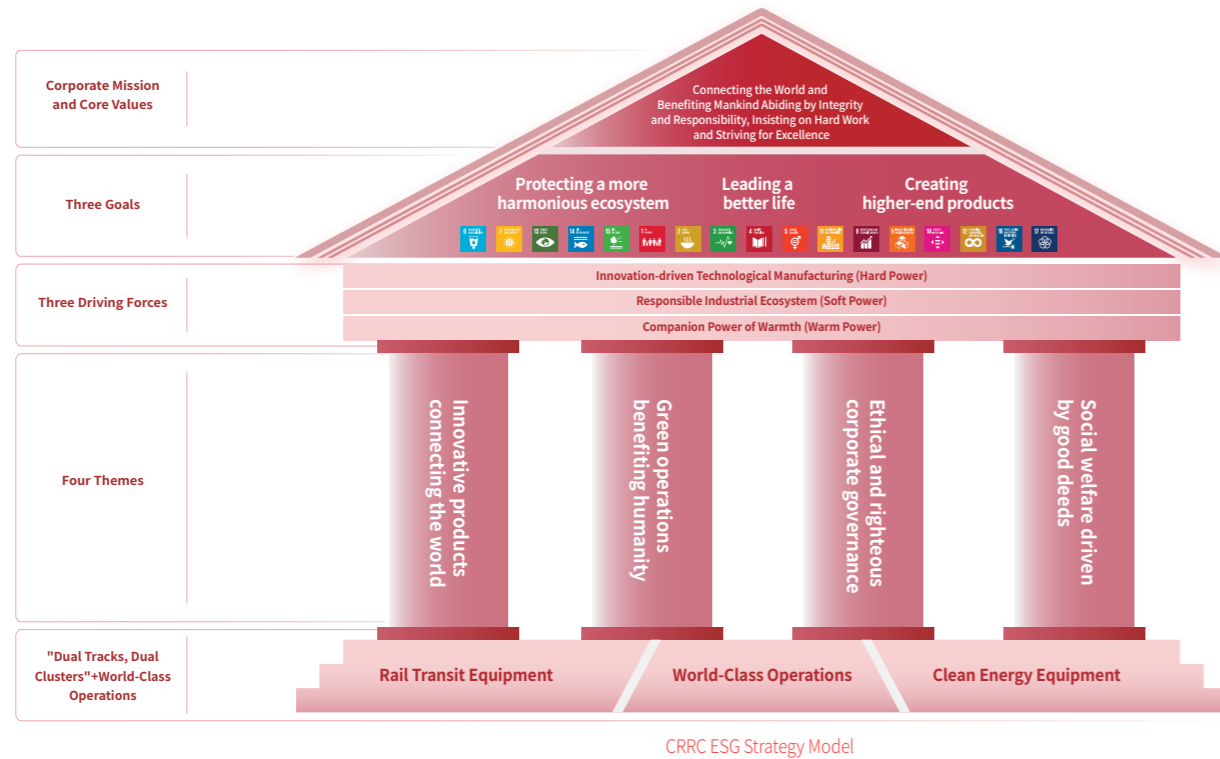
The ESG Management Committee oversees ESG operations and is in charge of refining the ESG strategy model, setting medium- and long-term ESG development plans and goals, organizing stakeholder engagement and data analysis, and establishing a comprehensive ESG indicator framework. ESG-related indicators are incorporated into performance evaluations, with continuous monitoring and optimization of ESG practices.

Implementation Level

Various headquarters departments and primary subsidiaries serve as the execution bodies for ESG initiatives. They are responsible for maintaining and reporting ESG data, as well as implementing and executing ESG-related tasks.

Strategy

Aiming to be a practitioner and innovator of sustainable development value, CRRG actively integrates ESG principles into its corporate strategy, management, and risk control. Upholding the mission of "Connecting the World and Benefiting Mankind" and the core value of "Abiding by Integrity and Responsibility, Insisting on Hard Work and Striving for Excellence", the Company has established the "33416" ESG Strategy Framework to guide its sustainable development efforts.



The first "3"

Three overarching goals aligned with the United Nations' 17 Sustainable Development Goals (UN SDGs), namely: protecting a more harmonious ecology, reflecting the Company's determination to become a guardian of the concept of harmonious coexistence between humans and nature; leading a better life, reflecting the Company's concern for stakeholders' aspirations for a better life; and creating higher-end products, corresponding to the Company's enterprise attribute of high-end equipment manufacturing, focusing on rail transit equipment and clean energy equipment, with quality and sustainability defining the "high-end" foundation.

The second "3"

Three driving forces: innovation-led technological intelligent manufacturing, responsible industrial ecological chain, and a warm partner synergy circle, corresponding respectively to the hard strength of co-creating technological and quality; soft strength of sharing management and cultural; and value strength of mutually beneficial responsibility. These three focus areas use the "three strengths" already in the Company's brand system as driving forces, reflecting how ESG work is rooted in CRRG culture. Based on our own products, we lead the sustainable value exploration and innovation of the industrial chain and partners.

"4"

Four work themes, namely, innovative products connecting the world: driven by technological innovation, ensuring continuous improvement in safety and quality, leading the industrial chain and connecting with the world; green operations benefiting humanity: with low-carbon sustainability as the foundation, throughout the lifecycle of products and services, striving for carbon neutrality and benefiting all humanity; righteous corporate governance: using deepening reforms as a handle, promoting the double-edged challenge of opportunities and risks, striving for excellence and giving back to investors; benevolent social co-benefits: pursuing mutually beneficial outcomes, focusing on stakeholder social responsibility, upholding righteousness, and valuing people-centered goodness.

"16"

16 ESG topics, which are the core elements of concern and a high-level overview of the ESG indicator system decoded from the Company's ESG strategy. Each topic is supported and constrained by institutional and indicator systems, guiding the Company at all levels to improve ESG performance.

The Company's next step is to conduct further identification and management of risks and opportunities for ESG issues with financial materiality, including but not limited to: identifying short-term, medium-term, and long-term risks and opportunities related to ESG; formulating ESG strategic goals and action plans; optimizing resource allocation; and developing ESG risk and opportunity management processes.

Risk Management

The Company has continuously strengthened ESG risk management, systematically advanced ESG risk assessments, and promptly implemented response measures. We have considered both opportunities and challenges brought by the external environment and industry developments, conducted comprehensive periodic risk reviews, and promptly captured trend changes. We also have established a scientific and quantitative evaluation indicator system, referencing domestic and international standards, and selected key indicators aligned with business operations in key areas such as resource utilization, green operations, technological innovation, employee rights, sustainable supply chains, and corporate governance. The Company has standardized data collection and analysis to accurately assess risks, while strengthening internal and external communication and collaboration to enhance information-sharing efficiency and employees' ESG risk awareness. We have maintained communication with external stakeholders and actively gathered feedback to continuously optimize ESG risk management and drive high-quality sustainable corporate development.

Case

Participation in the Beijing International Sustainability Conference

In October 2024, the Company's Chairman, Sun Yongcai, attended the "ESG China • Innovation Annual Conference (2024)" and delivered a keynote speech titled "Innovation-Driven, Reform-Empowered, Value Creation: Advancing New Productive Forces Through ESG Excellence." During his speech, he shared the company's practices and insights in the ESG domain.




Chairman Sun Yongcai Delivering a Keynote Address at the Innovation Annual Conference

Case

Hosting the Beijing International Sustainability Conference

In November 2024, the Company hosted the Beijing International Sustainability Conference under the theme "Integration and Convergence, Innovation and Development, Advancing Towards Global Benchmarking." Nearly 300 guest representatives attended the event, with 5.982 million online viewers worldwide.









Company President Ma Yunshuang Delivered Keynote Speech at the Beijing International Sustainability Conference

Indicators and Targets

Following the principles of "starting with the easy, progressing gradually, and striving for excellence," and considering regulatory, rating, and corporate management requirements, the Company has built an ESG indicator system and is implementing it step by step. Based on the four major themes of the ESG strategic model, the system further refines 16 topics from both qualitative and quantitative dimensions, forming primary and secondary indicators. Through a "planning-execution-evaluation-improvement" workflow, the indicator database is regularly updated in alignment with key material topics.

Stakeholder Communication

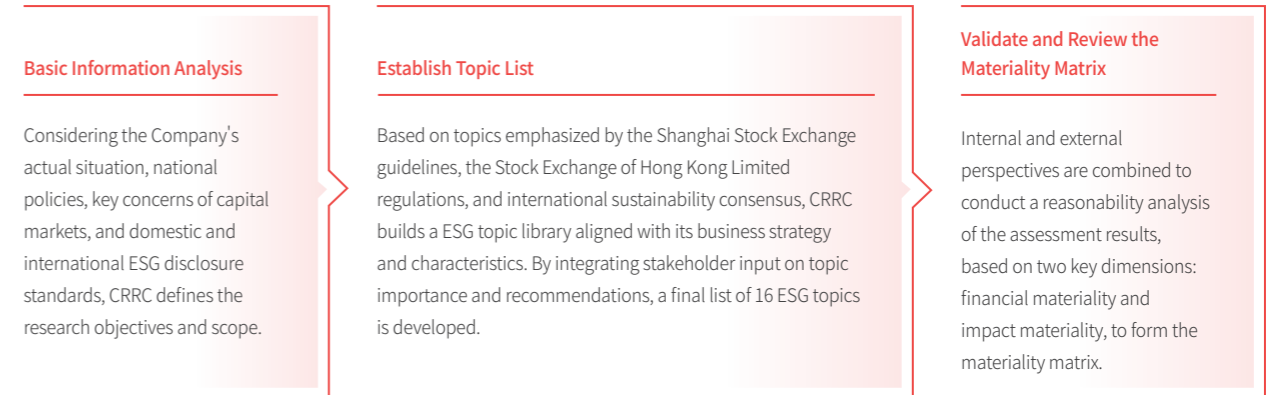
CRRC actively engages with stakeholders through various channels, including open days and roadshows, facilitating regular and ad-hoc interactions with government regulators, shareholders and investors, customers, suppliers, partners, communities, employees, and the media. By gathering feedback and insights from all parties, CRRC collaborates with relevant departments to assess and manage key topics, enhancing ESG management effectiveness. The Company also ensures timely disclosure of ESG-related progress, responding to stakeholder expectations and promptly, effectively, and widely conveying CRRC's values.

Stakeholders	Expectations & Concerns	Response Measures
 Government & Regulators	Implement macro policies, Operate with integrity and compliance, Pay taxes lawfully, Promote employment, Drive local economic growth, Preserve and enhance state-owned assets	Work reports, Participation in meetings and major events, Information disclosure and submission, Regulatory inspections
 Shareholders & Investors	Stable performance growth, Compliant information disclosure, Reduce operational risks, Shareholder rights protection	Corporate reports and announcements, Earnings briefings, General meetings, Investor meetings, Responses to investor inquiries
 Customers	Product quality and safety, Premium service, Technological R&D and innovation, Customer privacy protection	Customer satisfaction surveys, Client visits, Full lifecycle product services, Customer information protection policies
 Employees	Employee rights protection, Health and safety, Career development, Competitive salary and benefits, Work-life balance, Overseas employee management improvement	Leadership dialogue, Employee representative meetings, Employee satisfaction surveys, Training and education, Visits and support, Daily communication
 Suppliers & Partners	Integrity and compliance, Responsible procurement, Growth support, Information confidentiality	Open bidding, Centralized procurement, Supply chain management system, Industry collaboration and exchange, Executive visits
 Industry Associations	Fair competition, Technological innovation, Industry advancement	Industry forums, Mutual visits, Strengthened cooperation and exchanges
 Public, Media & Community	Transparent operations, Cultural exchange, Community development, Public welfare, Rural revitalization	Real-time communication, Community outreach, Public welfare initiatives

Materiality Analysis

Materiality Assessment Process

Taking into account national policies, changes in internal and external environments, and industry trends, CRRC conducts materiality assessments from two dimensions: "financial materiality" and "impact materiality." This process establishes materiality topics to address stakeholder expectations and continuously enhance ESG management.



Basic Information Analysis

Considering the Company's actual situation, national policies, key concerns of capital markets, and domestic and international ESG disclosure standards, CRRC defines the research objectives and scope.

Establish Topic List

Based on topics emphasized by the Shanghai Stock Exchange guidelines, the Stock Exchange of Hong Kong Limited regulations, and international sustainability consensus, CRRC builds a ESG topic library aligned with its business strategy and characteristics. By integrating stakeholder input on topic importance and recommendations, a final list of 16 ESG topics is developed.

Validate and Review the Materiality Matrix

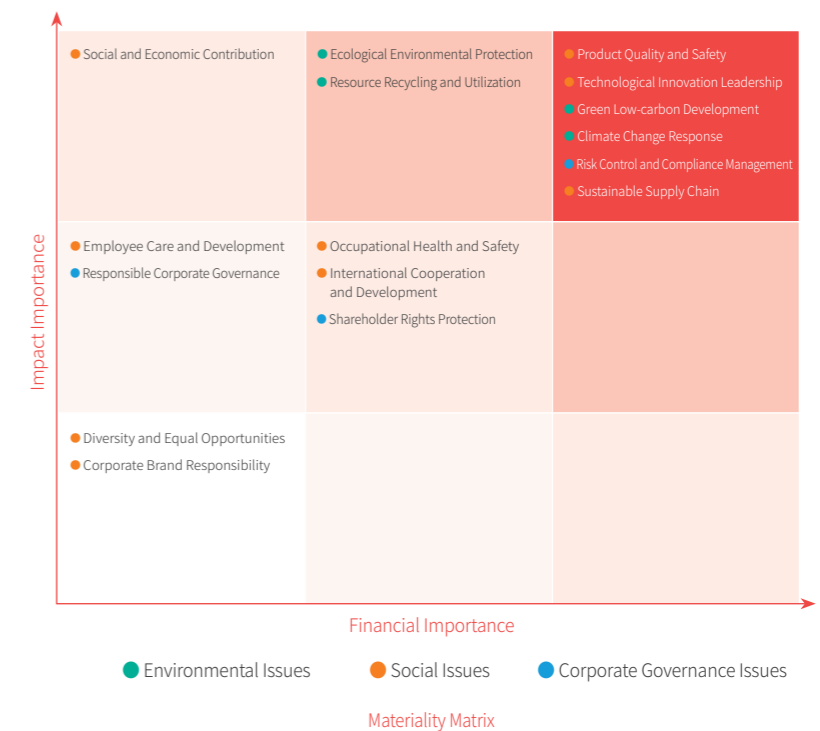
Internal and external perspectives are combined to conduct a reasonability analysis of the assessment results, based on two key dimensions: financial materiality and impact materiality, to form the materiality matrix.

Materiality Topic Identification Process

Materiality Assessment Results

Impact materiality is assessed by considering the scale (magnitude of actual or potential impact), scope (breadth of impact), and irremediability (difficulty in offsetting or mitigating harm). Financial materiality is evaluated based on financial impact severity and likelihood of occurrence. Topics are prioritized according to their final scores.

Materiality Matrix



Financial Importance

Materiality Matrix

ESG Topic 1

Value Creation – Effectively Supporting the Sustainable Development of the "Dual Tracks, Dual Clusters" Strategy

CRRC is accelerating the establishment of a new industrial framework under the "Dual Tracks, Dual Clusters" strategy, focusing on two key sectors: rail transit and clean energy equipment. The Company is driving the clustered development of complete vehicles (machines), core systems, and components. In the rail transit sector, CRRC is committed to advancing digitalization, green development, intelligence, and high-end manufacturing to enhance global competitiveness and innovation. This fosters the integrated development of various rail transit solutions. In the clean energy sector, CRRC leverages its strengths in technological synergy, industrial collaboration, resource sharing, and system integration. Centered on wind, solar, storage, and hydrogen energy, the Company is expanding its presence in clean power generation and new energy vehicle components, promoting the convergence of energy and transportation while driving industrial cluster growth.

Advancing Railway Business with Stability and Leading Industry Development

In the railway equipment sector, CRRC drives technological innovation, product upgrades, service optimization, and business model transformation to establish a modular and standardized technology platform. This accelerates the transition of railway equipment toward intelligent, green, and safe solutions. By deepening strategic partnerships, integrating with reforms, and leveraging manufacturing, maintenance, and service synergies, CRRC continues to enhance its full lifecycle service system and core competitiveness in the railway equipment industry.

CRRC is also shifting toward a system solutions provider to create greater value for customers. During the reporting period, seven series of new energy locomotives were launched globally, with over 200 units ordered. The first Fuxing high-speed sleeper train was delivered. A new batch of freight cars designed for multimodal transport and cold chain logistics was introduced.

Case

Setting a New Benchmark for Smart and Green New Energy Locomotives

In June 2024, CRRC released seven series of new energy locomotives featuring three power configurations: "diesel engine + battery," "battery-only," and "hydrogen fuel cell." These locomotives represent China's solution for the green and low-carbon transformation of rail transit.



Series of New Energy Locomotives

Case

BH10 Refrigerated Car Driving Innovation in Cold Chain Logistics

In March 2024, CRRC launched the BH10 single-unit mechanical refrigerated car, integrating next-generation intelligent technology for unmanned operation. This innovation promotes the high-quality development of the cold chain logistics industry.



BH10 Refrigerated Car

Urban Transit Business: Breaking Barriers and Expanding Growth Markets

In the urban rail and city infrastructure sector, CRRC is capitalizing on new opportunities arising from the development of metropolitan areas and urban clusters. The Company is developing standardized smart regional trains with the six features and integrate vehicle-to-ground electromechanical system solutions into product and technology platforms. Leveraging its full-industry-chain advantages, CRRC is expanding into system integration, smart operations, and service domains to enhance its business value chain. Efforts include optimizing PPP project management to drive coordinated growth between vehicle manufacturing and related industries, advancing digitalization, intelligence, and green transformation, and integrating resources to build a "Product+" and "System+" ecosystem, enhancing its full life-cycle solutions capabilities, consolidating its domestic and international market presence while ensuring the high-quality, sustainable development of urban transit services.

Focusing on diverse transportation scenarios and key elements, CRRC provides customized digital and zero-carbon urban mobility solutions tailored to cities, enterprises, and specific scenarios, integrating platform, equipment, model, and capital. As of the reporting period, the Company has successfully implemented 17 projects across 15 cities, including Zhuzhou, Chengdu, and Turpan.

Case

A New Choice for Green Urban Transit—Autonomous Rail Rapid Transit (ART) 2.0 "Green Peacock"

In September 2024, CRRC independently developed the ART 2.0 "Green Peacock", which features autonomous driving capabilities from L2 to L4 levels. During the construction phase, energy consumption was reduced by 86.4% compared to traditional trams, and carbon dioxide emissions were lowered by approximately 769 tons per kilometer of track.



ART 2.0 "Green Peacock"

* "System+" refers to "DLS" (Digital Life-cycle System Solution), which is an integrated full life-cycle system solution for design, construction, and operation, supported by digitalization and intelligence.

ESG Topic 1

Case

World's First Commercial Carbon Fiber Metro Train

In June 2024, CRRC launched the world's first commercial carbon fiber metro train, CETROVO 1.0 Carbon Star Express. This train reduces operational energy consumption by 7%, leading to an annual reduction of approximately 130 tons of CO₂ emissions. The CETROVO 1.0 marks a significant milestone in the green transformation of metro rail systems.



CETROVO 1.0 Carbon Star Express



Rapid Expansion of Emerging Industries with Coordinated Domestic and International Growth

The electromechanical business focuses on strengthening core technology breakthroughs and improving the industrial chain, extending into key systems and components for industrial, transportation, and energy sectors while accelerating specialization and scaling. Emerging industries adhere to the principles of "related diversification, high-end positioning, and industry leadership," integrating resources to build a clean energy equipment cluster. This has resulted in a new industrial ecosystem with wind power equipment and new materials as growth drivers, alongside photovoltaics, energy storage, hydrogen energy, environmental protection, industrial digitalization, and electric drive systems for automobiles and ships as additional growth areas. By deepening technology platforms and industrial chain development, new industries are progressing steadily.

The strategic renewal initiative for emerging industries is advancing through strengthened strategic cooperation, comprehensive resource deployment in key regions, and deeper coverage of core customer groups. The Company is actively exploring "source-grid-load-storage" system solutions and continuously promoting the implementation of "wind-solar-storage-hydrogen energy" projects, optimizing market structures.

Case

2,000 Nm³ Electrolyzer Rolls Off the Production Line, Another Breakthrough in Hydrogen Energy

In October 2024, the independently developed 2,000 Nm³ electrolyzer was successfully launched. This electrolyzer incorporates multiple advanced technologies, featuring industry-leading high current density design, ultra-low energy consumption, a broad operational adjustment range, and fully automated operation.



Zhuzhou Institute 2,000 Nm³ Electrolyzer



Case

The World's Highest-Altitude Wind Power Project Goes into Operation

For the highest-altitude wind power project in the world, featuring the largest single-unit capacity in high-altitude regions, a 5MW D195 doubly-fed wind turbine was designed. This project generates over 223 million kWh of clean electricity annually. Compared to coal-fired power plants, it saves approximately 73,100 tons of standard coal and reduces carbon dioxide emissions by about 182,800 tons per year. It provides sufficient electricity for the annual living needs of 230,000 people, supporting the optimization of Tibet's energy structure.



Zhuzhou Institute Datang Baxiu County Wind Power Project



International Business Coordination and Upgrading, Brand Empowerment for Global Expansion

Following the principles of "light assets, high efficiency, and sustainability," the Company is deepening its internationalization strategy, strengthening collaboration between platform companies and overseas institutions, and promoting the global deployment of rail transit and new industries.

The Company is advancing the development of an international organizational structure and management system to enhance resource coordination and sharing. Following the strategy of "complete machines driving components, manufacturing driving services," it leverages leading enterprises to expand its overseas presence. By establishing a global marketing network, the Company is expanding into international markets for wind power equipment, new materials, and other businesses while optimizing its business structure. The "platform Company + leading enterprise" DLS business expansion model has been implemented to complete the global layout, forming an intensive and rapid-response management model that ensures brand consistency and resource synergy.

During the reporting period, significant progress was achieved in South America, Asia, Europe, and the Middle East markets. The Company has continued to promote high-standard cooperation under the "Belt and Road Initiative". The operation and maintenance services for the Jakarta-Bandung High-Speed Railway and the Laos-China Railway have received widespread acclaim. Additionally, high-speed trainsets for the Hungary-Serbia Railway made a successful debut in Serbia, further strengthening the Company's position in the international market.

Case

First Anniversary of the Operation of Laos-China Railway International Passenger Train

In April 2024, marking the first anniversary of international passenger train operations on the Laos-China Railway, additional international trains equipped with Chinese, Lao, and English service facilities were introduced to cater to diverse passenger needs.



Laos-China Railway International Passenger Train



ESG Topic 1

Case

Signing of the São Paulo Intercity Railway North Axis Project in Brazil

In May 2024, the Company signed Brazil's largest passenger rail transit concession project to date. Once completed, this project will become Brazil's fastest and most modern intercity railway, benefiting approximately 15 million residents across 11 cities, creating over 10,500 jobs, and supporting local green transportation transformation and sustainable development.



Chairman Sun Yongcai Attended Signing Ceremony for São Paulo Intercity Railway North Axis Project in Brazil



Case

China's High-Speed Multiple Units Enter Europe for the First Time

In June 2024, the high-speed MUs for the Hungary-Serbia Railway made their debut at the Zemun depot in Belgrade, Serbia. The project, expected to be operational by the end of 2025, represents the first integration of Chinese railway technology and equipment with EU railway interconnection technical standards, marking a significant milestone in China's high-end rail transit equipment entering the global market.



