



2024

中钢洛耐科技股份有限公司
SINO STEEL LUONAI MATERIALS TECHNOLOGY CORPORATION

环境、社会及治理 (ESG) 报告

Environmental, Social and Governance (ESG) Report



中钢洛耐科技股份有限公司

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视频号

“新”向突破 “质”求卓越

Driving Breakthroughs Through Innovation Pursuing Excellence In Quality



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01 关于报告

About This Report

报告范围及边界

Report Scope and Boundaries

除非有特殊说明,本报告主要描述中钢洛耐科技股份有限公司(简称“中钢洛耐”“洛耐”“公司”或“我们”)环境、社会及治理绩效成果。除特殊说明外,报告中涉及的货币均为人民币。

Unless otherwise specified, this report primarily outlines the environmental, social, and governance (ESG) performance of Sinosteel Luonai Materials Technology Co., Ltd. (referred to herein as "Sinosteel Luonai," "Luonai," "the Company," or "we"). All monetary figures in the report are denominated in CNY unless otherwise indicated.

时间范畴

Timeframe

本报告覆盖的周期为2024年1月1日至2024年12月31日,为增加报告可比性和完整性,部分内容可能会超出上述范围。

This report covers the period from January 1, 2024, to December 31, 2024. To enhance comparability and completeness, certain content may extend beyond the above timeframe.

编制依据

Basis for Preparation

根据《上海证券交易所上市公司自律监管指引第14号——可持续发展报告(试行)》、全球报告倡议组织《可持续发展报告标准》(“GRI”)、国际标准化组织(“ISO”)、《社会责任指南》(GB/T36000-2015)、《T/CERDS8-2022:企业ESG披露指南》等。

This report is prepared in accordance with the "Self-Regulatory Supervision Guidelines for Listed Companies on the Shanghai Stock Exchange No. 14—Sustainable Development Report (Trial)", the Global Reporting Initiative(GRI) "Sustainable Development Reporting Standards", International Organization for Standardization ("ISO"), "Guidelines on Social Responsibility" (GB/T36000-2015), the "T/CERDS8-2022: Guidelines for Corporate ESG Disclosure" and other relevant regulations.

质量承诺

Quality Assurance

公司承诺,本报告内容不存在任何虚假记载、误导性陈述或重大遗漏,并对内容的真实性、准确性、完整性负责。

The Company undertakes that this report contains no false records, misleading statements, or material omissions and assumes responsibility for the truthfulness, accuracy, and completeness of its content.

发布形式

Release Format

本报告以印刷品、电子文档形式发布。

This report is published in both printed and electronic formats.

文本语言

Text Language

本报告以中文、英文两种文字发布,若两种文字的表述存在差异,以中文表述为准。

This report is released in both Chinese and English. In case of any discrepancy between the two language versions, the Chinese text shall govern.

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02 董事长致辞

Message From the Chairman

中钢洛耐党委书记、董事长



过去一年,中钢洛耐深入贯彻落实党的二十大精神,以“双碳”目标为导向,践行新发展理念,将ESG管理深度融入战略规划与生产经营全流程,实现了环境效益、社会价值与经营质量的协同提升,为股东创造了价值,为社会做出了贡献,成功入选2024年河南省制造业头雁企业名单。

2024年,市场环境复杂多变,尽管面临着诸多挑战,我们依然坚守初心,积极响应中国宝武“四化”发展方向、“四有”经营原则和中钢集团“一专两转三增三减”经营思路,聚焦主责主业,转变经营方式,提升产品质量和服务水平,努力拓展市场空间。通过持续的技术创新和管理创新,公司的核心竞争力得到了进一步增强。期间,牵头完成的“耐火材料功能化与绿色化设计、制备及其对钢铁绿色制造的支撑”项目荣获国家科学技术进步二等奖。

践行绿色使命,引领行业低碳转型。我们深刻认识到环境保护是企业应尽的社会责任,中钢洛耐作为耐火材料行业的领军企业,一直致力于推动行业的绿色发展。我们加大了在环保技术研发和设备改造方面的投入,积极推广节能减排技术,优化生产工艺,降低能源消耗和污染物排放。在资源利用方面,我们不断探索和实践资源循环利用的新模式,提高资源的综合利用率,努力实现资源的最大化利用和废弃物的最小化排放。同时,我们积极响应国家关于碳达峰、碳中和的战略目标,制定了切实可行的碳减排计划,努力为全球气候变化做出贡献,“高温工业高效节能环保梯度截热高强功能材料研究与应用示范”项目荣获“零碳中原杯”创新大赛一等奖。

坚守责任担当,共创共享发展成果。我们始终坚持以人为本,关注员工的成长和发展,为员工提供良好的工作环境

和发展机会,加强员工培训和职业规划,提高员工的专业技能和综合素质。我们积极参与社会公益事业,关心关爱弱势群体,荣获“2023年度涧西区无偿献血工作先进单位”荣誉称号,努力为社会和谐发展贡献力量。在安全生产方面,我们牢固树立安全第一的理念,加强安全生产管理,完善安全管理制度和应急预案,加大安全投入,强化员工安全培训,确保了公司生产经营的安全稳定运行。

完善治理体系,筑牢高质量发展根基。我们不断完善公司治理结构,加强内部控制和风险管理,提高公司治理水平。建立健全了科学决策机制、监督机制和激励约束机制,确保公司决策的科学性和公正性。加强信息披露工作,提高公司透明度,积极回应股东和社会各界的关切。

2024年,我们凭借在科技创新领域的卓越表现,荣膺“第二届国新杯·ESG金牛奖”科技引领二十强大奖,这是对我们积极践行ESG理念的充分认可和高度评价,也是对我们未来发展的激励和鞭策。这份荣誉不仅属于中钢洛耐,更属于每一位为公司发展付出努力的员工和关心支持中钢洛耐发展的社会各界人士。

展望未来,我们充满信心和期待。2025年,我们将继续坚持以习近平新时代中国特色社会主义思想为指导,深入贯彻党的二十大和二十届三中全会精神,完整准确全面贯彻新发展理念,紧紧围绕国家战略需求,加快推进科技创新和产业升级,努力实现公司的高质量发展。我们将进一步加强与股东、合作伙伴和社会各界的沟通与合作,携手共进,互利共赢,共同开创更加美好的未来。

In the past year, Sinosteel Luonai has thoroughly implemented the principles of the 20th National Congress of the Communist Party of China. Guided by the “Dual-Carbon” Goals, the company embraced the new development philosophy, integrating ESG management deeply into the whole process of strategic planning, production and operations, and achieved the coordinated improvement of environmental benefits, social value and operation quality. It has created value for shareholders, made contributions to society, and successfully been included in the list of the “Leading Manufacturing Enterprises in Henan Province” for 2024.

In 2024, despite the complex and volatile market environment, we still adhered to our original intention and actively responded to the Baowu's “Four Modernizations” development directions (high-end, intelligent, green, and efficient) “Four Operation Principles”(production based on confirmed orders, maintaining viable production scales, generating profitable revenues, and achieving cash-based profits), as well as the “One specialty, Two transformations, Three increases and Three decreases” operation strategy of Sinosteel Group. Focusing on our core responsibilities and businesses, we transformed our operation model, improved product quality and service standards, and strived to expand the market space. Through continuous technological and management innovation, the company's core competitiveness has been further enhanced. During this period, the project “Functional and Green Design, Preparation of Refractory Materials and Their Support for Green Steel Manufacturing” led by us won the Second Class award of the “National Science and Technology Progress Award”.

We fulfill our green mission and lead the low-carbon transformation of the industry. We deeply understand that environmental protection is an inescapable social responsibility of enterprises. As a leading enterprise in the refractory material industry, Sinosteel Luonai has been committed to promoting the green development of the industry. We have increased investment in the research and development of environmental protection technologies and equipment transformation. Actively, we have promoted energy-saving and emission-reduction technologies, optimized production processes, and reduced energy consumption and pollutant emissions. In terms of resource utilization, we have been continuously exploring and implementing new models of resource recycling, improving the comprehensive utilization rate of resources, and striving to achieve the maximum utilization of resources and the minimum emission of waste. Meanwhile, we have actively responded to the national strategic goals of carbon peaking and carbon neutrality, formulated practical carbon-reduction plans, and made efforts to contribute to addressing global climate change. The project “Research and Application Demonstration of High-strength Functional Materials for High-temperature Industry with High-efficiency, Energy-saving, Environmental-protection and

Gradient Heat-Insulation” won the first prize in the “Zero-carbon Central Plains Cup” Innovation Competition.

We uphold our responsibility and jointly create and share the development achievements. We always adhere to the people-first principle and focus on the growth and development of our employees. We provide employees with a good working environment and development opportunities, strengthen employee training and career planning, and improve their professional skills and comprehensive qualities. Striving to contribute to the harmonious development of society, we actively participate in social welfare undertakings, show concern for vulnerable groups, and have won the honorary title of “Advanced Unit in Unpaid Blood Donation Work in Jianxi District in 2023”. In terms of safety in production, we firmly establish the concept of safety first, strengthen safety in production management, improve safety management systems and emergency plans, increase safety investment, and strengthen employee safety training to ensure the safe and stable operation of the company's production and operation.

We perfect the governance system and lay a solid foundation for high-quality development. We continuously improve the company's governance structure, strengthen internal control and risk management, and improve the company's governance level. We have established and improved a scientific decision-making mechanism, the supervision mechanism and an incentive and restraint mechanism to ensure the scientificity and fairness of the company's decisions. We effectively strengthen information disclosure, improve the company's transparency, and actively respond to the concerns of shareholders and the wider public.

In 2024, with our outstanding performance in the field of scientific and technological innovation, we claimed the top-20 award in the category of Science and Technology Leadership at the “Second Guoxin Cup·ESG Golden Bull Award”. This fully acknowledges and highly commends our active implementation of the ESG concept, and also serves as an incentive and impetus for our future development. This honor is attributable not only to Sinosteel Luonai, but also to every employee who has strived for the company's growth and all those in society who care about and support the development of Sinosteel Luonai.

Looking forward to the future, we are full of confidence and expectations. In 2025, we will continue to be guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the principles of the 20th CPC National Congress and the Third Plenary Session of the 20th CPC Central Committee, accurately and comprehensively implement the new development concept, closely focus on the national strategic needs, hasten the pace of scientific and technological innovation and industrial upgrading, and strive to achieve the high-quality development of the company. We will further strengthen communication and cooperation with shareholders, partners and all sectors of society, work hand in hand for mutual benefit and win-win results, and jointly create a better future.

03

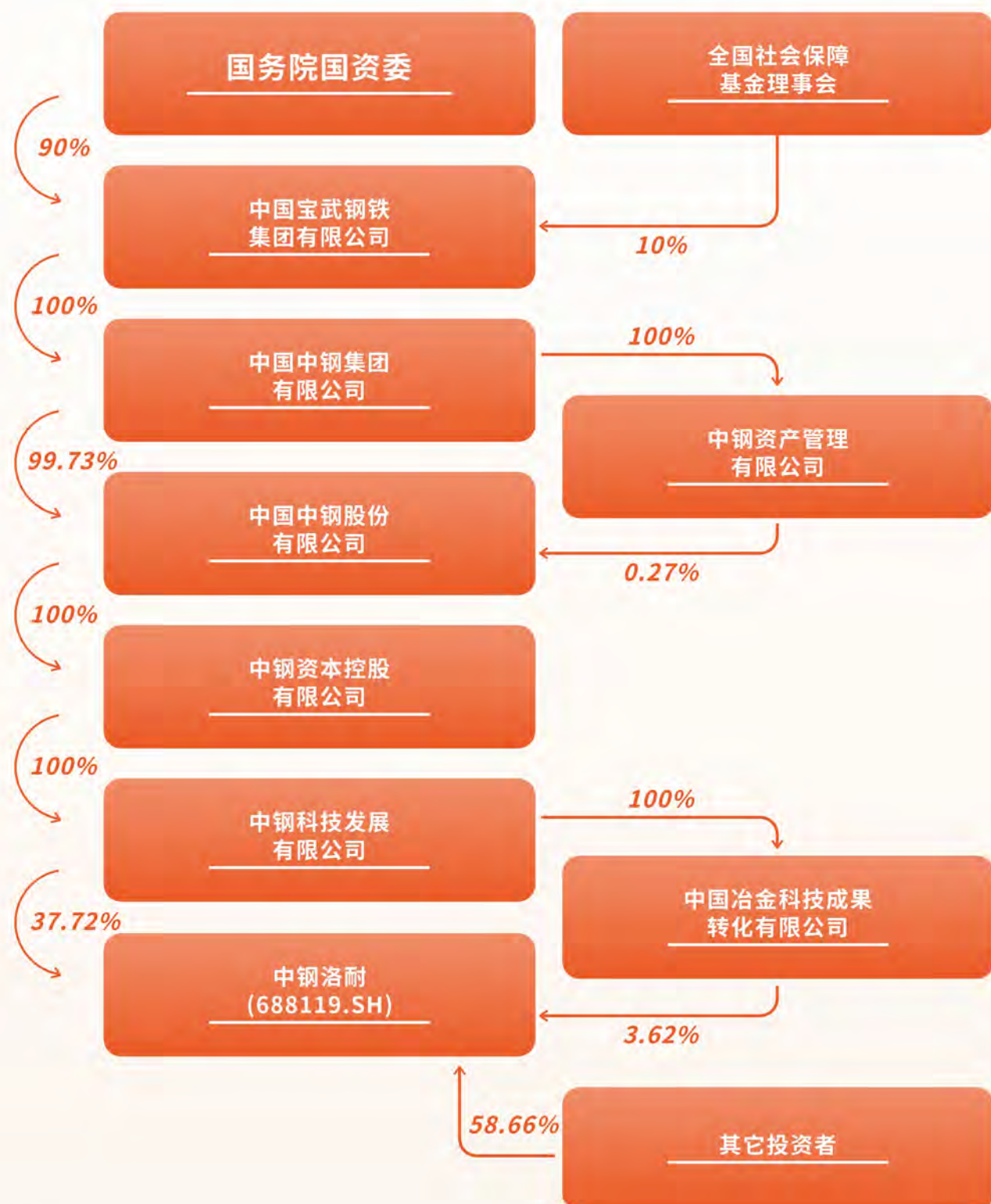
走进洛耐

About Luonai



公司概况

About US



历史沿革

Company History



组织机构

Organizational structure



创新平台

Innovation platform



企业文化

Corporate Culture

企业愿景：成为世界一流高温非金属材料企业。

Enterprise Vision: to become a world-class leader in high-temperature non-metallic materials field.

企业使命：聚焦科技创新与价值创造,引领高温非金属材料业技术进步。

Enterprise Mission: focus on scientific and technological innovation and value creation, leading the technological progress of the high-temperature non-metallic materials industry.

“

战略定位：创新型科技企业，为高温工业提供环境友好和更具价值的系统解决方案。

Strategic Position: an innovative technology enterprise that provides environmentally friendly and more valuable system solutions for the high-temperature industry.



发展战略：

以科技为支撑，立足高温工业，
积极拓展战略新兴材料产业，
打造高温工业用耐火材料系统集成、
综合配套和系统方案解决服务商，
推进耐火材料全面创新驱动，实现绿色、低碳、
可持续高质量发展，建设世界一流高温非金属材料企业。

Development Strategy: supported by science and technology, based on the high-temperature industry, actively expand the strategic emerging materials industry, build a service provider for the system integration, comprehensive supporting facilities, and system solution of refractory materials for the high-temperature industry. Promote the all-round innovation-driven development of refractory materials, achieve green, low-carbon, and sustainable high-quality development, and build a world-class high-temperature non-metallic materials enterprise.

企业理念

Enterprise Concepts



经营理念：合作 友谊 双赢 发展

Business Philosophy: Cooperation, Friendship, Win-Win Situation, Development

管理理念：严格 规范 高效 精细

Management Philosophy: Strictness, Standardization, High Efficiency, Meticulousness

环保理念：清洁优美 友好和谐

Environmental Protection Philosophy: Cleanliness and Beauty, Friendliness and Harmony

安全理念：安全保障 科学防范

Safety Philosophy: Safety Assurance, Scientific Prevention

科技理念：自主创新 持续推动

Science and Technology Philosophy: Independent Innovation, Continuous Promotion

质量理念：一丝不苟 精益求精

Quality Philosophy: Scrupulousness, Striving for Perfection

服务理念：客户至上 周到细致

Service Philosophy: Customer First, Thoughtfulness and Meticulousness

企业精神

Enterprise Spirit

团结：顾全大局、精诚合作，团结凝聚全体员工的智慧和力量，一心一意谋发展。

Unity

Consider the overall situation and cooperate sincerely. Pool the wisdom and strength of all employees, and focus wholeheartedly on development.

