



**Sinochem Holdings**

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**2022**  
Environmental, Social and  
Governance Report

# About the Report

## Reporting

Sinochem Holdings Corporation Ltd. (“Sinochem Holdings”, “the Company” or “we” for short).

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## Report Timeframe

January 1, 2022 - December 31, 2022. To ensure the completeness of the narrative and the continuity of the information, there may be items in the report that exceed this timeframe.

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## Report Scope

Unless otherwise specified, the relevant data in the report covers the Company and its wholly-owned and controlling subsidiaries.

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## Report Content

The social responsibility philosophy and commitment of Sinochem Holdings, as well as the Company's specific practices and main achievements in ESG (environmental, social and governance) aspects.

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## References

The State-owned Assets Supervision and Administration Commission of the State Council: *Work Plan for Improving the Quality of Listed Companies Controlled by State-owned Central Enterprises*

Global Reporting Initiative: *Sustainable Development Reporting Standards (GRI Standards)*

Task Force on Climate-Related Financial Disclosure (TCFD): *Climate Related Financial Information Disclosure Report*

ISO: *ISO 26000 Guidelines for Social Responsibility*

*Self-regulatory Guidelines No. 1 for Listed Companies on the Shanghai Stock Exchange - Standardized Operation*

Shenzhen Stock Exchange: *Self-regulatory Guidelines No. 1 for Listed Companies - Standardized Operation of Main Board Listed Companies*

The Stock Exchange of Hong Kong Limited: *Guidelines for Environmental, Social and Governance Report*

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## Disclosure Principles

The disclosure of the report follows the following principles:

**Importance:** The report adopts the substantive issue analysis method. According to the basis of substantive issue judgment, it selects and displays the substantive issue matrix through the judgment process, ultimately ensuring the accurate and comprehensive disclosure of ESG information.

**Quantification:** The report conducts quantitative performance management on substantive ESG issues, covering various aspects of environment, society and governance. Specific ESG quantification data and objectives are detailed in each chapter.

**Balance:** The report follows the principle of balance and fairly and objectively reflects the current ESG situation of the Company.

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## Data Sources

The data sources used in the report include but are not limited to the raw data of the Company's actual operations, the Company's internal statistical data, as well as public data from government departments and third-party institutions, etc. The financial data of the report is in RMB. It is promised that the data are true, valid and accurate.

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## Report Acquisition

The report is published in both Simplified Chinese and English. If there is any ambiguity in both versions of the report, the Simplified Chinese version shall prevail. You can log in to the Company's website <https://www.sinochem.com/> to browse or download the electronic text of the report and learn more about it.





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# Message from the Chairman

Dear friends:

On behalf of the Board of Directors, I sincerely thank you for your continuous care and support for Sinochem Holdings! Chemistry catalyzes magical powers. It creates new substances, and enables us to harmoniously coexist with nature. After the United Nations 2030 Sustainable Development Goals were proposed, sustainable development has become a global consensus. ESG is an important lever for achieving sustainable development and is increasingly becoming an important measure of high-quality development for enterprises. In the process of building itself into a world-leading chemical conglomerate, Sinochem Holdings practices the sustainable development path of symbiosis between chemistry and nature, contributing its part to modernization, and creating together for a brighter future.

2022 was the first complete operational year of Sinochem Holdings after the Company's joint restructuring. In 2022, the Company actively responded to environmental changes, integrated ESG concepts into the Company's development strategy, production and operation, and fulfilled the performance targets, and was rated A in the performance assessment of central SOEs. The Company's businesses have been deeply integrated, its overall operation has been stable, its reform and development are orderly advancing, the advantages of all of its businesses have been further strengthened, the innovative characteristics of the Company have been further highlighted, and the core competitiveness and sustainable development ability of the Company have been further enhanced.

## **Adhere to sustainable development and promote high-quality development.**

We adhere to the basic policy of prioritizing conservation and environmental protection, follow the basic principles of green development, circular development and low-carbon development, keep in mind the bottom line of protecting the eco-environment, and integrate green and low-carbon throughout the entire development and management process of the Company. By taking green and low-carbon development as the goal and taking pollution reduction, carbon reduction, synergy and efficiency improvement as levers, we have made overall planning for carbon peaking & carbon neutrality, pollution problem tackling and eco-environmental protection to promote the Company's green transformation and high-quality development at a high level.

## **Resolutely strive for progress and innovation, and shape new advantages through technological innovation.**

We have deeply implemented the national innovation driven development strategy, making technological innovation the only way forward and top priority for the Company's reform and development. By centering on our mission of building the Company into a world-leading chemical conglomerate, we have strengthened the Company's overall innovation concept and technological research and development capabilities. With the "Innovation Triangle" as the core, we have built the OMI technology innovation system, exerting the innovator role of enterprises, and bravely undertaking the important mission of innovation with science and technology.

## **Make every effort to stabilize growth and continue to improve business development.**

We have been persistently fighting against the pandemic, stabilizing production, promoting investment and strengthening innovation. Guided by the 14th Five-Year Plan, we focused on our main responsibilities, optimized our asset structure, and achieved significant growth in our current operating performance in 2022 compared to the same period of previous years. In the first complete operational year of the Company, we achieved a wonderful start, further improving the development quality of the Company.