Hungary-Serbia Railway High-Speed MU



ESG Topic 2

Industry Leadership - Fostering Collaborative Growth Among Linked Enterprises

CRRC is committed to strengthening the foundation of industrial chain modernization, promoting the optimization and upgrading of high-end equipment manufacturing, fostering collaboration across upstream and downstream enterprises, and integrating ecosystems. By cultivating advanced manufacturing clusters, CRRC aims to build a lasting competitive advantage for the high-quality development of the rail transit equipment industry and lead industry-wide synergy.

Strengthening the Industrial Chain Foundation and Enhancing Stability

By conducting precise assessments of the industrial chain and implementing intelligent dynamic management, CRRC aims to solidify the industrial chain's foundation and ensure stable operations.

Conducting Industrial Chain Assessments

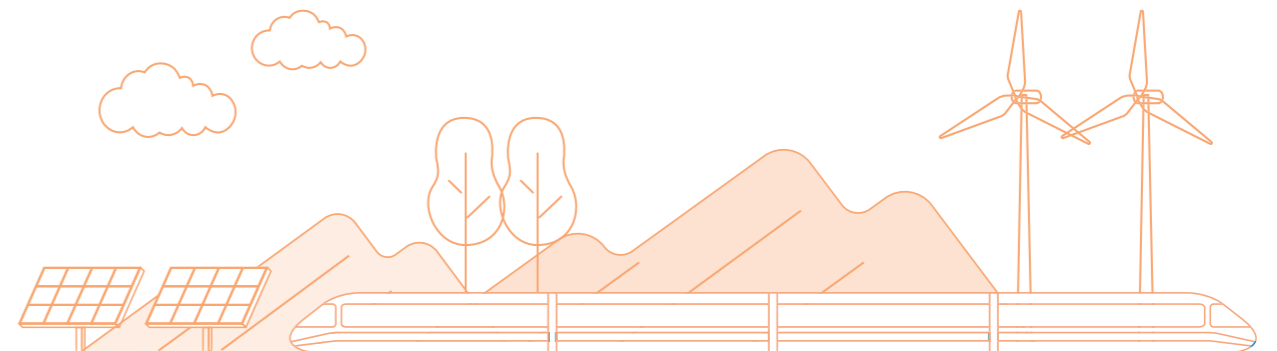


Starting with core vehicle products, the process systematically breaks down to the finest granular components, identifying key links in the industrial chain. A tiered and categorized list is established, addressing each issue step by step to create a dynamically adjustable management loop, enhancing the security and resilience of the industrial chain.



Establishing a Digitalized Management Platform

By utilizing information systems, structured frameworks, and measurable indicators, CRRC assesses the health of the industrial chain. Digital and intelligent technologies are applied to enable coordinated management and dynamic monitoring of the industrial chain. The Company independently developed a rail transit equipment industrial chain cockpit, establishing a health monitoring and evaluation system for the rail transit equipment industrial chain. It is structured around four key dimensions: safety, stability, leadership, and coordination, enabling dynamic evaluation and early warning monitoring of the industrial chain's health.



ESG Topic 2

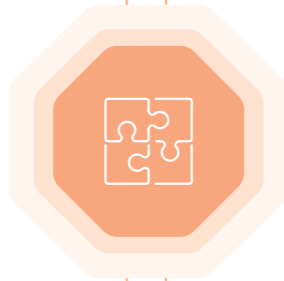
Strengthening Technological Innovation to Fill Gaps in the Chain

CRRC prioritizes breakthroughs in key technologies, building a collaborative innovation ecosystem, overcoming technical bottlenecks, and leveraging its role as a leading system integrator to systematically address industrial chain weaknesses and improve resilience.

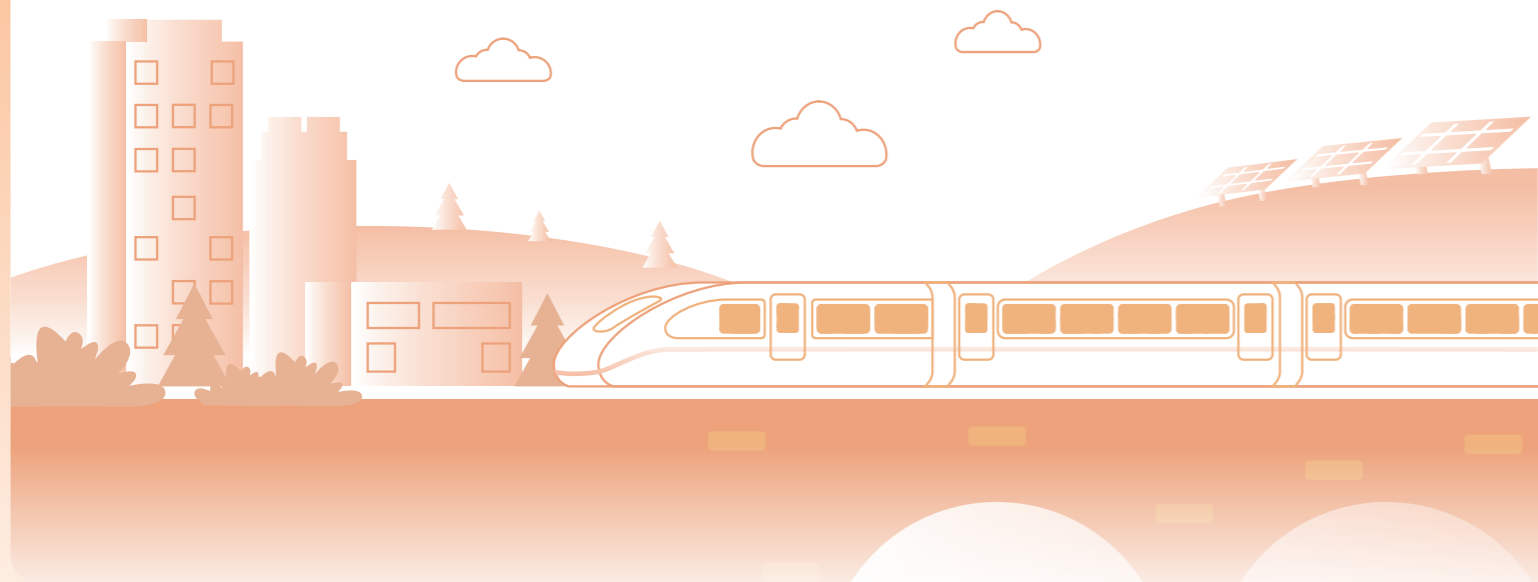
Building a Collaborative Technological Innovation System

Leading Innovation with Whole-System Integration

CRRC adopts a "One chain with multiple cores, one chain with multiple platforms, multiple chains sharing platforms" strategy, ensuring that innovation resources are accessible across the entire industry chain, enhancing the collaborative innovation capability of the industrial chain. The "CRRC Q" quality management system is promoted among chain enterprises, forming a comprehensive and collaborative quality management capability. The Company collaborated with enterprises across the supply chain to tackle technical challenges and address weaknesses precisely, while also establishing a joint development fund with the National Natural Science Foundation, participating in innovation consortiums, and forming cross-domain, cross-disciplinary collaborative innovation teams to create replicable and scalable innovation models.



By relying on complete system development, CRRC establishes a collaborative innovation framework to tackle key challenges in critical areas of the industrial chain. Enterprises within the industrial chain work together to enhance core capabilities, improving competitiveness and resilience.



Case

Standardized Metro Train Component Breakthroughs

CRRC collaborated with over 50 enterprises and research institutions to tackle 30 component challenges, including chips and bearings. Successful applications, such as IGBT driver boards, have been implemented in projects like the Guangzhou Metro Line 2.



Guangzhou Metro Line 2 A8-type train



Enhancing Supply Chain Resilience and Strengthening Industrial Integration

By restructuring industries and building industrial clusters, bottlenecks in the supply chain are eliminated, improving overall industry strength, risk resistance, and ecosystem resilience. Leveraging its leading role in the industrial chain, the company accelerates the development of high-quality, modernized industrial clusters. In Zhuzhou, Hunan, a trillion-yuan rail transit equipment industry cluster has been established. Meanwhile, in the Qingdao, Shandong Rail Transit Industry Demonstration Zone, over 220 core supporting enterprises have been brought together, with the industrial chain's output value exceeding one trillion yuan.

Strengthening Leadership in the Supply Chain and Systematically Optimizing Industrial Ecosystems

CRRC leverages centralized procurement, platform synergies, and collaborative advantages to unify systems, category management, supplier relations, digital platforms, and capability building. This strengthens supply chain operations and introduces innovative management practices, fostering world-class management systems.



Green CRRC

- Environmental Compliance Management — 24
- Energy and Resource Usage — 28
- Emissions Management — 33
- Climate Change Response — 39

UN SDGs



Environmental Compliance Management

Environmental Governance

CRRC continuously improves its environmental management system, strengthens energy-saving and ecological protection responsibilities, and regulates environmental compliance risk management. The Company actively participates in biodiversity conservation and promotes environmental and ecological protection across all employees, processes, and operations.

The Company strictly complies with relevant laws and regulations such as the *Environmental Protection Law of the People's Republic of China* and the *Energy Conservation Law of the People's Republic of China*. Major energy-saving and ecological protection matters are reviewed and decided by the General Meeting of Shareholders, the Board of Directors, and the Board of Supervisors. The Party Secretary, Chairman, and President bear overall responsibility for energy conservation and ecological protection efforts, while the Operations, Safety and Environmental Protection Department oversees management, with other departments coordinating supervision. Subsidiaries implement environmental protection goals and organize related activities accordingly. As of the end of the reporting period, 100% of the manufacturing subsidiaries have obtained ISO 14001 environmental management system certification.

In accordance with the *Administrative Measures for Energy Conservation and Environmental Protection Supervision of Central State-owned Enterprises*, CRRC integrates energy conservation and environmental protection performance into its executive performance evaluation system. Company executives (Chairman, President, Vice President) have signed a business performance responsibility agreement for the 2022–2024 term, with results directly linked to their performance evaluations and salary. During the assessment period (2022–2024), no environmental emergencies or violations related to energy conservation and environmental protection occurred, and no penalties or demotions were imposed.

CRRC adheres to the "Three Synchronizations" strategy, incorporating energy conservation and ecological protection into its mid- and long-term development strategy and annual business plans, ensuring synchronized planning, implementation, and development. The Company continuously monitors global industry trends, evaluates external environmental and industry risks and opportunities, analyzes various environmental risks, and conducts in-depth research on the potential impact of different types and characteristics of risks on the Company. By proactively formulating response measures, CRRC enhances its resilience and ability to adapt to global environmental changes.

The Company continues to implement the *Ecological Environment Protection Management Guidelines*, providing refined and professional guidance for subsidiaries in pollution prevention, environmental monitoring, emissions management, emergency response, and environmental information disclosure.

The Company conducts internal and external environmental management system supervision and audits annually, promptly rectifies issues identified during the audits, achieving continuous improvement and actively preventing similar problems from occurring. By strengthening environmental risk monitoring and identification, conducting regular inspections annually, and ensuring rectifications, the Company spots potential ecological risks timely and enhances its ability to respond to environmental emergencies. These efforts help mitigate the potential negative impact of business activities on ecosystems and biodiversity, effectively reducing and managing environmental risks.

The Company has implemented an online environmental monitoring system, developed an annual monitoring plan, and strictly controls key pollution factors such as wastewater, air emissions, and hazardous waste. Leveraging digital intelligence and big data platforms, a 24/7 environmental risk monitoring and warning system has been built, enabling real-time monitoring, dynamic assessment, and intelligent alerts. Accredited third-party agencies conduct environmental testing at pollution sources and provide reports, with all results meeting emissions standards.

Establishing Environmental Risk Monitoring and Detection Mechanisms

Case

Subsidiary Develops Environmental Risk Monitoring and Early Warning Platform

CRRC Tangshan has developed an online environmental risk monitoring and early warning platform. Utilizing remote enforcement monitoring equipment from environmental authorities and the Company's industrial data center, the system integrates "one cockpit and eight subsystems" to achieve 24/7, comprehensive, multi-facet, and transparent environmental risk management.



Online Environmental Risk Monitoring and Early Warning Platform Demonstration

Case

Subsidiary Engages Third-Party for Environmental Testing

CRRC Qiqihar Group commissioned a professional third-party agency to conduct air emissions testing. Following relevant standards, the agency assessed emission flow rates, concentrations, and compliance to ensure pollutant discharge meets environmental requirements.



Environmental Testing Reports and On-site Inspection

Strengthening Environmental Risk Supervision and Rectification

The Company continues to conduct environmental management through monitoring, special inspections, and audits. To mitigate risks, it formulates response plans and implements preventive measures, minimizing the likelihood of environmental emergencies. During the reporting period, a comprehensive environmental review was conducted, combining self-inspections, cross-regional joint sampling, and corporate-led oversight, ensuring full coverage, full transparency, and full-scale ecological and environmental risk identification and rectification at all levels of enterprises. The Company sorted out pollution sources of all subsidiary companies, classifying and counting pollutant discharge outlets and storage facilities. We also conducted energy and environmental protection operation monitoring evaluations, organizing expert teams to evaluate and inspect subsidiaries, and all identified issues have been rectified.

Case

Subsidiary's Environmental Risk Enhancement Plan

Sifang Co., Ltd formulated and implemented the "Support, Management, and Service" targeted improvement plan, conducted research, and revised and issued the *Environmental Protection Work Guide (Subsidiary Edition)*.



Conduct "Support, Management, and Service" Research

Case

Subsidiary's Environmental Risk Investigation

CRRC Changchun conducted an environmental investigation to comprehensively identify environmental risk points and urged its subsidiaries to rectify them within a set time frame. It provided guidance to subsidiaries on improving their environmental management systems, refining risk prevention plans, and effectively enhancing environmental compliance and green development capabilities.



Conduct Environmental Protection Research

Launching a Special Biodiversity and Ecological Environment Inspection

During the reporting period, a special environmental inspection was conducted on 29 subsidiaries located in the Yangtze River and Yellow River basins to ensure compliance with emission standards and prevent pollution of water sources, soil, and air, striving to reduce negative impacts on local river ecosystems while maintaining biodiversity within the basins.

Strengthening emergency management for environmental incidents

The Company implemented the *Emergency Response Plan for Environmental Incidents*, adopting a tiered management approach. Subsidiaries formulate comprehensive and specialized emergency plans, on-site response plans, and other incident response measures based on their scale and risk level. Regular emergency drills are conducted to ensure rapid and effective responses to environmental incidents.

Case

Subsidiary conducted a comprehensive emergency drill for production safety accidents

In 2024, Qishuyan Institute conducted a comprehensive emergency drill for production safety accidents. Teams including the command group, rescue group, security group, and logistics group responded swiftly and carried out their tasks, effectively enhancing employees' emergency response capabilities and safety awareness.



Qishuyan Institute Conducting a Comprehensive Emergency Drill for Production Safety Accidents

Conducting environmental protection capability training

The Company has standardized the management process of environmental protection training, combining online and offline methods to provide environmental education and training, continuously strengthening environmental management capabilities and enhancing environmental awareness among all employees.

During the reporting period, the Company organized three rounds of ecological and environmental protection training with a total of 351 participants. The training covered national policy interpretations, environmental supervision, and pollutant discharge permit management, with a focus on standardized hazardous waste management, pollutant emission control, corporate emergency response plans for environmental incidents, and standardization of environmental management operations.

During the reporting period

The Company organized **3** rounds of ecological and environmental protection training with a total of **351** participants.

Environmental Protection Achievements

No environmental incidents occurred during the reporting period, and there were no administrative penalties related to environmental issues. The total environmental protection investment amounted to 420.6354 million yuan, promoting green transformations at multiple production bases and enhancing environmental management and sustainable development capabilities.

During the reporting period

The total environmental protection investment amounted to **420.6354** million yuan

Environmental Protection Awards

Type	2024 Achievements	Cumulative Total
National Green Factory	Puzhen Co., Ltd., CRRC Qiqihar Group, Ltd., etc.	40
National Green Supply Chain Management Enterprise	CRRC Changchun, Sifang Co., Ltd, Qishuyan Co., Ltd., Qishuyan Institute, CRRC Zhuzhou Institute, etc.	12
Recognized as best examples of the SASAC's Central State-owned Enterprise Green and Low-Carbon Best Practices	Sifang Co., Ltd	2
Recognized as best examples of the Ministry of Ecology and Environment's "National Green and Low-Carbon Model Cases"	CRRC Zhuzhou	1

Energy and Resource Usage

The Company implements precise control over the use of energy, water resources, raw materials, and packaging materials, promoting reduction and harmless treatment in production and distribution processes, and encouraging resource recycling and efficient reuse.

Resource Category	Main Types
Water Resources	Production: cleaning, testing, cooling, etc. Other: office, canteen, bathrooms, etc.
Energy	Purchased electricity, purchased thermal energy, gasoline, diesel, natural gas, liquefied petroleum gas, etc.
Raw Materials	Steel, aluminum, stainless steel, surface coatings, etc.
Packaging Materials	Wood, plastic, steel, etc.

Energy Management

The Company strictly complies with the *Renewable Energy Law of the People's Republic of China* and the *Energy Conservation Law of the People's Republic of China*, issuing the *Guiding Opinions on Energy Efficiency Improvement* and formulating special energy efficiency improvement plans. By optimizing product structure and energy consumption structure, the Company enhances energy utilization efficiency and increases the proportion of green energy, continuously promoting energy efficiency management. Subsidiaries have improved their energy management systems based on the *Energy Conservation and Ecological Environment Protection Management Regulations*, employing smart energy management, energy-saving technology upgrades, and energy recycling to achieve overall energy consumption reduction targets.

Intelligent Energy Management

Optimizing the integrated control of the State Grid, photovoltaics, and energy storage systems.; advancing smart green lighting retrofitting.

Efficient Energy Utilization

Conducting energy benchmarking, energy audits, and energy-saving reviews to strengthen refined energy management; implementing an energy trusteeship model for air compressors, enabling real-time monitoring and intelligent control; upgrading motors and transformers; upgrade or replace inefficient boilers and outdated motors; replacing traditional streetlight sources with LED lighting.

Energy Recycling Utilization

Researching and implementing waste heat recovery solutions for thermal storage devices and equipment, promoting the recycling of motors, boilers, and air compressors.

Energy Management Measures

Case

Subsidiary Enhanced Power Supply System Performance

CRRC applied load monitoring technology to obtain real-time data on the power supply system, using dynamic optimization strategies to enhance overall system performance, achieving an annual electricity cost saving of 6.16 million yuan.



Employee monitoring power supply system operation data

Case

Subsidiary Developed a High-Efficiency Compressed Air Station

CRRC Yangtze Group implemented energy-saving improvements in key energy-consuming areas, collaborating with Qishuyan Institute to build a Level-1 energy-efficient compressed air station. The project saves 1.22 million kWh annually, reduces 150 tons of standard coal consumption, and cuts carbon emissions by 720 tons per year.



Axle Non-cycling Refrigerated Dryer

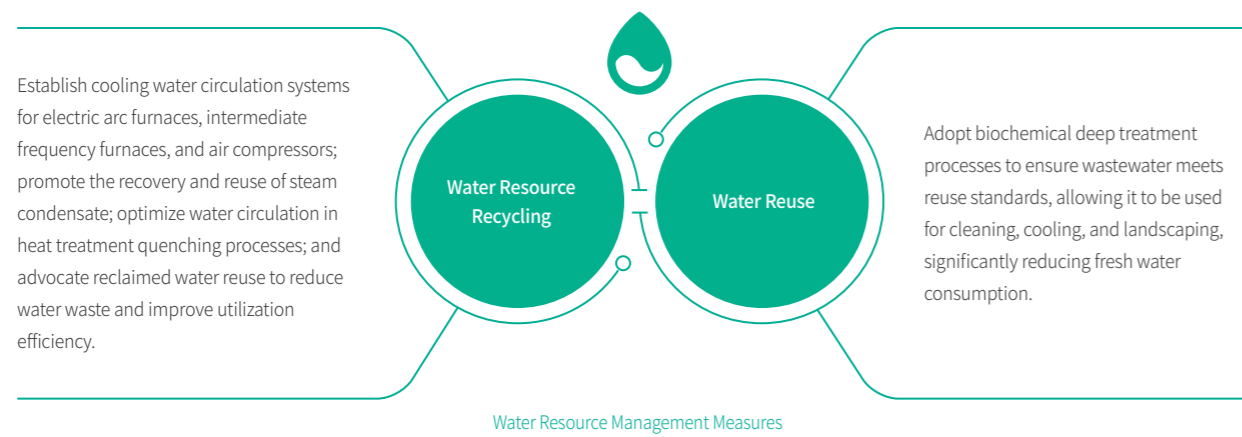
During the reporting period, the Company's comprehensive energy consumption per 10,000 yuan of output value was 0.0203 tons of standard coal, a 15% decrease compared to the 2021 baseline, successfully achieving the three-year target of a 13% reduction. An additional 47.3 MW of photovoltaic capacity was installed, bringing the total operational capacity to 209.31 MW. The Company's annual green electricity usage reached 122 million kWh.

Energy Consumption Usage

Indicator	Unit	2024
Total Energy Consumption	Tons of Standard Coal	573,156.99
Direct Energy Consumption	Tons of Standard Coal	177,220.47
Indirect Energy Consumption	Tons of Standard Coal	395,936.52
Energy Consumption per 10,000 yuan of Output Value	Tons of Standard Coal/10,000 yuan	0.0203

Water Resource Utilization

Strictly complying with the *Water Law of the People's Republic of China* and the *Circular Economy Promotion Law of the People's Republic of China*, the Company adopts circulating water equipment and implements reclaimed water reuse measures to promote water resource recycling and efficient utilization, improving water use efficiency and reducing water resource consumption.



During the reporting period

Fresh water consumption per 10,000 yuan of output value decreased by 5.26% year-on-year.

Case

Subsidiary Increases Reclaimed Water Utilization

CRRC Dalian has fully applied reclaimed water for landscaping, restrooms, and mop sinks, reducing fresh water consumption. The Company has also strengthened the maintenance of sewage treatment stations, improving the efficiency of wastewater treatment equipment.



Reclaimed Water Reuse Equipment

Water Resource Usage

Indicator	Unit	2024
Fresh Water Consumption	Tons	15,208,547
Fresh Water Consumption per 10,000 Yuan Output Value	Tons/10,000 yuan	0.54

Green Raw Materials

Promote the priority use of environmentally friendly materials across subsidiaries in core businesses (rail transit equipment and clean energy equipment) to reduce emissions of toxic and hazardous substances. In surface coating applications, the Company enhanced source reduction, continuously increase the proportion of water-based coatings and fully implementing green and low-carbon production. Water-based coatings are used exclusively in railway freight car painting, reaching over 90%, while their use in urban rail vehicles has increased to over 75%, effectively reducing volatile organic compound (VOC) emissions.

Case

Subsidiary Improved Coating Process

A subsidiary under CRRC Yangtze Group conducted trials on a water-soluble combined primer and finish coat in accordance with the *Technical Conditions for Water-Soluble Paint (Combined Primer and Finish Coat) for Railway Freight Cars (Interim)*. This significantly improved the overall efficiency of vehicle painting, extended the replacement cycle for environmentally friendly materials, and reduced paint consumption by over 30%.