务实：实事求是、求真务实，按照改革开放、市场经济要求，扎扎实实抓好落实。

Pragmatism

Pragmatism: Seek truth from facts and be pragmatic. In accordance with the requirements of reform and opening up and the market economy, conscientiously carry out all tasks.

高效：抓住机遇、快速反应，提高工作效率，创造良好效益，取得预期效果。

High Efficiency

Seize opportunities, respond quickly, improve work efficiency, create good benefits, and achieve the expected results.

奋进：坚定信心、艰苦奋斗，奋发图强，居安思危，锐意改革，开拓进取。

Striving Forward

Strengthen confidence, work hard, strive for progress, be prepared for danger in times of peace, be determined to reform, and forge ahead with pioneering spirit.

品牌形象

Brand Image

团结奋进:团结务实、高效奋进,对国家、社会、客户、员工诚信负责,共铸和谐。

Unity and Striving
Forward

Be united and pragmatic, efficient and progressive. Be honest and responsible towards the country, society, customers and employees, and jointly create harmony.

争创优异:创新开拓,追求卓越,造就优异团队,奉献优异产品及服务,共赢发展。

Strive for Excellence

Innovate and pioneer, pursue excellence, cultivate excellent teams, offer excellent products and services, and achieve win-win development.

主营业务

Main Business

主营产品及配套服务

Main Products and Supporting Services

- 1** 硅质系列制品:硅砖、高导热硅砖、零膨胀硅砖
Silica Series Products: Silica bricks, high thermal conductivity silica bricks, zero expansion silica bricks
- 2** 碳化硅系列制品:氮氧化物结合碳化硅砖、莫来石碳化硅砖、碳化硅坩埚打料
Silicon Carbide Series Products: Nitrogen oxide bonded silicon carbide bricks, mullite silicon carbide bricks, silicon carbide crucible filling materials
- 3** 镁质系列制品:电熔再结合镁铬砖、电熔半再结合镁铬砖、直接结合镁铬砖
Magnesium Series Products: Electrically fused and rebonded magnesia-chrome bricks, electrically fused semi-rebonded magnesia-chrome bricks, directly bonded magnesia-chrome bricks
- 4** 高纯氧化物制品:高纯莫来石砖、镁铝尖晶石砖
High-purity Oxide Products: High-purity mullite bricks, magnesia-alumina spinel bricks
- 5** 不定形及预制件制品:出铁场系统用不定形耐火材料及预制件、炼钢用系列功能材料
Monolithic and Prefabricated Products: Monolithic refractory materials and prefabricated components for the tapping yard system, and a series of functional materials for steelmaking
- 6** 高铝系列制品:高铝砖系列产品、红柱石制品
High Alumina Series Products: High alumina brick series products, andalusite products
- 7** 功能型材料制品:RH无铬砖、炉门砖、冷却壁镶砖
Functional Material Products: RH chrome-free bricks, furnace door bricks, bricks inserted in the cooling staves

配套服务

Supporting Services

钢铁冶炼全流程、全生命周期耐火材料集成技术和总包服务

Integrated technology and turnkey services of refractory materials for the whole process and the whole life cycle of iron and steel smelting

工程技术服务

Engineering and technical services

业务范围

Business Scope

公司产品畅销全国各地，销售范围逐步覆盖全球，产品已经出口至南美、北美、欧洲、非洲及亚洲其他地区等40多个国家和地区。

Our products are marketed nationwide and have gradually covered the global market. Many products have been exported to over 40 countries and regions, including South America, North America, Europe, Africa, and other parts of Asia.



企业荣誉

Enterprise Honors

- ◆ 国家科学技术进步二等奖
Second Prize for National Science and Technology Progress Award
- ◆ 2023年度河南省科技进步一等奖
First Prize of Henan Province Science and Technology Progress Award in 2023
- ◆ 获“洛阳市科技创新先进企业”称号
Named as "Advanced Enterprise in Scientific and Technological Innovation in Luoyang City"
- ◆ 获河南省“专精特新”中小企业。
Designated as a "Specialized, Refined, Characteristic and Innovative" Small and Medium-sized Enterprise in Henan Province
- ◆ “2023年度润西区无偿献血工作先进单位”荣誉称号
Honorer as "Advanced Unit in Voluntary Blood Donation Work in Jianxi District in 2023"
- ◆ 发明专利喜获第四届河南省专利奖一等奖
The invention patent won the First Prize of the Fourth Henan Province Patent Award
- ◆ 两个项目斩获第二十七届全国发明展览会——“一带一路”暨金砖国家技能发展与技术创新大赛金奖
Two projects won the Gold Award in the 27th National Invention Exhibition -Skills Development and Technological Innovation Competition of the Belt and Road Initiative and BRICS Countries

◆ “零碳中原杯”创新大赛一等奖

Won the First Prize in the "Zero-carbon Central Plains Cup" Innovation

◆ 入选2024年河南省制造业头雁企业名单

Selected into the list of Leading Enterprises in Henan Province's Manufacturing Industry in 2024

◆ 河南省高性能碳化物材料院士工作站2024年度绩效评估“优秀”

The Academician Workstation for High-performance Carbide Materials in Henan Province was rated as "Excellent" in the 2024 performance evaluation

◆ 项目荣获2024年河南省建材行业技术革新奖一等奖

One project won the First Prize of the 2024 Technical Innovation Award in Henan Province's Building Materials Industry

◆ “第二届国新杯·ESG金牛奖”科技引领二十强

Ranked among the Top 20 in Science and Technology Leadership of the "Second Guoxin Cup · ESG Golden Bull Award"

◆ 一项目入选河南省重点产业链5G规模化应用典型解决方案名单

One project was selected into the list of Typical Solutions for Large-scale 5G Application in Key Industrial Chains in Henan Province



国家科技进步二等奖



第四届河南省专利奖一等奖



河南省科技进步一等奖



河南省建材行业技术革新奖一等奖



无偿献血工作先进单位



初心 优秀奖

全国发明展览会——一带一路
暨金砖国家技能发展与技术创新大赛金奖全国发明展览会——一带一路
暨金砖国家技能发展与技术创新大赛金奖

ESG金牛奖·科技引领二十强

商业模式

Business Model

以高端化为引领,以差异化为路径,发挥科技创新核心驱动作用,加速产业新型高温领域布局与服务化转型,形成以战略新型材料、中高端产品为主体,传统产品制造+技术集成服务为两翼的“一体两翼”商业模式,构建高端化、智能化、绿色化、高效化的产业体系。

Guided by the high-end development with differentiation as the pathway, the Company gives full play to the core driving role of scientific and technological innovation, accelerates the industrial layout in the new high-temperature field and the transformation towards service-oriented development. A “One Body with Two Wings” business model has been formed, with strategic new materials and mid-to-high-end products as the main body, and traditional product manufacturing and technical integration services as the two wings. Furthermore, the company aims to build an industrial system that is high-end, intelligent, green and efficient.



04

责任专题

Column on Responsibility

创新驱动

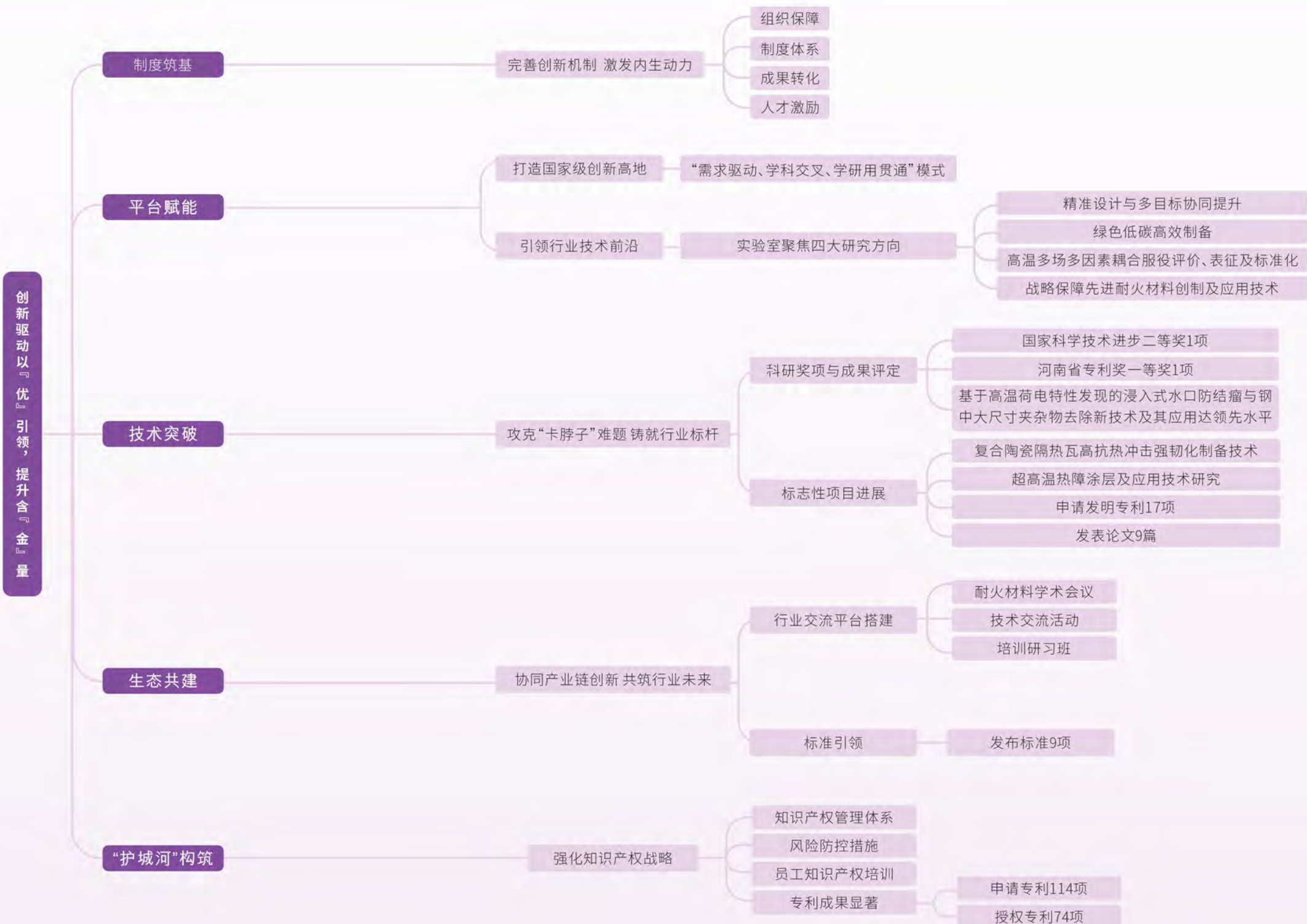
以“优”引领, 提升含“金”量

Innovation-driven excellence:
enhancing value-proposition



创新是引领发展的第一动力，更是企业实现可持续发展的核心引擎。2024年，公司研发投入总额**12646.29万元**，为技术创新提供了强劲动力。作为中国耐火材料行业的领军企业，中钢洛耐始终将创新作为企业发展的战略支点，以制度保障为基石、以平台建设为依托、以技术突破为目标、以协同合作为纽带，构建起覆盖基础研究、技术研发、成果转化、产业协同的全链条创新生态。本专题聚焦中钢洛耐在2024年以创新为核心的责任实践，系统呈现公司在技术创新、研发投入、知识产权保护、产业链协同及标准引领等方面的突出成果，展现其对行业高质量发展与绿色低碳转型的引领作用。

Innovation is the primary driving force for development and, more significantly, the core engine for enterprises to achieve sustainable development. In 2024, the company invested a total of CNY 126.4629 million in research and development, providing a powerful impetus for technological innovation. As a leading enterprise in China's refractory materials industry, Sinosteel Luonai Co., Ltd. has always regarded innovation as a strategic pivot for corporate development. With institutional safeguards as the cornerstone, platform construction as the foundation, technological breakthroughs as the goal, and collaborative cooperation as the link, it has established a full-chain innovation ecosystem covering basic research, technological research and development, achievement transformation, and industrial collaboration. This special topic focuses on Sinosteel Luonai's innovation-centered responsibility practices in 2024, systematically presenting the company's outstanding achievements in technological innovation, R&D investment, intellectual property protection, industrial chain collaboration, and standard leadership, and demonstrating its leading role in the high-quality development and green and low-carbon transformation of the industry.



完善创新机制 激发内生动力

Improving the innovation mechanism and stimulating internal driving forces

中钢洛耐通过系统性制度建设，明确了技术创新的重点方向与任务，为激发全员创新活力，公司构建了“四位一体”的科技创新激励机制。

Through systematic institutional construction, Sinosteel Luonai has clarified the key directions and tasks of technological innovation. To stimulate the innovation vitality of all employees, the company has established a "four-in-one" scientific and technological innovation incentive mechanism.

制度体系 Institutional System

出台《科研项目管理办法》《揭榜挂帅项目管理办法》等制度，建立“目标导向、权责明确、动态考核”的科研管理体系；通过《专利管理办法》《科技创新奖励管理办法》等，打通“研发—转化—激励”闭环。

Formulate and issue regulations such as the "Administrative Measures for Scientific Research Projects" and the "Administrative Measures for Projects under the Taking up the Challenge Mechanism", and establish a scientific research management system featuring "target-oriented approach, clear rights and responsibilities, and dynamic assessment". Through systems like the "Patent Management Measures" and the "Measures for the Management of Scientific and Technological Innovation Incentives", the closed loop of "research and development-transformation-incentive" has been established.

成果转化 Achievement Transformation

设立专项基金支持科技成果产业化，报告期内推动12项技术成果转化为新产品、新工艺，其中“基于高温电特性发现的浸入式水口防结瘤与钢中大尺寸夹杂物去除新技术及其应用”实现规模化应用，助力钢铁企业降本增效。

Special funds have been set up to support the industrialization of scientific and technological achievements. During the reporting period, 12 technological achievements have been promoted to be transformed into new products and new processes. Among them, the "new technology for preventing clogging of immersion nozzles and removing large-sized inclusions in steel based on the characteristics of high-temperature electrical charge and its application" has achieved large-scale application, helping steel enterprises reduce costs and increase efficiency.

组织保障 Organizational Guarantee

成立技术委员会，统筹研发方向与资源配置，确保创新战略高效落地。

A technical committee has been established to coordinate research and development directions and resource allocation, ensuring the efficient implementation of the innovation strategy.

人才激励 Talent Incentive

实施“揭榜挂帅”机制，鼓励跨部门、跨领域协同攻关，2024年共有8个项目通过该机制完成关键技术突破。

The "Taking up the Challenge" mechanism has been implemented to encourage cross-departmental and cross-field collaborative research. In 2024, a total of 8 projects achieved key technological breakthroughs through this mechanism.

这一系列制度创新不仅释放了科研人员的创造潜力，更将企业创新从“单点突破”升级为“系统推进”，为可持续发展注入持久动能。

These innovations not only unleashes the creative potential of scientific research personnel but also upgrades the enterprise's innovation from "single-point breakthrough" to "systematic promotion", injecting lasting momentum into sustainable development.

打造创新高地 引领行业技术前沿

Building an innovation powerhouse and leading the forefront of industry technology

中钢洛耐以国家级平台建设为抓手，推动产学研深度融合，构建开放协同的创新网络。2024年，中钢洛耐院联合上海大学、武汉科技大学共建的全国实验室通过科技部重组答辩，成为耐火材料领域唯一纳入国家新序列的全国重点实验室。实验室聚焦四大研究方向。

Sinosteel Luonai takes the construction of national-level platforms as a key driver to promote the in-depth integration of industry, academia and research, and to build an open and collaborative innovation network. In 2024, the state key laboratory jointly established by Sinosteel Luoyang Institute of Refractories Research Co., Ltd., Shanghai University and Wuhan University of Science and Technology passed the restructuring defense of the Ministry of Science and Technology, becoming the only national key laboratory in the field of refractory materials included in the new national laboratory system. The laboratory focuses on four research directions.