## **Take swift and steady steps to promote our reform, and effectively adjust our industrial structure.**

We have taken the three-year action on the reform of state-owned central enterprises as an opportunity to deepen the reform of our corporate governance system. By winning the opportunity through reform and seeking impetus from integration, we have been persisting in bolstering areas of weakness, effectively enhancing the development vitality and competitive strength of our company, leading industrial competition to upgrade from product competition to industrial chain competition by extending, supplementing, and strengthening our industrial chain, and promoting our industrial restructuring.

## **Keep in mind the social responsibility of central SOEs and help safeguard the national economy and people's livelihood.**

We actively fulfill the social responsibility of central SOE, leverage our business advantages, keep doing well in targeted poverty alleviation and counterpart assistance, help consolidate our country's achievements in poverty alleviation, and comprehensively promote rural revitalization. We dare to undertake urgent, difficult and arduous tasks, and play the role of the main force in critical moments such as pandemic prevention and control, etc., making positive contributions to national prosperity, national rejuvenation and people's happiness, and promoting social harmony and progress.



## **Promote the spirit of the new era and forge ahead on a new journey.**

In times of prosperity, we will travel thousands of miles with the help of a strong downwind and take on heavy duties to forge ahead. In the face of adversity, we will persevere despite countless challenges and remain calm despite severe chaos. Sinochem Holdings will actively inherit and carry forward the fine tradition of both Sinochem Group and ChemChina, and lead all employees of Sinochem Holdings to embark on a new journey, fulfilling new missions and responding to new challenges under the guide of the new-era spirit of Sinochem Holdings centered on "the spirit of hard work and innovation, the value orientation of responsibility and dedication, and the work style of seeking truth and staying pragmatic".

The goal is set and the mission is urgent. We can only forge ahead through hard work and practical action. 2023 will be a crucial year for the smooth implementation of the 14th Five-Year Plan and is also a crucial year for Sinochem Holdings to seize strategic opportunities to promote its high-quality development. Sinochem Holdings will unite all of our forces to forge ahead, continuously improving our company's ESG governance and evaluation mechanism, and keeping enhancing our company's ESG performance; we will fully integrate ESG concepts into our company's operations, continue to promote integration, synergy and deep fusion, unswervingly practice the path of "carbon peaking and carbon neutrality", and promote our company's high-quality development through reform and upgrading; we will take technological innovation as the lever, delivering more and better products to meet the people's need for a better life; we will boost our morale, unite our forces and stimulate our motivation with the new-era spirit of Sinochem Holdings, and will work hard and perseveringly and overcome difficulties with a more uplifting and enterprising spirit to enhance the ESG governance level of our company, striving to build Sinochem Holdings into a world-leading chemical conglomerate, and showcasing the new responsibilities and achievements of Sinochem Holdings in the new-era and new journey!

A handwritten signature in black ink, consisting of stylized Chinese characters.

Chairman of the Board of Sinochem Holdings Corporation Ltd.