Bogie Automatic Spraying System

Circular Packaging

Strictly complying with the *Circular Economy Promotion Law of the People's Republic of China*, the Company adheres to the principles of green environmental protection and efficient use. Leveraging an integrated "transportation services + VMI warehousing services + integrated storage and transportation tooling" solution in smart logistics industry within the rail transit industry chain, the Company promotes circular packaging services.

The Company has set a goal of zero-emission in disposable packaging and developed corresponding action plans to promote reusable packaging materials and establish a circular packaging ecosystem. It has compiled the *Circular Shared Packaging* standard, revised procurement evaluation criteria to reward the use of green circular packaging. The Company also implements simplified packaging structures. Self-manufactured components are transported in material boxes, expanding the scope of circular packaging and bare packaging, while suppliers are encouraged to optimize packaging designs to support sustainable packaging solutions.

As of the reporting period, the Company has invested in 74,000 reusable packaging units, replacing 640,000 wooden crates annually, reducing carbon emissions by 445,000 tons per year, and releasing 394,000 tons of oxygen annually. Cumulatively, 3.02 million wooden crates have been replaced, protecting 285,000 acres of forest.

 During the reporting period

The Company has invested in **74,000** reusable packaging units, replacing **640,000** wooden crates annually, reducing carbon emissions by **445,000** tons per year, and releasing **394,000** tons of oxygen annually.



Emissions Management

The Company comprehensively manages pollutant emissions, implementing source control and full-process supervision for air emissions, wastewater, and solid waste to minimize environmental impact. During the reporting period, all emission indicators met or exceeded national and local environmental standards, with no instances of excessive emissions.

Solid Waste Disposal

The Company strictly complies with the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste*, the *Pollution Control Standard for Hazardous Waste Storage*, and other relevant laws, regulations, and industry standards. The Operations, Safety and Environmental Protection Department serves as the central solid waste management unit, responsible for formulating pollution prevention policies, work plans, and targets, organizing technical exchanges and promotion, and overseeing subsidiaries' implementation of waste management measures. Other departments perform their respective duties according to their responsibilities. The Company has developed the *Solid Waste Pollution Prevention and Management Guidelines*, classifying solid waste into general waste and hazardous waste for differentiated management and standardized disposal. It has established goal-oriented management from policy formulation, source reduction, categorized storage, resource utilization, harmless disposal, and public awareness campaigns, implementing continuous improvement measures.

Hazardous Waste Management and Disposal Measures

The Company has formulated the *Hazardous Waste Management Guidelines* to implement hazardous waste management plans and maintain detailed records. Subsidiaries strictly comply with regulations in handling hazardous waste generated during industrial production, including waste paint residue, used paint buckets, waste lubricating oil, spent activated carbon and filter cotton, and sludge from wastewater treatment plants. Emergency response plans and management policies have been developed to ensure classified control and compliant disposal of hazardous waste, adopting multiple measures to achieve waste reduction.



High-solid/water-based coatings and high-voltage electrostatic spraying technology are used in painting processes to reduce waste paint generation. Eco-friendly adhesives are promoted to minimize toxic waste. Digital printing replaces traditional developing processes, reducing waste developer fluid and ink cartridge consumption. Toner cartridges are collected and recycled by suppliers.



Dedicated hazardous waste storage facilities are established to prevent cross-contamination. Non-recyclable hazardous waste such as waste coatings, used paint buckets, and waste mineral oil is entrusted to qualified third-party agencies for incineration or landfill disposal, ensuring a 100% harmless treatment rate.



An IoT-based monitoring platform is introduced to track waste generation, storage, and disposal in real time, optimizing waste reduction strategies.

General Solid Waste Management and Disposal Measures

Following the *General Industrial Solid Waste and Household Waste Management Guidelines*, the Company adheres to the principles of "reduction, resource utilization, and harmless disposal." A classification management system is implemented to promote recycling, efficient recovery, and compliant storage, transfer, and disposal of general solid waste. Each subsidiary has established environmental responsibility policies to ensure the effective recycling and utilization of general solid waste. For household waste, subsidiaries comply with the *Household Waste Classification Marking Standard* (GB 19095), conducting waste separation and green living and waste classification awareness campaigns. Construction waste is handled by the project contracting entities for unified disposal.

Classified Recycling

Household waste classification demonstration sites are promoted, and standardized improvement actions for solid waste storage areas are actively carried out to ensure construction and management compliance with regulatory requirements. A comprehensive waste classification and recycling ledger system is established to efficiently separate and reuse materials such as waste foundry sand, discarded packaging, and used paper cartons, reducing resource waste. The Yiqipai green recycling trading platform is utilized to build a circular waste utilization system, enabling efficient waste recovery, fair valuation, and precise redistribution.

Digitalized Office Practices

The Company promotes paperless office initiatives, reducing the use of paper documents and minimizing waste from office supplies.

Case

Subsidiary Implemented Waste Resource Utilization and Reduction

CRRC Dalian has actively pursued waste resource utilization and reduction initiatives. Measures include feeding scrap steel and waste wires into the furnace for reuse and introducing a used sand regeneration system to extract and recycle foundry waste sand, increasing in-house resource utilization. Additionally, they utilize a digital collaboration platform for document management and employ reusable dining utensils, reducing waste generation and operational costs.



Recycled Foundry Sand

Case

Multiple Subsidiaries Recognized as "Zero-Waste Factories"

Sifang Research Institute was awarded the provincial-level "Zero-Waste Factory" title in Shandong, while CRRC Dalian, CRRC Qiqihar Group, Sifang Co., Ltd, and Yongji Electric's subsidiaries received city-level "Zero-Waste Factory" certifications. These factories have successfully passed evaluations by implementing raw material substitutions, process optimizations, and technological upgrades to continuously reduce solid waste at the source and enhance resource utilization.



Zero-Waste Factory at Sifang Co., Ltd Subsidiary

During the reporting period

During the reporting period, the Company's hazardous waste emissions totaled **27,475.20** tons, while non-hazardous waste emissions reached **524,187.00** tons. The generation of non-hazardous waste per 10,000 yuan in revenue decreased by **1.39%** year-over-year. The overall waste recycling rate was **80.26%**.

Waste Disposal Indicators

Waste Type	Unit	2024
Total Hazardous Waste	Tons	27,475.20
Hazardous Waste per 10,000 Yuan Revenue	Tons/10,000 Yuan	0.0011
Total Non-Hazardous Waste	Tons	524,187.00
Non-Hazardous Waste per 10,000 Yuan Revenue	Tons/10,000 Yuan	0.0213

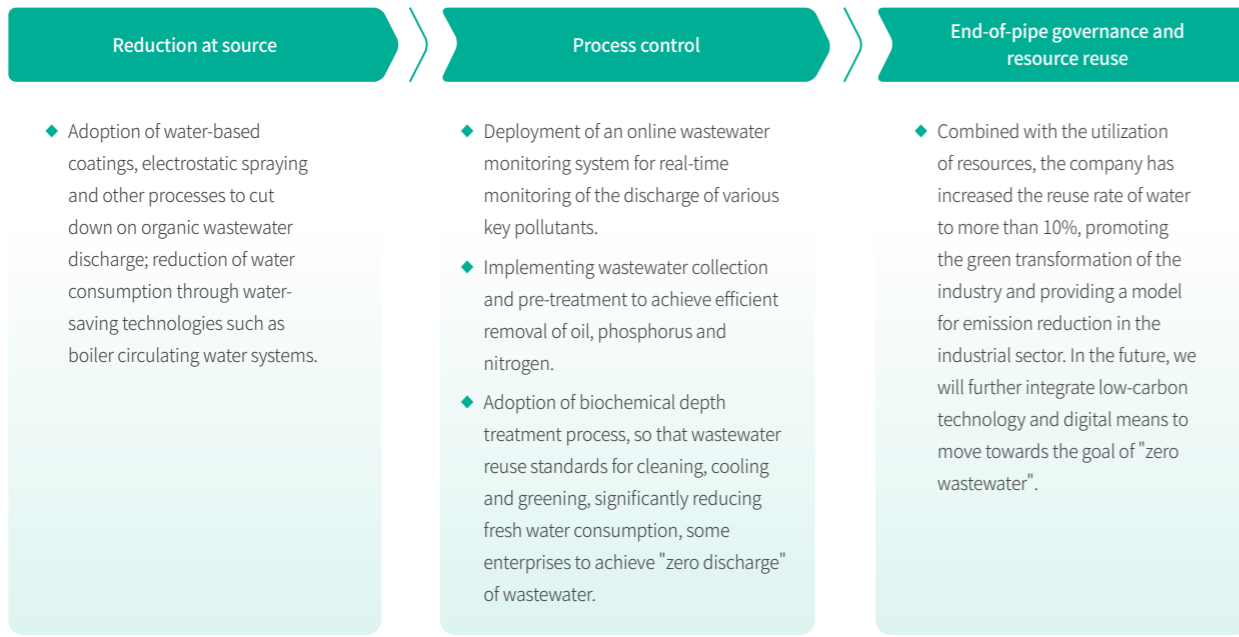
Waste Recycled

Waste Recycling Rate	Tons	420,844.13
Waste Recycling Rate	%	80.26

Wastewater Treatment

The Company strictly complies with the *Water Pollution Prevention and Control Law of the People's Republic of China* and the *Comprehensive Sewage Discharge Standards*, with the Operations, Safety and Environmental Protection Department overseeing water pollution control efforts. This department is responsible for formulating pollution control policies, guiding subsidiaries in their implementation, and ensuring other subsidiaries carry out their responsibilities. The Company has also developed the *Water Pollution Prevention and Control Guidelines*, which regulate drainage system design, wastewater treatment equipment, and pollutant discharge standards.

The Company's wastewater primarily originates from production, including machine processed oil-containing wastewater, heat treatment cleaning water, cooling water, and domestic sewage from factory sites. The main pollutants include COD and ammonia nitrogen. A rainwater-sewage separation system is implemented to improve wastewater management. Process wastewater undergoes physical-chemical or bio-chemical treatment to meet discharge standards before being released into municipal sewage systems. Through technological innovation and management optimization, subsidiaries employ a "source reduction – process control – end treatment – resource reuse" approach to significantly reduce wastewater emissions.



Wastewater Treatment Measures

Case

Subsidiary Implements Rainwater-Sewage Separation

A subsidiary under CRRC Yangtze Group has strictly enforced a rainwater-sewage separation system to ensure wastewater treatment facilities operate effectively. The Company has also implemented reclaimed water reuse, achieving zero wastewater discharge.

Rainwater-Sewage Separation Treatment

Wastewater Discharge Indicators

Wastewater Pollutant Type	Unit	2024
Total Wastewater Discharge	Tons	8,712,094.17
Wastewater Reduction	Tons	579,546.24
COD	Tons	347.87
Ammonia Nitrogen	Tons	34.23

Air Emission Reduction

The Company strictly adheres to the *Air Pollution Prevention and Control Law of the People's Republic of China*, the *Comprehensive Emission Standards for Air Pollutants*, and the *Unorganized Emission Control Standards for Volatile Organic Compounds (VOCs)*. The Operations, Safety and Environmental Protection Department is responsible for overseeing air pollution control efforts, formulating regulatory policies, and ensuring compliance across subsidiaries, while other departments execute specific responsibilities according to their roles. The Company has also developed the *Air Pollution Control Management Guidelines*, which set requirements for pollution control equipment management, VOC treatment, pollutant monitoring, and emergency response to environmental incidents.

The Company's air emissions mainly come from painting, heat treatment, and welding processes, with primary pollutants including sulfur dioxide, nitrogen oxides, VOCs and particulate matter. By promoting low-VOC raw and auxiliary materials, standardizing operating procedures, and establishing monitoring plans, the Company implements comprehensive control over air emissions. Through equipment upgrades, process optimization, and supporting exhaust gas treatment facilities, the Company has completely replaced coal-fired boilers and kilns with natural gas alternatives. For dust control, technologies such as cartridge filtration, bag filtration, and electrostatic precipitation are employed to significantly enhance exhaust gas treatment efficiency.

Case

Subsidiary Enhances Air Pollution Control

CRRC Tangshan invested over 5 million yuan to upgrade its painting line organic waste gas treatment system, incorporating multi-stage activated carbon chambers to prevent unorganized VOC emissions, increase contact area with adsorbents, and improve overall treatment efficiency.


Waste Gas Treatment Equipment

Case

Subsidiary Upgrades VOC Treatment Equipment

CRRC Qiqihar Group invested over 10 million yuan to upgrade pollution control systems, transitioning its subsidiaries from using activated carbon adsorption to an advanced "zeolite rotor + RTO" process. They also upgraded its VOC continuous monitoring system.

Waste Gas Treatment Equipment

 During the reporting period

The Company's VOCs emissions were 3,071.12 tons, marking a 26.13% reduction compared to the 2021 baseline, successfully achieving the three-year VOC reduction target of 6%.
Using 2024 as the baseline year, the Company aims to keep VOCs emissions below 3,000 tons within the next three years, expecting a reduction of over 3% compared to the 2024 baseline.

Air Pollutant Emission Indicators

Pollutant Type	Unit	2024
Ozone-Depleting Substance Emissions*	Tons	89.96
Sulfur Oxide Emissions	Tons	77.31
Particulate Matter (PM) Emissions	Tons	1,063.36
Nitrogen Oxide Emissions	Tons	215.71
Vocs Emissions**	Tons	3,071.12
Mercury Emissions	Tons	0
Heavy Metal Emissions	Tons	0
Dioxin Emissions	Tons	0

* Based on data from two air-conditioning manufacturing subsidiaries, calculated using the "Controlled Ozone-Depleting Substances List of China". Among them, the Category 9 hydrofluorocarbon (HFCs) emissions amounted to 88.45 tons, but their ozone depletion potential (ODP) is zero.
** The calculation of volatile organic compounds (VOCs) emissions is based on the full-process material balance method.

Climate Change Response

The Company actively integrates the national "dual carbon" strategy into its core development, steadily advancing carbon peaking and carbon neutrality efforts as key measures to address climate change. It continuously improves top-level dual-carbon planning, strengthens energy management and emission reduction, and contributes to achieving national sustainable development and carbon neutrality goals.

Climate Governance

The Company has established a top-down "dual carbon" management system. The Board of Directors and the Dual Carbon Leadership Group oversee climate change management decisions, reviewing major matters such as climate action strategic planning, regulatory systems, implementation plans, and key initiatives. The Dual Carbon Work Group and the ESG Management Committee formulate climate action strategies, set phased work goals and action plans, and coordinate the identification and response to climate risks and opportunities. The Operations, Safety and Environmental Protection Department houses the Dual Carbon Office, which is responsible for organizing and advancing the implementation of dual-carbon action plans and related initiatives.

Board Oversight of Climate Matters

During the reporting period, the Board of Directors and the ESG Management Committee reviewed climate-related matters five times, reviewing and formulating documents regarding topics such as the construction of the dual-carbon management system, the implementation plan for integrating the "carbon + R&D" system, and carbon management measures in production and operations.

Climate Governance Research

The Company conducted two climate governance research studies during the reporting period, analyzing the impact of the EU's CBAM regulation and the new Battery Directive on the Company. It also benchmarked against ISSB sustainability disclosure standards IFRS S1 and S2 to conduct relevant research, enhancing its climate governance capabilities.

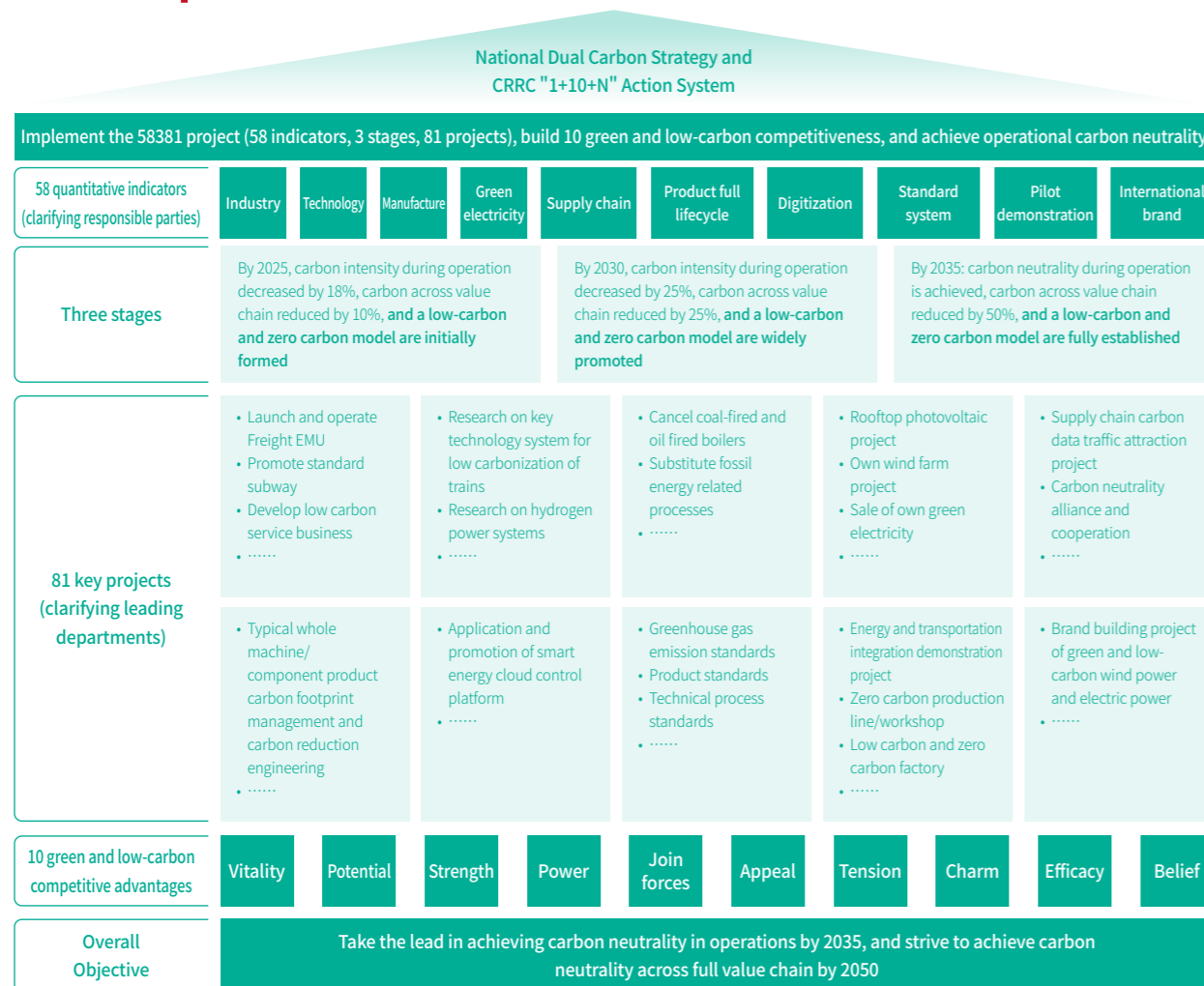


Climate Strategy

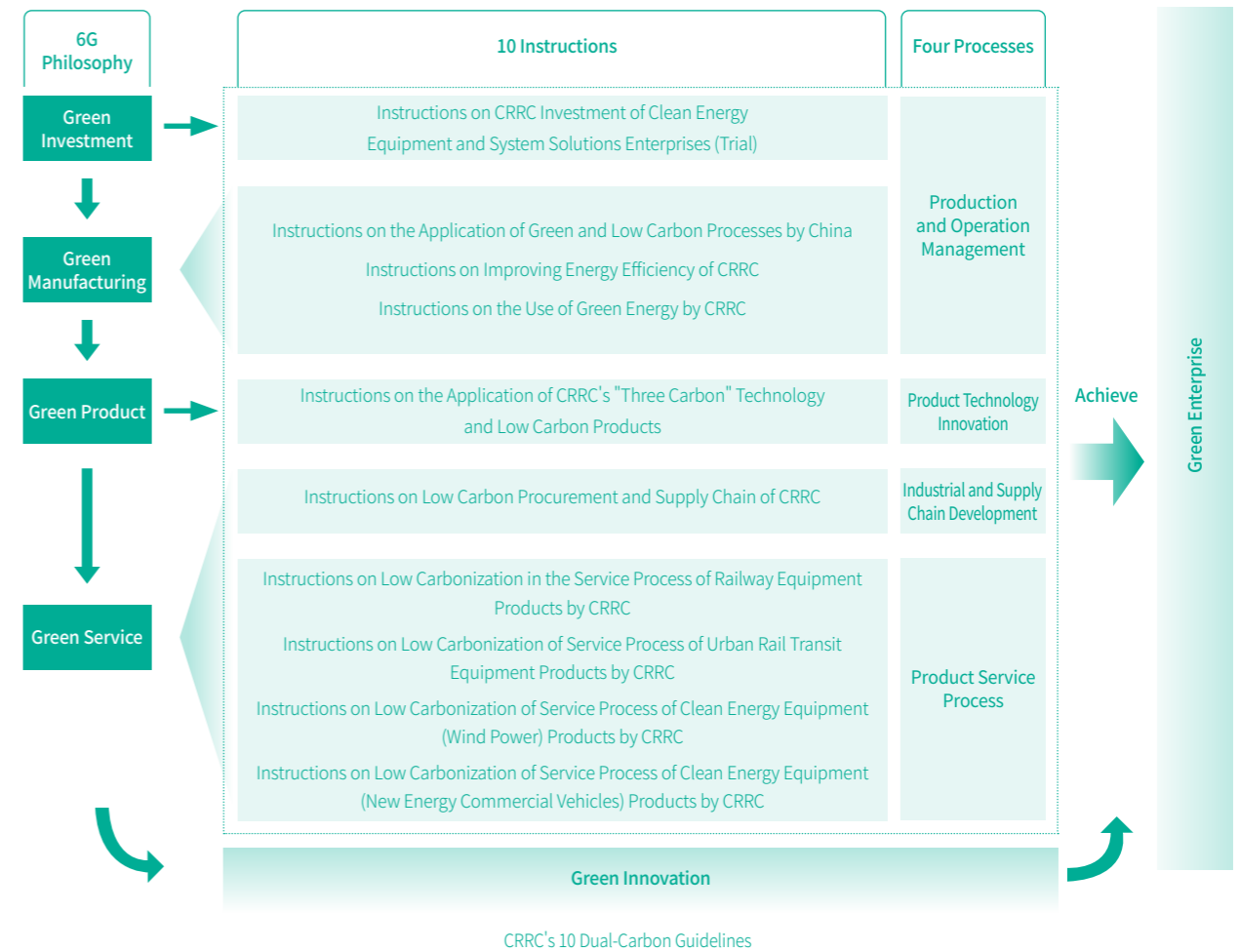
The Company comprehensively identifies the risks and opportunities brought by climate change, making green and low-carbon initiatives a core element of its sustainable development strategy. Building on the *Carbon Peaking and Carbon Neutrality Action Plan* released in 2021 and the *Carbon Peaking and Carbon Neutrality Action Program* formulated in 2023, the Company has established a clear strategic direction for climate governance. This is guided by 10 policy documents, including the *Investment Guidelines for Clean Energy Equipment and System Solutions Enterprises*, *Guidelines for Green Energy Use*, and *Guidelines for Low-Carbon Procurement and Supply Chain Development*, forming a "1+10+N" dual-carbon action system as the blueprint to guide subsidiaries at all levels in implementing action plans and emission reduction initiatives, enhancing the Company's carbon neutrality efforts.