● 先进耐火材料精准设计与多目标协同提升

Precise design and multi-objective collaborative improvement of advanced refractory materials

● 先进耐火材料绿色低碳高效制备

Green, low-carbon and efficient preparation of advanced refractory materials

● 先进耐火材料高温多场多因素耦合服役评价、表征及标准化

Evaluation, characterization and standardization of advanced refractory materials under multi-field and multi-factor coupling at high temperatures

● 战略保障先进耐火材料创制及应用技术

Development and application technology of advanced refractory materials for strategic security

通过“需求驱动、学科交叉、学研用贯通”模式，打通人才链、教育链、创新链、产业链，创建先进耐火材料理论与技术体系，创制特钢绿色化洁净化冶炼、能源绿色安全发展、窑炉极致能效、航天国防等系列先进耐火材料，引领耐火材料并保障高温技术创新发展。

Through the mode of "demand-driven, interdisciplinary integration, and seamless academia-research-application collaboration, Sinosteel Luonai integrates the talent chain, education chain, innovation chain and industrial chain, establishes a theoretical and technical system for advanced refractory materials, develops a series of advanced refractory materials tailored for green and special steel smelting, green and safe energy development, ultra-efficient kilns and furnaces operations, aerospace and national defense, etc. These efforts leads the development of refractory materials industry and ensures the innovative development of high-temperature technologies.

电熔铸铬刚玉和锆刚玉耐火砖研制项目工程样机出厂验收会
中国核电工程有限公司 中钢洛耐科技股份有限公司



攻克“卡脖子”难题 铸就行业标杆

Tackle the “chokepoint” issues to establish an industry paragon

2024年，中钢洛耐始终坚持以创新驱动发展战略，在关键领域实现多项重大技术突破，彰显硬核创新实力。

In 2024, Sinosteel Luonai steadfastly adhered to the innovation-driven development strategy, achieving a number of major technological breakthroughs in key fields and showing its core innovative strength.

科研奖项与成果评定

Scientific research awards and achievement evaluation

获国家科学技术进步二等奖1项、河南省专利奖一等奖1项。“基于高温荷电特性发现的浸入式水口防结瘤与钢中大尺寸夹杂物去除新技术及其应用”经中国金属学会评定达国际领先水平。

It won one Second Prize of the National Science and Technology Progress Award and one First Prize of the Henan Province Patent Award. The "New Technology for Preventing Clogging of Immersion Nozzles and Removing large-sized Inclusions in Steel Based on the Characteristics of High-temperature Electrical Charge and Its Application" was evaluated by the Chinese Society for Metals as reaching the international leading level.

标志性项目进展

Progress of landmark projects

国家重点研发计划“复合陶瓷隔热瓦高抗热冲击强韧化制备技术”，采用毫米级至微米级跨尺度原料的级配、界面设计和气孔调控，开发了具有“增加应变容限，提升应力缓释能力”的新一代强韧化陶瓷隔热瓦。河南省中央引导地方科技发展专项“超高温热障涂层及应用技术研究”突破了高纯稀土钽酸盐喷涂粉体的批量化稳定制备技术，完成了稀土钽酸盐热障涂层结构设计和喷涂工艺优化研究，创新研制出综合性能优异的YSZ/钽酸盐/纳米复合涂层。通过项目实施，申请发明专利17项，发表论文9篇，其中SCI收录7篇，EI收录1篇，目前项目已顺利通过验收。

National Key Research and Development Program "Preparation Technology for High Thermal Shock Resistance, Strengthening and Toughening of Composite Ceramic Insulation Tiles": by employing cross-scale gradation of raw materials (from millimeter to micrometer scale), interface design and pore regulation, a new generation of toughened ceramic insulation tiles with the characteristics of "increasing strain tolerance and enhancing stress relief ability" has been developed. The Special Project of Henan Province Guided by Central Government for Local Scientific and Technological Development, "Research on Ultra-high Temperature Thermal Barrier Coatings and Application Technology", has broken through the technology for batch and stable preparation of high-purity rare earth tantalate spraying powder, completed the research on the structural design and spraying process optimization of rare earth tantalate thermal barrier coatings, and innovatively developed a YSZ/tantalate/nano-composite coating with excellent comprehensive performance. Through the implementation of the project, 17 invention patents were applied for, and 9 papers were published, including 7 papers included in SCI and 1 paper included in EI. Currently, the project has successfully passed the acceptance inspection.



协同产业链创新 共筑行业未来

Collaborate on innovation along the industrial chain to co-create the industry's future

中钢洛耐以创新为纽带推动全产业链升级

Sinosteel Luonai promotes the upgrading of the entire industrial chain with innovation as the connecting link

行业交流平台搭建

Building of industry exchange platforms

作为行业领军企业,中钢洛耐持续发挥行业带动作用,通过举办和参加各类学术会议、技术交流活动 and 培训研习班,加强与行业内企业、科研机构和高校的沟通与合作,促进了行业技术的交流与共享。

As a leading enterprise in the industry, Sinosteel Luonai continues to play a leading role in the industry. By organizing and participating in various academic conferences, technical exchange activities and training seminars, it strengthens communication and cooperation with enterprises, scientific research institutions and universities in the industry, and promotes the exchange and sharing of industry technologies.



第九届国际耐火材料学术会议

成功组织召开第十九届全国耐火材料青年学术报告会、第九届国际耐火材料学术会议(ISR2024),近600位来自中国、美国等世界各地的耐火材料领域专家、学者、企业家和技术人员参加ISR2024会议,参会人员达到新高。与韩国朝鲜耐火公司开展第十届技术交流,双方交流科研方向与进展,计划开展科研项目合作,在产品推广和市场开拓方面加强沟通,实现共赢。

It successfully organized and held the 19th National Youth Academic Symposium on Refractory Materials and the 9th International Symposium on Refractory Materials (ISR2024). Nearly 600 experts, scholars, entrepreneurs and technicians from the field of refractory materials around the world, including China, the United States and other countries, participated in the ISR2024 conference, reaching a new high in the number of participants. It carried out the 10th Technical Exchange Meeting with Korea Chosun Refractories Co., Ltd. The two sides exchanged scientific research directions and progress, planned to carry out cooperation on scientific research projects, strengthened communication in product promotion and market development, and achieved win-win results.

标准引领

Standards Leadership

标准的制定是企业技术实力和行业影响力的重要体现。通过参与标准制定,中钢洛耐将自身的技术优势和创新成果转化为行业标准,引领行业技术发展方向。2024年,主持及参与发布标准9项。其中国家标准3项,行业标准1项,团体标准5项。

The formulation of standards is an important manifestation of an enterprise's technical strength and industry influence. By participating in standard formulation, Sinosteel Luonai transforms its own technical advantages and innovation achievements into industry standards, leading the development direction of industry technology. In 2024, it led and participated in the development and release of 9 standards, including 3 national standards, 1 industry standard, and 5 group standards.

国家标准

3 项

行业标准

1 项

团体标准

5 项

强化知识产权保护 构建完善体系

Strengthen intellectual property protection and establish a robust system

中钢洛耐高度重视知识产权保护工作，构建了完善的知识产权管理体系，筑牢创新成果“护城河”。

Sinosteel Luonai places great importance to the protection of intellectual property rights, and has established a complete intellectual property rights management system to firmly build a "moat" for innovation achievements

为加强知识产权风险防控，公司密切关注市场信息、行业动态、竞争对手动态以及政策法规变化等，及时发现潜在的风险并采取相应的措施。此外，公司还加强员工知识产权培训，通过组织培训课程、讲座等形式，让员工了解和学习相关法律法规，增强员工保密和知识产权保护意识。

In order to strengthen the IP risk prevention and control, the company closely monitors market trends, industry developments, the competitors activities, and policies changes. It promptly identifies potential risks and takes corresponding measures. In addition, the company also strengthens the intellectual property rights training for employees. Through organizing training courses, lectures and other forms, employees can understand and learn relevant laws and regulations, enhancing their awareness of confidentiality IP protection.

申请专利114件

56项

发明专利

58项

实用新型专利

授权专利74件

36项

发明专利

38项

实用新型专利

2024年，公司在知识产权方面也取得了显著成绩，申请专利**114**件，其中发明专利**56**项，实用新型专利**58**项；授权专利**74**件，其中发明专利**36**项，实用新型专利**38**项。

In 2024, the company also achieved remarkable results in terms of intellectual property rights. It applied for 114 patents, including 56 invention patents and 58 utility model patents; and 74 patents were granted, including 36 invention patents and 38 utility model patents.

创新是中钢洛耐践行ESG责任的灵魂。2024年，公司通过制度革新、平台升级、技术突破、生态协同，不仅实现了自身竞争力的跃升，更以“链长”担当推动耐火材料行业向高端化、绿色化迈进。未来，中钢洛耐将继续以创新为引擎，深化基础研究、加速成果转化、扩大开放合作，为国家高温工业低碳转型提供洛耐方案”，书写高质量发展新篇章。

Innovation is the soul of Sinosteel Luonai's fulfillment of ESG responsibilities. In 2024, through institutional innovation, platform upgrading, technological breakthroughs, and ecosystem collaboration, the company not only achieved a leap in its own competitiveness, but also, as the "chain leader", promoted the refractory materials industry to move towards high-endization and green development. In the future, Sinosteel Luonai will continue to take innovation as the engine, deepen basic research, accelerate the transformation of achievements, expand open collaboration, provide the "Luonai Solution" for the low-carbon transformation of the national high-temperature industry, and write a new chapter of high-quality development.



05

治理优化

以“质”稳健, 提升含“质”量

Governance optimization:
steady quality enhancement



强化党建引领 筑牢精神之魂

Strengthening the leadership of CPC and firmly building the spiritual core

强化政治监督，健全全面从严治党体系。公司严格落实党委书记第一责任人职责、领导班子其他成员“一岗双责”，坚持党建和经营工作齐抓共管，带头转作风，出实效。面对严峻的市场环境，公司党委领导班子深入一线广泛听取意见，梳理解决公司运营管理中的难点和突出问题，出台了《中钢洛耐领导班子进一步带头过紧日子、尽快扭转当前困难局面、推动公司高质量发展的七项措施》。公司按照“一企一策”方法全力推进“两金”压降工作；成功召开中钢洛耐第一次党代会，组织策划《贯彻党代会精神 干部职工在行动》专题宣传，展现干部职工积极进取的精神状态，激发基层广大党员干部职工的干事创业热情。

Strengthen political supervision and improve the system for comprehensively and strictly governing the Party. The company strictly implements the primary responsibility of the Party secretary as the first person in charge and the "dual responsibilities for one position" of other members of the leadership team. It adheres to the coordinated management of Party building and business operations, taking the lead in changing work styles and achieving practical results. Facing the severe market environment, the Party committee leadership team of the company conducted inspections into the front line to widely listen to opinions, sorted out and solved the difficult and prominent problems in the company's operation and management, and issued the "Seven Measures for the Leadership Team of Sinosteel Luonai to Further Take the Lead in Living a Thrifty Life, Reverse the Current Difficult Situation as Soon as Possible, and Promote the High-quality Development of the Company". The company has made all-out efforts to promote the work of reducing the "Two Funds" according to the "one enterprise, one strategy" method. It successfully held the first Party Congress of Sinosteel Luonai, organized and planned the special publicity of "Cadres and Employees Taking Action to Implement the Spirit of the Party Congress", showed the positive and enterprising mental state of cadres and employees, and stimulated the enthusiasm of the vast number of Party members, cadres and employees at the grassroots level for doing business and starting undertakings.



中国共产党中钢洛耐科技股份有限公司第一次党员代表大会



开展党建共建

公司充分发挥党建引领作用，与产业链上下游供应商、客户等相关方开展党建联建，发挥好“党建朋友圈”促经营的独特优势，助力生产经营工作，推动企业高质量发展。

The company gives full play to the leading role of Party building, and carries out joint Party building with upstream and downstream suppliers, customers and other relevant parties in the industrial chain. It leverages the unique advantage of the "Party Building Circle of Friends" in promoting business operations, supports production and operation work, and drives the high-quality development of the enterprise.

公司4名员工个人获得中国宝武2023年度“优秀共产党员”“优秀党务工作者”荣誉称号，2个集体获得“先进基层党组织”表彰。公司4名员工个人、2个集体获得中钢集团2023年度“优秀共产党员”“优秀党务工作者”和“先进基层党组织”表彰。

Four employees of the company were individually awarded the honorary titles of "Excellent Communist Party Member" and "Excellent Party Affairs Worker" of China Baowu in 2023, and two collectives were commended as "Advanced Primary Party Organization". Four employees and two collectives of the company were commended as "Excellent Communist Party Member", "Excellent Party Affairs Worker" and "Advanced Primary Party Organization" of Sinosteel Group in 2023.

健全治理架构 夯实决策根基

Enhancing governance framework and solidifying decision-making foundation



董事会履责

The board of directors fulfills its responsibilities

公司根据国资监管和上市公司监管体系的相关要求，修订完善《关联交易管理制度》《募集资金管理制度》《信息披露管理制度》等10项基本管理制度，并制定了《独立董事专门会议工作制度》，为公司规范治理、高效决策提供了完善的制度依据；2024年，公司召开董事会13次，审计委员会4次，起草拟定了21项议案，召开薪酬与考核委员会3次，战略委员会、提名委员会各1次，审议了《公司2023年度财务决算报告》《关于公司高级管理人员2023年度报酬情况的议案》《关于提名公司第二届董事会补选非独立董事候选人的议案》及《关于公司〈2023年度环境、社会及治理(ESG)报告〉的议案》等。

In accordance with the relevant requirements of the state-owned assets supervision system and the supervision system for listed companies, the company has revised and improved 10 basic management systems, including the "Related Party Transactions Management System", the "Raised Funds Management System" and the "Information Disclosure Management System", and formulated the "Working System for Special Meetings of Independent Directors", providing a sound institutional basis for the company's standardized governance and efficient decision-making. In 2024, the company held 13 board of directors meetings and 4 audit committee meetings, and drafted and formulated 21 proposals. The Remuneration and Appraisal Committee held 3 meetings, the Strategy Committee and the Nomination Committee each held 1 meeting. The company deliberated on the "Company's 2023 Annual Financial Final Accounts Report", the "Proposal on the Remuneration of the Company's Senior Management in 2023", the "Proposal on Nominating Candidates for the Supplementary Election of Non-independent Directors of the Company's Second Board of Directors", the "Proposal on the Company's <2023 Annual Environmental, Social and Governance (ESG) Report>", etc.

董事会构成多元化

Diversified composition of the board of directors

公司董事会由7名董事组成，5人为外部董事，其中3人为独立董事，独立董事数量超过董事会人数的1/3；拥有女性董事1名，占董事会总人数的1/7，董事会人员的构成符合相关法律法规、规范性文件的要求。董事会中有2人为公司经营层管理人员，2人为公司股东的派出或推荐人员，公司董事会的组成结构能够充分发挥董事会在决策方面公平公正的作用，董事会成员包含耐火材料、会计、法律和管理等专业人员，能够充分发挥董事会成员在各个领域的专业特长。报告期内，公司共召开4次股东大会会议、13次董事会会议和6次监事会会议，会议的召集与召开程序、出席会议人员资格、会议表决程序、表决结果和决议内容均合法、规范，会议资料完整齐备，并按相关规定及时履行信息披露义务。

The company's Board of Directors is composed of 7 directors, among which 5 are external directors, and 3 of them are independent directors. The number of independent directors exceeds one-third of the total number of directors on the Board. There is 1 female director, accounting for one-seventh of the total number of directors on the Board. The composition of the Board of Directors complies with the requirements of relevant laws, regulations and regulatory documents. Two directors are management personnel at the company's operational level, and two are dispatched or recommended by the company's shareholders. The composition structure of the company's Board of Directors can fully exert the fair and just role of the Board in decision-making. The members of the Board of Directors include professionals in fields such as refractory materials, accounting, law and management, etc., enabling the full utilization of the professional expertise of the Board members in various fields. During the reporting period, the company held a total of 4 general meetings of shareholders, 13 meetings of the Board of Directors and 6 meetings of the Board of Supervisors. The procedures for convening and holding these meetings, the qualifications of the attendees, the voting procedures of the meetings, the voting results and the contents of the resolutions are all legal and compliant. The meeting materials are complete and in order, and the company has fulfilled its information disclosure obligations in a timely manner in accordance with relevant regulations.