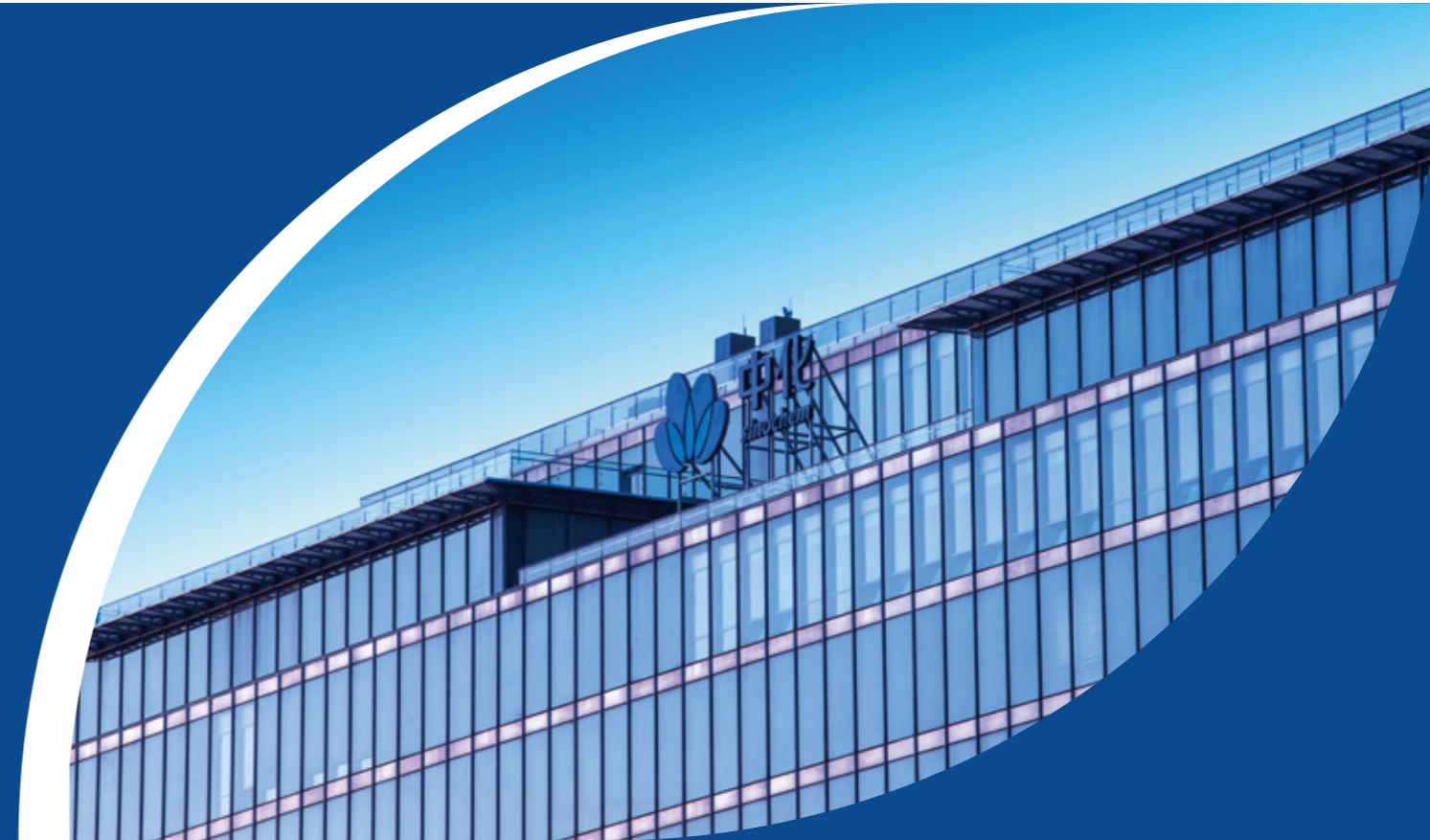


# Company Profile

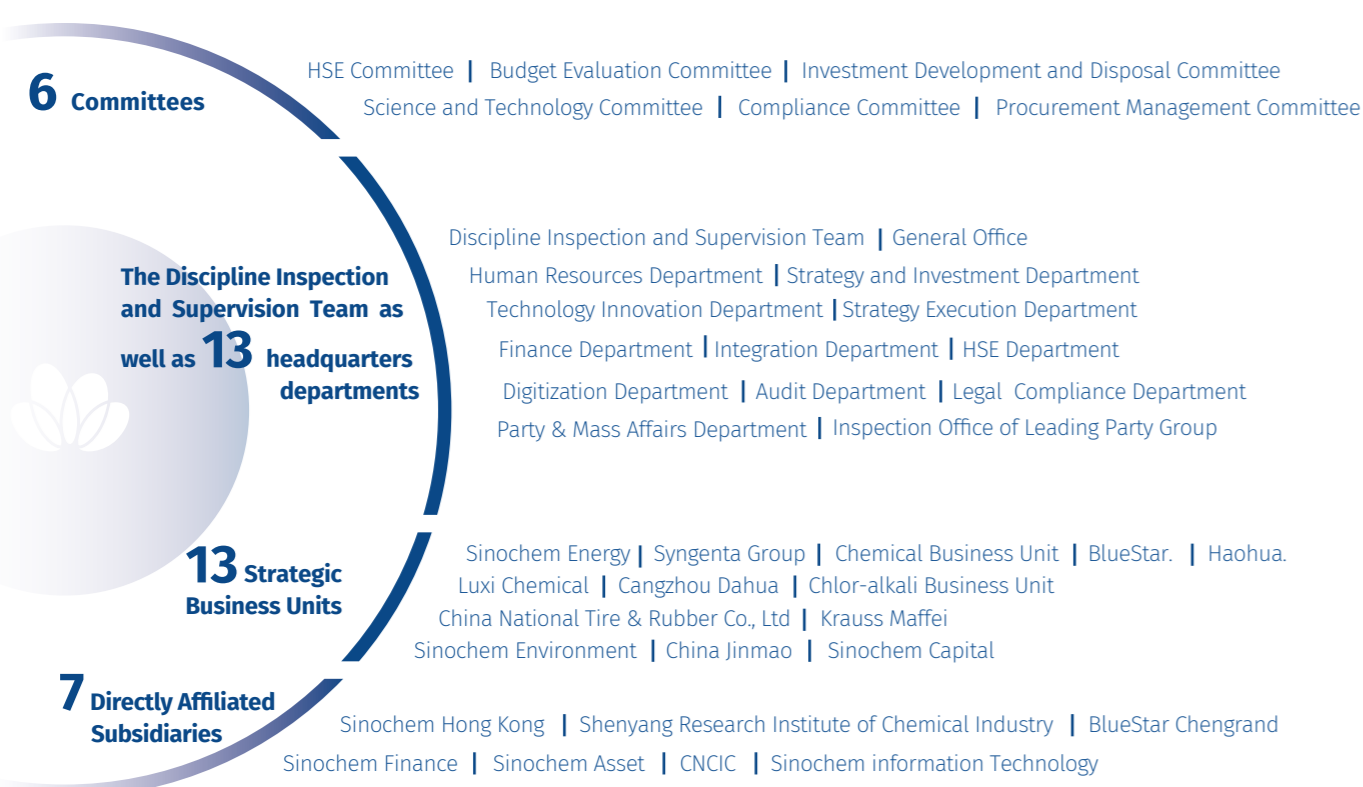
Sinochem Holdings Corporation Ltd. ("Sinochem Holdings" for short) was established through the joint restructuring of Sinochem Group Co., Ltd. ("Sinochem Group" for short) and China National Chemical Corporation Ltd. ("ChemChina" for short) on May 8, 2021. It is one of the leading state-owned enterprises under the supervision of the SASAC (State-owned Assets Supervision and Administration Commission of the State Council). It has over 220,000 employees.