Adopting the "6G" philosophy—Green Investment, Green Innovation, Green Manufacturing, Green Products, Green Services, and Green Enterprise—the Company focuses on the entire value chain, full lifecycle, and all processes. This spans four key areas: product technology innovation, industrial and supply chain development, production and operation management, and product lifecycle management. The Company has developed a dual-carbon indicator system with 58 quantifiable metrics and 81 key projects, strengthening its position across ten key areas: industry, technology, manufacturing, green electricity, supply chain, carbon footprint, digitalization, standard systems, benchmarks, and branding. The goal is to become a leader in green manufacturing, a creator of green living, and a pioneer of green development.

Overview of CRR Carbon Peaking and Carbon Neutrality Action Program



CRR Dual-Carbon Action Framework



During the reporting period, 11 subsidiaries formulated enterprise-level dual-carbon action plans based on these guidelines, continuously refining the dual-carbon action system. The Company developed the *Carbon Industry Development Plan*, promoting the green and low-carbon transformation of its existing industries while expanding into the carbon industry. To enhance carbon research and development, the *"Carbon + R&D" System Integration and Implementation Plan* was compiled to encourage the adoption of low-carbon, zero-carbon, and negative-carbon technologies in R&D and design. To improve carbon management, the *Carbon Management Implementation Plan for Production and Operation* was formulated to drive a comprehensive green and low-carbon transformation in manufacturing.

Risk and Opportunity Management

The Company pays great attention to climate-related risks and opportunities, continuously strengthening risk assessment and response measures. It actively enhances its climate risk management framework, formulating response measures to improve climate resilience.

Climate Risk Identification and Response Measures

Type	Climate-Related Risk Description	Financial Impact	Response Measures
Transition Risks	Policies and Regulations		
	Due to the impact of regulations and policies on energy conservation, emission reductions, and carbon trading, stricter carbon emissions controls on the factories in the future may require the Company to purchase carbon credits, leading to higher operational costs.	Direct cost increase ↑	1. Stay aligned with the latest "dual carbon" regulations and policies, fully implementing the dual carbon action plan, to accelerate the development of low-carbon technologies and proactively expand into green and low-carbon industries.

Type	Climate-Related Risk Description	Financial Impact	Response Measures
Transition Risks	Technology		
	Advancements in energy-efficient equipment and technologies are driving the replacement of traditional high-energy-consumption equipment. The Company may need to invest in new equipment, adopt energy-saving technologies, or optimize processes, leading to higher capital expenditures. Additionally, expenditure on the development of innovative new energy products and alternative technologies may rise.	Indirect cost increase (equipment upgrades & R&D investment) ↑	<ol style="list-style-type: none"> 1. Develop energy-saving and carbon-reduction technologies to support the development of clean energy equipment. 2. Advance energy transition efforts, implement energy-saving and carbon-reduction retrofits, and promote green transformation in rail transit equipment.
	Market		
	Climate change trends may affect product market access, leading to shifts in customer preferences and new demands, such as stricter carbon footprint requirements. If the Company fails to meet the growing demand for low-carbon products, its competitiveness and sales may decline. Additionally, fluctuations in raw material and fuel prices could increase operational costs.	Direct cost increase ↑ Direct revenue decrease due to lower demand ↓	<ol style="list-style-type: none"> 1. Implement green supply chain management and drive supply chain green transition. 2. Implement quality improvement and efficiency enhancement initiatives to ensure substantial growth in operational performance. 3. Implement centralized, full-scope procurement of materials and services to lower costs. 4. Carry out product carbon footprint management and certification, and establish zero-carbon scenario demonstrations.
Physical Risks	Reputation		
	With the introduction of the "dual carbon" goals and carbon neutrality policies, stakeholders expect the Company to actively address climate change and enhance transparency in information disclosure. If the Company fails to adequately respond to demands in energy conservation and emission reduction, it may negatively impact the Company's reputation.	Indirect cost increase ↑ Direct revenue decrease ↓	<ol style="list-style-type: none"> 1. Strengthen ESG initiatives and reinforce the Company's green development image. 2. Maintain open stakeholder communication. Identify, revise, and incorporate ESG concerns into strategy. 3. Ensure timely and compliant disclosure of reports.
Physical Risks	Short-term (Acute)		
	Increasing frequency of extreme weather events (e.g. typhoons, floods, tropical cyclones) may damage factories, workshops, offices, and equipment, resulting in asset losses, data losses, and employee safety risks. Damage to equipment, service interruptions, or major equipment failures may impact business continuity and cause direct or indirect harm to the Company's financial interests. Extreme heat could strain power supply, impacting the operations of electricity-intensive equipment and causing revenue loss.	Indirect cost increase ↑ Direct revenue decrease ↓ Asset depreciation ↓	<ol style="list-style-type: none"> 1. Establish a risk emergency management system. 2. Develop emergency plans, strengthen emergency drills, and improve the effectiveness of environmental risk emergency management.
Physical Risks	Long-term (Chronic)		
	Rising global temperatures may increase the need for cooling systems, leading to higher maintenance and operational costs. Water shortages could raise procurement costs for alternative water sources, further driving up expenses.	Direct/indirect cost increase ↑ Direct revenue decrease ↓	<ol style="list-style-type: none"> 1. Improve energy efficiency and implement digital management for systematic energy conservation. 2. Adopt advanced technologies, such as CO₂-based air conditioning systems, as an alternative to traditional AC.

Identification and Response to Climate Opportunities

Type	Climate-related Opportunities	Financial Impact	Response Measures
Resource Efficiency	Improving energy efficiency helps reduce production costs.	Direct cost reduction ↓	<ol style="list-style-type: none"> 1. Upgrade energy-saving equipment and carry out energy-saving technological improvements to enhance energy efficiency. 2. Develop relevant management systems to promote efficient resource use.
Energy Substitution	Increasing the share of clean energy can lower energy costs. Optimizing processes and upgrading equipment can reduce greenhouse gas emissions, making the Company less sensitive to carbon emission cost changes.	Direct cost reduction ↓ Direct revenue increase ↑	<ol style="list-style-type: none"> 1. Promote the development and utilization of renewable energy such as wind, solar, and biomass, and advance clean energy equipment. 2. Adopt new production processes or equipment to reduce energy consumption.
Products and Market	In the context of low-carbon economic transformation, customers' preference for low-carbon products will drive the demand for green, low-emission rail transit products, potentially boosting Company revenue. Developing new energy products may also result in government incentives and rewards.	Direct revenue increase ↑	<ol style="list-style-type: none"> 1. Promote the green, low-carbon development of the rail transit industry and develop new energy-powered vehicles. 2. Expand emerging industries based on green and low-carbon strategies.

Greenhouse Gas Emission Reduction Measures

A series of emission reduction initiatives is implemented, including the establishment of a detailed action plan for the dual carbon strategy, with 81 key projects underway. The plan is continuously advanced to ensure its implementation. The Company implements the *Carbon Emission Target Management and Assessment Measures*, incorporating carbon emission targets into the enterprise performance evaluation system while conducting regular monitoring of the progress. By innovating carbon emission monitoring and digital management, product carbon footprint calculation and certification, the Company is advancing the green transformation of rail transit equipment and clean energy equipment, and continuously improving the fine management of carbon emissions, promoting the synergistic progress of emission reduction and green development.

Emission Monitoring and Digital Management

The "Carbon Monitoring Smart Cloud Platform" enables real-time online monitoring of carbon emissions data, pushes data in real time, and provides warnings on data fluctuations. Monthly data assessments and manual reviews are conducted to ensure data quality. During the reporting period, new functions were added to the platform, including real-time data push notification and data fluctuation detection. The number of enterprises using the platform increased from 78 to 81, and abnormal process handling was reduced by 55% compared to 2023.



Carbon Monitoring Smart Cloud Platform

Product Carbon Footprint Management and Certification

The Company has established a carbon footprint management system for typical products, developed calculation standards, and started building a background database to create a CRRC Carbon Footprint Ecosystem, actively accounting for carbon footprints for whole products and components.

During the reporting period, 12 typical rail transit and clean energy products were selected for carbon footprint calculation and baseline carbon footprint identification. Carbon footprint certification was completed for four types of products, including the new energy shunting locomotive, C70E freight train, CR400BF electric multiple unit, and standard city rail type A train. Additionally, carbon asset and carbon footprint training was held to enhance the team's capability in their management.

Case

Company Releases Carbon Footprint of New Energy Locomotive

The Company has conducted a full lifecycle carbon emission study on both new energy locomotives and old internal combustion locomotives. The Company has completed carbon footprint calculations for pure electric, hybrid, hydrogen fuel cell new energy locomotives, and three types of internal combustion locomotives, and has released the world's first carbon footprint report for pure electric new energy locomotives. Based on a 30-year operational cycle, a 1,000-ton load, 40% of standard operating speed, and electricity consumption sourced from green power, the carbon footprint during the usage phase of a pure electric new energy locomotive is reduced by 94.2%.



ISO 14067 Product Carbon Footprint Certificate

Zero-Carbon Scenario Demonstration Construction

The Company has initiated the construction of zero-carbon scenario demonstrations, establishing four zero-carbon factories and five zero-carbon workshops. Two subsidiaries, CRRC Changchun and CRRC Tangshan were awarded the "2024 China Industrial Carbon Peaking" and "Leading Enterprise" title.

Green Transformation of Rail Transit Equipment

The Company continues to promote low-carbon energy transformation and the development of green transportation. It has developed the *Old DC Internal Combustion Locomotive Elimination Plan* to accelerate the transition of outdated internal combustion locomotives to new energy ones. A special task force for new energy locomotives has been established, focusing on digitalization, intelligence, greenness, modularity, lightweight, and platform integration, committing to creating a modern industrial system for new energy locomotives characterized by five features: green, intelligent, high-end, economical, and safe. New energy urban rail vehicles, including hydrogen fuel cell-driven regional trains, have been introduced to support the low-carbon transportation transformation.

Case

Subsidiary Releases First Hydrogen Energy Regional Train

In March 2024, CRRC Changchun successfully completed the operational testing of China's first hydrogen energy regional train, marking a significant breakthrough in the application of hydrogen energy in the rail transit sector.



Hydrogen Energy Regional Train

Case

Company Hosts Carbon Asset and Carbon Footprint Training

In March 2024, the Company organized a Carbon Asset and Carbon Footprint training session, with 124 participants from 65 subsidiaries. The training covered topics such as the current state and analysis of carbon markets, carbon asset trading and management, green electricity and green certificate applications, and carbon footprint standards.



Carbon Asset and Carbon Footprint Training



Case

Subsidiary Releases First New Energy Intelligent Intercity Regional Multiple Unit

In September 2024, Sifang Co., Ltd launched China's first new energy intelligent intercity regional multiple units, CINOVA H2, at the Berlin International Trade Fair for Transport Technology. The train operates with zero carbon emissions throughout its journey, achieving a 15% reduction in energy consumption per 100 kilometers per passenger. After operation, each train set reduces CO2 emissions by approximately 730 tons annually.



New Energy Intelligent Intercity Regional Multiple Unit



Clean Energy Equipment Development

The Company is developing strategic emerging industries, driving breakthroughs in clean energy equipment technology, and leveraging new energy development and construction to promote industry iteration and upgrade. This will accelerate the rapid development of a modern energy system that is clean, low-carbon, safe, and efficient.

Case

Subsidiary Develops 20MW Floating Offshore Wind Turbine

In October 2024, Zhuzhou Institute successfully launched the world's largest 20MW floating offshore wind turbine, "Qihang." The turbine is capable of generating 62 million kWh of clean electricity annually, which can supply power to approximately 37,000 households. This is equivalent to saving 25,000 tons of coal and reducing carbon dioxide emissions by 62,000 tons.



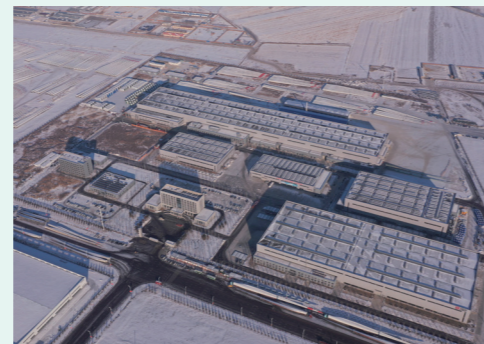
World's Largest 20MW Floating Offshore Wind Turbine



Case

Subsidiary Builds Songyuan Onshore Wind Power Zero Carbon Demonstration Industrial Park

In 2024, CRRC Shandong Wind Power Co., Ltd. began planning the Songyuan Zero Carbon Industrial Park, which includes functions such as energy supply, ecological greening, energy management system, low-carbon living, and low-carbon offices. The rooftop photovoltaic project received approval for a 1.76MW capacity, generating 2.288 million kWh per year.



Songyuan New Energy Equipment Industrial Park Distributed Photovoltaic Power Generation Project



Indicators and Targets

The CRRC Carbon Peak and Carbon Neutrality Action Plan clearly defines the "35•50" carbon neutrality goal, aiming for operational carbon neutrality by 2035 based on achieving carbon peak by 2018, and striving for full value chain carbon neutrality by 2050.

Climate-Related Targets

In alignment with the national "14th Five-Year" dual carbon targets, and the three-year performance evaluation indicators, a target was set to reduce carbon emission intensity by 17% in 2024 compared to 2021. As of the end of the reporting period, the Company's carbon emission intensity had decreased by 19.7% compared to 2021, achieving the target.

The Company has implemented new industry policies such as the *Guidelines for Green Energy Use, Guidelines for Clean Equipment Investment, and Large Base Construction Investment Measures*, setting investment goals to continuously increase investment in clean technology. During the reporting period, the investment in clean technology increased by 2.208 billion yuan compared to the previous year.

Greenhouse Gas Emissions

During the reporting period, the Company's total greenhouse gas emissions (Scope 1 and Scope 2) amounted to 2,000,109.88 tons of CO₂ equivalent, a reduction of 8,604.56 tons of CO₂ equivalent compared to the total emissions in 2023 (Scope 1 and Scope 2).

Greenhouse Gas (GHG) Emissions Indicators

Indicator	Unit	2024
Total GHG Emissions (Scope I, II)	Tons of CO ₂ Equivalent	2,000,109.88
GHG Emissions (Scope I) [*]	Tons of CO ₂ Equivalent	317,759.04
GHG Emissions (Scope II) ^{**}	Tons of CO ₂ Equivalent	1,682,342.06
GHG Emission Intensity (GHG Emissions per 10,000 Yuan of Production Value)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0707
GHG Emission Intensity (Scope I)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0112
GHG Emission Intensity (Scope II)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0595
GHG Emission Reduction	Tons of CO ₂ Equivalent	8,604.56

^{*} The calculation of greenhouse gas emissions is based on the GB/T 32150-2015 *General Principles for Greenhouse Gas Emission Calculation and Reporting for Industrial Enterprises*.

^{**} The electricity emission factor is calculated regionally according to the National Development and Reform Commission's *Greenhouse Gas Emission Calculation Methods and Reporting Guidelines for Mechanical Equipment Manufacturing Enterprises (Trial)*. The data for the regional electricity emission factors is sourced from the Provincial Energy Balance Tables in the China Energy Statistical Yearbook. The heat emission factor is calculated according to the same guidelines from the National Development and Reform Commission.



People-oriented CRRC

- Protecting the Rights and Interests of Employees — 50
- Promoting Talent Growth Together — 55
- Building Safety Assurance — 60
- Committed to Social Welfare — 64

UN SDGs



Protecting the Rights and Interests of Employees

Compliant Employment

CRRC upholds a people-oriented philosophy, providing equal employment opportunities, protecting fundamental rights and interests of employees, optimizing remuneration systems, and establishing effective communication and feedback channels. The Company continuously enhances employee well-being and strives to create a legally compliant, fair, just, and mutually supportive work environment.

Strictly adhering to the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China*, and other relevant laws, regulations, and employment policies in its domestic and overseas places of operation, the Company has established the *Regulations on the Protection of Employee Rights*, ensuring that labor contracts are signed with employees based on the principles of "legality, fairness, voluntary participation, mutual agreement, and good faith", covering matters related to employee rights, including working hours, leave policies, compensation and benefits, labor conditions, and labor protections.

Strictly enforcing the *Provisions on the Prohibition of Using Child Labor* and the *Law on the Protection of Minors of the People's Republic of China*, along with other laws and regulations, and adhering to international human rights treaties such as the core conventions of the International Labour Organization (ILO), the *Universal Declaration of Human Rights*, and labor rights protection mechanisms, the Company rigorously verifies employee identities to eliminate child labor and firmly opposes all forms of forced or compulsory labor. As of the end of the reporting period, there have been no incidents of child labor or forced labor within the Company.

Diverse and Inclusive Policies

The Company promotes the concept of multicultural integration and actively fosters an equal and inclusive work environment. It continuously implements the *Regulations on the Protection of Employee Rights* to ensure that no employee is subjected to discrimination based on gender, marital status, race, color, ethnicity, religion, age, disability, or other personal characteristics. The Company provides employment opportunities and accessible work environments for employees with disabilities. It strictly prohibits workplace harassment, ensuring that employees are protected from improper infringements, such as physical, verbal, sexual, or psychological harassment, abuse, and threats. Dedicated employee rights protection channels have been established to enable employees to report any issues related to discrimination or inequality in a timely manner and receive appropriate resolution.

Diverse Talent Recruitment

The Company actively broadens its talent selection channels to attract a diverse range of high-caliber professionals. Its international operations prioritize local employment, offering diverse employment opportunities across different regions and professional fields for talents with various professional backgrounds. Additionally, it continuously optimizes its workforce structure to support diverse and equitable career development.

During the reporting period, the Company adopted a combined approach of social recruitment, campus recruitment, and flexible talent acquisition to continuously and precisely attract high-caliber professionals. It further implemented the graduate recruitment reform plan, systematically training recruiters to enhance their presentation skills and professional capabilities. The Company schemed and organized 12 "urban university cluster" recruitment events in cities such as Berlin, Paris, Beijing, and Shanghai, and conducted targeted "Future Star" internship recruitment. It continuously intensified efforts to recruit outstanding master's and doctoral graduates from top universities, signing nearly 3,000 graduates in 2025. Among them, holders of a degree above a master's accounted for 75%, reflecting a 4% increase compared to the previous year, while graduates from leading domestic and international universities made up 67%, reflecting a 23% increase compared to the previous year. The Company also strengthened flexible talent acquisition by engaging top university experts in joint research projects, cumulatively recruiting nearly 50 high-level "dual-appointed" professionals.

Human Resources Indicators

Indicator	Unit	2024
Total Number of Employees	Persons	152,082
Percentage of Employees by Gender		
Percentage of Male Employees	%	83.45
Percentage of Female Employees	%	16.55
Percentage of Male Senior Management by Gender at the Headquarters	%	88.89
Percentage of Female Senior Management by Gender at the Headquarters	%	11.11
Percentage of Employees By Workplace Location		
Percentage of Employees in Mainland China	%	95.60
Percentage of Employees in Hong Kong, Macao, Taiwan, and Overseas	%	4.40
Percentage of Employees by Age Group		
Percentage of Employees Aged 30 and Below	%	17.05
Percentage of Employees Aged 30 to 50 (Inclusive)	%	64.24
Percentage of Employees Aged above 50	%	18.71
Percentage of Employees By Educational Background		
Percentage of Employees with a Doctoral Degree	%	0.41
Percentage of Employees with a Master's Degree	%	12.37
Percentage of Employees with a Bachelor's Degree or Below	%	87.22
Number of Ethnic Minority Employees	Persons	7,806
Social Insurance Coverage Rate	%	100
Number of Labor Dispute Incidents	Cases	0

Remuneration System

The Company adheres to the principle of "equal pay for equal work" and implements the *Interim Measures for Remuneration Management*, the *Guidelines for All-Employee Performance Management*, and the *Guidelines for Reform of Internal Distribution System in Enterprises* to regulate the remuneration structure, salary levels, growth strategies, and payment strategies for employees across various sequences. In addition to providing competitive base salaries, the Company offers multiple incentive policies, including performance bonuses, mid- and long-term equity incentive plans, profit-sharing schemes, and special rewards, covering all employees (including both management and non-management employees).

Employee remuneration incentives are closely linked to performance evaluations. Establish performance management measures and an incentive mechanism covering all employees (including both management and non-management employees) in accordance with the *Guidelines for All-employee Performance Management*. Formulate annual business plans based on the Company's strategic objectives, which are further broken down into key performance indicators (KPIs) and goal setting (GS) by departments to serve as a basis to create individual employee assessment forms. The assessment forms cover three categories: organizational performance, individual tasks, and personal behavior, with each category weighted according to the employee's job level. Assessment scores are determined based on the evaluation results of each indicator and are directly linked to remuneration distribution, career development, and performance evaluation and recognition, ensuring an effective connection between performance management and the incentive mechanism. Both management and non-management employees who excel in meeting the requirements of their individual assessment scorecards are eligible to receive corresponding incentive-based remuneration, such as performance bonuses and special rewards.

Mid- and Long-term Incentive Plans

The Company continuously implements the *Guidelines for Mid- and Long-Term Incentives*, thoroughly reviewing the implementation of equity incentives and strengthening dynamic control. It adopts a tailored approach for each enterprise, guiding qualified subsidiaries to implement stock rights, stock options, dividend rights, and other incentive measures for employees who have made significant contributions or are outstanding technical talents. The goal is to encourage shared business outcomes and risk-sharing, while also guiding employees to pay more attention to the Company's long-term development.

As of the end of the reporting period, a total of 10 equity incentive plans had been approved and implemented, covering various incentive tools such as equity incentives for employees of technology-based enterprises, employee stock ownership in mixed-ownership reform enterprises, equity incentive for listed companies and strategic placement for listing on SSE STAR Market, involving 42 subsidiaries with more than 2,200 people, holding a total of 1.297 billion shares.



Welfare and Care

The Company strictly adheres to national policy requirements, committed to meeting the diverse needs of employees and providing diverse welfare benefits to all employees to drive the Company's sustainable growth.

Employee Insurance and Supplemental Medical Coverage

The Company fully contributes to basic pension insurance, basic medical insurance, unemployment insurance, work-related injury insurance, maternity insurance, and housing provident fund. In addition to statutory benefits, each subsidiary, based on its business performance, provides all employees with non-remuneration benefits such as supplementary commercial insurance, supplemental medical insurance, and corporate annuities.

Rights to Rest and Leave

The Company ensures that all employees are covered by local urban employees' social insurance and are legally entitled to paid annual leave, family leave, marriage and funeral leave, maternity leave, and other types of leave, thus effectively safeguarding employee rights.

Physical and Mental Well-being Care

Employee health care is integrated into all aspects of employees' work and life. The Company provides annual health check-up benefits and organizes regular health screenings to promptly identify potential health issues. It continues to focus on employees' mental health and is committed to providing comprehensive psychological support services.

The Company pays close attention to the physical and mental health of employees, improving care mechanisms to enhance employee recognition, sense of belonging, and well-being. Regular activities are organized for expatriates and domestic families, such as comfort visits, heatstroke prevention, flood prevention and disaster relief, and back-to-school assistance in autumn. Funds are allocated for employee care and support programs.

Care for Female Employees

The Company emphasizes the protection of female employee rights and interests, building the "CRRC Care House" and organizing activities such as the "CRRC Female Worker's Reading Season," actively creating a work environment conducive to the development of female employees. During the reporting period, the Company conducted "Two Festival" warm-hearted events, raising over 40 million yuan in assistance funds, and providing assistance to 44,500 employees and 2,291 work teams.