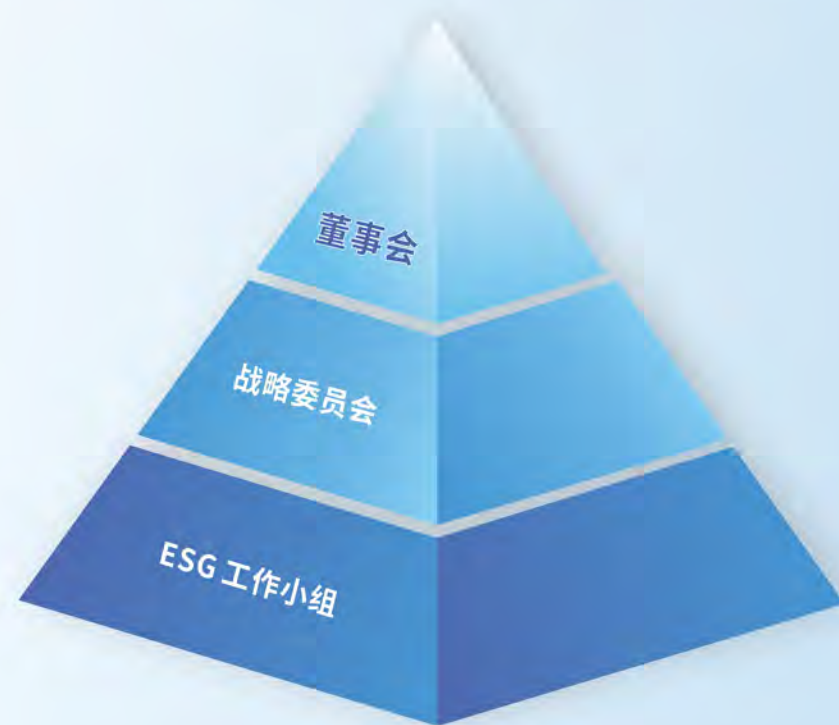


完善ESG管理体系 提升ESG治理水平

Improving ESG management system and enhancing ESG governance level

公司目前已形成完整的ESG报告编撰、审议、披露工作机制。公司董事会每年度指导公司企业文化部牵头成立ESG报告编撰工作小组，组织各业务部门配合，开展年度ESG报告编撰工作。董事会战略委员会作为ESG工作的专门研究审议机构，对公司形成的ESG报告进行研究并提出建议，经战略委员会审核通过后的ESG报告提交董事会进行审议，审议通过后方可对外披露。

We have currently established a complete working mechanism for the compilation, review, and disclosure of ESG reports. Each year, the company's board of directors instructs the Corporate Culture Department to take the lead in establishing an ESG report compilation working group, and organizes various business departments to cooperate in carrying out the annual ESG report compilation work. As a specialized research and deliberative body for ESG affairs, the Strategic Committee of the Board of Directors studies the ESG report formed by the company and puts forward suggestions. The ESG report, after being reviewed and approved by the Strategic Committee, is submitted to the board of directors for review. Only after passing the review can it be disclosed externally.



董事会充分发挥定战略、作决策、防风险职责，下设战略委员会作为专门工作机构，主要负责对公司长期发展战略、重大投资决策及环境、社会及治理(ESG)工作进行研究并提出建议。战略委员会由公司董事长及2名独立董事组成，董事长担任战略委员会主任委员。

The board of directors gives full play to its responsibilities of formulating strategies, making decisions, and preventing risks. It has established a Strategic Committee as a specialized working institution, which is mainly responsible for studying and making suggestions on the company's long-term development strategy, major investment decisions, and environmental, social, and governance (ESG) work. The Strategic Committee is composed of the company's chairman and 2 independent directors, and the chairman serves as the chairperson of the Strategic Committee.

在全面了解内部业务关系、外部客观环境以及利益相关方情况的基础上，结合所处行业特点及发展阶段、自身商业模式等情况，识别对公司有财务重要性和影响重要性的议题，形成议题清单，根据议题清单对相关风险与机遇进行调查和评估。

On the basis of a comprehensive understanding of internal business relationships, the external objective environment, and the situation of stakeholders, combined with the characteristics and development stage of the industry in which it is located, its own business model, etc., the company identifies the issues that are financially important and of significant influence to the company, forming an issue list, and conducts investigations and evaluations of relevant risks and opportunities according to the issue list.



保护投资者权益 筑牢资本市场基石

Safeguarding rights and interests of investors and establishing solid capital market foundation

公司通过业绩说明会、投资者专线咨询电话、上证e服务问答及机构交流会等多种形式与投资者进行沟通交流，积极维护公司与投资者良好关系，提高公司信息透明度，保障全体股东特别是中小股东的合法权益。公司切实遵守《公司章程》及相关政策文件的要求，严格执行累积投票制、重大事项中小投资者单独计票等制度，切实加强中小投资者权益保护。

The company communicates and exchanges with investors through various forms such as performance briefing, investor hotline consultation, SSE e-service Q&A, and institutional exchange meetings, which actively foster strong investor relations, enhance corporate transparency, and safeguard the legitimate rights and interests of all shareholders, particularly retail and minority shareholders. In strict compliance with the Articles of Association and relevant regulatory requirements, the company implements the systems such as the cumulative voting and separate vote counting for small and medium investors on major resolutions, which effectively strengthens the rights and interests protection of retail and minority shareholders.

加强信息公开，通过指定网站上海证券交易所(www.sse.com.cn)及指定报刊《中国证券报》《上海证券报》《证券时报》《证券日报》，真实、准确、完整、公平、及时地进行信息披露，确保公司所有股东能够公平地获取公司信息。

Strengthen information disclosure. Through the designated website of the Shanghai Stock Exchange (www.sse.com.cn) and the designated newspapers including China Securities Journal, Shanghai Securities News, Securities Times, and Securities Daily, information is disclosed truthfully, accurately, completely, fairly and timely to ensure that all shareholders of the company can obtain the company's information fairly.

加强信息保护 夯实发展根基

Strengthening information protection and solidifying development foundation

公司重视知识产权保护，根据《中华人民共和国专利法》《企业知识产权管理规范》等相关法律法规，建立完善了知识产权保护 and 内部管理制度，规范风险控制程序，对公司各项知识产权工作实行台账动态管理，并定期对已获得的知识产权进行市场价值、经济价值、技术价值以及潜在风险进行评估；同时，注重公司各项知识产权合法权益的保护，加强知识产权市场监控，跟踪调查相关知识产权侵权与被侵权行为，防止核心技术被恶意窃取或流失。通过引入知识产权大数据智能分析管理系统，保障资源平台信息有效共享。

The company attaches great importance to the protection of intellectual property rights. In accordance with relevant laws and regulations such as the Patent Law of the People's Republic of China and the Enterprise Intellectual Property Management Specification, it has established and improved the intellectual property protection and internal management systems, standardized the risk control procedures, implemented dynamic ledger management for all the intellectual property work of the company, and regularly evaluated the market value, economic value, technical value and potential risks of the obtained intellectual property rights. At the same time, it pays attention to the protection of the legitimate rights and interests of various intellectual property rights of the company, strengthens the market monitoring of intellectual property rights, tracks and investigates relevant intellectual property infringement and infringed behaviors, and prevents the core technologies from being maliciously stolen or lost. By introducing the big data intelligent analysis and management system of intellectual property rights, it ensures the effective sharing of information on the resource platform.

类 型 Type	次 数 Number of times	相关情况 Relevant circumstances
召开业绩说明会 Hold performance presentations	3	具体详见公司在上海证券交易所网站(www.sse.com.cn)披露的相关公告。 For details, please refer to the relevant announcement disclosed by the company on the website of Shanghai Stock Exchange (www.sse.com.cn)
借助新媒体开展投资者关系管理活动 Carry out investor relations management activities with the help of new media	4	详见公司公众号“中钢洛耐” For more details, please refer to the company's official WeChat account "Sinosteel Luonai"



公司认真贯彻落实数据安全与隐私保护相关法律法规要求，健全数据管理体系，按照相关法律法规要求和上级公司数据安全定级指南，开展重要数据和核心数据识别工作，完成公司数据安全分类分级保护。建立全方位、多层次的安全机制，健全数据管理体系：通过数据加密防止数据窃取或被轻易解读；部署综合防护技术体系，及时发现并阻止恶意攻击；建立数据安全管理制度，明确人员职责和权限；定期开展分级安全培训，提升全员安全素养与意识；配置数据治理岗位，开发数据产品和服务，充分发挥数据要素价值，驱动公司数字化转型和智能化提升。数据机房配备精密空调、UPS、动环系统、自动数据备份设备；办公网络部署网络防火墙、入侵检测、态势感知等安全设备，具备身份鉴别、访问控制和系统审计，能有效防御网络攻击，保障数据与隐私安全。

The company earnestly implements the requirements of relevant laws and regulations on data security and privacy protection, improves the data management system, carries out the identification work of important data and core data in accordance with the requirements of relevant laws and regulations and the data security classification guidelines of superior companies, and completes the classified and graded protection of the company's data security. It establishes an all-round and multi-level security mechanism and improves the data management system: preventing data from being stolen or easily interpreted through data encryption; deploying a comprehensive protection technology system to promptly detect and block malicious attacks; establishing a data security management system to clarify the responsibilities and authorities of personnel; regularly conducting graded security training to improve the security literacy and awareness of all employees; configuring data governance positions, developing data products and services, giving full play to the value of data elements, and driving the company's digital transformation and intelligent improvement. The data computer room is equipped with precision air conditioners, UPS, dynamic environment monitoring systems, automatic data backup equipment. The office network is equipped with security devices such as network firewalls, intrusion detection, and situation awareness, which have functions of identity authentication, access control and system auditing, effectively defending against network attacks and ensuring data and privacy security.



健全监督体系 防范各类风险

Improving the supervision system and prevent all kinds of risks

公司严格贯彻落实中国宝武《关于落实廉洁风险防控工作的实施意见》，全面排查本企业重点领域、重要流程、关键环节存在的廉洁风险，坚持求真务实，真抓严管，以“人财物”管理的权力运行和监督制约为核心，以加强廉洁风险和管理风险管控为目的，在元旦春节、五一端午、中秋国庆等重大节日期间，通过发送提醒短信、微信等方式开展警示教育；为进一步加强廉洁风险防控，公司发布了《关于落实廉洁风险防控工作的实施意见》等制度，并加强学习宣贯，通过完善相关管理制度和业务流程，构建覆盖职能运行全过程的风险管控机制。

The company strictly implements the "Implementation Opinions on Implementing the Prevention and Control of Cleanliness Risks" of China Baowu, comprehensively investigates the cleanliness risks existing in the key areas, important processes and key links of the enterprise. Adhering to the principles of seeking truth from facts, earnestly implementing and strictly managing, with the operation, supervision and restriction of the power in the management of "personnel, property and materials" as the core, and aiming at strengthening the prevention and control of cleanliness risks and management risks, during major festivals such as New Year's Day and Spring Festival, Labor Day and Dragon Boat Festival, Mid-Autumn Festival and National Day, the company conducts warning education through sending reminder text messages, WeChat messages and other means. To further strengthen the prevention and control of cleanliness risks, the company has issued the "Implementation Opinions on Implementing the Prevention and Control of Cleanliness Risks" and other systems, and strengthened the study, publicity and implementation. By improving relevant management systems and business processes, a risk control mechanism covering the whole process of functional operation has been established.



报告期内，公司及下属子公司相关管理人员参加国资央企大讲堂，参加新公司法、涉外法治系列课程培训；公司各单位员工参加河南省工会劳动法律监督员网络培训、合同风险管理培训、能源环保培训等各类型法律及行为合规管理培训，加强公司法治与合规文化建设，在企业内部营造依法合规的良好氛围，让依法合规经营成为全体员工的自觉行为，牢固树立底线思维和红线意识。2024年度公司参培人数共计6303人次，总学时合计53272.5时长。

During the reporting period, the relevant management personnel of the company and its subsidiaries participated in the lecture hall for state-owned assets and central enterprises, and participated in the training of a series of courses on the new Company Law and foreign-related laws. The employees of the various units of the company participated in various types of legal and compliance management training, such as the online training for labor law supervisors of the Henan Provincial Federation of Trade Unions, contract risk management training, and energy and environmental protection training to strengthen the construction of the company's legal and compliance culture, create a good atmosphere of legal compliance within the enterprise, make the compliant operation a conscious behavior of all employees, and firmly establish the bottom-line thinking and the awareness of the red line. In 2024, the total number of participants in the company's training was 6,303, and the total class hours were 53,272.5.



优化依法治理体系，公司建立统一领导、分级负责的合规管理体系，设立法治建设与合规管理委员会，实行总法律顾问制度，围绕生产经营与改革发展，持续推进依法治企和合规运营管理体系建设，明确各治理主体决策权责；严格规范信息披露，防范内幕交易；完善工作机制，构建协同运作机制，提升管理效能。

To optimize the legal governance system, the company has established a compliance management system with unified leadership and hierarchical responsibility, set up a Committee for the Legal Construction and Compliance Management, and implemented the system of chief legal counsel. Focusing on production, operation, reform and development, it continuously promotes the construction of the management system for legal enterprise management and compliant operation, and clarifies the decision-making rights and responsibilities of each governance subject. It strictly standardizes information disclosure to prevent insider trading. It improves the working mechanism, establishes a coordinated operation mechanism, and improves management efficiency.

公司持续以制度规范风险内控管理，发布《中钢洛耐全面风险与内部控制管理制度》等系列风险内控管理制度，不断完善制度体系，为相关工作开展提供有力保障。设置风险内控专职部门，负责公司风险管理体系策划、内控体系建设与运行，推进工作融合、完善风险控制措施，以及对外业务授权和子公司内控指导监督。

The company continuously standardizes the risk and internal control management with systems, and has issued a series of risk and internal control management systems such as the "Sinosteel Luonai Comprehensive Risk and Internal Control Management System", constantly improving the system framework, providing strong guarantee for the implementation of relevant work. A full-time department for risk and internal control has been set up, which is responsible for the planning of the company's risk management system, the construction and operation of the internal control system, promoting the integration of work, improving risk control measures, as well as the external business authorization and the internal control guidance and supervision of subsidiaries.



组织协调风险识别、处置、防控工作，发布应急预案，建立预警监督机制，定期完善风险监控指标，不定期发布风险专题提示，要求各单位落实管控措施，守住风险底线。定期发布企业环境、社会及治理(ESG)报告，各部门各单位通力合作，开展企业自身ESG尽职调查，全面审视自身在环境、社会及治理方面的表现，发现优势与不足，从而将ESG目标融入战略任务，实现长期可持续发展。

It organizes and coordinates the work of risk identification, handling, prevention and control, issues emergency response plans, establishes an early warning and supervision mechanism, regularly improves the risk monitoring indicators, and issues special risk prompts irregularly, requiring each unit to implement control measures and hold the bottom line of risks. It regularly releases the Enterprise Environmental, Social and Governance (ESG) report. All departments and units cooperate fully to carry out the ESG due diligence investigation of the enterprise itself, comprehensively review their own performance in environmental, social and governance aspects, identify the advantages and disadvantages, so as to integrate the ESG objectives into the strategic tasks and achieve long-term sustainable development.

06

低碳转型

以“绿”永续, 提升含“绿”量

Low-carbon transformation:
advancing sustainable green development



2024年,公司坚持以习近平生态文明思想为指导,全面落实全国生态环境保护大会精神,完整准确全面贯彻新发展理念,坚持生态优先、绿色低碳发展,遵守国家有关生态环境保护法律法规要求,实行污染物减排与环境治理并举。报告期内投入环保资金**2850.77**万元,缴纳环保税共计**38.99**万元。

In 2024, guided by Xi Jinping Thought on Ecological Civilization, We fully implemented the spirit of the National Conference on Ecological and Environmental Protection, thoroughly, accurately and comprehensively applied the new development philosophy, adhered to the principles of giving priority to ecological protection and pursuing green and low-carbon development, abided by the requirements of national laws and regulations on ecological and environmental protection, and simultaneously carried out both pollutant emission reduction and environmental governance. During the reporting period, we invested CNY 28,507.7 million in environmental protection funds and paid a total of CNY 389,900 in environmental protection taxes.



健全完善管理制度 提升规范化水平

Improving the management system and enhancing the level of standardization

公司高度重视节能环保工作,不断完善相关制度,2024年调整了能源环保管理委员会,制定发布了《能源管理办法》《固体废物管理办法》《危险废弃物管理办法》《环保事件问责管理办法》等制度,加强了对能源和固危废的管理,进一步提升环保管理规范化水平。

We attach great importance to energy conservation and environmental protection and continuously improve the relevant systems. In 2024, We adjusted the Energy and Environmental Protection Management Committee and formulated and issued systems such as the Measures for Energy Management, the Measures for Solid Waste Management, the Measures for Hazardous Waste Management, and the Measures for Accountability Management of Environmental Protection Incidents. These measures have strengthened the management of energy, solid waste, and hazardous waste, and further enhanced the standardization level of environmental protection management.