With operations in eight business sectors covering life science, materials science, petrochemicals, environmental science, rubber & tire, machinery & equipment, city operation, and industrial finance, Sinochem Holdings is one of the world's leading chemical conglomerates, ranking 31st on the 2022 Fortune Global 500 list and 1st on the 2022 Fortune Global chemicals industry list. It has 16 listed domestic and overseas companies, including Yangnong Chemical (600486.SH), Adama (000553.SZ), Adisseo (600299.SH), Sinochem International (600500.SH), Luxi Chemical (000830.SZ), Haohua Technology (600378.SH), Elkem (ELK.OL), Pirelli (PIRC.MI), and China Jinmao (00817.HK). Sinochem Holdings owns production bases and R&D facilities in more than 150 countries and regions around the world and has a fully-developed marketing network.

Looking ahead, Sinochem Holdings will uphold the company's value of "In Science We Trust" as it strives to develop the company into a world-leading chemical conglomerate which is focused on life science and materials science, supported by petrochemicals, backed by environmental science and driven by technology. Sinochem Holdings will keep enhancing its sustainable development capability to create maximum value for society, clients, shareholders and employees and to contribute to social progress as well as the development of the chemical industry.



## Corporate Architecture



## Development Goal

Sinochem Holdings is committed to building itself into a world-leading chemical conglomerate which is focused on life science and materials science, supported by petrochemicals, backed by environmental science and driven by technology.

**It will build itself into a world-leading chemical conglomerate through "Three five-year plans" and "Three-step strategy"**

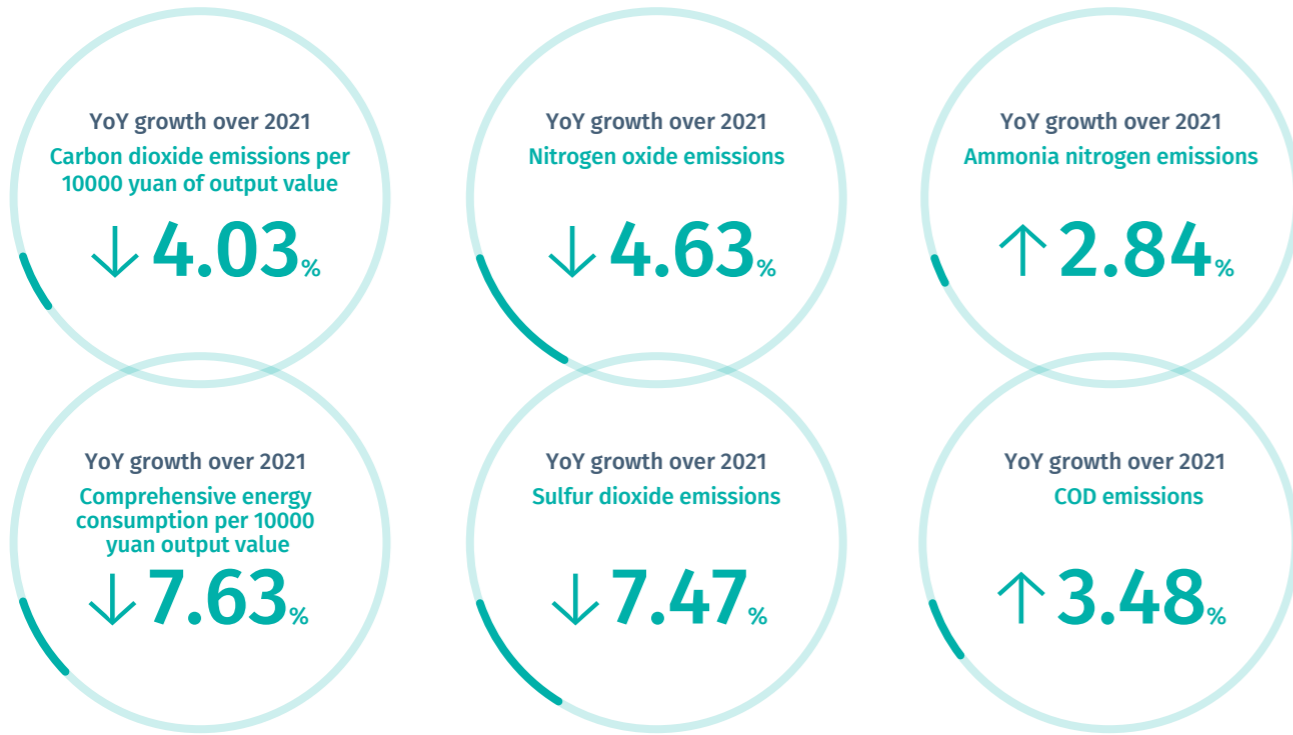
- Step 1**  
**2025**  
 Catch up with and even surpass industry benchmarks in terms of profitability
- Step 2**  
**2030**  
 Catch up with and even surpass industry benchmarks in terms of asset returns
- Step 3**  
**2035**  
 The Company's main indicators and comprehensive strength shall reach world-class level