Case

The Company Leadership Paid a Comfort Visit to Front Line Employees during the Spring Festival

On the eve of the 2024 Spring Festival, the Company leadership paid a comfort visit to employees at the Beijing High-speed Train Service Center and conducted an inspection of the after-sales service support operations during the Spring Festival travel rush.



Chairman of the Company Paid a Comfort Visit to Front-Line Employees

Democratic Management

The Company actively promotes the democratic management of employees and respects their legal rights to freely and voluntarily join organizations. It improves the enterprise's democratic management system, with the employee representative assembly as the core. As the daily operational body of the employee representative assembly, the labor union actively participate in the democratic processes during reforms and restructuring, provides timely feedback on reasonable employee demands, prevents and resolves labor disputes, strengthens the function of democratic supervision, protects employees' legal rights and interests, and promotes the stable and harmonious development of the Company. Through democratic management, the Company enhances employees' sense of belonging and responsibility, and fosters harmonious labor relations, thereby laying a solid foundation for its sustainable development.

Collective Agreement

In accordance with the *Labor Contract Law of the People's Republic of China*, the *Trade Union Law of the People's Republic of China*, the *Regulations on Collective Contracts*, the *Law of the People's Republic of China on the Protection of Women's Rights and Interests*, the *Special Rules on the Labor Protection of Female Employees*, and other laws and regulations, the labor union represents the employees in revising and negotiating to sign the *Collective Agreement and the Special Collective Contract for the Protection of Rights and Interests of Female Employees* (hereinafter referred to as the *Special Agreement for Female Employees*) with the Company, covering all employees.

On January 9, 2023, the Company convened the third meeting of the second Employee Representative Assembly. The attending representatives discussed and approved the *Collective Agreement and the Special Agreement for Female Employees* revised in line with the latest regulations and related guidance. The union chairman, representing all employees, signed the above agreements with the Company. The revised Collective Agreement primarily covers topics such as labor compensation, working hours, rest and leaves, labor contract management, labor safety and hygiene, insurance benefits, vocational training, provisions in the collective contract, and supervision and inspection, ensuring all employees are protected under the *Collective Agreement*. The revised *Special Agreement for Female Employees* focuses on strengthening the provisions on the protection of female employees' legal rights and interests, as well as their special interests.

The *Collective Agreement* and the *Special Agreement for Female Employees* are valid for three years. In 2025, the Company plans to conduct a new round of equal negotiations based on the actual conditions and sign new ones in early 2026 to better safeguard the legal rights and interests of all employees, protect female employees' legal rights and interests, as well as their special interests.

Smooth Communication Channels for Employees

The Company respects employees' rights to express reasonable demands and is committed to building smooth communication and feedback channels. It implements regular communication between employees and supervisors, as well as a mechanism for talent discussions. Employees can seek consultation and assistance through channels such as employee representative assembly, joint meetings, the labor union, the labor dispute mediation committee, collective bargaining, and management communication.

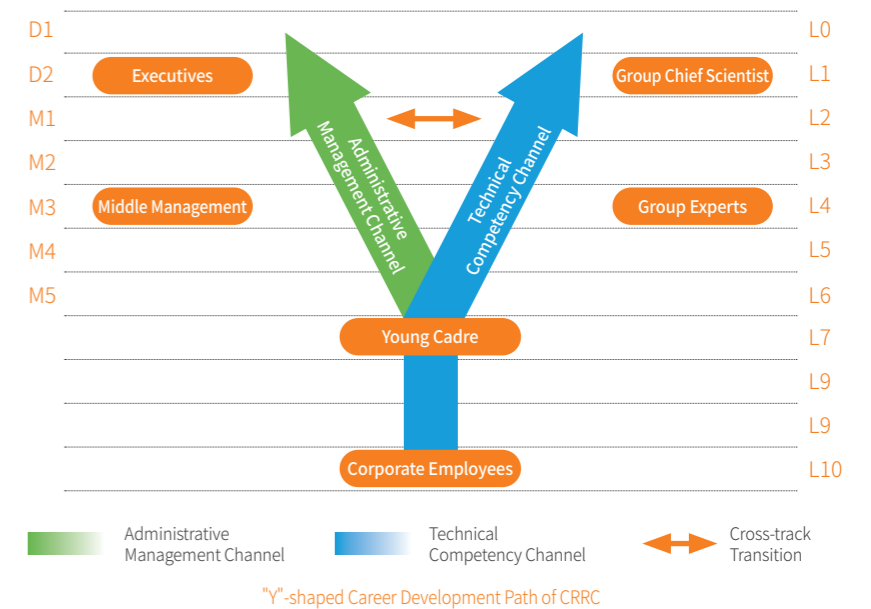
A satisfaction survey system has been established for employees. With a focus on issues that are commonly concerned by employees, such as career development, training and development, reform and innovation, corporate culture, and work environment. Satisfaction survey questionnaires have been designed and distributed on an annual basis, and the feedback was received through all-staff (employee representative) meetings to ensure smooth communication channels and gather employee suggestions. During the reporting period, a satisfaction survey was conducted once at the headquarters level through a questionnaire, with an overall satisfaction rate of 97.5%. At the subsidiary level, ongoing surveys were conducted in a tiered and categorized manner. Based on the results of the satisfaction survey, the Company conducted a thorough analysis of the research data, systematically reviewing employee feedback, focusing on common and key issues, and promptly optimizing management strategies to continuously improve employee satisfaction and sense of belonging.

Promoting Talent Growth Together

Career Development

The Company ensures smooth career development paths for employees, improves the talent training system, and provides a favorable environment for employee growth.

The Company continuously implements systems such as the *Measures for the Management of Core Technology Leading Talents* and systematically classifies the five levels of "CRRC Chief Scientist, CRRC Scientist, CRRC Chief Expert, CRRC Senior Expert, and CRRC Expert". It steadily advances a dynamic management mechanism of "selection every two years, contract renewal every four years," constructing a "Y-shaped" career development path that integrates management and technology. It has improved and implemented an "eight-level" vocational skills (positions) evaluation mechanism, improving the skill talent evaluation system that is oriented towards professional abilities, focuses on work performance, emphasizes the cultivation of craftsmanship spirit, and fosters professional ethics development, and has established a development pathway for skilled talent following the "8+5" model (i.e., chief technician, specialist master technician, senior technician, technician, advanced worker, intermediate worker, junior worker, apprentice, and recipients of the China Skill Prize, chief skill expert, senior skill expert, skill expert, and subsidiary skill experts) and strengthened the cultivation of "dual-teacher" talents.



The Company promotes a multi-level position management system, providing clear promotion channels and support measures. For position changes and internal transfers, dynamic management principles are applied, allowing core talents to apply for promotion or contract renewal based on the results of the contract period assessment and performance contribution. It also systematically advances the selection and training of young cadres, strengthens the linkage between performance evaluations and remuneration distribution, and carries out talent evaluation reviews in an orderly manner to fully stimulate the vitality of talents.

During the reporting period, the Company adhered to a performance-oriented approach, revised and implemented core talent evaluation standards, and completed the selection of core talents, title assessments, and vocational skill evaluations. The Company appointed 22 new scientists, 200 chief experts, 866 senior experts, and 2,912 experts. Additionally, an additional 341 employees received senior professional titles and 1,756 received advanced professional titles. There was also an addition of 19 specialist master technicians, 653 senior technicians, and 1,074 technicians. The scale of "dual-teacher" talent continued to expand, with 39 skilled workers awarded senior engineer titles, and 39 technology talents awarded senior technician titles.

Training System

The Company deeply practices the talent concept of "leading with talent first," continuously improves the employee training management system, and enhances the focus on professional skills training. The Company focuses on the urgent needs of various talent teams' capability building, and following the laws of employees' career development, it scientifically and systematically develops and implements the Company's *2024 Training Plan*, aiming to promote the training and development of various talents and empower employees at all business positions and levels.

Leadership Training

The Company focuses on leadership development and has developed a "Politician + Specialist" standard system for high-quality and specialized enterprise leadership personnel. It has established a four-tiered leadership training and development system, ranging from "Basic, Development, Excellent, to Outstanding," aimed at company leaders, business backbones, high-skilled talents, and management personnel at all levels. Additionally, it has organized training programs on political literacy, management abilities, digitalization, and internationalization. During the reporting period, courses such as the Senior Digital Economy Workshop, Industrial Engineering Management, Marketing, and Project Management were held, aiming to help managers grow in leadership and professional capabilities.

In terms of training for corporate leadership, an international leadership development training session has been organized to strengthen the professional management training of leaderships. By benchmarking and engaging in exchanges with internationally leading companies, the program focuses on learning advanced concepts of modern corporate governance. The emphasis is on enhancing strategic thinking, international perspective, corporate governance, and the ability for reform and innovation, with a focus on strengthening the capabilities of leaderships.

In terms of leadership training for business backbones, efforts have been made to continuously strengthen the development of management talent pool. The innovative "Training + Further Education" model has been implemented, with a systematic approach involving 4 training modules: "Course Guidance, Case Analysis, Benchmark Visits, and Overseas Study Programs." The focus is on broadening international perspectives, introducing new concepts, and inspiring new ideas, aiming to comprehensively enhance the professional quality and performance capabilities of management talents, while continuously strengthening the development of the management talent pool.

In terms of leadership training for highly skilled talents, systematic training has been carried out through programs such as skills enhancement training courses and management empowerment training courses for the digital age.

The Company continuously strengthens the construction of the training management system and deepens the application of the "CRRC Learning Cloud Platform." A tiered and categorized video course library has been established, covering courses on management practices and leadership training, among other topics. The aim is to enhance the overall competency, management skills, digital management capabilities, and technological innovation abilities of employees at all levels. The video courses are accessible to all employees.

Case

Organizing the Senior Digital Economy Workshop

The Company organized the senior digital economy workshop to support CRRC's high-quality development. Through providing professional theoretical guidance, sharing typical cases, visiting benchmark enterprises, holding dean forums, and conducting discussions and exchanges, the program aimed to enhance employees' digital leadership abilities.



Senior Digital Economy Workshop

Case

Organizing ESG Training

In May 2024, the Company organized an ESG training session to help the team enhance their strategic thinking and comprehensive management capabilities from the perspective of sustainable development. The training was attended by 103 employees from 62 subsidiaries at various levels. The content covered mainstream domestic and international ESG disclosure standards, ESG framework systems, and industry practices.



2024 ESG Training Session

Vocational Skills Training

For skilled talents, the Company organized a Skills Week event themed "Promoting Craftsmanship Spirit, Building a Strong Manufacturing Nation," aiming to implement and advance a three-year action plan to enhance their quality and capabilities. The initiative supports the growth and development of skilled talents through various activities, including advanced operational techniques, demonstration studio selections, innovative achievements exhibitions, and cutting-edge technology skills training.

Case

Focusing on Skill Competitions to Enhance Skills

Tangshan Branch established a horizontal-driven, vertically-guided, multi-level technical worker grid competition system, aiming to create gold medal workers through "work"-themed skill competitions.



Skill Competitions

Degree Courses and Certifications

The Company organized the Annual Staff Meeting of the National Rail Transit Equipment Industry-Education Integration Community. To fully facilitate collaboration channels between enterprises and educational institutions, the Company systematically advanced the coordinated development of key elements in vocational education — including major design, curriculum development, textbook compilation, teacher training, and training base construction. It also deepened industry-education integration and supported employees in obtaining academic degrees and relevant certifications for personal growth and advancement. Collaborations with prestigious universities such as Zhejiang University and Tongji University were established to organize training and selection programs for employees to pursue master's and doctoral degrees in engineering, and recommend employees to personally participate in major engineering research projects for further study. Following the principles of "voluntary registration, selective recommendation, rigorous assessment, and fairness," the selection of trainees, course design, and practical enterprise internships were carefully implemented. The scope of partner universities and the number of joint training quotas were significantly expanded. Employees with substantial engineering practice experience and key roles in major research projects, were recommended for further education. Corporate mentors and internship practice topics were recommended to partner institutions. Efforts were made to lead the joint training of integrated circuit talents, with a continued focus on building an exceptional engineering talent pool.

Case

Organizing the Overseas DLS Business Talent Training Session

The Company partnered with the Macau University of Science and Technology to offer customized teaching and strengthen cross-cultural communication and training across various professional disciplines, with a focus on enhancing the comprehensive business capabilities of DLS backbones.



Overseas DLS Business Talent Training Session

Supplier Safety Capability Training

The Company launched a program on the prevention of work-related injury throughout the supply chain, leveraging its own safety management advantages to establish an integrated "Help, Learn, Check, Practice, Supervise" system, addressing both "Dispersing" and "Blocking" issues using a point-to-surface approach. Through on-site support, safety empowerment, and the establishment of work-related injury prevention training bases, the Company led more than a hundred companies in the supply chain to improve their safety management levels.

Case

Special Guidance on the Prevention of Work-Related Injury throughout the Supply Chain

In October 2024, the Company organized in batches for the heads of 50 key supply chain enterprises, providing targeted guidance on the prevention of work-related injury across the supply chain, and distributing the *Work-related Injury Risk Manual for Small and Medium-sized Enterprises*. Through case analysis, interactive Q&A, and on-site visits to safety education and training bases, along with various practical scenario experiences, the training aimed to strengthen the learning and practice of safety management standards.



Special Guidance on the Prevention of Work-related Injury throughout the Supply Chain

During the reporting period

Employee training coverage reached **100%**

During the reporting period, the Company made continuous efforts to strengthen the construction of the training and development system, formulating and implementing the *Decoding the National Brand* strategic guidance, operational control, and practical case "Three-Step" development plan. It systematically developed 133 specialized courses with more than 1.5 million words and organized 60 company-level training sessions, covering over 7,700 person-times. Additionally, the Company strengthened the operation and application of the "CRRC Learning Cloud Platform" and the development of the video course system, promoting and establishing a total of 23 learning branches, and organizing and publishing over 1,200 video courses. An online training program for newly recruited university graduates was developed to provide online training for more than 3,400 new employees.

Employee Training Indicators		
Indicator	Unit	2024
Employee Training Coverage Rate	%	100
Male Employee Training Rate	%	100
Female Employee Training Rate	%	100
Senior Management Training Rate	%	100
Middle Management Training Rate	%	100
General Employee Training Rate	%	100
Number of Employee Training Sessions	Times	341,651
Annual Training Expenditure	10,000 yuan	22,088.45
Total Annual Training Duration	Hours	13,964,198
Average Training Duration per Employee	Hours	96
Average Training Duration Per Male Employee	Hours	97
Average Training Duration Per Female Employee	Hours	90
Average Training Duration Per Senior Management Employee	Hours	109
Average Training Duration Per Middle Management Employee	Hours	86
Average Training Duration Per General Employee	Hours	101

Building Safety Assurance

Safety Management

The Company values employee safety and occupational health, making continuous efforts to build a scientific and sound safety management system, advancing the standardization of safety production, thus laying a solid safety foundation for the Company's high-quality development.

The Company has established the "CRRC Safety Tower" safety production management system, with the Safety Production Committee led by the chairman and the president serving as the highest leadership body for safety production work, and a safety production responsibility system with the main responsible person assuming primary responsibility. It has appointed a safety director, set up safety management departments, and designated dedicated safety management personnel. Safety production responsibilities have been clearly defined and incorporated into the performance assessment criteria for each subsidiary, stipulating that the strategic and performance management departments are responsible for organizing and guiding the overall strategy, while the safety management departments are tasked with the specific implementation of safety production strategies and performance management mechanisms.

In accordance with regulations such as the *Measures for the Safety Production and Supervision Management of Central Enterprises*, the Company has included the safety production into the business performance evaluation system of responsible persons (chairman, president, and vice president). Any production safety accidents occurring within the evaluation period shall result in point deductions or demotion during the assessment, and the assessment results are closely linked to performance and remuneration. The Company has established the *Regulations on Safety Production Reward and Punishment*, linking the performance evaluation of responsible persons in subsidiaries to safety production responsibility accidents. Based on the frequency and impact of accidents, penalties such as written warnings and salary deductions shall be imposed. Where 1,000 consecutive days of safe production are achieved, rewards shall be given to relevant department and enterprises to promote continuous optimization and improvement of safety management.

Following relevant regulations and standards, including the *Safety Production Law of the People's Republic of China*, *Prevention and Control of Occupational Diseases Law of the People's Republic of China*, and the *Requirements for Occupational Health and Safety Management System*, the Company has prepared the *Safety Management System Compilation*, which includes 35 safety production and occupational disease prevention management regulations, such as the *Regulations on the Management of Safety Production*, the *Regulations on All-Employee Safety Production Accountability*, the *Regulations on the Management of Occupational Health*, and the *Regulations on the Management of Emergency Response Plan*, covering the business sectors, branches, and operational processes of all subsidiaries, spanning the entire value chain - from product development and manufacturing to after-sales service - and establishing a safety management system with clearly defined responsibilities, comprehensive safety risk identification, clear reward and punishment mechanisms, and well-established emergency response plans.

During the reporting period, 15 new safety management system standards were added, and 8 existing ones were revised, further strengthening the basis of safety production management.



As of the end of the reporting period

All manufacturing subsidiaries had obtained ISO 45001 Occupational Health and Safety Management System certification.

Supplier and Contractor Safety Management

In terms of contractor and supplier safety management, the Company has developed the *Regulations on the Safety Production Management of Related Parties*, adhering to principles such as "Three Regulations and Three Musts," "whoever assigns the contract is responsible for the management and accountability," and "local management." Based on safety risks and management authority, contractors and suppliers of different natures are subject to integrated safety management, safety supervision management, and chain safety management, respectively. The Company provides safety training for contractors and suppliers before they enter the premises, standardizes operational procedures and accident emergency response processes, ensures the proper provision of protective equipment, and regularly conducts safety supervision work.

The Company clearly stipulates in the *Regulations on the Safety Production Management of Related Parties* the following:

For suppliers and contractors, key areas to be audited include the scope of operations, registered capital, outsourcing (labor) contracts, labor contracts, basic information of employees, personnel qualifications, insurance, health conditions, educational level, accident history, safety training, accident risk tolerance, and other related factors. The principle requires certification through occupational health and safety management systems or second-party audits. The competent authorities shall strictly review and approve; those with no legal qualifications or who fail to meet the relevant safety production laws and regulations shall not be allowed to enter into contracts or agreements.

For labor dispatch parties, process outsourcing parties, in-plant logistics and transportation providers, equipment maintenance service providers, and other related parties (suppliers and contractors), production safety responsibility accidents shall be incorporated into the Company's internal control indicators and evaluated according to standards. An annual safety production performance evaluation shall be conducted, and a negative list and exit mechanism for related parties shall be established. Priority shall be given to related parties with high reputations and excellent safety performance.

For equipment engineering operators, infrastructure construction contractors, external transportation providers, commuting service providers, leasing parties, and other service providers, safety supervision and inspection shall be implemented. Where they fail to comply with national safety production laws and regulations or the Company's safety production rules and fulfill their safety management responsibilities, have disordered safety management, ineffective hazard mitigation, or experience production safety accidents resulting in personal injury or property damage, the Company shall have the right to pursue economic and legal responsibility according to the relevant clauses in the contract or safety agreements.

Safety indicators for contractors (outsourced personnel) shall be systematically managed, specifically including the "number of work-related fatalities," "ratio of work-related fatalities," "work days lost due to work-related injuries," "lost time work-related injury rate," and "total recordable accident rate." Each year, the safety production performance of such contractors shall be evaluated. For contractors who fail to meet the safety performance standards, a negative list and exit mechanism for related parties shall be established, with priority given to contractors with high reputations and excellent safety performance.

Risk Prevention

In accordance with the *Guidelines for the Construction and Implementation of the Safety Production Risk Classification and Control System*, the Company identifies and assesses potential safety production and occupational health risks during operations and manufacturing processes. It conducts a comprehensive analysis of various risk sources and their potential impacts based on hazard source identification. Through systematic evaluation, risk priorities are determined, and corresponding control measures are developed and implemented to effectively reduce and prevent safety risks.



Occupational Health and Safety Risk Management Process

In accordance with the risk classification and control procedures, a comprehensive identification process is organized at least once a year. The risk database, risk control checklist, and other related content are updated in a timely manner based on changes in risk points, hazard source identification, and risk evaluations. A risk assessment activity is also conducted, performing a comprehensive and systematic evaluation, preparing a safety risk assessment report, and providing improvement comments to continuously enhance the effectiveness of risk control.

Actions and Measures

Continuously strengthen the safety protection and development of occupational disease prevention systems. Based on systems such as the *Safety Production Responsibility Assurance System* and *the Regulations on the Management of Safety Inspection and Hazard Control*, regularly conduct comprehensive checks, daily inspections, and special inspections for each subsidiary in terms of system construction, safety management systems, emergency response plans, safety education and training, hazard investigation, the development and implementation of safety operating procedures, and other matters. Promptly issue rectification notices for identified issues and actively follow up on the implementation of corrective actions. Promote the effective enforcement of the system through audit inspections to fully safeguard the safety and health of employees and related parties.

Safety Production Grade Evaluation

Following the principle of "one batch per year, full coverage within three years," the 2024 safety production grade evaluation for was conducted for 29 enterprises in 5 groups, identifying and rectifying 1,411 issues.

Safety Hazard Investigation and Rectification

Focus on six key areas of safety hazard investigation and rectification for electric vehicles, fire safety inspections for rental assets, special inspections for safety production expenses, safety checks in high-risk accident areas, safety hazard inspections during the flood season, and safety risk management for overseas projects to comprehensively perform safety management.

Improvement of Safety Emergency Response Systems

Establish a domestic "1+13+N" emergency response system (1 general plan, 13 specialized plans, and several site handling plans and emergency cards). Establish an overseas "1+10+N" emergency system (1 general plan, 10 specialized plans, and several emergency response videos), along with a "1+17" safety assurance system (1 guiding opinion, 17 specialized plans and guidelines).

Safety Capability Building

Accelerate the digitization of safety, promote the transformation and upgrade of the Safety Tower Operation Platform, Safety Network Digital Intelligent Management Platform, Global Emergency Command Center, and other safety platforms, and use digital means to improve safety management efficiency and accuracy.

Safety Training

Innovate the safety training model by introducing the "Safety Murder Mystery" format. Strengthen safety capacity building and conduct 13 sessions of rotating training for full-time safety management personnel, with a total of 1,142 individuals obtaining safety production management qualifications.

Prevention and Control of Occupational Diseases

Continuously strengthen the management of occupational disease prevention, effectively preventing, controlling, and eliminating occupational disease hazards in the working environment in accordance with the *Procedures for the Prevention and Control of Occupational Diseases* and the *Regulations on the Prevention and Control of Occupational Hazards*.