公司及所属子公司定期对厂区生活污水管道、隔油池、沉淀池、总排口进行清理和维护,规范排污口设置。2024年,耐研滨河更新了污水处理设备,提升了污水处理能力和效果,处理后的废水用于绿化,可实现废水零排放。报告期内,公司万元产值用新水量(可比价)为**1.51**吨/万元,循环使用的水量为**465.17**万吨。

The company and its subsidiaries regularly clean and maintain the domestic sewage pipelines, oil separation tanks, sedimentation tanks and general discharge outlets within the factory areas, and standardize the setting of sewage discharge outlets. In 2024, Sinosteel Ningxia LIRR Binhe New Material Co., Ltd. updated the sewage treatment equipment, improving the sewage treatment capacity and effect. The treated wastewater is used for greening purposes, achieving zero wastewater discharge. During the reporting period, the new water consumption per CNY 10,000 output value (at comparable prices) of the company was 1.51 tons per CNY 10,000, and the recycled water consumption was 4.6517 million tons.

公司制定了《黄河流域生态环境保护规划》,并对年度废气减排目标进行了分解、签订了目标责任书,建立了《环保事件问责管理办法》、环保十条禁令等文件。采取自查自纠34项问题并整改、排查环保设施风险、开展环保升级改造、升级4套门禁系统等措施减少废气排放。2024年实际二氧化硫排放总量**25.24**吨,氮氧化物排放总量**44.35**吨,完成年度减排目标。

We formulated the "Ecological Environment Protection Plan for the Yellow River Basin", decomposed the annual waste gas emission reduction targets, and signed target responsibility contract. We also established documents such as the "Measures for Accountability Management of Environmental Protection Incidents" and the Ten Prohibitions on Environmental Protection. We taken a series of measures to reduce waste gas emissions, including the self-inspection and rectification of 34 the problems, the investigation of environmental protection facilities risks, the Promotion and transformation of environmental protection, and the upgrading of 4 access control systems. In 2024, the actual total emissions of sulfur dioxide were 25.24 tons, and the total emissions of nitrogen oxides were 44.35 tons, achieving the annual emission reduction targets.

2024年发布《固体废物管理办法》和《危险废弃物管理办法》,进一步规范了固废和危废的管理。一般工业固废自行或交其他单位回用,危废交有资质第三方处置,开展固废减量等工作,助力“无废城市”“无废集团”建设,危废合规暂存处置率**100%**,配合土壤和地下水调查采样。固体废物综合利用率**100%**,2024年公司产生危废**22.20**吨,转移处置**22.88**吨(含去年库存**0.68**吨),合规暂存处置率**100%**。子公司被洛阳市工信局评为洛阳市第二批“无废工厂”。

In 2024, the Measures for Solid Waste Management and the Measures for Hazardous Waste Management were issued, further standardizing the management of solid waste and hazardous waste. General industrial solid waste is either recycled by the company itself or handed over to other units for recycling, while hazardous waste is entrusted to qualified third-party disposal companies. Work such as solid waste reduction has been carried out to contribute to the construction of a "waste-free city" and a "waste-free group". The compliance rate of temporary storage and disposal of hazardous waste is 100%. We also cooperates for soil and groundwater investigation and sampling. The comprehensive utilization rate of solid waste is 100%. In 2024, we generated 22.20 tons of hazardous waste, and 22.88 tons (including 0.68 tons of inventory from the previous year) were transferred for disposal, with a compliance rate of temporary storage and disposal reaching 100%. Our subcompany was rated as the second batch of "Waste-free Factory" in Luoyang.

坚持绿色发展理念 降低能源消耗

Upholding green development principles and reducing energy consumption

公司主要涉及能源为电、天然气,主要涉及资源为水资源、原辅材料。2024年新建了约3兆瓦分布式光伏发电,报告期内,公司能源消费分别为电力10,593.13万千瓦时;天然气3,190.99万立方米。公司主要通过建设新能源项目、更新重点用能设备、优化烧成工艺、通过优化配方降低烧成温度、窑炉余热利用、采购节能电机等措施降低单位产品能耗,节约电力和天然气等能源;通过节水设备使用、生产工艺优化、节约生活用水等措施,降低水资源的消耗及对水环境的影响;通过提高产品合格率、资源回收利用和减少原料撒漏等措施减少原辅材料的消耗。制定包装制度,严禁浪费角纸、垫纸、纸板等包装辅材;精确计算耗材用量后裁剪,回收余料用于其他产品,包装材料边角料也回收利用。在保证产品质量的前提下,减小包装材料厚度。根据产品规格和数量提前规划,充分利用托盘或木箱有效空间,减少使用量。对需求量大的产品,专项定制包装纸片规格和厚度,避免产生废角料。统一收集破碎托盘,用于盛放原料、不合格品或其他自用产品;统一收集废弃吨包装袋,用于盛放日常垃圾、废弃物或周转物料;回收利用原料附带的质量较好的木托盘。报告期内,制成品所用包装材料总量约9000吨,回收包装材料约占3%。



In the company, the main energy sources are electricity and natural gas, and the main resources it involves are water resources, raw and auxiliary materials. In 2024, a distributed photovoltaic power generation project of approximately 3 MW was newly built. During the reporting period, the energy consumption was 105,9313 million kWh of electricity and 31.9099 million cubic meters of natural gas. The company mainly reduces the energy consumption per unit of products and saves electricity and natural gas energy sources through measures such as building new energy projects, updating key energy-consuming equipment, optimizing the firing process, reducing the firing temperature by optimizing the formulation, utilizing the waste heat of kilns, and purchasing energy-saving motors. The company reduces the consumption of water resources and the impact on the water environment through measures such as using water-saving equipment, optimizing the production process, and saving domestic water. The company also reduces the consumption of raw and auxiliary materials through measures such as improving the product qualification rate, recycling resources, and reducing raw material spills. The company has formulated a packaging system, strictly prohibiting the waste of packaging auxiliary materials such as corner papers, cushion papers, and cardboards. The materials are cut after accurately calculating the consumption, and the remaining materials are recycled for other products. The cuttings of packaging materials are also recycled. On the premise of ensuring product quality, the thickness of packaging materials is reduced. According to product specifications and quantities, advance planning is carried out to make full use of the effective space of pallets or wooden boxes and reduce their usage. For products of high demand, the specifications and thickness of packaging paper are specially customized to avoid generating scrap corners. Broken pallets are uniformly collected to hold raw materials, nonconforming products, or other self-used products. Discarded ton bags are uniformly collected to hold daily garbage, waste, or turnover materials. The relatively good wooden pallets attached to raw materials are recycled. During the reporting period, the total amount of packaging materials for finished products was approximately 9,000 tons, and the recycled packaging materials accounted for approximately 3%.

加大厂区绿化力度 保护生物多样性

Increasing the factory greening and protecting biodiversity

公司积极践行国家生态保护战略，聚焦生物多样性保护及黄河流域生态治理目标，大力推进厂区绿化工作。2024年，新种植**1450平方米**麦冬，新增绿地**6512平方米**，栽种乔木约**70棵**，选用本地适生树种，为昆虫、鸟类等生物提供栖息地，助力构建“城市工业生态微系统”，推动生物多样性“就地保护”，以实际行动履行企业环保责任。



The company actively implements the national ecological protection strategy, focuses on the goals of biodiversity conservation and ecological governance in the Yellow River Basin, and vigorously promotes greening in the factory area. In 2024, 1,450 square meters of Ophiopogon japonicus were newly planted and the green area increased by 6,512 square meters, and about 70 arbors were planted. Native tree species suitable for growth were selected to provide habitats for insects, birds and other organisms. This helps to build an "urban industrial ecological microsystem", promotes the "in-situ conservation" of biodiversity, and fulfills the enterprise's environmental protection responsibilities with practical actions.

应对气候变化 助力“双碳”目标

Addressing climate change and supporting the "Dual-Carbon Goals"

公司坚持把节约能源资源放在首位，加大节能减碳项目实施力度，推动能耗双控转向碳排放双控，从源头减少二氧化碳排放。公司温室气体排放主要为天然气燃烧产生的直接二氧化碳排放、净购入的电力消费产生的间接二氧化碳排放。

The company persists in prioritizing energy and resource conservation, intensifies the implementation of energy-saving and carbon reduction projects, promotes the shift from dual control of energy consumption to dual control of carbon emissions, and reduces carbon dioxide emissions at the source. The company's greenhouse gas emissions mainly include direct carbon dioxide emissions generated from the combustion of natural gas and indirect carbon dioxide emissions resulted from the net purchased electricity consumption.

2024年，公司温室气体排放量共计为**127627.29吨**。

In 2024, the total greenhouse gas emissions amounted to **127,627.29 tons**.

2024年	实物量	范围1	范围2
In 2024	Physical Quantity	Scope 1	Scope 2
天然气消耗	3190.99万立方米	69084.11吨二氧化碳	58543.18吨二氧化碳
Natural gas consumption	31.9099 million cubic meters	69,084.11 tons of carbon dioxide	58,543.18 tons of carbon dioxide

公司积极响应“碳达峰碳中和”政策，落实“双碳”及新能源政策，开展产品碳足迹核算，推进新能源建设、窑炉余热利用改造，加装太阳能路灯，更换新型节能变压器、空压机和电机并维护，实现节能降碳，减少化石能源消耗。报告期内，公司建成**10兆瓦**分布式光伏并网发电，全年光伏发电**680万Kwh**，降低用电成本约**118万元**，持续优化能源消费结构。

The company actively responds to the policies of "carbon emission peaking and carbon neutrality", implements the "dual carbon" and new energy policies, conducts product carbon footprint accounting, promotes the construction of new energy sources, transforms kilns for the utilization of waste heat, installs solar street lamps, replaces and maintains new energy-saving transformers, air compressors and motors, so as to achieve energy conservation and carbon reduction and reduce the consumption of fossil energy. During the reporting period, the company built a 10-megawatt distributed photovoltaic grid-connected power generation project, and the annual photovoltaic power generation reached 6.8 million Kwh, reducing the electricity cost by approximately CNY1.18 million and continuously optimizing the energy consumption structure.

公司实施绿色采购，推动落后电机更新，报告期内，淘汰18台落后制冷设备，更新45台落后电机；在项目建设和设备采购中，推广使用一级或二级能效设备，提升节能水平。对干燥窑进行热风循环改造，增强均温性与保温性能，大幅降低干燥用电量；改造利用隧道窑余热，用于办公楼取暖和车间工人洗澡，提升用能效率。

The company implements green procurement and promotes the renewal of backward motors. During the reporting period, 18 sets of backward refrigeration equipment were phased out, and 45 sets of backward motors were updated. In project construction and equipment procurement, the company promotes the application of first-level or second-level energy efficiency equipment to improve the energy-saving level. The hot air circulation renovation was carried out on the drying kilns to enhance the temperature uniformity and heat preservation performance, significantly reducing the electricity consumption for drying. The waste heat from the tunnel kiln was renovated and utilized for heating the office building and providing hot water for workers in the workshop, thus improving energy utilization efficiency.

公司以“碳达峰、碳中和”为契机,在追求自身绿色发展的同时,大力研发节能环保新产品,开拓新市场,为高温领域节能减排、降本增效和技术进步贡献力量。在科研项目立项阶段,成立包含环保专家在内的项目评审组,立项建议书中设立了环境评价章节,对可能使用的有毒有害原料、高能耗设备,以及生产和使用后可能带来的环境危害进行全面而深入的评估,从源头上降低环境风险。

Taking the opportunities of "carbon emission peaking and carbon neutrality", while pursuing its own green development, the company vigorously researches and develops new energy-saving and environmental protection products, and explores new markets, contributing to energy conservation, emission reduction, cost reduction, efficiency improvement and technological progress in the high-temperature field. During the initiation stage of scientific research projects, a project evaluation team including environmental protection experts is established, and an environmental assessment chapter is set up in the project initiation proposal to conduct a comprehensive and in-depth assessment of potentially toxic and hazardous raw materials, high-energy-consuming equipment, and the possible environmental hazards brought about after production and use, thereby reducing environmental risks from the source.

公司成功研发多项关键产品与技术:电熔铸铬刚玉产品是我国玻璃固化技术处理核工业高放废液的关键炉衬材料,已完成中试,在首套玻璃固化陶瓷电熔炉试验炉上使用超过一年,有力支撑关键工艺与配方研制;多孔陶瓷烧嘴用于燃气轮机,使燃料充分燃烧,热量场分布均匀,降低能量损耗与氮氧化物排放;低成本高性能气凝胶材料热导率极低,可广泛应用于绿色建筑,减少热能散失;耐火材料不定形化与免高温烧成技术,借助高效结合剂等工艺,减少制作工序的机械损毁与热损耗,保证性能的同时减少烧成环节,节约能源。

The company has successfully developed a number of key products and technologies. The electrofused cast chrome corundum product is a crucial furnace lining material for the treatment of high-level radioactive liquid waste in the nuclear industry through the vitrification technology in China. It has completed the pilot test and has been used on the first set of the vitrification ceramic electric melting test furnace for more than a year, strongly supporting the development of key processes and formulations. The porous ceramic burner, used in gas turbines, enables the fuel to burn completely, ensuring a uniform heat distribution, thus reducing energy loss and nitrogen oxide emissions. The low-cost and high-performance aerogel material has an extremely low thermal conductivity and can be widely applied in green buildings to reduce heat loss. The unshaping and high-temperature free firing technology of refractories, with the help of high-efficiency binders and other processes, reduces the mechanical damage and thermal loss during manufacturing, which reduces the firing process and saves energy while ensuring the performance.



光伏发电

公司践行“双碳”发展战略,根据公司实际,设定应对气候变化目标为万元产值二氧化碳排放量0.61吨/万元,实际温室气体排放强度为万元产值二氧化碳排放(可比价)为0.55吨二氧化碳当量/万元。

The company implements the "dual carbon" development strategy. Based on its actual situation, the company has set the target for addressing climate change as 0.61 tons carbon dioxide emissions per CNY 10,000 output value and the actual greenhouse gas emission intensity is 0.55 tons carbon dioxide equivalent per CNY 10,000 output value (at comparable prices).

公司针对钢铁行业低碳绿色的发展需求,基于高炉富氢冶炼、全氢冶炼和氢基竖炉冶炼等“以氢代碳”的绿色冶炼新技术、新装置,开展了相关耐火材料的合理配置和长寿化研究,研究了耐火材料侵蚀机理及积碳行为,为低碳冶金高温装置耐火材料的科学配置、新材料研发和炉衬长寿化提供理论基础。

To satisfy the low-carbon and green development needs of the steel industry, the company has carried out research on the rational allocation and long-life design of relevant refractory materials based on new green smelting technologies and devices such as hydrogen-enriched blast furnace smelting, all-hydrogen smelting, and hydrogen-based shaft furnace smelting that feature the substitution of hydrogen for carbon. The corrosion mechanism of refractory materials and the carbon deposition behavior were studied, providing a theoretical basis for the scientific configuration of refractory materials for high-temperature devices in low-carbon metallurgy, the research and development of new materials, and the long service life of furnace linings.

公司与欧冶工业品合作,牵头制定了《耐火材料产品种类规则(PCR)》,已在钢铁全产业链EPD平台发布。此次制定的PCR文件是全球首个针对耐火材料产品的EPD(环境产品声明)分类规则,填补了国际标准空白,为行业提供了科学、规范的环境影响评价框架。将通过数据透明化、评价标准化和行动协同化,推动耐火材料行业从“高能耗、高排放”传统模式向绿色低碳高质量模式转型,为我国实现“双碳”目标、参与全球气候治理提供实质性支撑。

Cooperated with Obei, the company took the lead in formulating the "Product Category Rules (PCR) for Refractory Materials", which has been released on the EPD platform of the entire steel industry chain. The PCR document is the world's first EPD (Environmental Product Declaration) classification rule for refractory materials products, filling the gap in international standards and providing a scientific and standardized environmental impact assessment framework for the industry. Through data transparency, evaluation standardization, and coordinated actions, it will promote the transformation of the refractory materials industry from the traditional mode of "high energy consumption and high emissions" to a green, low-carbon and high-quality mode, providing substantial support for China to achieve the "dual carbon" goals and participate in global climate governance.



智能化立体仓储系统

2024年,公司完成了9个产品碳足迹核算报告的年度更新,减少排放二氧化碳当量3,420.13吨。

In 2024, the company completed the annual update of the carbon footprint accounting reports for 9 products, reducing the carbon dioxide equivalent emissions by 3,420.13 tons.