## Development Strategy

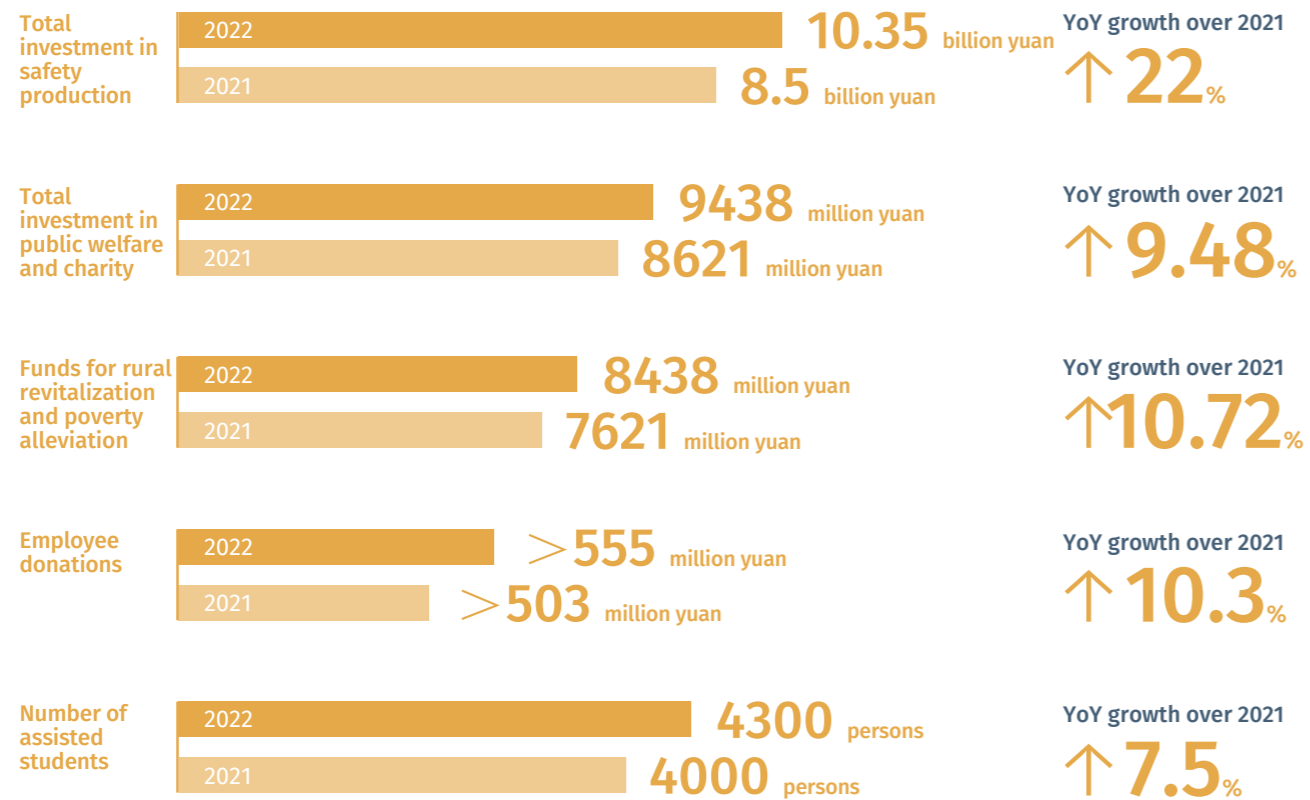
### "123 Industrial Development" Strategy

- 1 Adhere 1 strategic positioning**  
 A world-leading chemical conglomerate which is focused on life science and materials science, supported by petrochemicals, backed by environmental science and driven by technology.
- 2 Shoulder 2 industrial missions**  
 Promote the high-quality development of China's agricultural modernization.  
 Accelerate the shoring up the new chemical materials industry.
- 3 Implement 3 transformations and upgrades**  
**Product layout:** Upgrade from single products to an industrial chain.  
**Serve customers:** Upgrade from providing products to providing comprehensive solutions.  
**Digital empowerment:** Upgrade from a traditional enterprise to a digital and intelligent enterprise.