Safety Objectives

As of the end of the reporting period, the Company has achieved the "zero" target for safety production-related fatalities, Class 1 fire accidents, and newly diagnosed occupational diseases for five consecutive years. During the reporting period, employees lost 5,114 workdays due to work-related injuries, resulting in a lost-time injury rate of 0.38. Contractors and outsourced workers lost 785 workdays due to work-related injuries, with a lost-time injury rate of 0.19. As of the end of the reporting period, the safety performance objectives set for 2024 have been fully achieved. The Company has established safety performance objectives for 2025 at the end of the reporting period, and a safety assurance plan will be gradually implemented in 2025 to ensure the completion of safety performance. The safety performance objectives set by the Company for 2024 and 2025, along with their completion status, are detailed in the table below:

Indicator	Unit	Target Value for 2024	Actual Value in 2024	Target Completion in 2024	Target Value for 2025
Safety production-related fatalities	Cases	0	0	Achieved	0
Class I fire accidents	Cases	0	0	Achieved	0
newly diagnosed occupational diseases	Cases	0	0	Achieved	0
Work-related fatalities of full-time and part-time employees	Persons	0	0	Achieved	0
Work-related fatalities of contractors/outsourcing personnel	Persons	0	0	Achieved	0
Lost time work-related injury rate of full-time and part-time employees [*]	/	<1.0	0.38	Achieved	<1.0
Total recordable accident rate of full-time and part-time employees [*]	/	<1.0	0.51	Achieved	<1.0
Lost time work-related injury rate of contractors/outsourcing personnel [*]	/	<1.0	0.19	Achieved	<1.0
Total recordable accident rate of contractors/outsourcing personnel [*]	/	<1.0	0.33	Achieved	<1.0

The Company has developed contingency plans in advance for potential restructuring and layoff compensation. In case of a restructuring, the Company has a clear severance compensation policy for employees whose positions are affected, ensuring that their basic livelihood is protected during the transition period. At the same time, the Company actively carries out redeployment efforts, matching employees to other suitable positions within the Company based on their skills and experience wherever possible.

2024 Occupational Health and Safety Indicators



Safety Production Investment
RMB 526.42 million

Coverage Rate of Safety Production Liability Insurance
100%

Person-times of Employees Receiving Safety Production Training
519,178 person-times

Occupational Health Expenses
RMB 24.25 million


* The calculation formula is detailed in Appendix I

Committed to Social Welfare

The Company is committed to promoting sustainable social and economic development and implementing the national requirements on rural revitalization and social welfare. Through various public welfare and assistance programs, the Company actively fulfills its social responsibilities.

Public Welfare Activities

The Company actively fulfills its social responsibility by promoting knowledge dissemination and cultural interaction through the "CRRC Eco-connect Center" Exchange Center platform and the "Starry Sky Project" science popularization initiative. Volunteers are organized to participate in community services, Lei Feng volunteer activities, environmental protection efforts, and other public welfare initiatives to spread warmth and goodwill to society.

 During the reporting period

The Company organized **59** public welfare activities, with over **6,000** participants and a total of **200,000** hours of volunteer service.

Case

Launching the "CRRC Eco-connect Center" Exchange Center

The "Lyuchi" Exchange Center (Indonesia) is dedicated to fostering connections through vehicle. It displays cutting-edge rail transit equipment and fosters Sino-Indonesian cultural interactions. More than 10 science popularization lectures and business-cultural exchange events have been held, with over 500 participants in total.



Official Launch of the "Lyuchi" Exchange Center

Case

Developing the "Starry Sky Project" Science Popularization Program

The Company launched the "Starry Sky Project" science popularization initiative leveraging new media platforms to release various forms of science popularization content on topics such as the CR450 EMU and new energy locomotives, aiming to promote China's advancements in high-end equipment manufacturing and advocate for railway heritage preservation.



Launch of the "Starry Sky Project" Science Popularization Initiative

Rural Revitalization

The Company adheres to the approach of "industry-led, coordinated development, and bridging gaps," continuously improving its assistance model featuring "multi-dimensional support and full-scale efforts". Solid progress has been made in the five key aspects of rural revitalization. During the reporting period, the direct assistance funds amounted to 22.11 million yuan, and 21.06 million yuan was introduced; 15 assistance projects were implemented and 1 new project was introduced, assisting 4 leading enterprises and 3 rural cooperatives and providing 230 previously impoverished people with job transfer opportunities; agricultural products worth 40.62 million yuan were purchased and sold under assistance from designated assistance counties, while agricultural products worth 770,000 yuan were purchased from other previously impoverished regions; the Company actively organized and participated in the "Central Enterprise Consumption Assistance" and "Spring Festival Consumption Assistance Initiative by Central Enterprises," contributing to agricultural product sales totaling 18.82 million yuan.

Case

Industrial Revitalization – Revitalizing Rural Communities through the Nut Industry

The Company explored a "shareholding cooperation + asset leasing" model to promote localized processing in the nut industry, driving an increase of over 7.6 million yuan in collective village economies across 38 villages and creating job opportunities for 250 local residents, contributing to border area development, rural prosperity and income increase.



Nut Processing Project in Kangcheng Community

Case

Talent Revitalization – "Swan Project" Leadership Enhancement Training for Rural Revitalization

In July 2024, the Company successfully held the "Swan Project" leadership enhancement training session for rural revitalization in the supported areas. Since 2018, the project has been held for 7 consecutive years, training a total of 556 grassroots leaders and rural cooperative leaders from the supported regions.



2024 Rural Revitalization Leadership Enhancement Training Session - the "Swan Project"



Win-win CRRC

- High-quality Products and Services — 68
- Upholding an Innovation-driven Approach — 70
- Building a Sustainable Supply Chain — 74

UN SDGs



High-quality Products and Services

Quality System

CRRC upholds the principle of quality first, strictly adhering to product quality control standards to provide customers with safe, efficient, intelligent, and eco-friendly rail transit solutions, and continuously enhance customer experience and satisfaction.

The Company has established the "CRRC-Q" quality management system, which centers on the rail transit equipment industry while extending across all business segments, covering processes such as manufacturing, after-sales service, talent management, quality risk control, supplier collaboration, and full life-cycle services. It has formulated the *Quality Management Provisions*, the *Measures for the Management of Special Quality Audit*, the *Quality Accident Investigation and Handling Measures*, and other management systems to establish the quality management framework and quality and safety responsibility management mechanism, clarify the quality responsibilities at all levels of the organization, and standardize quality management operations.

In accordance with ISO 9001, ISO 22163, and other applicable quality management system standards, the subsidiaries develop a quality management system covering the entire product process, exerting effective control over requirement identification, R&D and design, material procurement, production and manufacturing, after-sales operation and maintenance, and other processes. They also establish a product recall management mechanism to ensure compliant product quality following regulatory requirements set by the National Railway Administration and other government agencies.

In terms of international product quality control, the Company has developed the *Measures for the Management of "System" + (DLS) Business Quality* and the *Measures for the Management of International Business Products' Quality*. In the area of technical management and quality standards, the Company has formulated the *Measures for the Management of Wind Power Complete Unit Technologies* and the *Specifications for the R&D of Wind Power Products*, as well as quality and safety standards for hydrogen energy and lithium batteries. Additionally, it has published six safety technical specifications, including the *Safety Technical Specifications for Lithium-ion Battery System Applications* and the *Safety Technical Specifications for Hydrogen Energy and Fuel Cell System Applications* that covers hydrogen production, storage and transportation, hydrogen refueling, system applications, vehicle applications, and other processes.

As of the end of the reporting period, all primary manufacturing subsidiaries have obtained the ISO 9001 Quality Management System certification. Some subsidiaries have also obtained certifications for the ISO 22163 Railway Quality Management System, IATF 16949 Automotive Industry Quality Management System, EN 15085 Welding System, DIN 6701 Bonding Quality Management System, and other international and industry-specific certifications.

Risk Control

The Company pays close attention to the evolving demands of customers for higher-quality products and services. It proactively adjusts its strategic deployment, and takes various measures to ensure that every stage of product design, production, and delivery is fully compliant with customer requirements. The Company strictly implements product service and recall management mechanisms, including the *Measures for the Management of Product Application and Maintenance Services*, the *Measures for the Management of Defective Product Recall*, the *Measures for the Management of On-site Failure Disposal*, and the *Non-conforming Product Control Procedures*. Comprehensive services such as repair, expert support, and product optimization are provided to ensure timely response to product quality issues and their effective resolution.

At key stages such as demand identification, R&D and design, material procurement, production manufacturing, and after-sales operation and maintenance, the Company strictly enforces quality inspection and control measures. It organizes quality management maturity evaluations to address root causes of quality issues. During the reporting period, the Company conducted special quality inspections for 16 new energy equipment subsidiaries, and regularly tracked the progress of issue improvements. It carried out root cause quality issue rectification, and planned "N-Prevention" quality and safety management actions for its new energy equipment subsidiaries, focusing on the prevention and control of potential quality risks in wind power, energy storage, photovoltaic, and other products.

Quality Culture

The Company actively participates in the revision of domestic and international standards, and promotes the "CRRC Q" standard concept. Currently, quality safety management, project hierarchical management, and other methods have been integrated into the ISO 22163 Railway Industry Quality Management System Standard. It organizes and conducts "Quality Month" activities and special training to comprehensively enhance employees' quality awareness.

Case

Conducting the "Quality Month" Series Activities

In September 2024, with the overall goal of "Revitalizing the Brand (Quality Excellence) Year" for quality work, all levels of subsidiaries were organized to conduct the "Quality Month" activities, aiming to create a positive atmosphere where everyone cares about, values, creates, and enjoys quality.



Site of the "Quality Month" Activity

Case

Special Training for the ISO 22163 Standard

In 2024, the Company organized relay training sessions focused on the key points and content changes of the ISO 22163 standard, further strengthening quality support.



Special Training for the ISO 22163 Standard

During the reporting period, the Company received no administrative penalties concerning the safety and quality of products and services, and experienced no product withdrawals and recalls due to quality safety reasons.

Information Security

Following the *Data Security Law of the People's Republic of China*, the *Cybersecurity Law of the People's Republic of China*, and the *Measures for the Administration of Data Security in the Industrial and Information Field (Trial)*, the Company has formulated systems such as the *Network Management Measures*, the *Measures for the Management of Data Security*, the *Specifications for the Classification and Grading of Data Security Technical Data*, and the *Measures for the Management of Data Entry and Exit* to continuously improve its data management system and standards, and regulate internal data management activities, with a focus on protecting customer privacy during the acquisition and use of customer information. Subsidiaries, under the unified data system, have formulated and implemented their specific rules according to their actual conditions. As of the end of the reporting period, 21 subsidiaries in total had obtained ISO 27001 certification.

The Company has researched and formulated an overall data security management plan to advance the identification of important data, data classification and grading, and data security risk assessments. It has conducted commercial encryption application security assessments to achieve the application of commercial encryption technology in Level 3 protection system and safeguard network and information security. Additionally, it has built a unified data management platform to perform the identification of sensitive data, and organized information security training activities to enhance employees' data governance and cybersecurity capabilities.

During the reporting period, the Company was honored with the title of "Leader" in China's industrial data governance and experienced no incidents of customer privacy leakage.

Upholding an Innovation-driven Approach

Technological Innovation System

The Company is steadfast in making technological innovation a core strategy, adhering to independent, open, and collaborative innovation, aiming to establish an internationally leading rail transit equipment product system and knowledge system to provide strong momentum for "CRRC Creation" and "Chinese Creation."

The Company has formulated the *Measures for the Management of Scientific and Technological Innovation Evaluation*, the *Guiding Opinions on the Reform of the Science and Technology System*, and the *Management Measures for the Construction of Overseas R&D Centers* to enhance technological research and product R&D capabilities, and ensure standardized management of research project applications and new product development.

The Company continuously innovates to maintain technological competitiveness and sustainable development, and relentlessly optimizes the technological research system and strengthens the product R&D system to advance the shift from "product-driven technology" to "technology-driven products." It improves the collaborative innovation mechanism, builds a market-based technology trading mechanism, and accelerates internal technology conversion and incubation to achieve rapid transformation of technological achievements, industry structural transformation, and vertical development. A scientific and technological innovation evaluation system is built to optimize innovation resource allocation, enhance technology management levels, and improve the effectiveness of scientific and technological.

Innovation Capabilities

The Company has revised the *Measures for the Management of Specialized Technology R&D Centers* and the *Measures for the Management of Overseas R&D Centers* to continuously strengthen the capability of scientific and technological innovation. It has developed the *Measures for the Management of the National High-Speed Train Technology Innovation Center (Trial)* to promote collaborative construction of the National High-Speed Train Technology Innovation Center, and jointly funded with the National Natural Science Foundation of China to establish a joint innovation and development fund for enterprises in the fields of rail transportation equipment and clean energy equipment, with 26 guidelines released in the first phase.

The Company continuously promotes digital and intelligent transformation integration, and has formulated the work plan for the construction of the "1 Guideline + 4 Specifications" system for R&D digitalization. It has established the artificial intelligence leadership group and set up a digital intelligence business unit to form the overall development plan for artificial intelligence, as well as implementation plans for scenarios, industries, and common technologies. It has made efforts to advance the construction of the CRRC intelligent manufacturing system, drafted the *Intelligent Manufacturing Capability Maturity Model and Methods for Rail Transportation Equipment*, and established 4 digital workshops and 27 intelligent production lines.

Case

Establishing the World Vocational and Technical Education Development Conference

In November 2024, the World Vocational and Technical Education Development Conference was established. The Company, as the initiating unit, is committed to promoting the internationalization of vocational education and constructing a high-level integration of industry and education for the national rail transportation equipment sector.



Establishment site of the World Vocational and Technical Education Development Conference

Case

Innovative Achievements at the World-class Rail Transportation Equipment Exhibition

In September 2024, the Company participated in the International Trade for Transport Technology (InnoTrans) in Berlin, Germany, fully showcasing passenger and freight solutions as well as full life-cycle system solutions, and demonstrating the Company's technological innovation capabilities in green and low-carbon areas.



InnoTrans in Berlin, Germany

As of the end of the reporting period, 11 national-level R&D institutions (including 2 national innovation centers), 22 nationally-certified technology centers, 18 overseas R&D centers, and 17 specialized technology R&D centers within CRRC have been established. The Company employs 19,000 R&D personnel, including 873 high-end talents (experts at or above the senior technical series of CRRC), with 2 individuals receiving the National Engineer Award.

Innovation Achievements

During the reporting period, the total R&D investment amounted to 16,685,588,000 yuan, accounting for 6.77% of total revenue, with R&D personnel representing 13.90% of the total workforce. The Company led or participated in 9 international standards, 100 national standards, 23 industry standards, and 63 group standards. As of the end of the reporting period, the "Fuxing High-Speed Train" project won the grand prize of the 2023 National Award for Science and Technology Progress.

Case

The CR450 EMU Prototype was Released, Advancing the High-speed Rail Technology Innovation

In December 2024, the CR450 EMU prototype was officially released, which was produced by Sifang Co., Ltd. and CRRG Changchun. The prototype incorporates new power devices and other key technologies, reducing its weight by 19.7% compared to the CR400 EMU, increasing power density by 45%, and improving rated efficiency by 0.5%. The release of this EMU marks a significant breakthrough in technological innovation, offering a Chinese solution for the development of global high-speed rail technology.



CR450 EMU

Case

The Subsidiary Rolled off the Mainline Freight Diesel Locomotive for Export to Kazakhstan

In November 2024, CRRG Dalian rolled off the self-developed mainline freight diesel locomotive for export to Kazakhstan. This locomotive will serve as an important achievement in China and Kazakhstan's high-quality Belt and Road collaboration in rail transportation, further advancing the modernization of Kazakhstan's railways.



Export of Diesel Locomotives to Kazakhstan for its Mainline Freight

Intellectual Property

The Company has developed systems such as the *Measures for the Management of Intellectual Properties*, and issued the *Work Plan for the High-Quality Development of Intellectual Properties* and the *Measures for the Management of Technology Transfer*, embedding the concept of high-quality development into the entire chain of intellectual property creation, protection, management, and utilization. It has conducted a patent asset survey to solidify the foundation of intellectual property work.

As of the end of the reporting period, the Company had a total of 31,614 authorized patents. During the reporting period, 4,952 new patent applications were filed, including 3,673 new invention patent applications, and 1,733 authorized invention patents. It has won 14 China Patent Gold Awards, 13 Silver Awards, and 72 Excellence Awards in total.

Key Indicators of Technological Innovation

Indicator	Unit	2024
R&D Investment	10,000 yuan	1,668,558.80
R&D Investment Growth Rate	%	12.64
R&D Investment Percentage	%	6.77
Percentage of Growth Rate of R&D Investment	%	7.12
Number of R&D Personnel	Persons	21,138
Proportion of R&D Personnel	%	13.90
Number of Cumulative Authorized Patents	Pcs	31,614
Number of Cumulative Authorized Invention Patents	Pcs	17,110
Number of Patent Applications	Pcs	4,952
Number of Invention Patent Applications	Pcs	3,673
Number of Authorized Invention Patents	Pcs	1,733

Building a Sustainable Supply Chain

Management System

The Company continuously improves its supply chain management system, promoting the integration of ESG principles into the construction of the supply chain, continuously strengthening risk control, and performing supplier cultivation and empowerment. The goal is to integrate digitalization, intelligence, and sustainability across the entire industrial chain, and drive the improvement of sustainable supply chain performance.

The Company has established a "two-level, three-tier" management system. The "two levels" refer to the supply chain management headquarters of the industrial chain and primary subsidiaries. The "three tiers" include the Industrial Chain and Supply Chain Management Committee as the decision-making agency, the Industrial Chain Management Department and relevant business departments as the management, and subsidiaries as the operation body. During the reporting period, the Company revised and issued the *Supplier Management Measures*, covering 4 regulations: the *Regulations on the Management of Supplier Performance Evaluation*, the *Regulations on the Management of Supplier Misconduct and Blacklist*, the *Regulations on the Management of Overseas Suppliers*, and the *Regulations on the Management of Anti-Corruption and Anti-Bribery by Suppliers*, to standardize supplier qualification certification, performance evaluation management, and resource pool management mechanisms.



Supplier Qualification Certification, Performance Evaluation, and Resource Pool Management Mechanisms

Strategic Focus

The Company has formulated and issued the *Measures for the Management of Industrial Chain and Supply Chain's Resilience and Security*, focusing on risk control across nine key areas: strategic planning, supervision and evaluation, planning management, supplier management, procurement logistics, security resilience, digital transformation, green and low-carbon initiatives, and talent development. The goal is to strengthen the management of key supply chain links. The Company continuously deepens its "Comprehensive Procurement" strategy, reducing procurement costs and improving operational efficiency. Additionally, it advances the construction of "one network, one platform" to achieve standardized supply chain management.

Risk Management

For identified supply chain security, supply disruptions, and compliance risks, the Company has implemented digital management and training empowerment measures to improve supply chain management.



Case

Building a Good ESG Ecosystem for the Synergized Development of Supply Chain and Industrial Chain

On October 20, 2024, the Company hosted the "ESG China·Innovation Conference (Green Supply Chain Sub-Forum)" under the theme "New Quality Leadership and Industry-Driven: Practicing the Construction of a Green Supply Chain," aiming to establish a green and low-carbon supply chain ecosystem and promote the collaborative development of industrial chain partners.



ESG China · Innovation Conference (Green Supply Chain Sub-Forum)

Collaborative Development

With the goal of shared construction and mutual benefits, the Company advanced a "Five Unifications" management model, namely unified system standards, unified category management, unified supplier management, unified digital platform, and unified capability development, to coordinate the management of upstream and downstream supply chain. It issued the *Implementation Plan for Supplier Qualification Certification in 2024* and the *Notification on the Formulation and Release Process of Supplier Product Certification Implementation Rules* to gradually promote the sharing and mutual recognition of supplier and product qualifications. As of the end of the reporting period, 1 general rule and 62 specific product certification rules have been published, with 70 CRRC-level suppliers completing the unified qualification certification, promoting their mutual recognition and sharing.

Case

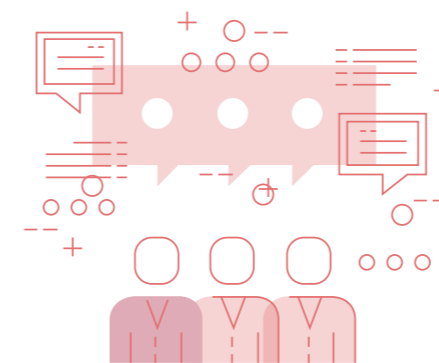
Establishing the "CRRC Supplier Management and Evaluation Center"

In June 2024, the "CRRC Supplier Management and Evaluation Center" was officially established, laying the foundation for building an innovation-driven, open and inclusive, co-built and shared, and mutually recognized and trusted supply chain ecosystem.



Inauguration Ceremony for the "CRRC Supplier Management and Evaluation Center"

Key Indicators of Supplier Management in 2024



Number of Suppliers by Region
37,072 Companies

Number of Suppliers in Mainland China
36,845 Companies

Number of Suppliers in Hong Kong, Macao, Taiwan, and Overseas
227 Companies

Number of Audited Suppliers
14,622 Companies

Number of Suppliers Suspended for Non-compliance
36 Companies



Excellence in Governance at CRRC

- Optimizing Corporate Governance — 80
- Upholding Business Ethics — 82
- Standardizing Compliance Operations — 85
- Strengthening Risk Control — 86
- Upholding Party Leadership — 87

UN SDGs



Optimizing Corporate Governance

Governance System

CRRC continuously strengthens the construction of its organizational structure. It clarifies the responsibility boundaries of the "Three Meetings", improves corporate governance mechanisms, and enhances the scientific nature and operational efficiency of decision-making, aiming to comprehensively establish a standardized modern corporate governance system.

Strictly adhering to the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, the *Code of Corporate Governance for Listed Companies*, and other laws and regulations, and requirements, the Company has formulated policies such as the *Articles of Association*, the *Notice on Further Standardizing the Board Construction of Subsidiaries*, and the *Measures for the Evaluation of Subsidiary Board*, establishing a "Three Meetings and One Level" corporate governance framework that comprises the Shareholder's Meeting, the Board of Directors, the Board of Supervisors, and the Management. This structure ensures clear authority and responsibility, as well as standardized operations, between the governing bodies, decision-making bodies, supervisory bodies, and executive management. The board of directors has four specialized committees: Strategy and Sustainability, Nomination, Remuneration Appraisal, and Audit Risk, providing multi-dimensional support for major decision-making.

During the reporting period, 2 Shareholder's Meetings were convened, with 13 resolutions approved; 11 board meetings were held, with 53 resolutions approved; 14 meetings of specialized board committees were held; and 6 external director research visits were organized.

Board Composition

Board appointments follow a merit-based selection principle, aligned with the Company's business model and specific needs. The Company has adopted a board diversity policy, with the Nomination Committee comprehensively considering factors such as gender, age, cultural background, professional expertise, and skills to continuously optimize the board's composition.

As of the end of the reporting period, the Board of Directors consists of 6 members, including 3 executive directors and 3 independent non-executive directors. They have expertise in business management, rail transit, law, administration, and accounting, ensuring independent and professional decision-making by the Board of Directors.

Remuneration Policy for Senior Management

The remuneration of Company senior management consists of a base salary and performance-based pay, closely tied to performance evaluations, which are determined based on the Company's annual operational performance and individual assessment results. The performance assessment covers performance in assigned areas, achievement of personal goals, team collaboration and other elements. Additionally, energy conservation and emission reduction, environmental protection, quality efficiency, technological innovation, and production safety are incorporated into the senior management performance assessment system and linked to sustainable development goals. For significant safety, quality, and environmental protection risks, a "one-vote veto" mechanism is applied in performance assessments. In cases of serious violations of national laws and regulations or failure to fulfill duties resulting in corporate asset losses, the Company may deduct or reclaim part or all of the awarded performance-based annual salary and tenure-based incentive income. The remuneration distribution plan for directors and senior management is reviewed by the Remuneration Committee of the board of directors, then submitted to the board of directors for approval, and finally approved by the shareholders' meeting.

Information Disclosure

Strictly adhering to the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, the *Guidelines for Investor Relations Management of Listed Companies*, the *Measures for the Management of Investor Relations*, and other relevant laws and regulations, the Company has formulated policies such as the *Measures for the Management of Information Disclosure* to ensure fair, just, and open disclosure while safeguarding investors' right to be informed about and other legal rights.