新型高温功能材料生产线概览图

产品碳足迹
Product Carbon Footprint

中钢洛耐科技股份有限公司
河南省洛阳市涧西区西苑路1号

以下“中钢洛耐科技股份有限公司_莱钢石铸”产品碳足迹评价由欧冶工业品股份有限公司完成,并由专家进行独立审定评价。

服务: 1千克的“中钢洛耐科技股份有限公司_莱钢石铸”产品碳足迹评价结果为:
(1) 莱钢石铸工厂(A1-A3): 2.182263e+00 kg CO₂eq/kg;
(2) 工厂大门到客户(西苑路) 2.345710e+01 kg CO₂eq/kg。
该产品碳足迹的计算和验证按照国家标准《GB/T 24040-2008 环境管理 生命周期评价 原则与框架》、国家标准《GB/T 24044-2008 环境管理 生命周期评价 要求与指南》、国际标准《ISO 14067:2018 温室气体产品碳足迹 量化要求和指南》的生命周期评价方法完成。

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欧贝零碳
Eco
欧冶工业品股份有限公司
www.obei.com.cn

产品碳足迹
Product Carbon Footprint

中钢洛耐科技股份有限公司
河南省洛阳市涧西区西苑路1号

以下“中钢洛耐科技股份有限公司_莱钢石铸”产品碳足迹评价由欧冶工业品股份有限公司完成,并由专家进行独立审定评价。

服务: 1kg的“中钢洛耐科技股份有限公司_莱钢石铸”产品碳足迹评价结果为:
(1) 莱钢石铸工厂(A1-A3): 5.632E-1 kg CO₂eq;
(2) 工厂大门到客户(西苑路) 1.918E-1 kg CO₂eq。
该产品碳足迹的计算和验证按照国家标准《GB/T 24040-2008 环境管理 生命周期评价 原则与框架》、国家标准《GB/T 24044-2008 环境管理 生命周期评价 要求与指南》、国际标准《ISO 14067:2018 温室气体产品碳足迹 量化要求和指南》的生命周期评价方法完成。

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www.obei.com.cn

07

拥抱大我

以“善”致远, 提升含“责”量

Embrace social responsibility:
long-term impact through sustainable goodness





履行社会责任 展现国企担当

Fulfilling social responsibilities and demonstrating exemplify of state-owned enterprises

公司认真贯彻落实习近平总书记关于乡村振兴的重要论述精神,按照相关部署,选派第五任驻村第一书记到定点帮扶的汝阳县井沟社区开展驻村帮扶,助力乡村振兴。通过年节福利采购、职工购买、职工帮销等方式,消费帮扶农户自产农副产品18.23万余元,在夏季,首次以防暑降温物资采购的方式采购村脱贫户自种西瓜近万元;积极参与第三届“央企消费帮扶农周”活动,共计消费帮扶金额93.94万元;公司通过“志”“智”双扶和暖心捐赠等形式,向对口帮扶井沟村爱心超市捐资捐物,向村集体捐助办公设备,助力乡村振兴。

The company earnestly implement the important expositions of General Secretary Xi Jinping on rural revitalization. In accordance with relevant arrangements, we dispatched the fifth resident village first secretary to Jinggou Community in Ruyang County, the designated poverty alleviation area, to carry out resident village assistance work and contribute to rural revitalization. Through methods such as purchasing festival benefits, employee purchases, and employee-assisted sales, we helped consume more than CNY 182,300 products produced by rural households. In summer, we purchased nearly CNY 10,000 worth of watermelons self-grown by poverty-alleviated households in the village in the form of purchasing heatstroke prevention and cooling supplies. We actively participated in the third "Central Enterprise Consumption Assistance for Agricultural Development Week" activity, with a total amount of CNY 939,400 for consumption-driven poverty alleviation. The company provided donations of funds and materials to the targeted-assistance Jinggou Village's charity supermarket through forms such as "ambition-and-intelligence" assistance and warm-hearted donations, and donated office equipment to the village collective, making contributions to rural revitalization.

公司在创造经济效益的同时,始终坚持回馈社会,主动参与公益慈善活动,报告期内,以助学捐赠的方式支持教育事业,为公司周边幼儿园、小学、初中捐赠费用合计1.4万元,促进教育事业的持续发展;开展无偿献血活动,组织45名职工进行献血、3名职工捐献造血干细胞,共献出18030ml健康血液。

While creating economic benefits, the company has always been committed to giving back to society and actively participating in public welfare and charitable activities. During the reporting period, it supported the education cause through educational assistance donations. A total of CNY 14,000 was donated to kindergartens, primary schools and junior high schools around the company to promote the sustainable development of education. In addition, it organized unpaid blood donation activities involving 45 employees to donate blood and 3 employees to donate hematopoietic stem cells, with a total of 18,030 mL of healthy blood donated.



六一儿童节走访慰问活动



无偿献血活动

护航股东和债权人权益

Protecting rights of shareholders and creditors



公司始终重视股东和债权人权益保护工作,切实履行上市公司责任。报告期内,公司按照《公司法》《证券法》等有关法律、法规和规范性文件的要求,不断完善公司法人治理结构,注重公司的规范化运营。以《公司章程》为基础,建立健全内部各项管理制度,形成以股东大会、董事会、监事会为主体结构的决策与经营体系,公司三会的通知、召集、召开、表决程序均符合相关规定。报告期内,公司严格履行信息披露义务,做到信息披露工作的真实、准确、完整、及时,同时向所有投资者公开披露信息,保证所有股东均有平等的机会获取信息。公司重视对投资者的合理投资回报,按照分红政策的要求制定分红方案,以维护广大股东合法权益。公司通过签订合同、定期付款等方式保障债权人权益,利用互通互访的交流形式,及时与债权人进行沟通和信息联系,创造合作共赢、共同发展的环境。

The company attaches great importance to the protection of the rights of shareholders and creditors, and earnestly fulfills the responsibilities of a listed company. During the reporting period, in accordance with the requirements of relevant laws, regulations and regulatory documents such as the Company Law and the Securities Law, the company has continuously improved its corporate governance structure and focused on the standardized operation. Based on the Company's Articles of Association, the company has established and improved various internal management systems, and formed a decision-making and operation system with the general meeting of shareholders, the board of directors and the board of supervisors as the main structure. The notification, convening, holding and voting procedures of the three meetings are all in line with relevant regulations. During the reporting period, the company strictly fulfilled information disclosure obligations, ensuring that the information disclosure work is true, accurate, complete and timely. At the same time, it publicly disclosed information to all investors, ensuring that all shareholders have an equal opportunity to obtain information. The company also attaches great importance to the reasonable investment returns of investors and formulates dividend plan in accordance with the requirements of the dividend policy to safeguard the legitimate rights of shareholders. The company safeguards the rights of creditors by means such as signing contracts and regular payment, and communicates and maintains information contact with creditors in a timely manner through mutual visits and exchanges, which has created an environment of win-win cooperation and common development.

切实维护职工权益 营造良好从业环境

Safeguarding employees rights and fostering positive professional environment



报告期内,公司拥有在职职工 2677人,其中40岁及以下占比28.46%,博士研究生 15 人,硕士研究生 156人,大学专科及以上学历占比38.44%,汉族 2609 人,少数民族 68 人。

During the reporting period, there were 2,677 employees in the company. Among them, employees aged 40 and below accounted for 28.46%. There were 15 employees with a Doctoral degree and 156 employees with a Master's degree. Employees with a junior college degree or above accounted for 38.44%. There were 2,609 Han employees and 68 ethnic minority employees.



公司严格遵守《中华人民共和国劳动法》《中华人民共和国劳动合同法》等相关法律规定,秉持民主、合法的程序制定多样化和平等机会的劳动人事规章制度,营造良好的从业环境。公司坚持公正、公平、公开的雇佣原则,反对一切以种族、性别、年龄、家庭背景、宗教信仰等为由的歧视行为,确保所有员工在招聘、劳动、薪资、培训、晋升、补偿等阶段都能享受到公平对待。公司开展民主管理,普及劳动安全卫生教育,改善操作环境和工作条件,为职工创造健康、安全的工作环境,对违规行为进行全面检查和调查处理。尊重并保护员工隐私,以制度保障员工在薪酬、福利等多方面的权益。

The company strictly complies with relevant laws and regulations such as the Labor Law of the People's Republic of China and the Labor Contract Law of the People's Republic of China, and formulates diverse labor and personnel regulations and systems that provide equal opportunities in accordance with democratic and legal procedures, creating a favorable working environment. The company also adheres to the employment principles of fairness, impartiality and openness, and opposes all forms of discriminatory behavior on the grounds of race, gender, age, family background, religious belief, etc., ensuring that all employees can enjoy fair treatment in all stages such as recruitment, labor, salary, training, promotion and compensation. The company conducts democratic management, popularizes labor safety and hygiene education, improves the operating environment and working conditions to create a healthy and safe working environment for employees and conducts comprehensive inspections, investigations and handling of violations. The company respects and protects employees' privacy, and safeguards employees' rights and interests in various aspects such as salary and benefits through institutional measures.

公司遵循同工同酬等原则,致力于构建一个公平、公正的薪酬与福利体系,以吸引和保留优秀人才,同时激励员工的工作积极性和创造力。

Following the principle of equal pay for equal work we commit to building a fair and just salary and welfare system to attract and retain outstanding talents, while motivating employees' work enthusiasm and creativity.

构建岗位工资+绩效奖金+津补贴+其他奖励的薪酬体系。

We build a salary system consisting of post salary, performance bonus, allowances and other incentives.

构建法定假期+社保公积金企业年金+培训与发展+职工活动的福利体系。社会保险覆盖率:100%,人均带薪年假天数:9.5天。

We build a welfare system that includes legal holidays, social security, provident fund and enterprise annuity, training and development and employee activities. The coverage rate of social insurance is 100%, and the paid annual leave days per capita is 9.5 days.



摄影培训



线上慰问驻工程项目人员

坚持职工代表大会制度，每年召开职代会、工代会，签订《集体合同》《女职工特殊权益保护专项集体合同》。坚持开展“关爱你我他（她）温暖千万家”活动和困难职工帮扶工作。2024年春节走访慰问离退休老同志、在职一线困难职工、在职省级以上劳模、春节驻外工程现场职工56名，共计发放温暖帮扶资金和温暖物资10.18万元。解决职工子女就近入学难问题，协调安排39名职工子女就近入托、入学。2024年全公司2182人参加洛阳市互助保障，公司工会专项补贴4.36万元。

We adhere to the system of the workers' congress, hold the workers' congress and the trade union congress every year, and sign the "Collective Contract" and the "Special Collective Contract for the Protection of Female Employees' Special Rights and Interests". We persist in carrying out the activity of "Caring for You, Me, Him/Her and Bringing Warmth to Thousands of Families" and the assistance work for employees in difficulties. During the Spring Festival in 2024, we paid visits and extended condolences to 56 retired senior employees, front-line employees in difficulties, model workers at the provincial level and above who are still in service, and employees at overseas project sites during the Spring Festival. A total of CNY 101,800 in warm assistance funds and supplies were distributed. In order to solve the problem of the difficulty for employees' children to enroll in nearby schools, we coordinated and arranged for 39 employees' children to enter nearby kindergartens and schools. In 2024, a total of 2,182 employees in our company participated in the mutual assistance insurance in Luoyang, and the trade union of the company provided a special subsidy of CNY 43,600.

2024年，公司召开第一届工会会员代表大会暨第一届职工代表大会，选举产生了新一届工会委员会、经费审查委员会、女职工委员会；成立了提案审理委员会、民主评议监督委员会、法律监督委员会等7个职代会专门委员会，为工会各项工作的开展提供了坚强组织保障。《中钢洛耐职工代表大会实施办法》中第九条规定职工代表中少数民族职工应有适当的比例。

In 2024, we convened the first trade union member representative assembly and the first staff representative assembly, and elected a new session of the trade union committee, the fund review committee, and the women staff committee. Seven special committees of the staff representative assembly, such as the proposal review committee, the democratic evaluation and supervision committee, and the legal supervision committee, were established, providing a strong organizational guarantee for the implementation of various trade union work. Article 9 of the "Implementation Measures of the Staff Representative Assembly of Sinosteel Luonai" stipulates that there should be an appropriate proportion of ethnic minority staff among the staff representatives.

积极组织参加宝武职工技能竞赛，获得中国宝武2023年“银牛奖”2人、“铜牛奖”6人、金玫瑰奖章1人，受到“宝武工匠”提名表彰1人。2个班组荣获中国宝武“五有班组”称号，3个集体和1名职工获得中国宝武算账经营最佳实践团队和算账经营实践者等奖项。

We actively participated in the Baowu Employee Skill Competition. As a result, 2 employees won the "Silver Ox Award" in 2023 of China Baowu, 6 employees won the "Bronze Ox Award", 1 employee won the Golden Rose Medal, and 1 employee was nominated and commended as a "Baowu Craftsman". Two work teams were awarded the title of "Five-qualification Work Team" of China Baowu. Three collectives and 1 employee received awards such as the Best Practice Team in Cost-based Operation and the Practitioner in Cost-based Operation of China Baowu.



玫瑰奖章



银牛奖



铜牛奖

畅通职业发展通道 提升职工能力素质

Streamlining career development pathways and enhancing employee competencies

建立完善人力资源全面激励制度，构建双通道员工职业发展晋升体系。建立适合中钢洛耐“扁平化、高效化”管理要求的、规范统一的岗位体系管理制度，明确岗位各项管理要求，推动管理的制度化、规范化、科学化。建立纵向岗位层级晋升激励机制，以及适配不同员工类型的分类薪酬体系，以能力和业绩为导向，增强薪酬激励精准性。

We have established a comprehensive human resources incentive system and constructed a dual-channel employee career development and promotion system. And established a standardized and unified post system management system that meets the "flat and efficient" management requirements of Sinosteel Luonai, clearly defined various management requirements for posts, and promoted the institutionalization, standardization, and scientification of management. A vertical post-level promotion incentive mechanism and a classified salary system adapted to different types of employees have been established. Guided by capabilities and performance, the accuracy of salary incentives has been enhanced.

公司高度重视员工培训工作，结合公司战略发展及实际经营需要，调研各部门培训需求，统筹制定并落实全年培训计划。新员工入职时进行三级安全教育与实训教育，助其了解公司。针对在岗员工，按岗位和层级开展针对性岗位技能培训，组织中层干部和一般管理岗位人员培训，提升管理与专业技术人员能力及综合素质，增强公司核心竞争力。加强对科技研发人员的科技伦理的培训和教育，通过座谈会、学术交流会等方式，教育引导科技人员遵守科研道德规范，树立正确的价值取向，依托科学家精神教育基地，开展形式多样的科学家精神传承、弘扬、宣讲和科普等活动，助力公司形成尊重知识、崇尚创新、尊重人才、热爱科学的浓厚氛围。



安康杯安全生产知识竞赛

We attach great importance to employee training. In line with the company's strategic development and actual business needs, we research the training requirements of various departments, make overall plans, formulate and implement the annual training plan. When new employees join us, they will receive three-level safety education and practical training to help them get to know the company. For on-the-job employees, targeted job skill training is carried out according to their positions and levels. Training for middle-level cadres and general management positions is organized to enhance the capabilities, professional levels, and comprehensive qualities, strengthening the company's core competitiveness. We also strengthen the training and education on scientific and technological ethic for scientific research and development personnel. Through symposiums, academic exchange meetings and other means, we educate and guide scientific and technological personnel to abide by research ethics norms and establish correct values. Relying on the Scientist Spirit Education Base, we conduct a variety of activities of inheritance, promotion, publicity and popular science of the scientist spirit, helping the company to create a strong atmosphere of respecting knowledge, advocating innovation, valuing talents and loving science.

2024年，公司在员工培训方面投入的资金总额为**49.33**万元。2024全年开展了中央企业干部研修班、能源环保管理能力提升等**142**项培训，覆盖员工**2574**人。线下培训**19580**人次，完成**97769.5**总学时；线上培训**14720**人次，完成**70537**总学时，累计培训**34300**人次，完成**168306.5**总学时。

In 2024, we invested a total of CNY 493,300 in employee training. In 2024, a total of 142 training programs were carried out, including the study class for cadres of central enterprises and the improvement of energy and environmental protection management capabilities. These training programs covered 2,574 employees. There were 19,580 person-time of offline training, with a total of 97,769.5 class hours completed; and 14,720 person-time of online training, with a total of 70,537 class hours completed. In total, there were 34,300 person-time of training, and a total of 168,306.5 class hours were completed.