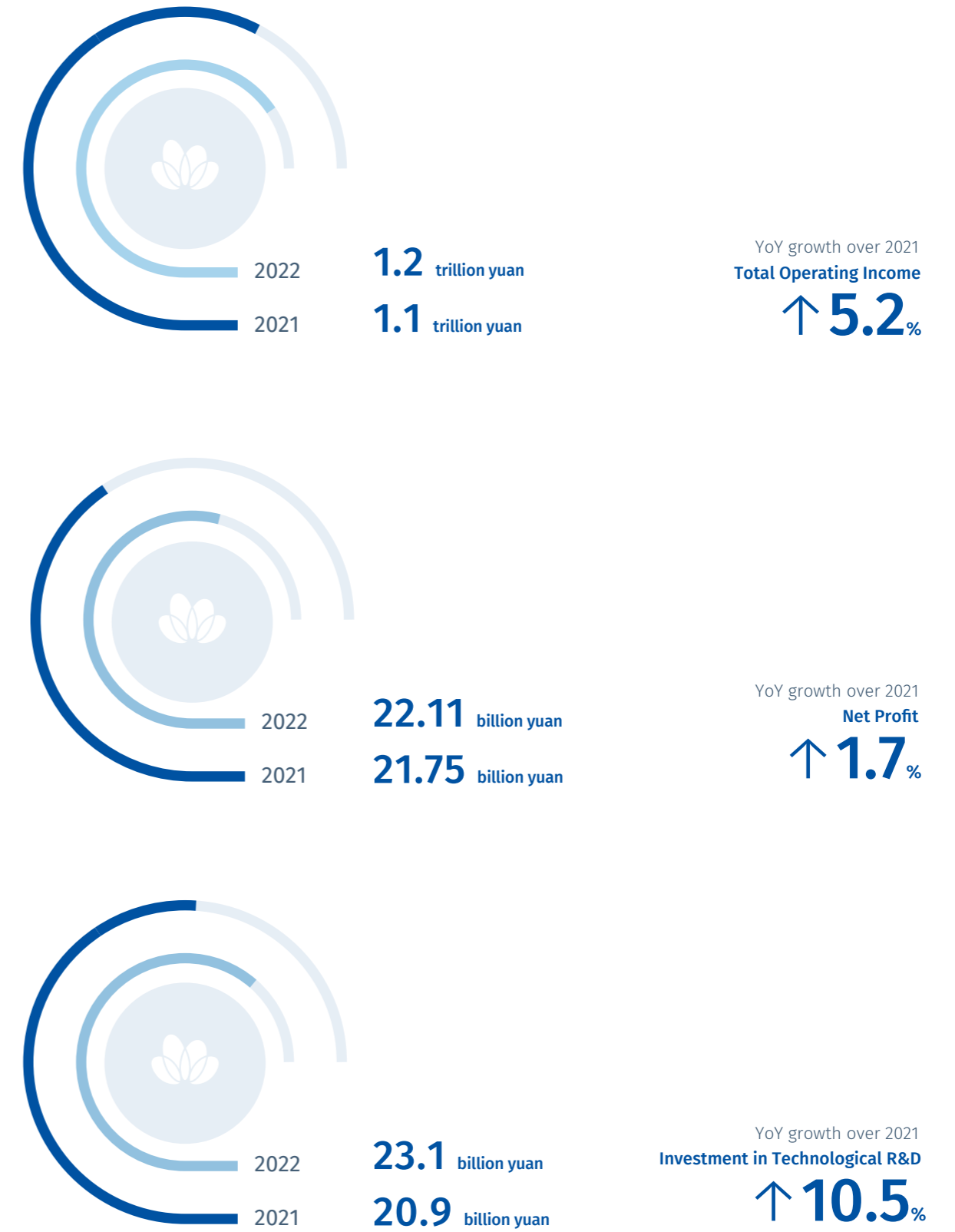
## Environment



## Society



## Governance



Note: The data of the total operating income and the net profit for 2022 and 2021 are sourced from the financial statements of 2022 and 2021.



# Communication with stakeholders

Sinochem Holdings takes a series of measures to maintain close cooperation and efficient communication with stakeholders in a two-way, open and transparent manner, ensuring that our communication channels and actions can meet the expectations of stakeholders and promote the harmonious development and common progress of society and the Company.

Stakeholders	Major Expectations	Communication Channels	Our Actions
<b>Government and Regulatory Agencies</b>	Respond to national strategies Development and taxation Industry leading Supervision and audit	Government communication departments Special offline meetings Network conferences News platforms, etc.	Revitalization of seed industry as well as food security Honest operations, compliant governance, and paying taxes according to law Create employment opportunities Strengthen technological innovation and promote industry development Regularly communicate with regulatory authorities and respond to policy calls
<b>Shareholders and Investors</b>	Stable operation Risk management Return on income Sustainable development	Statutory information disclosure Regular performance reports Regular seminars Emails, etc. Appeal mailbox Emails, etc.	Operate stably and improve business performance Establish a risk management committee and establish a risk management system Establish a "1+5+N" investment management system to promote the achievement of the "high-efficiency operation" investment management goal Regularly convene shareholder meetings to protect the rights and interests of small and medium-sized shareholders Regularly report to investors, and strengthen investor relationship management
<b>Employees</b>	Employee rights protection Career Development Diversified development demands	Employee satisfaction questionnaires Internal meetings, trainings Trade unions Appeal mailbox Emails, etc.	New-era spirit of Sinochem Holdings FORUS system ensures employee health and safety Vocational skills training and talent development plan Transparent promotion channels and fair compensation A corporate culture featuring innovation and open communication
<b>Consumers/ Customers</b>	Product quality and safety Consumer rights protection	Customer communication meetings Product after-sales hotline Customer satisfaction surveys Appeal mailbox Emails, etc.	Showcasing at CIIE 2022 Quality management system; continuous optimization of the quality of existing products Complaint and feedback communication channels
<b>Supply Chains and Partners</b>	Procurement Business ethics and anti-corruption	Regular communication meetings Annual survey review meeting Dedicated personnel docking, etc.	Sunshine procurement, green procurement, and electronic trading platforms Business ethics training and anti-corruption management
<b>Community</b>	Community health and environment Community development	Community services Community activities Community satisfaction survey Communication with neighborhood committees, etc.	Rural revitalization, pandemic prevention, and educational assistance Circular economy and biodiversity conservation
<b>Industry Associations</b>	Industry demonstration role	Webinars International exchange conferences, etc.	Participate in industry and field standard development activities
<b>Universities and Research Institutions</b>	Innovative research and development Cooperation and exchange	Large exchange conferences and forums Field visits and research Online seminars, etc.	Joint cultivation of scientific research talents Transformation of innovative achievements