The Company has established an information disclosure system for stocks, bonds, and inter-bank markets, supported by a "five-in-one" collaborative working mechanism involving the chairman, board secretary, business departments, subsidiaries, and expert teams to ensure high-quality disclosures. It strengthens the quality of fundamental information sources, rigorously reviews disclosure content, and fulfills disclosure obligations. Additionally, it participates in major project communication and review processes to ensure standardized decision-making, timely disclosure, and compliance in areas such as external investments, guarantees, financial assistance, and related transactions.

During the reporting period, the Company issued more than 300 announcements in the stock market, corporate bonds and inter-bank markets, including annual reports, semi-annual reports, quarterly reports and related documents, as well as announcements of resolutions of the shareholders' meeting, the board of directors and the board of supervisors, and other major matters, achieving legal and compliant information disclosure throughout the year, with no false records, misleading statements, or material omissions, and no violations of information disclosure regulations. The information disclosure work was widely recognized by the capital market, regulatory authorities and professional institutions. The business performance assessment achieved 13 consecutive A ratings. Since the SASAC began evaluating board standardization, the Company has received an "Outstanding" rating for 6 consecutive years. Additionally, it has been awarded the "A-Level" honor in annual information disclosure for listed companies by the SSE for 9 consecutive years.

Investor Relations

The Company has established a regular communication mechanism, inviting directors, supervisors, and senior management to directly engage with investors and accurately interpret the Company's operational performance through regular performance briefings, telephone conferences, and press conferences. It also conducts reverse roadshows, inviting investors to visit production bases and demonstration centers to visually communicate the Company's value. Dedicated personnel are assigned to handle phone calls, receive emails, and respond to inquiries on the SSE's E-Interaction platform, ensuring efficient communication with investors. The Company focuses on nurturing key institutional investors, maintaining good relationships through calls, visits, and other means, and actively participates in investor education activities to guide investors toward rational investment decisions.

During the reporting period, the Company held 1 performance press conference, 2 performance roadshows, 1 reverse roadshow, 3 performance briefings, and 4 performance telephone conferences. In terms of honors, the Company won the "Golden Bull Most Investable Company in the Capital Market" award, the "Golden Information Disclosure" award, and the Investor Relations "Tianma Award". It also ranked in the "Top 100 Most Valuable Companies Listed on the Mainboard" by *Securities Times* and won the Gold Award at the LACP Vision Award for its annual report. Chairman Sun Yongcai received the "Golden Bull Outstanding Entrepreneur" award, and Board Secretary Wang Jian received the "Golden Bull Board Secretary" award.

The Company attaches great importance to the right to influence remuneration within its governance structure, ensuring shareholders' key rights and interests are safeguarded in remuneration decisions. According to the governance structure, shareholders have the right to vote comprehensively on remuneration policies and their implementation, covering policy content, payment amounts, and reports from the Remuneration Committee. Shareholders' voting rights extend to the overall remuneration policy and total remuneration, not limited to individual components, ensuring full participation in decision-making. The scope of votes includes all executive directors of the board of directors, allowing both collective and individual votes to respect shareholder autonomy. A once-a-year remuneration voting mechanism is implemented, ensuring continuous shareholder oversight and adjustment of remuneration policies to align with the Company's strategy and shareholder interests, thereby promoting the Company's stable development under a fair and reasonable remuneration system.

In response to the SSE's initiative to "enhance quality, improve efficiency, and focus on returns," the Company has formulated a special action plan, adhering to a prudent dividend policy while continuously balancing long-term development and investor interests. Since its reorganization and listing in 2015, the Company has performed cash dividend distribution annually, with the dividend distribution amount steadily increasing. The average annual dividend distribution ratio over the past three years was approximately 49%, achieving a win-win outcome with investors.

Upholding Business Ethics

The Company regulates the construction of the business ethics management system, focusing on areas such as anti-bribery, anti-corruption, advocating fair competition, maintaining open channels for reporting and complaints, supporting legitimate business competition, opposing unethical market transactions, and actively creating a healthy business environment.

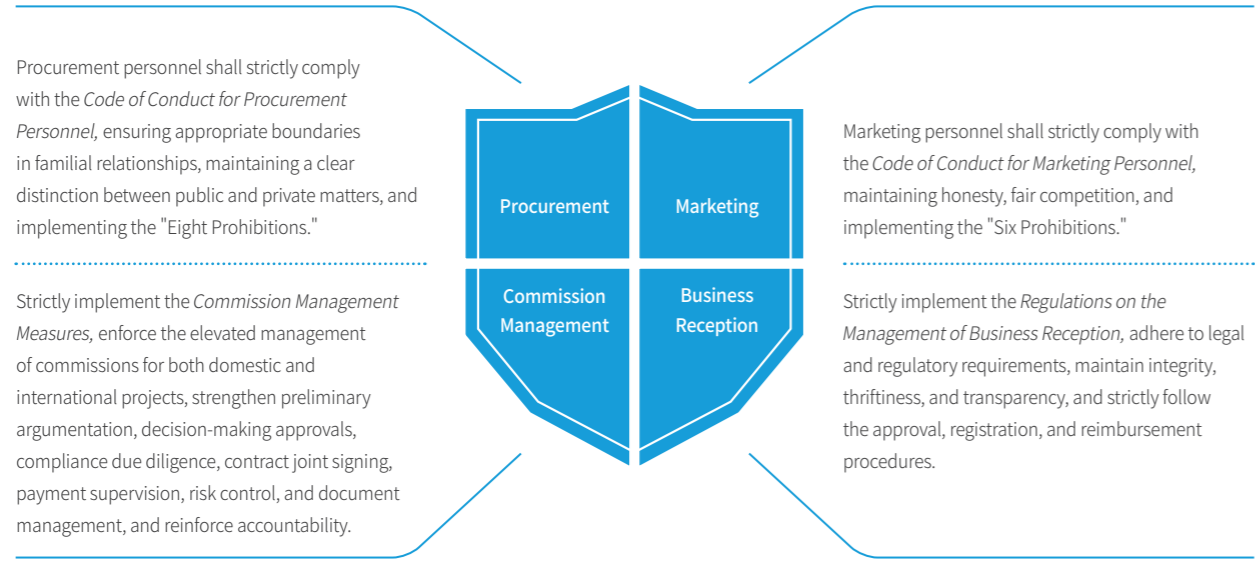
Integrity and Anti-corruption

Strictly adhering to the *Criminal Law of the People's Republic of China*, the *Company Law of the People's Republic of China*, the *Law of the People's Republic of China on Supervision*, the *Law of the People's Republic of China on Administrative Sanctions for Public Officials*, the *Regulations on Integrity in State-Owned Enterprise Leadership*, and other laws and regulations, as well as international principles and initiatives such as the *United Nations Convention Against Corruption*, the Company has formulated and issued documents including the *Guiding Opinions on Building a "All-in-One" Comprehensive Supervision System* and the *Measures for the Management of Anti-Corruption Compliance*.

An "all-in-one" comprehensive supervision system has been established, creating a joint meeting system for supervisory work to study key supervision matters. The leadership team (chairman, president, vice president) is the responsible entity for the management of anti-corruption compliance and internal supervision, and the dedicated supervision departments include the Discipline Inspection and Supervision Committee, the Inspection Office, the Audit Committee, and the Board of Supervisors. The Legal Compliance Department and Party Committee Cadre Department are responsible for key supervision, while departments such as HR and Finance perform business supervision functions. All departments are interconnected, forming a coordinated supervision effort to legally promote anti-corruption compliance.

Anti-corruption Risk Management

The Company implements a "zero-tolerance" policy toward corruption and categorizes projects based on areas where corruption is more likely, such as procurement and marketing, to identify and control integrity risks precisely.



Anti-corruption Supervision and Inspection

The Company conducts regular internal anti-corruption supervision and special inspections at least once per year, covering all Company operations, with a focus on elements such as the implementation of major projects and the governance of overseas corruption. It conducts progress meetings, research and supervision, talks, letter inquires and disciplinary inspections in a comprehensive manner to strengthen routine supervision, ensuring effective implementation of feedback from inspections. Actions violating anti-corruption policies shall be handled seriously, depending on the severity and

impact of the violations, through measures such as talks and reminders, criticism and education, rectification requests, and accountability. For key areas with concentrated power, intensive capital, and abundant resources, the Company urges subsidiaries to carry out "project approval supervision" to drive the construction of a long-term clean governance mechanism. Annual reviews of anti-corruption related system documents are conducted to ensure that they are binding in supporting anti-corruption efforts.

During the reporting period, 3 special notices on integrity supervision and inspections during holidays were issued, with subsidiaries urged to conduct over 150 supervisions and inspections in total.

Anti-corruption Training

The Company organizes anti-corruption compliance training, public awareness campaigns, and case warnings to actively cultivate an anti-corruption compliance culture. It has distributed an *Employee Integrity and Compliance Handbook* to all employees for ethics standards training, and educates part-time employees and outsourced personnel on compliance knowledge through various promotional activities to comprehensively raise compliance awareness across the Company.

During the reporting period, the Company held 2 warning education conferences for cadres, with nearly 12,000 person-times. Subsidiaries independently held 113 such conferences, involving 9,027 person-times of cadres and employees.

Review of Business Ethics Standards

The Company attaches great importance to business ethics and compliant operation-related issues, and has developed relevant system documents such as the *Code of Business Conduct* and the *Employee Integrity and Compliance Handbook* to regulate employee behavior and guide related operations. Internal supervision and inspection of business ethics standards are conducted regularly, with a frequency of once per year. The scope covers all business operations and addresses key issues such as anti-bribery, anti-corruption, employee conduct standards, and more. The Company remains vigilant to detect any violations of regulations or discipline, such as employee misconduct, fraud, or corruption. By promptly identifying and warning against abnormal behaviors, the Company ensures early detection, intervention, and resolution, effectively preventing various types of risks and ensuring that all responsible parties fulfill their duties, thereby promoting stable corporate operations.

Supplier Integrity

The Company has established the *Regulations on the Management of Anti-Corruption and Anti-Bribery by Suppliers* and implemented a dynamic supervision mechanism to monitor suppliers' corrupt behaviors throughout the entire process. It organizes subsidiaries at all levels to sign integrity commitment letters with suppliers and encourages suppliers to comply with anti-corruption and anti-bribery laws and regulations when cooperating with other enterprises. Suppliers who violate the integrity commitment or make false, deceptive statements, representations, or guarantees may be blacklisted based on the severity of their actions. In terms of supplier integrity training, the Company conducts at least one special supply chain integrity education session annually and strengthens suppliers' awareness of integrity through platforms such as the procurement and supply chain management system work meetings.

Key Indicators of Anti-Corruption Training in 2024

Number of Anti-corruption Training	Duration of Anti-corruption Training	Number of Employee Receiving Anti-corruption Training
116 Times	232 Hours	152,082 Persons
Percentage of Employees Receiving Anti-corruption Training	Number of Directors Receiving Anti-corruption Training	Percentage of Directors Receiving Anti-corruption Training
100 %	6 Persons	100 %

Anti-unfair Competition

Strictly adhering to the *Law of the People's Republic of China Against Unfair Competition* and the *Anti-Monopoly Law of the People's Republic of China*, the Company continuously implements the *Code of Business Conduct*, the *Employee Integrity and Compliance Handbook*, and other system documents to regulate the Company's operations and employee behavior. It strictly prohibits a series of unfair competition behaviors, such as false advertising and infringement upon trade secrets.

According to the *Code of Business Conduct*, employees shall conduct all business activities with integrity and compliance with the law. In marketing activities, they shall maintain the principles of honesty and transparency and ensure the authenticity and accuracy of all marketing information. Fair competition shall be upheld to obtain business opportunities, and it is prohibited to win business through providing improper benefits to others. Employees shall not discuss sensitive competitive information, such as pricing and costs, with competitors, nor shall they obtain competitors' confidential information through illegal means or maliciously spread false information about competitors or other products or services.

Whistleblowing Mechanism

The Company has established a complete supervision and assurance mechanism, which is coordinated by the Compliance Committee, with the Discipline Inspection Commission and Legal Compliance Department jointly managing reports of violations, and the Audit Department and other business departments collaborating based on their respective responsibilities to conduct investigations into reported violations. In accordance with the relevant guidelines issued by the General Office of the CPC Central Committee and the General Office of the State Council, such as the *Implementation Rules for the Central Committee's Eight-Point Decision* and the *Implementation Opinions on Strengthening Work Style Construction*, the Company has formulated the *Measures for the Management of Petition and Whistleblowing by the Disciplinary Inspection Committee* and the *Regulations on the Management of Violation Whistleblowing*, which define the management processes for receiving and investigating reports to ensure timely acceptance and handling of violations of laws and regulations, following the principles of "tiered acceptance, division of responsibilities, fair investigation, and protection of whistleblowers" to organize the work.



Employees or business partners of the Company may report violations related to national laws and regulations, regulatory provisions, industry standards, international treaties and rules, the articles of association, and other rules and regulations during the Company's operation and management, and employee performance through the whistleblowing platform.



Whistleblowers may report via various methods, including email, telephone, whistleblowing boxes, or visiting the reception room in person. The Company will assign dedicated personnel to handle reports and complaints, regularly collect and review the issues raised, and form a work log to conduct regular assessments. The following are the channels for reporting:
Whistleblowing email: weiguijubao@crccgc.cc
Whistleblowing Tel.: 010-51872519
Whistleblowing address: No. 16-5 West 4th Ring Road, Haidian District, Beijing, China



According to the *Regulations on the Management of Violation Whistleblowing*, the identity of whistleblowers and the information they provide is strictly confidential. The range of individuals with access to the information is limited to prevent leakage or dissemination. All personnel involved in handling the reports shall strictly follow the working procedures, safeguard the whistleblowing materials properly, and prevent the disclosure of the whistleblower's identity or the reported matters to the person reported or other unrelated parties. Retaliation against whistleblowers is strictly prohibited, and any retaliatory behavior resulting in negative consequences shall be subject to accountability or disciplinary actions.

Standardizing Compliance Operations

Compliance Management

The Company views compliance management as the cornerstone of sustainable development. It strictly adheres to both domestic and international laws and regulations to establish a comprehensive compliance management system with clear responsibilities and rights. By integrating legal and compliance management into business operations, the Company effectively controls key areas and projects, reduces operational risks, and enhances its reputation and market competitiveness.

The Company has established the Compliance Management Measures and set up a Compliance Committee to advance the development of the compliance system in a coordinated manner, ensuring that compliance risks are accurately identified, timely alerted, and properly addressed. The Company continuously improves mechanisms for compliance review, reporting, rectification, whistleblowing, and accountability, reinforcing the system enforcement and supervision implementation to ensure compliance management covers all business processes. Personnel in important positions and key business areas are required to sign compliance commitment letters to ensure the fulfillment of their responsibilities and promote the establishment of a long-term compliance management mechanism. The Company emphasizes the importance of building a compliance culture and values employee compliance training, aiming to foster a culture of active compliance through the participation of all employees.

Case

Organizing the Advanced Workshop for Legal Compliance and Risk Prevention

The Company organizes training sessions, tailoring high-quality lecturer resources to the workshop, with a focus on enhancing the awareness of legal governance, compliant operation, and risk prevention among corporate leaders and cadres. The goal is to effectively improve their ability to identify, prevent, and resolve operational risks, thereby providing strong support for accelerating the construction of a world-class legal system at CRRC.



The Advanced Workshop for Legal Compliance and Risk Prevention

Key Indicators of Compliance Training in 2024



Number of Legal Compliance Training
513 Times

Duration of Legal Compliance Training
1,382 Hours

Person-time of Employees Receiving Legal Compliance Training
42,017 Person-times

Tax Transparency

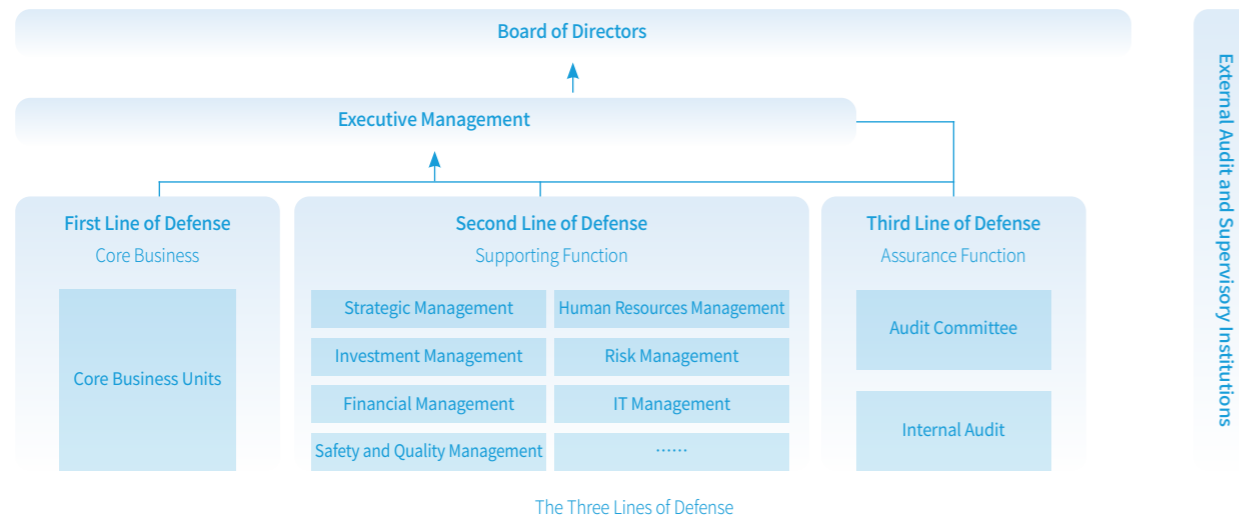
The Company adheres to legal tax payment and strictly complies with national tax regulations. It emphasizes tax risk management, requiring each subsidiary to conduct tax self-inspections each year, with at least one tax risk self-inspection per year, and reflect the self-inspection results and corrective actions in the annual tax summary report for comprehensive review and evaluation. Each year, a third-party organization is engaged to issue an annual corporate income tax declarations and audit report to ensure the accuracy, transparency, and compliance of tax declarations and payments.

Strengthening Risk Control

The Company has established a comprehensive risk management system to strengthen internal control construction and improve the effectiveness of such mechanisms, thereby ensuring the stable operation of the enterprise.

Risk Control System

Following the *Provisions on the Comprehensive Risk Management for Central Enterprises*, the *Basic Norms for Internal Control of Enterprises*, and other system documents, the Company has developed a risk management and internal control system, and in line with the "Three Lines of Defense" principle in risk management, it has established a comprehensive line of defense penetrating through each level ("point-line-surface + dual firewall") to ensure precise risk management and effective control.



The system consists of three levels: At the first level, 2 fundamental regulations - the *Comprehensive Risk Management and the Internal Control Provisions* - are formulated; At the second level, 9 specialized systems, 27 risk guidelines, and 13 risk manuals, as well as 28 internal control guidelines and 4 internal control manuals are formulated; At the third level, the *Risk Management and Internal Control Manual* is formulated.

The Company continuously promotes reforms in its risk control mechanism and system, optimizing risk identification, analysis, and response effectiveness. It strengthens supervision before and during key projects, ensuring comprehensive risk management throughout the process. In areas such as investment management and related-party transactions, it further enhances risk control and promotes the deep integration of risk management into the Company's high-quality development. In line with the *2024 Special Action Plan for Preventing and Resolving Major Risks*, the Company signs risk mitigation responsibility agreements with relevant subsidiaries to ensure accountability in risk management and resolution. For major decisions such as overseas project bidding and asset acquisitions, the Company strictly follows risk evaluation procedures for major projects to ensure scientific and compliant decision-making.

Internal Audit

The Company has established a framework based on the basic system outlined in the *Internal Audit Provisions*, focusing on 6 work plans such as the *Implementation Plan for Audit Management Reform* to develop 10 basic systems such as the *Economic Responsibility Audit Measures*, 9 internal audit practical guidelines, as well as a series of systems, including the "Four Libraries and One Manual" and work assembly. The Company continuously optimizes and improves the "1+1+N" audit management structure, strengthens the construction of the audit shared center, and concentrates superior resources to carry out internal audit supervision work.

During the reporting period, the Company fully implemented the annual audit priorities of the SASAC and the Company's business priorities. It formulated 390 audit project plans and successfully completed 393, exceeding the annual audit target. The Company continuously advances the digital transformation of the audit risk control system and implements the *Work Plan for the Digital Transformation of Audit Risk Control* to improve the intelligence and precision of audit work and provide strong support for the Company's stable development.

Upholding Party Leadership

The Company views Party leadership as the core driving force for high-quality corporate development. It advances the deep integration of Party building with production and operations to create a Party-building practice system with characteristics of central enterprises.

Strengthening the Foundation

Adhering to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era, with the "leading innovation" as the theme and the pursuit of innovative breakthrough in the construction of the Party's "Golden Name Card" as the goal, the Company advances the "Four Major Actions" of value creation, demonstration establishment, management enhancement, and brand leadership in a coordinated manner, defines the strategic path of "Seven New Breakthroughs" in business layout, market expansion, technological innovation, reform innovation, management enhancement, integration of production and finance, and the construction of the Party's "Golden Name Card." It deepens the integration of Party building with production and operation, creating a Party-building practice system with characteristics of central enterprises, thereby providing strong assurance for accelerating the construction of a world-class CRRC. By strengthening political and ideological leadership, improving the "Two Safeguards" mechanism, carrying out Party discipline education, and promoting ideological work, the Company facilitates high-quality development of the enterprise. It strengthens organizational foundations, implements projects to improve Party-building quality and efficiency, promotes special Party-building empowerment initiatives, and establishes a Party-building brand structure. Additionally, it focuses on building a high-quality cadre team, improves the mechanisms for selecting and appointing people, enhances cadre supervision, and advances the construction of talent hubs.

Innovating Practices

The Company explores innovative paths for Party building. Through the implementation of four major projects - "Value Empowerment," "Museums and Zones Building," "Cultural Inheritance," and "Industrial Innovation," it promotes the revitalization and utilization of industrial heritage, builds cultural confidence, inherits industrial spirit, enhances the competitiveness of central enterprise brands, and promotes the efficient use of assets, thereby driving mutual advancement of Party building and enterprise development.

The Company delves into the red stories and industrial spirit behind industrial heritage, creating a "matrix-style" education base. For example, the construction of the Changxindian Erqi Memorial Hall has become an important base for red education, passing on red genes, building cultural confidence, and enhancing cultural identity.

The Company promotes the "Serving the Nation through Industry, Daring to Innovate, and Accelerating the Chinese Dream" spirit of Chinese high-speed rail workers, setting up immersive ideological and political classrooms. Using industrial heritage as a medium, the Company tells the history of China's industrial development and CRRC's hard struggle, inspiring Party members and cadres to stand firm in their posts and pass on the industrial spirit.

The Company transforms industrial sites into industrial museums, urban parks, and cultural creative parks, creating cultural landmarks with characteristics of CRRC. By developing cultural products, it turns the cultural value of industrial heritage into economic benefits, further enhancing brand competitiveness.

The Company reconstructs old factory buildings to activate idle assets. For example, CRRC Tangshan has incorporated the casting steel workshop site into the Tangshan Earthquake Memorial Park to integrate industrial heritage revitalization into various stages of cultural industry development, thereby promoting the efficient use of assets.