完善采购模式 打造绿色供应链

Refining procurement models to build a sustainable supply chain

公司已形成成熟的采购模式，配合生产模式运行，根据生产计划、结合安全库存管理，采购部门根据原料产品特性、供货周期以及市场价格波动等因素，决定采购行为。坚持公平公正公开，制定合格供应商管理制度，通过招标、询价、竞争性谈判等方式，建立了由多部门共同参与、相互制衡的采购控制体系，保证中小企业和大企业拥有同等的信息获取渠道。公司采购部门负责对供应商进行管理和优化，规范组织确定合格供应商名录；根据公司发展规划、年度生产经营计划、物资消耗定额、合理库存和使用单位用料计划等内外部因素制定物资采购计划，并会同采购招标部门、生产单位、财务部门、生产管理部门，按照公司相关管理制度在合格的供应商范围内通过公开招标、比价方式确定供应商。采购商品进入公司后，由质量管理部门与生产单位共同进行外观检查，并由技术部门进行性能检测；仓储管理人员对到达公司的原料、燃料数量、包装进行查验核实。

We have developed a mature procurement model that operates in tandem with the production model. Based on the production plan and combined with safety stock management, the procurement department determines procurement actions considering factors such as the characteristics of raw material products, supply cycle, and market price fluctuations. Adhering to the principles of fairness, impartiality, and openness, we have formulated a management system for qualified suppliers. Through methods such as bidding, inquiry, and competitive negotiation, we have established a procurement control system with the joint participation and mutual checks and balances of multiple departments, ensuring that small and medium-sized enterprises have the same access to information as large enterprises. Our procurement department is responsible for managing and optimizing suppliers and

standardizing the organization to determine the list of qualified suppliers. It formulates the material procurement plan based on internal and external factors such as development plan, annual production and operation plan, material consumption quota, reasonable inventory, and the material usage plan of the using units. In conjunction with the procurement bidding department, production units, finance department, production management department, and other departments, we determine suppliers through public bidding and price comparison within the scope of qualified suppliers in accordance with the relevant management systems. After the purchased goods enter the company, the quality management department and the production unit jointly conduct appearance inspections, and the technical department conducts performance tests. Warehouse management personnel check and verify the quantity and packaging of the raw materials and fuels arriving at the company.

附件2：供方调查评价表

供方调查评价表		编号：QH-KZ-01-02
一、供方基本情况	七、被证实的信誉和业绩 (20分)	评价得分 ()
1. 供方名称	(主要供货单位或行业使用意见情况)	
2. 供方地址	初选合格供方评价标准：	
3. 联系人	以上二至六项评价内容每项优良 (13-16分)；第七项优良 (20-18分)。	
4. 员工总数	合格 (12-9分)，(17-15分)，不合格 (8-0分)，(14-0分)。	
二、供应能力 (16分)	三类进行打分评价，二至七项合计评价得分≥75分的可列为初选合格供方。	
1. 供方主要产品	初选合格供方评价总分：()分。此供方为我公司初选合格供方	
2. 产品质量情况	评价人员 (签字)：	
3. 产品价格情况	八、试验 (试用) 报告批准情况：	
4. 交通运输情况	根据已批准的试验报告，此供方为本公司的合格供方。	
三、质量环境职业健康安全情况 (16分)	物资采购单位 (签字或盖章)：	
1. 产品环境和危害特性控制手段	年 月 日	
2. 在运输、储存使用中的防护及应急措施		
3. 绿色清洁能源的节约利用		
4. 所需备相关体系认证情况		
四、设备生产能力 (16分)		
1. 主要生产设备情况		
2. 月产量		
五、过程控制能力 (16分)		
1. 工艺技术水平		
2. 使用或安装的质量标准		
3. 员工培训情况		
六、检测验证能力 (16分)		
1. 检测机构和设备情况		
2. 检测设备校准情况		



构建“准入、审核、评估”供应商管理体系，公司依客户需求筛选新进供应商，提出质量、环保等资质要求(如ISO 14001、ISO 9001等)，分类管理不同类型供应商，要求提供特定许可文件。对新进供应商填“供方调查评价表”，经分管领导和采购中心审核生效；定期对稳定合作供应商开展现场质量审核，跟踪验证整改效果。评估标准含定量绩效、采购员评价和用户单位评价，结合综合评价体系给供应商年度综合评分。2024年，公司ESG培训覆盖供应商数量为6家，合格供应商数量为435家，预备级供应商13家，供应商总数为571个。

We have constructed a supplier management system of "access, review, and evaluation". In line with customer requirements, the company screens new suppliers, puts forward qualification requirements regarding quality, environmental protection, etc. (such as ISO 14001, and ISO 9001, manages different types of suppliers by classification, and requires them to provide specific permit documents. New suppliers are required to fill in the "Supplier Investigation and Evaluation Form", which becomes effective after being reviewed by the responsible leaders and the procurement center. Regular on-site quality audits are carried out for suppliers with stable cooperation, and the rectification effects are tracked and verified. The evaluation criteria include quantitative performance, purchaser evaluation, and evaluation by user units. An annual comprehensive score is given to suppliers based on a comprehensive evaluation system. In 2024, the number of suppliers covered by the ESG training was 6. The number of qualified suppliers was 435, the number of pre-qualified suppliers was 13, and the total number of suppliers was 571.

供方现场考察记录表

单位名称	内蒙古包头市稀土高新区	地址	内蒙古包头市稀土高新区稀土高新区稀土高新区
创建时间	2019年	注册资金	2000
企业负责人	张远鹏	身份证号	51062319770114017X
业务联系人	王健	电话	18047391777
年生产能力	12万吨	年产量	66315.49万
主要生产设备	主要环保设备：石灰石青法脱碱塔两座		
环保设备	布袋除尘器30台		
环保设施	喷淋式除尘器15台		
名称	规格	型号	参考价格
碳化硅	98%	0.5-1.43mm	6500
碳化硅	90%	1-5mm	5950
碳化硅	85%	0.5-5mm	5650
碳化硅	70%	1-5mm	4300
主要原料来源	原料：厦门振丰能源有限公司/乌拉特旗鑫源矿业有限公司		
销售主渠道	营销：天津钢铁集团有限公司/江苏钢铁集团有限公司/四川达州钢铁集团有限公司		
现有检测设备和手段	激光粒度仪(100-600)/激光粒度仪(100-600)/激光粒度仪(100-600)		
ISO9000质量管理体系	北京中质认证有限公司，GB/T19001-2016/ISO9001:2015，2023年4月15日		
政府安全环保监管情况	正常监管		
现场考察人员及日期	张利军 2024年11月11日		

深入贯彻落实国家绿色发展理念，践行国企社会责任，构建绿色、低碳、可持续的耐火材料采购供应链体系，推动企业高质量发展。按照“绿色引领、全链管控、协同共建、持续优化-宣传推广”原则开展绿色采购链条管理。成立绿色采购领导小组，修订采购制度，融入绿色采购要求，制定绿色采购目录，加大资金投入，搭建绿色供应商评价体系，完善采购合同环保条款。开展供应商绿色培训，助力供应商绿色转型；搭建环境信息共享平台，实施绿色绩效评价，及时整改问题；推广电子化采购系统；运用大数据分析辅助决策。开展宣传活动，提升员工认知，总结推广经验，树立标杆示范。

We deeply implement the national concept of green development, fulfill the social responsibilities of state-owned enterprises, construct a green, low-carbon and sustainable procurement supply chain system for refractory materials, and promote the high-quality development. The management of the green procurement chain is carried out in accordance with the principles of "green leadership, full-chain control, collaborative co-construction, continuous optimization-publicity and promotion". A green procurement leading group has been established. The procurement system has been revised to incorporate green procurement requirements. A green procurement catalog has been formulated, with increased capital investment. A green supplier evaluation system has been built, and the environmental protection clauses in procurement contracts have been improved. Green training for suppliers is carried out to assist their green transformation. An environmental information sharing platform has been set up, green performance evaluation has been implemented, and problems are rectified in a timely manner. An e-procurement system has been promoted, and big data analysis is used to assist decision-making. Publicity activities are carried out to enhance employees' awareness, summarize and promote experience, and set up benchmark demonstrations.



招标工作推进会

2024年，公司通过绿色采购、循环经济利用采购降低采购成本1654.33万元，达到预期目标。

In 2024, through green procurement and the utilization of circular economy in procurement, we reduced procurement costs by CNY 16.5433 million, achieving the expected target.

强化质量意识 提升产品质量

Cultivating quality-consciousness and elevating product standards



公司先后取得了GB/T19001-2016/ISO9001:2015质量管理体系认证、GB/T24001-2016/ISO14001:2015环境管理体系认证、GB/T45001-2020/ISO45001:2018职业健康安全管理体系认证、GB/T23331-2020/ISO50001:2018及RB/T121-2016能源管理体系认证；全资子公司还取得了GJB9001C-2017军用标准质量管理体系认证，部分仪器设备产品通过了CE认证。

We have successively obtained the GB/T19001-2016 idt ISO9001:2015 Quality Management System Certification, GB/T24001-2016 idt ISO14001:2015 Environmental Management System Certification, GB/T45001-2020 idt ISO45001:2018 Occupational Health and Safety Management System Certification, and GB/T23331-2020 idt ISO50001:2018 & RB/T121-2016 Energy Management System Certification. Our wholly-owned subsidiary has also obtained the GJB9001C-2017 Military Standard Quality Management System Certification, and some instrument and equipment products have passed the CE Certification.

公司注重制度建设，制定《质量环境能源职业健康安全管理手册》等配套文件与管理制度，培养高素质质量人才，每年通过第三方认证机构监督审核，提升管理效能。开展质量改进系列活动，举办质量专题培训64人次，网上参与中国质量协会质量答题竞赛1280余人。多次举办QC活动，鼓励员工参与质量改进，2024年公司产品合格率为95.71%，三项QC活动获洛阳市优秀质量管理小组一等奖。

We attach great importance to system construction. We have formulated supporting documents and management systems such as the "Quality, Environment, Energy, Occupational Health and Safety Management Manual", and cultivated high-quality quality-related talents. Every year, we undergo supervision and review by third-party certification bodies to improve management efficiency. We have carried out a series of quality improvement activities such as 64 person-time of quality-themed training, and more than 1,280 people participated in the quality-answering competition of the China Quality Association online. We have held QC activities for many times to encourage employees to participate in quality improvement. In 2024, the product qualification rate was 95.71%, and three QC activities won the first prize of the excellent quality management team in Luoyang.



质量月演讲比赛

完善问题产品处理流程 保障客户权益

Improve the handling process for problem products to safeguard the rights and interests of customers

当产品或服务威胁客户生命财产安全时:

When products or services pose a threat to the life and property safety of customers:



以客户为中心 提供优质服务

Adopting a customer-centric approach to deliver premium services

在产品宣传册、展会及与客户交流资料中,依据产品实际性能、参数、使用效果、第三方评价、客户反馈和法规,进行合规宣传,杜绝夸大、隐瞒风险与过度营销。深入用户现场提供技术服务,满足、挖掘和创造客户需求,以精益服务为客户创造价值,推进工程或区域总包,拉伸服务领域。坚持客户至上,精益服务,给予中小企业客户和大客户平等的合作机遇;整合内外部优势资源,建立稳定高效销售渠道,加强现场技术服务与管理,优化产品质量,获取客户信赖。

In product brochures, exhibitions, and materials for communication with customers, compliance promotion is carried out based on the actual performance, parameters, usage effects, third-party evaluations, customer feedback, and regulations of the products. Exaggeration, risk concealment, and over-marketing are strictly prohibited. The company sends staff to customers' sites to provide technical services, aiming to meet, explore, and create customer needs. It creates value for customers through lean services, promotes project or regional general contracting, and expands the service scope. Adhering to the customer-first principle and providing lean services, the company offers equal cooperation opportunities to both small and medium-sized enterprise customers and large customers. It integrates internal and external advantageous resources, establishes stable and efficient sales channels, strengthens on-site technical services and management, optimizes product quality, and wins the trust of customers.



积极应对客户投诉,公司承诺对客户投诉第一时间响应并解决,将其视为改进服务与提升品质的契机,不仅追求速度,更注重解决质量和效果。通过建立完善投诉处理机制,优化服务流程和质量,确保客户投诉解决率始终保持100%,以此赢得客户信任与忠诚。2024年客户投诉解决率为**100%**,顾客满意度为**99.58%**,整体满意。



We actively responds to customer complaints and promise to respond and resolve customer complaints immediately, regarding them as opportunities to improve services and enhance quality. Not only pursues speed but also attaches great importance to the quality and effectiveness of solutions. By establishing a sound complaint-handling mechanism, optimizing service processes and quality, we ensure that the customer complaint resolution rate always remains at 100%, thus winning the trust and loyalty of customers. In 2024, the customer complaint resolution rate was 100%, and the customer satisfaction rate was 99.58%, indicating overall satisfaction.

加强客户信息安全保护,从营销内部管理入手,依据职权进行业务管控,按权限查阅资料,依部门权限分发合同内容;遵循ISO9001质量管理体系标准,与关键客户签订保密协议,严格按规定和协议保护客户信息安全。

We strengthen the protection of customer information security. Starting from the internal management of marketing, we conduct business control based on job responsibilities, allow access to materials according to authority, and distribute contract content according to departmental authority. In accordance with the ISO9001 quality management system standard, we sign confidentiality agreements with key customers and strictly protect the security of customer information in accordance with regulations and agreements.

践行“一带一路”海外项目快速发展

Advancing the belt and road initiative for rapid overseas expansion

公司积极响应全球发展倡议,深度融入国家“一带一路”政策,秉持合作共赢理念,大力推进海外履责实践。以“一带一路”为市场主干线、以印度、中东、俄罗斯等活跃市场为重点,以传统基建产品为基础,以耗材为持续增长点,以直接服务终端客户为最终目标,以集团国际平台和国内外设计总包公司为引领,全面开发国际市场,海外项目发展呈现出多元化和快速发展的趋势。公司始终在前期优质合作的基础上,紧盯印尼项目,成功签订了中伟高冰镍冶炼富氧侧吹炉、回转窑约6000万元人民币项目、力勤KPS二期回转窑约4700万元人民币项目、力勤印尼电解铝约4400万元人民币项目。首次向日本成批次供应焦炉维修预制件,向欧洲客户提供焦炉炉门砖,供货沙特防腐行业用碳化硅砖,供货达涅利设计DRI管道用耐磨瓷块。公司紧抓时机,在俄罗斯市场上取得重大突破,首次签订俄罗斯市场玻璃窑用硅砖订单、炼铜竖炉碳化硅订单、二段炉刚玉砖订单,齿科设备市场也增长迅速。

We actively respond to the Global Development Initiative and deeply integrate into the national "Belt and Road" policy. Upholding the concept of win-win cooperation, we vigorously promote overseas responsibility - fulfillment practices. Taking the "Belt and Road" as the main market line, focusing on active markets such as India, the Middle East, and Russia, basing on traditional infrastructure products, regarding consumables as a continuous growth point, aiming at directly serving end - customers, and being led by the group's international platform and domestic and foreign design general contracting companies, we comprehensively develop the international market. The development of overseas projects shows a trend of diversification and rapid growth. Based on previous high - quality cooperation, we have been closely following the Indonesian projects and successfully signed projects worth approximately CNY 60 million for the oxygen - enriched side - blown furnace and rotary kiln of Zhongwei High - Ice Nickel Smelting, approximately CNY 47 million for the rotary kiln of Liqin KPS Phase II, and approximately CNY 44 million for Liqin Indonesia's electrolytic aluminum. For the first time, it supplied coke oven repair prefabricated parts to Japan in batches, provided coke oven door bricks to European customers, supplied silicon carbide bricks for the anti - corrosion industry in Saudi Arabia, and supplied wear - resistant ceramic blocks for DRI pipelines designed by Danieli. Seizing the opportunity, the company has made significant breakthroughs in the Russian market: it signed orders for silica bricks for glass furnaces, silicon carbide for copper - smelting shaft furnaces, and corundum bricks for secondary furnaces in the Russian market for the first time. The dental equipment market has also grown rapidly.



中钢洛耐在印尼承建的第100条镍铁回转窑耐材工程顺利竣工交付

2024年,公司高效完成印尼16项、阿尔及利亚4项、马来西亚1项施工项目,目前印尼仍有17个在建项目。海外业务呈“以点带面”高速拓展趋势,彰显出中钢洛耐产品与服务的卓越品质,展现了中钢洛耐投身国际合作的强大动力和实干精神。在“一带一路”沿线的阿尔及利亚项目,当地员工雇佣比例最高达60%,有力带动当地就业,增加居民收入,促进了当地经济发展。

In 2024, we efficiently completed 16 construction projects in Indonesia, 4 in Algeria, and 1 in Malaysia. There are still 17 ongoing projects in Indonesia. The overseas business is expanding at a high speed in a "radiating from point to area" manner, demonstrating the outstanding quality of Sinosteel Luonai's products and services, as well as the strong impetus and practical spirit of engaging in international cooperation in the new era. In the Algerian projects along the "Belt and Road", the employment proportion of local employees reached up to 60%, which effectively promoted local employment, increased residents' income, and contributed to local economic development.