# Materiality Analysis

## Materiality Analysis

### Issue Collection

Sinochem Holdings collects key environmental, social and governance related issues by considering policy and regulatory requirements based on its strategic focus and industry priorities, referencing domestic and foreign ESG standards as well as the ESG content frameworks of advocacy organizations and associations, and benchmarking international excellent ESG practice cases.

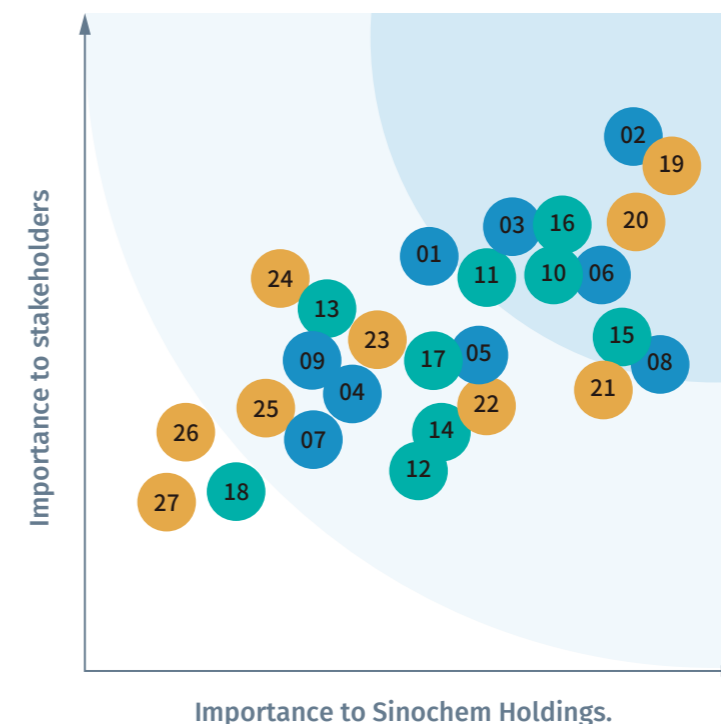
### Research and Evaluation

Sinochem Holdings fully considers the views of stakeholders, including government, clients, employees, suppliers, investors, regulatory agencies, communities, etc., and confirms through survey questionnaires, interviews, communication meetings and other forms that important issues align with their concerns and expectations.

### Importance Assessment

Based on the opinions of various stakeholders, Sinochem Holdings fully considers the impact of its business on environment, society and governance. According to future development trends, such as global warming, sustainable development goals as well as policy and regulatory changes, it evaluates the importance of each substantive issue to Sinochem Holdings and various stakeholders.

## Materiality Matrix



Governance	Environment	Social Responsibility
01 Board governance	10 Environmental risk identification	19 Safety production
02 Compliance management	11 Energy utilization management	20 Occupational health
03 Risk management	12 Water resource utilization management	21 Emergency management
04 Supervision and management	13 Land resource utilization management	22 Talent development
05 Business ethics	14 Pollution release and management	23 Employee rights and interests
06 Business synergy	15 Climate risk identification and response	24 Rural revitalization
07 Supply chain management	16 Carbon emission management	25 Community contributions
08 Technological innovation	17 Circular economy	26 Public welfare activities
09 Products and services	18 Biodiversity conservation	27 Fight against the pandemic