Outlook for the Future

In 2025, CRRCL will use the ESG strategic model as a guide to deepen the integration of sustainable development concepts with the Company's strategy. Focusing on four key themes - "innovative products connecting the world, green operations benefiting humanity, integrity-based corporate governance, and social well-being through virtuous actions" - the Company aims to achieve three overarching goals of "protecting a more harmonious ecosystem, leading a better life, and creating more high-end products."

Governance as the Foundation: Ensuring Steady Corporate Development

The Company will continuously deepen and enhance its reform initiatives to enhance levels of governance, strengthen the development of the board of directors, improve information disclosure quality, and increase market value management capabilities. It will reinforce risk management and internal control, and build a multi-level risk prevention and control system to lay a solid foundation for steady development, and foster a culture of compliance to create a sound corporate ecosystem and achieve high-quality development.

Leadership by Green Development: Igniting the Engine of Green Transformation

The Company will uphold the concept of green development, and, guided by its operational goals, continuously enhance environmental protection, energy conservation, and carbon peaking and carbon neutrality efforts. With a focus on environmental protection, it will continuously strengthen corporate environmental risk inspections, promote online monitoring and early warning for environmental risks, and reinforce environmental compliance. With a focus on energy conservation, it will improve energy efficiency in production, manufacturing, and infrastructure while enhancing electricity demand-side management. With a focus on carbon peaking and carbon neutrality, it will continuously refine the construction of the carbon peaking and carbon neutrality management system, advance the construction of zero-carbon pilot demonstration projects, and accelerate the Company's green transformation and upgrading.

Leadership by Innovation: Strengthening the Leading Role in the Industry

Committed to technological innovation and foundation enhancement through quality improvement, the Company will continue to consolidate its leading role in the global rail transit equipment manufacturing industry. It will continuously refine the "CRRCL Q" quality standard system to ensure product safety and performance through rigorous standards and deliver high-end rail transit equipment with strong international competitiveness. It will strengthen its innovation capabilities, accelerate the transformation of technological achievements, and deepen industry-academia-research collaboration. And it will closely cooperate with domestic and international universities, research institutions, and upstream and downstream enterprises within the industrial chain to overcome key technological challenges in the rail transit sector and drive global industry innovation.

People-oriented Practice: Promoting Harmonious Coexistence among Multiple Parties

The Company will continuously practice the people-oriented development philosophy, pursuing mutual benefit and shared success while focusing on the social responsibilities of stakeholders. Internally, it will enhance employee well-being, foster a positive working environment, and provide broad career development opportunities to help employees achieve harmonious integration of personal growth and social value. Externally, it will implement the rural revitalization strategy, actively participate in social welfare initiatives, support education, promote employment, and comprehensively fulfill its corporate social responsibilities to advance social harmony and sustainable development.

Looking ahead to 2025, remaining committed to its mission of "Connecting the World, Benefiting Humanity", and the core values of "Upholding Integrity, and Advancing Goodness", CRRCL will collaborate with stakeholders to drive coordinated development, deliver excellent rail transit solutions to global customers, and contribute CRRCL's wisdom and strength to sustainable social development.

Appendix

Appendix I: Summary of ESG Performance Indicators

Indicator	Unit	2023	2024
Part I: Environmental			
Environmental Protection			
Amount of Investment In Environmental Protection	10,000 Yuan	46,913.51	42,063.54
Emissions Management			
Waste Gas Pollutant Emissions			
Ozone-Depleting Substance Emissions	Tons	/	89.96
Sulfur Oxide Emissions	Tons	86.5	77.31
Particulate Matter (PM) Emissions	Tons	1,064.30	1,063.36
Nitrogen Oxides Emissions	Tons	217.63	215.71
VOCs Emissions	Tons	3,101.41	3,071.12
Mercury Emissions	Tons	0	0
Heavy Meta Emissions	Tons	0	0
Dioxin Emissions	Tons	0	0
Wastewater Pollutant Discharges			
Total Wastewater Discharge	Tons	9,291,640.41	8,712,094.17
Wastewater Reduction	Tons	795,505.90	579,546.24
COD	Tons	371.15	347.87
Ammonia Nitrogen	Tons	34.92	34.23
Solid Waste Pollutant Discharge			
Total Hazardous Waste	Tons	24,013.80	27,475.20
Hazardous Waste Per 10,000 Yuan Revenue	Tons/10,000 Yuan	0.0010	0.0011
Total Non-Hazardous Waste	Tons	507,057.41	524,187.00
Non-Hazardous Waste Per 10,000 Yuan Revenue	Tons/10,000 Yuan	0.0216	0.0213

Indicator	Unit	2023	2024
Utilization of Recycled Resource			
Energy Management			
Total Energy Consumption	Tons of Standard Coal	573,322.26	573,156.99
Direct Energy Consumption	Tons of Standard Coal	190,633.41	177,220.47
Indirect Energy Consumption	Tons of Standard Coal	382,688.85	395,936.52
Energy Consumption per 10,000 yuan of Output Value	Tons of Standard Coal/10,000 yuan	/	0.0203
Water Management			
Fresh Water Consumption	Tons	15,596,741	15,208,547
Fresh Water Consumption per 10,000 yuan of Output Value	Tons/10,000 Yuan	0.57	0.54
Waste Recycled			
Amount of Waste Recycled	Tons	410,778.92	420,844.13
Waste Recycling Rate	%	80.93	80.26
Addressing Climate Change			
Greenhouse Gas Emission			
Total GHG Emissions (Scope I, II)	Tons of CO ₂ Equivalent	2,008,714.44	2,000,109.88
GHG Emissions (Scope I)	Tons of CO ₂ Equivalent	305,114.60	317,759.04
GHG Emissions (Scope II)	Tons of CO ₂ Equivalent	1,703,599.84	1,682,342.06
GHG Emission Intensity (GHG Emissions per 10,000 Yuan of Production Value)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0788	0.0707
GHG Emission Intensity (Scope I)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0120	0.0112
GHG Emission Intensity (Scope II)	Tons of CO ₂ Equivalent/10,000 Yuan	0.0668	0.0595
GHG Emission Reduction	Tons of CO ₂ Equivalent	95,048.29	8,604.56

Greenhouse gas emissions calculated in accordance with GB/T 32150-2015 General guideline of the greenhouse gas emissions accounting and reporting for industrial enterprises.

The calculations for greenhouse gas (GHG) emission reductions encompass Scope 1 and Scope 2 emissions, and reflect annual reductions in 2024.

Indicator	Unit	2023	2024
Part II: Social Scope			
Employment and Rights of Employees			
Total Number of Employees	Persons	154,292	152,082
Percentage of Employees by Gender			
Percentage of Male Employees	%	83.09	83.45
Percentage of Female Employees	%	16.91	16.55
Percentage of Male Senior Management at The Headquarters	%	83.33	88.89
Percentage of Female Senior Management at the Headquarters	%	16.67	11.11
Percentage of Employees By Workplace Location			
Percentage of Employees In Mainland China	%	95.60	95.60
Percentage of Employees In Hong Kong, Macao, Taiwan, and Overseas	%	4.40	4.40
Percentage of Employees By Age Group			
Percentage of Employees Under 30 Years Old (Inclusive)	%	16.83	17.05
Percentage of Employees Aged 30 to 50 (Inclusive)	%	63.86	64.24
Percentage of Employees Aged Over 50	%	19.31	18.71
Percentage of Employees By Educational Background			
Percentage of Employees With a Doctoral Degree	%	0.39	0.41
Percentage of Employees With a Master's Degree	%	10.59	12.37
Percentage of Employees With a Bachelor's Degree or Below	%	89.02	87.22
Number of Ethnic Minority Employees	Persons	7,920	7,806
Number of New Employees	Persons	6,896	6,475
Number of New Female Employees	Persons	1,172	1,071
Number of New Male Employees	Persons	5,724	5,404
Number of Newly Recruited Fresh Graduates	Persons	3,787	4,308

Indicator	Unit	2023	2024
Number of Newly Employees From Social Recruitment	Persons	3,109	2,167
Employee Turnover Rate	%	1.53	2.64
Turnover Rate of Male Employees	%	1.32	2.24
Turnover Rate of Female Employees	%	0.21	0.40
Turnover Rate of Employees Under 30 Years Old (Inclusive)	%	0.55	1.03
Turnover Rate of Employees Aged 30-50 (Inclusive)	%	0.92	1.30
Turnover Rate of Employees Over 50 Years Old	%	0.05	0.30
Turnover Rate of Domestic Employees	%	1.48	2.64
Turnover Rate of Overseas Employees	%	0.05	0
Social Insurance Coverage Rate	%	100	100
Number of Labor Dispute Incidents	Case	148	0
Occupational Health and Safety			
Number of Work-Related Death Among Full-Time and Part-Time Employees	Persons	0	0
Ratio of Work-Related Death Among Full-Time and Part-Time Employees	%	0	0
Lost Time Injury Frequency Rate Among Full-Time and Part-Time Employees	/	/	0.38
Total Recordable Accident Rate Among Full-Time and Part-Time Employees	/	/	0.51
Number of Work-Related Death Among Contractor/Outsourced Personnel	Persons	/	0
Ratio of Work-Related Death Among Contractor/Outsourced Personnel	%	/	0
Lost Time Injury Frequency Rate Among Contractor/Outsourced Personnel	/	/	0.19
Total Recordable Accident Rate Among Contractor/Outsourced Personnel	/	/	0.33
Volume of Major Safety Incidents or More Serious Incidents	Cases	0	0
Safety Production Investment	10,000 yuan	56,859.92	52,642.28
Coverage Rate of Safety Production Liability Insurance	%	100	100
Person-Times of Those Receiving Safety Production Training	Person-times	488,899	519,178
Occupational Health Expenses	10,000 yuan	2,842.30	2,425.25

Indicator	Unit	2023	2024
Employee Development & Training			
Employee Training Coverage Rate	%	100	100
Male Employee Training Rate	%	100	100
Female Employee Training Rate	%	100	100
Senior Management Training Rate	%	100	100
Middle Management Training Rate	%	100	100
General Employee Training Rate	%	100	100
Number of Employee Training Sessions	Times	373,809	341,651
Annual Training Expenditure	10,000 yuan	22,160.22	22,088.45
Total Annual Training Duration	Hours	14,023,984	13,964,198
Average Training Duration Per Employee	Hours	103	96
Average Training Duration Per Male Employee	Hours	105	97
Average Training Duration Per Female Employee	Hours	97	90
Average Training Duration Per Senior Management Employee	Hours	120	109
Average Training Duration Per Middle Management Employee	Hours	87	86
Average Training Duration Per General Employee	Hours	118	101
Sustainable Supply Chain			
Number of Suppliers By Region	Companies	20,071	37,072
Number of Suppliers In Mainland China	Companies	19,830	36,845
Number of Suppliers In Hong Kong, Macao, Taiwan, and Overseas	Companies	241	227
Number of Audited Suppliers	Companies	11,225	14,622
Number of Suppliers With Which The Cooperation Was Terminated Due to Non-Compliance	Companies	52	36
Product Responsibility			
Number of Products Recalled Due to Safety Issues	Products	0	0
Percentage of Products Recalled Due to Safety Issues	%	0	0

Indicator	Unit	2023	2024
Rural revitalization and public charity			
Investment In Rural Revitalization	10,000 yuan	/	2,211
Length of Time Spent In Charity and Volunteer Activities	Hours	185,000	200,000
Number of People Involved In Charity and Volunteer Activities	Persons	5,700	6,000
Investment In Charity and Volunteer Activities	10,000 yuan	1,970.88	2,165.00
Technological Innovation			
R&D Investment	10,000 yuan	1,481,339.20	1,668,558.80
R&D Investment Growth Rate	%	11.44	12.64
R&D Investment Percentage	%	6.32	6.77
Percentage of Growth Rate of R&D Investment	%	6.04	7.12
R&D Personnel	Persons	19,000	21,138
Percentage of R&D Personnel	%	12.31	13.90
Number of Cumulative Authorized Patents	Pcs	31,335	31,614
Number of Cumulative Authorized Invention Patents	Pcs	15,783	17,110
Number of Patent Applications	Pcs	5,615	4,952
Number of Invention Patent Applications	Pcs	4,064	3,673
Number of Invention Patents Granted	Pcs	/	1,733

Indicator	Unit	2023	2024
Part III: Governance			
Corporate Governance			
Number of Board Meetings Held	Sessions	10	11
Attendance rate of the Board of Directors	%	/	100
Number of Board Directors	Persons	7	6
Number of Independent Directors	Persons	/	3
Percentage of Board Members Independent of Executives	%	/	83.33
Percentage of Executive Directors	%	/	50
Investor Relations and Shareholder Rights Management			
Number of Shareholders' Meetings Held	Sessions	2	2
Risk Control and Compliance			
Number of Legal and Compliance Training	Times	333	513
Duration of Legal and Compliance Training	Hours	929	1,382
Person-times of Those Receiving Legal and Compliance Training	Person-times	29,836	42,017
Number of Anti-Corruption Training	Times	89	116
Duration of Anti-Corruption Training	Hours	178	232
Number of Directors Receiving Anti-Corruption Training	Persons	/	6
Percentage of Directors Receiving Anti-Corruption Training	%	/	100
Number of Executives Receiving Anti-Corruption Training	Persons	/	9
Percentage of Executives Receiving Anti-Corruption Training	%	/	100
Number of Employees Receiving Anti-Corruption Training	Persons	/	152,082
Percentage of Employees Receiving Anti-Corruption Training	%	/	100
Number of Corruption Lawsuits (Number of Corruption Lawsuits Filed and Concluded Against The Issuer or Its Employees During The Reporting Period)	Cases	0	0

Indicator	Unit	2023	2024
Economic Performance			
Total Assets	10,000 yuan	47,179,174	51,282,363
Total Operating Income	10,000 yuan	23,426,151	24,645,680
Growth Rate of Operating Income	%	5.08	5.21
Total Profit	10,000 yuan	1,637,300	1,743,215
Growth Rate of Total Profit	%	1.57	6.47
Weighted Average Return on Net Assets attributable to ordinary Shareholder	%	7.41	7.51
Taxes	10,000 yuan	1,172,628	1,301,910

Lost Time Injury Frequency Rate Among Full-Time and Part-Time Employees = (Number of workplace injuries during the reporting period that prevented full-time and part-time employees from working for at least one day ÷ Total number of hours worked by all full-time and part-time employees during the reporting period) × 1,000,000

Lost Time Injury Frequency Rate Among Contractor/Outsourced Personnel = (Number of workplace injuries during the reporting period that prevented contractors/outsourced personnel from working for at least one day ÷ Total number of hours worked by all contractors/outsourced personnel during the reporting period) × 1,000,000

Total Recordable Accident Rate Among Full-Time and Part-Time Employees = (Number of workplace accidents for all full-time and part-time employees that occurred during the reporting period ÷ Total number of hours worked by all full-time and part-time employees during the reporting period) × 1,000,000

Total Recordable Accident Rate Among Contractor/Outsourced Personnel = (Number of all contractor/outsourced personnel injuries that occurred during the reporting period ÷ Total number of hours worked by all contractors/outsourced personnel during the reporting period) × 1,000,000

Appendix II: Index of Reporting Indicators

Table of Content	GRI Standards	SSE	HKEX	Page
Preface				
About the Report	GRI 2-2、GRI 2-3	Articles 3, 4, and 6	/	P1
Message from the Chairman	GRI 2-22	/	/	P4-5
Company Overview	GRI 2-1、GRI 2-6	/	/	P6-7
ESG Governance				
Board Statement	GRI 2-22	Articles 2, 5, 6, 9, 12, and 19	/	P8
ESG Governance System	GRI 2-9、GRI 2-10、GRI 2-11、GRI 2-12、GRI 2-13、GRI 2-14、GRI 2-17、GRI 2-24	Articles 11, 12, 13, 15, 17, 18, 19, 51, and 52	/	P9-11
Stakeholder Communication	GRI 2-29	Articles 9, 53	/	P12
Materiality Analysis	GRI 3	Articles 5, 16 and 18	/	P13
ESG Special Topics				
ESG Topic I: Value Creation – Effectively Supporting the Sustainable Development of the "Dual Tracks, Dual Clusters" Strategy	GRI 3、GRI 203-1、GRI 203-2、GRI 302-4	Articles 20, 23, 27, 28, 35, 41, 42	/	P14-19
ESG Topic II: "Chain Leader" Initiative Driving Industry Synergy and Development	GRI 3、GRI 203-1、GRI 203-2	Articles 41, 42 and 45	/	P19-21
Green CRRC				
Environmental Compliance Management	GRI 2-23、GRI 2-24、GRI 3、GRI 101-2、GRI 101-5、GRI 302	Article 29, 30, 32 (2), 32 (3), 32 (5), and 33 (1)	A3、A3.1	P24-27
Energy and Resource Usage	GRI 2-23、GRI 3、GRI 301、GRI 302、GRI 303-1、GRI 303-3、GRI 303-5	Articles 34, 35, 36 and 37	A2、A2.1、A2.2、A2.3、A2.4、A2.5	P28-32

Table of Content	GRI Standards	SSE	HKEX	Page
Emissions Management	GRI 2-23、GRI 3、GRI 303-2、GRI 303-4、GRI 305-7、GRI 306	Article 30 (1), 30 (2), 30 (3), 30 (4), 31, and 32 (5)	A1、A1.1、A1.3、A1.4、A1.5、A1.6	P33-38
Climate Change Response	GRI 2-23、GRI 3、GRI 201-2、GRI 305-1、GRI 305-2、GRI 305-3、GRI 305-4、GRI 305-5	Articles 14, 17, 20, 21, 22, 23, 24, 26, 27, and 28	D17、D19、D20、D21、D22、D24、D25、D27、D28、D29、D37、D40	P39-47
People-oriented CRRC				
Protecting the Rights and Interests of Employees	GRI 2-7、GRI 2-23、GRI 3、GRI 401-1、GRI 401-2、GRI 405-1、GRI 406、GRI 408、GRI 409	Articles 49, 50 (1)	B1、B1.1、B4、B4.1、B4.2	P50-54
Promoting Talent Growth Together	GRI 2-23、GRI 2-24、GRI 3、GRI 404-1、GRI 404-2、GRI 405-1	Articles 49, 50 (3), 53 (2)	B3、B3.1、B3.2	P55-59
Building Safety Assurance	GRI 2-9、GRI 2-23、GRI 2-24、GRI 3、GRI 403	Articles 49, 50 (2)	B2、B2.2、B2.3	P60-63
Committed to Social Welfare	GRI 203、GRI 413	Articles 38, 39 and 40	B8、B8.1、B8.2	P64-65
Win-Win CRRC				
High-Quality Products and Services	GRI 2-23、GRI 203、GRI 302-5、GRI 416、GRI 417、GRI 418	Articles 47, and 48	B6、B6.2、B6.4、B6.5	P68-70
Upholding an Innovation-driven Approach	GRI 2-6、GRI 2-23	Article 42	B6.3	P70-73
Building a Sustainable Supply Chain	GRI 2-23、GRI 3、GRI 204、GRI 308	Article 45	B5、B5.1、B5.2、B5.3、B5.4	P74-77

Table of Content	GRI Standards	SSE	HKEX	Page
Excellence in Governance at CRRC				
Optimizing Corporate Governance	GRI 2-9、GRI 2-10、GRI 2-19、GRI 2-23	/	/	P80-81
Upholding Business Ethics	GRI 2-23、GRI 3、GRI 205、GRI 206	Articles 44, 54, 55, and 56	B7、B7.1、B7.2、B7.3	P82-84
Standardizing Compliance Operations	GRI 2-15、GRI 2-23、GRI 2-26、GRI 2-27、GRI 3-3、GRI 207	/	/	P85
Strengthening Risk Control	GRI 2-15、GRI 2-23、GRI 2-26、GRI 3-3	Articles 48, and 52	/	P86
Upholding Party Leadership	/	/	B8、B8.1	P87
Outlook for the Future	/	Article 11 (4), and 12 (4)	/	P88
Appendix				
Appendix I: Summary of ESG Performance Indicators	GRI 201-1、GRI 205-2、GRI 205-3、GRI 206-1、GRI 301、GRI 302-1、GRI 302-3、GRI 302-4、GRI 303-3、GRI 303-4、GRI 303-5、GRI 305、GRI 306、GRI 307、GRI 401-1、GRI 403-5、GRI 403-9、GRI 403-10、GRI 404-1、GRI 404-3、GRI 405-2、GRI 416、GRI 417、GRI 418	Article 11 (4), 19, 24, 30, 31, 33, 35, 36, 37, 39, 40, 42, 47, 48, 50, 55, and 56	A1.1、A1.3、A1.4、A1.5、A1.6、A2.1、A2.2、A2.3、A2.4、A2.5、B1.1、B1.2、B2.2、B3.2、B5.1、B6.1、B6.2、B7.1、B7.3、B8.2	P89-96
Appendix II: Index of Reporting Indicators	/	Article 57	/	P97-99
Appendix III: Definition	GRI 2-2	/	/	P100
Appendix IV: Feedback	GRI 2-29	Article 9	/	P101

Appendix III: Definition

Full Name	Short in the Report
State-owned Assets Supervision and Administration Commission of the State Council	SASAC
Shanghai Stock Exchange	SSE
The Stock Exchange of Hong Kong Limited	HKEX
CRRC Changchun Railway Vehicles Co., Ltd	CRRC Changchun
CRRC Dalian Co., Ltd.	CRRC Dalian
CRRC Tangshan Co., Ltd.	CRRC Tangshan
CRRC Qiqihar Group Co., Ltd	CRRC Qiqihar Group
CRRC Yangtze Group Co., Ltd	CRRC Yangtze Group
CRRC Zhuzhou Locomotive Co., Ltd	CRRC Zhuzhou
CRRC Qingdao Sifang Co., Ltd	Sifang Co., Ltd
CRRC Qingdao Sifang Rolling Stock Research Institute Co., Ltd	Sifang Research Institute
CRRC Zhuzhou Institute Co., Ltd.	Zhuzhou Institute
CRRC Nanjing Puzhen Co., Ltd.	Puzhen Co., Ltd.
CRRC Qishuyan Co., Ltd.	Qishuyan Co., Ltd.
CRRC Qishuyan Institute Co., Ltd.	Qishuyan Institute
CRRC Yongji Electric Co., Ltd.	Yongji Electric
CRRC Beijing Nankou Co., Ltd.	Nankou Co., Ltd.

Appendix IV: Feedback

Dear Reader,

Thank you for taking the time to read the Environmental, Social, and Governance (ESG) report of CRRC. To enhance the quality and standards of this report, we sincerely welcome your valuable comments and suggestions. We look forward to your feedback!

Selective Questions (please select the appropriate option with ✓)

Please rate the extent to which this report reflects the economic, social, and environmental impacts of CRRC:

Very Good Good Fair Poor Very Poor

Please rate the extent to which this report addresses and discloses issues of concern to stakeholders:

Very Good Good Fair Poor Very Poor

Please rate the clarity, accuracy, and completeness of the information, indicators, and data disclosed in this report:

Very Good Good Fair Poor Very Poor

Please rate the readability of the content of this report:

Very Good Good Fair Poor Very Poor

Please rate the overall synthesis of this report:

Very Good Good Fair Poor Very Poor

Open-Ended Questions

What aspects of this report did you find most satisfactory?

What additional information would you like to see disclosed in this report?

What comments or suggestions do you have regarding CRRC ESG initiatives?

You may provide personal information if you wish:

Name: _____

Occupation: _____

Organization: _____

Phone: _____

Email: _____

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