完善安全管理制度 促进公司持续发展

Strengthening safety management systems to ensure sustainable growth

公司设立安全管理专责部门,明确安全体系、安全监督、防灾保卫三个模块职责。成立安全生产委员会,董事长、总经理任安委会主任,分管安全副总经理任安委会副主任。

We have established a dedicated safety management department, clearly defining the responsibilities of three modules: the safety system, safety supervision, and disaster prevention and security. We have also set up a Work Safety Committee, with the chairman and general manager serving as the directors of the committee, and the deputy general manager in charge of safety serving as the deputy director.

按照生产经营业务范围,组织对公司涉及的职业健康安全法律、法规进行识别,识别确定公司主要涉及的法律、法规和标准规范196部,建立公司《职业健康安全法律、法规和标准清单》,并组织各单位学习相应的法律、法规,及时传达给相关人员,确保相关方要求及时落实。组织制(修)订职业健康安全规章制度及标准、预案26项,并对制度进行宣贯、解读,确保各项制度有效落实。

In line with the scope of production and business operations, we organize the identification of occupational health and safety laws and regulations relevant to its operations. A total of 196 main laws, regulations, and standard specifications have been identified, and the company has established the "List of Occupational Health and Safety Laws, Regulations, and Standards". Moreover, it organizes each unit to study the corresponding laws and regulations and promptly conveys them to relevant personnel to ensure the timely implementation of the requirements of relevant parties. We have organized the formulation (revision) of 26 occupational health and safety rules, regulations, standards, and emergency plans. It also publicizes and interprets these systems to ensure their effective implementation.



开展安全生产标准化作业专项治理,组织评估、修订安全操作规程229项。为增强员工安全意识,公司组织开展安全管理人员培训取证、职业病防治法宣讲等各类培训。公司主要负责人、安全生产管理人员、职业卫生管理人员、特种作业人员、特种设备操作人员均依法取得相应的管理资格证、作业资格证,各级人员合规持证率**100%**。

We have carried out special governance on standardized operation for work safety. We have organized the assessment and revision of 229 safety operation procedures. To enhance employees' safety awareness, we have organized various types of training, such as training and certification for safety management personnel and the promotion of the Law on Prevention and Control of Occupational Diseases. The company's main responsible people, work safety management personnel, occupational health management personnel, special operation personnel, and special equipment operators have all obtained corresponding management qualification certificates and operation qualification certificates in accordance with the law. The certificate holding rate at all levels is **100%**.

公司根据国家关于安全生产费用的相关规定,制定《安全生产费用使用管理办法》,依法提取和使用安全生产费用,2024年安全生产投入**1073.73万元**。以安全生产月为契机,开展安全承诺宣誓、安全签字活动;举办“安康杯”安全生产知识竞赛,广泛普及安全生产知识,大力弘扬安全文化。公司2024年开展各类培训及知识学习和竞赛活动**10次**,培训受众**3736人次**,培训覆盖率**100%**。

In accordance with relevant national regulations on work safety expenses, we have formulated the "Administrative Measures for the Use of Work Safety Expenses", and use work safety expenses in accordance with the law. In 2024, the investment in work safety was CNY **10.7373 million**. Taking the Work Safety Month as an opportunity, we carried out safety commitment oaths and safety signature activities, and held the "Ankang Cup" Work Safety Knowledge Competition to widely popularize work safety knowledge and vigorously promote safety culture. In 2024, the company carried out **10** training sessions, knowledge learning activities, and competitions, covering **3,736** people, with a training coverage rate of **100%**.

公司制定发布《危险源辨识、风险评价及风险分级管控管理办法》,组织开展危险源辨识、风险分析与风险分级管控,制定针对性的风险控制措施,有效防范化解各类安全风险;公司制定发布《安全生产事故隐患排查治理管理办法》等文件,建立事故隐患排查机制,深入推进事故隐患排查整治。2024年,应急管理部门、集团公司及公司共排查治理事故隐患**607项**,隐患整改率**100%**。

We have the "Administrative Measures for Hazard Identification, Risk Assessment and Risk Classification Control", organized the identification of hazards, risk analysis and risk classification control, and formulated targeted risk control measures to effectively prevent and defuse various safety risks. We have also issued documents such as the "Administrative Measures for the Investigation and Rectification of Work Safety Accident Hidden Dangers", established an accident hidden danger investigation mechanism, and deeply promoted the investigation and rectification of accident hidden dangers. In 2024, the emergency management department, the parent company and the company jointly investigated and rectified 607 accident hidden dangers, with a hidden danger rectification rate of **100%**.



消防应急演练

公司修订《生产安全事故应急预案》,制定发布《生产安全事故应急预案管理办法》,开展应急资源调查和事故风险评估,建立完善应急管理体系架构,开展公司总部行政办公人员消防等应急知识培训,组织开展公司级事故应急预案演练**2次**,增强员工安全应急能力和意识;各单位开展各级、各类事故应急演练**50余次**,参加演练**2584余人次**,以实际应急行动践行“人人讲安全、个个会应急”的安全理念,营造了公司“人人讲安全、个个会安全”的安全氛围。

We have revised the "Production Safety Accident Emergency Plan" and formulated and issued the "Administrative Measures for Production Safety Accident Emergency Plan". We have carried out emergency resource surveys and accident risk assessments, established and improved the framework of the emergency management system, provided emergency knowledge training such as fire protection for administrative office staff at the company's headquarters, and organized 2 company-level accident emergency plan drills to enhance employees' safety emergency capabilities and awareness. Each unit has carried out more than **50** emergency drills at various levels and of various types, with more than **2,584** people participating in the drills. Through actual emergency actions, the safety concept of "everyone emphasizes safety and everyone can respond to emergencies" has been implemented, creating a safety atmosphere of "everyone emphasizes safety and everyone knows safety" within the company.

加强职业健康管理。公司制定《职工劳动防护用品管理办法》,为员工配备劳动防护用品,指导员工正确使用并定期检查劳动防护用品使用情况,使员工在劳动过程中免遭或者减轻事故伤害和职业病危害。公司通过ISO45001职业健康安全管理体系认证。扩大员工体检覆盖率,2024年公司接触职业病危害的员工均参加了职业健康检查,体检覆盖率**100%**。

We strengthen occupational health management. We have formulated the "Administrative Measures for Employees' Labor Protection Articles", providing employees with labor protection articles, guiding employees on their correct use, and regularly inspecting the usage of labor protection articles, so as to protect employees from accident injuries and occupational disease hazards during the labor process. We have passed the ISO45001 Occupational Health and Safety Management System Certification. The company has expanded the coverage of employee physical examinations. In 2024, all employees exposed to occupational disease hazards in the company participated in occupational health examinations, with a physical examination coverage rate of **100%**.

08 实质性议题

Material Topics

公司建立与利益相关方的常态化沟通机制,通过采用调查问卷的方式,综合考虑各 ESG 议题的影响重要性和财务重要性,充分了解各议题对公司的重要程度以及各利益相关方对于公司 ESG 表现的评价。公司的主要利益相关方分为以下7类,各类利益相关方所关注的主要ESG议题如下

We have established a normalized communication mechanism with stakeholders. By using the method of questionnaires and comprehensively considering the impact significance and financial significance of various ESG issues, we fully understand the importance of each issue and the evaluation of stakeholders ESG performance. Our main stakeholders are divided into the following 7 categories, and the main ESG issues concerned by each category of stakeholders are as follows:

利益相关方 Parties concerned	主要关注议题(财务重要性) Main issues of financial importance	主要关注议题(影响重要性) Main issues of influence importance
员工 Staff	经济绩效 economic performance 公司治理体系 governance system 科技创新成果 scientific and technological innovation achievements	诚信合规经营 operation with integrity and compliance 科技创新成果 scientific and technological innovation achievements 优质产品 quality products
供应商 Suppliers	诚信合规经营 operation with integrity and compliance 职工健康与安全生产 employee health and work safety 环境管理体系 environmental management system	公司治理体系 governance system 诚信合规经营 operation with integrity and compliance 降低资源消耗 resource consumption reduction
客户 Consumers	经济绩效 economic performance 诚信合规经营 operation with integrity and compliance 供应链健康可持续发展 the healthy and sustainable development of the supply chain	信息披露 information disclosure 推动行业进步 promote the progress of the industry 风险管理 risk management
评级机构 Rating organization	碳减排和碳中和 carbon emission reduction and neutrality 公司治理体系 governance system 污染物排放 pollutant emissions	信息披露 information disclosure 碳减排和碳中和 carbon emission reduction and neutrality 污染物排放 pollutant emissions

利益相关方 Parties concerned	主要关注议题(财务重要性) Main issues of financial importance	主要关注议题(影响重要性) Main issues of influence importance
社区 Local community	科技创新成果 scientific and technological innovation achievements 经济绩效 economic performance	科技创新成果 scientific and technological innovation achievements 优质产品 quality products
媒体 The media	供应链健康可持续发展 the healthy and sustainable development of the supply chain 科技创新成果 scientific and technological innovation achievements 公司治理体系 governance system	诚信合规经营 operation with integrity and compliance 科技创新成果 scientific and technological innovation achievements 风险管理 risk management
政府部门 Government	经济绩效 economic performance 科技创新成果 scientific and technological innovation achievements	优质产品 quality products 科技创新成果 scientific and technological innovation achievement

ESG 重要性议题分析流程

ESG materiality issue analysis process

议题识别:根据监管机构指引,结合国内外权威ESG标准研究、行业优秀ESG报告对标、公司发展战略和内外利益相关方关注的内容识别出反映中钢洛耐经济、环境和社会影响的ESG议题。

议题辨析:制定实质性议题调查问卷,了解内外部利益相关方对初步识别和筛选出的ESG议题的重要性排序。

议题评估:根据问卷调查结果,进一步分析梳理各项ESG议题的影响重要性和财务重要性的双重重要程度,筛选出利益相关方关注度高、与公司可持续发展密切相关的核心ESG议题,作为2024年ESG报告披露重点。

Issue Identification: Based on the guidelines of regulatory authorities, combined with research on authoritative domestic and international ESG standards, benchmarking against excellent industry ESG reports, the company's development strategy, and the concerns of internal and external stakeholders, identify ESG issues that reflect the economic, environmental, and social impacts of Sinosteel Luonai.

Issue Discrimination: Develop a questionnaire on material issues to understand the importance rankings of the initially identified and screened ESG issues by internal and external stakeholders.

Issue Evaluation: According to the survey results, further analyze and sort out the dual importance of the impact and financial significance of each ESG issue. Screen out the core ESG issues that attract high attention from stakeholders and are closely related to the company's sustainable development, and use them as the key disclosure points in the 2024 ESG report.

09 关键绩效

Key Performance Indicators

指标	单位	2024年
安全生产投入	万元	1073.73
职业健康与安全培训覆盖率	%	100
研发投入	万元	12646.29
申请受理专利数	件	114
专利授权数	件	74
参与标准制定	项	9
资产总额	亿元	52.10
营业收入	亿元	21.88
纳税总额	亿元	1.21
职工总数	人	2677
产品合格率	%	95.71
环保资金投入	万元	2850.77
固体废物综合利用率	%	100
合规暂存处置率	%	100
审查的供应商数量	个	571
因不合规被中止合作的供应商数量	个	18
劳动合同签订率	%	100
员工流失率	%	2.43
社会保险覆盖率	%	100
职业培训投入	万元	49.33
职业培训比例	%	100
职业培训累计人次	人次	34300
职业培训学时	学时	168306.5
客户满意度	%	99.58
投诉解决率	%	100

Indicators	Unit	2024
Investment in work safety	CNY Ten thousand	1073.73
Coverage rate of occupational health and safety training	%	100
Investment in research and development	CNY Ten thousand	12646.29
Number of patent applications accepted	Piece	114
Number of authorized patents	Piece	74
Participation in standard formulation	Item	9
Total assets	CNY Billion	5.210
Operating revenue	CNY Billion	2.188
Total tax payment	CNY Billion	0.121
Total number of employees	Person	2677
Product qualification rate	%	95.71
Investment in environmental protection funds	CNY Ten thousand	2850.77
Comprehensive utilization rate of solid waste	%	100
Rate of compliant temporary storage and disposal	%	100
Number of suppliers reviewed	Piece	571
Number of suppliers whose cooperation has been terminated due to non-compliance	Piece	18
Rate of labor contract signing	%	100
Employee turnover rate	%	2.43
Social insurance coverage rate	%	100
Investment in vocational training	CNY Ten thousand	49.33
Proportion of vocational training	%	100
Cumulative number of person-time in vocational training	Person-time	34300
Hours of vocational training	Class-hours	168306.5
Customer satisfaction	%	99.58
Complaint resolution rate	%	100

10 读者意见反馈

Reader Feedback and Engagement

尊敬的读者：

您好！感谢您阅读《中钢洛耐科技股份有限公司2024年度环境、社会及治理（ESG）报告》，为向您及其他利益相关方提供更专业、更有价值的企业社会责任信息，请您协助我们完成反馈意见表中的相关问题，帮助我们在今后进一步提升社会责任和可持续发展管理水平。

选择性问题：

1. 您对本报告的整体满意度如何？

- ☐ A. 非常满意 ☐ B. 较满意 ☐ C. 一般 ☐ D. 不满意 ☐ E. 非常不满意

2. 您认为报告中哪些部分内容最具价值？（最多选3项）

- ☐ A. 环境绩效（减排、资源循环利用等） ☐ B. 社会责任（员工权益、社区贡献等）
☐ C. 治理架构（董事会参与、风险管理等） ☐ D. 可持续战略与目标
☐ E. 创新与技术应用案例

3. 您对报告中提到的ESG实践案例（如绿色技术研发、供应链管理）的描述是否满意？

- ☐ A. 充分具体且有启发性 ☐ B. 案例较典型但可深化 ☐ C. 案例较少或关联性不足

4. 您认为公司未来应在哪些ESG领域加强行动？

- ☐ A. 气候变化应对 ☐ B. 供应链可持续管理 ☐ C. 员工职业健康与安全
☐ D. 社区参与与公益投入 ☐ E. 技术创新与绿色转型

其他：_____

5. 您通过哪些渠道了解到本报告？（最多选3项）

- ☐ A. 官网/公告 ☐ B. 企业社交媒体（微信公众号/视频号等） ☐ C. 行业协会 ☐ D. 投资者关系平台

其他：_____

6. 您建议通过哪些方式加强ESG信息的传播？

您对《中钢洛耐科技股份有限公司2024年度环境、社会及治理（ESG）报告》的其他意见与建议，欢迎提出。

您的联系方式：

姓名： 电子邮箱：

电话： 工作单位：

Dear Readers,

Thank you for reading the "Environmental, Social and Governance (ESG) Report of Sinosteel Luonai Materials Technology Co., Ltd. for the Year 2024". In order to provide you and other stakeholders with more professional and valuable corporate social responsibility information, please assist us in answering the relevant questions in the feedback form. Your input will help us further enhance our social responsibility and sustainable development management in the future.

Optional Questions:

1. How satisfied are you with the overall report?

- ☐ A. Very satisfied ☐ B. Relatively satisfied ☐ C. Average ☐ D. Dissatisfied ☐ E. Very dissatisfied

2. Which part of the report do you think is the most valuable? (Select up to 3 options)

- ☐ A. Environmental performance (emission reduction, resource recycling, etc.)
☐ B. Social responsibility (employee rights and interests, community contributions, etc.)
☐ C. Governance structure (board of directors' participation, risk management, etc.)
☐ D. Sustainable strategies and goals
☐ E. Innovation and technology application cases

3. Are you satisfied with the description of the ESG practice cases mentioned in the report (such as green technology research and development, supply chain management)?

- ☐ A. Sufficiently specific and inspiring
☐ B. The cases are relatively typical but can be further deepened
☐ C. There are few cases or insufficient relevance

4. In which ESG areas do you think the company should strengthen its actions in the future?

- ☐ A. Climate change response
☐ B. Sustainable supply chain management
☐ C. Employees' occupational health and safety
☐ D. Community participation and public welfare investment
☐ E. Technological innovation and green transformation

Others: _____

5. Through which channels did you learn about this report? (Select up to 3 options)

- ☐ A. Official website/announcement
☐ B. Corporate social media (WeChat official account/WeChat Channels, etc.)
☐ C. Industry associations
☐ D. Investor relations platform

Others: _____

6. What methods do you suggest to strengthen the dissemination of ESG information?

You are welcome to put forward any other comments and suggestions on the "Environmental, Social and Governance (ESG) Report of Sinosteel Luonai Materials Technology Co., Ltd. for the Year 2024". Please leave your contact information, Name, Email, Telephone and Work unit.

Thank you again!