# Topic 1: Carry out Green Transformation and Practice Low-Carbon Development

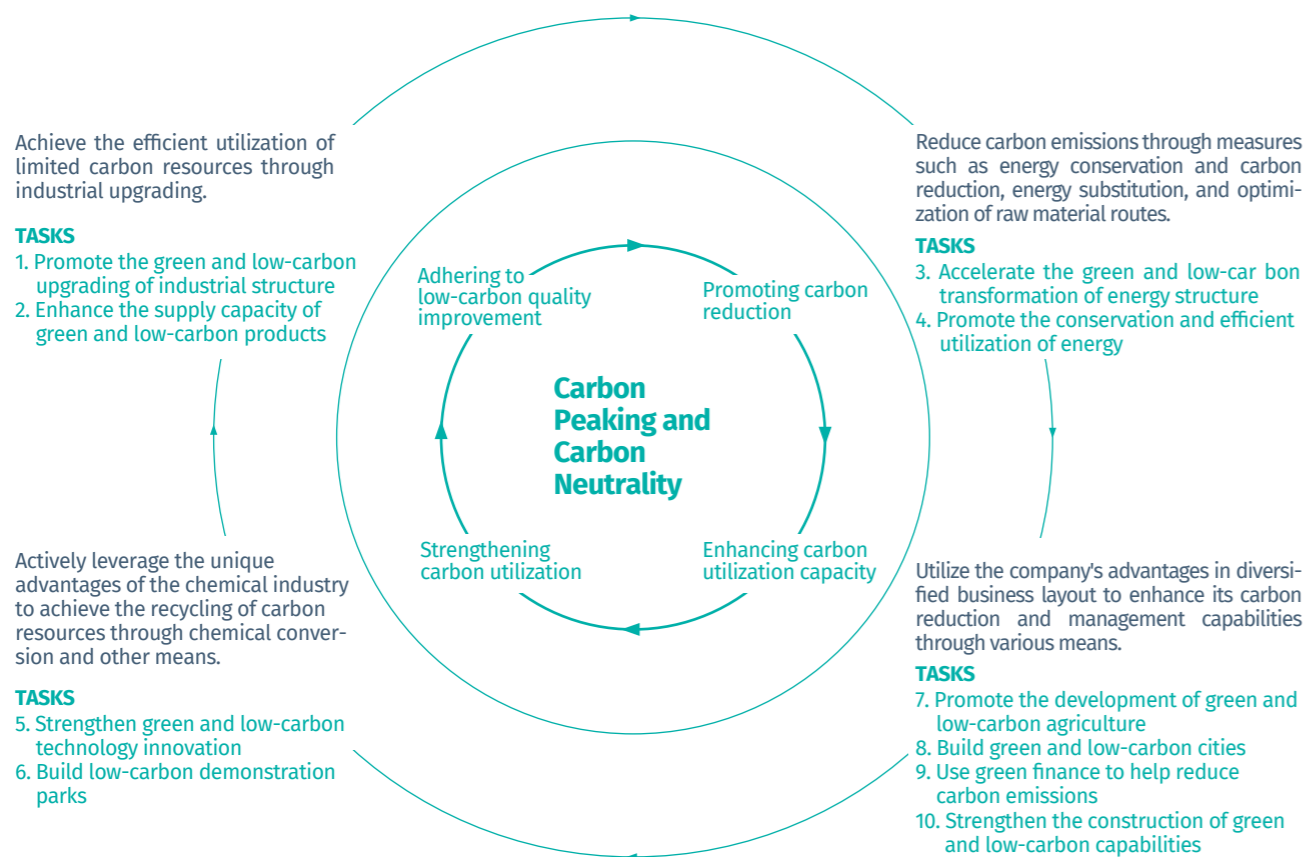
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Sinochem Holdings places green development at a strategic height that can affect the overall future situation, and deeply recognizes that green and low-carbon development is a key issue related to the Company's core competitiveness and future survival rights and is also the first issue to be solved in building the Company into a world-class enterprise. Green and low-carbon development not only brings the simple addition of economy and environment, but also the energy-level multiplication of economy and environment.



## Green and Low-Carbon Strategy and Path

Low-carbon development and high-quality integration are reinforcing. Sinochem Holdings will implement carbon peaking and carbon neutrality as a strategic means to promote the sustainable development of the Company. It coordinates industrial development and energy conservation & carbon reduction, strengthens top-level design, coordinates planning and supervisory guidance, and determines green and low-carbon strategies and paths. In 2022, Sinochem Holdings set reduction goals for carbon dioxide emissions per 10000 yuan of output value and comprehensive energy consumption per 10000 yuan of output value. Centered on the **4** key paths of "adhering to low-carbon quality improvement, promoting carbon reduction, strengthening carbon utilization, and enhancing carbon utilization capacity", it proposed **10** key tasks, integrating green and low-carbon concepts throughout the company's entire development and management process, ensuring low-carbon development, and supporting the realization of the "carbon peaking and carbon neutrality" goal.



## Green New Materials

The materials industry is a strategic and fundamental industry and is a key area for green development and technological competition. By closely centering on its industrial mission of "shoring up new chemical materials development", the Company has kept deepening supply-side structural reform, implemented an industrial upgrading strategy centered on the industrial chain, and promoted the smooth completion and operation of a batch of chemical new materials projects, effectively **filling the gaps** in related fields and leading the green development of China's materials field.

### Small but High-energy - Domestic Substitution of Lithium Battery PVDF

Sinochem Holdings has a wide presence in the field of lithium battery materials, with shipments of solid electrolytes, aqueous electrolytes and adhesives (polyvinylidene fluoride or PVDF) entering in the top five in the industry, and its product quality and technical level rank in the forefront in China. Sinochem Liantian's flagship product, lithium battery adhesive PVDF, has replaced foreign high-end products in China through technological and product innovation, and has taken the lead in entering the global supply chain system of leading power lithium battery manufacturers, helping new energy vehicles continuously improve their performance and contributing to the green and low-carbon transformation of the transportation sector.



Lithium Iron	First to realize domestic substitution
Ternary	Solve the problem of high nickel and alkali resistance
Film	Post-processing precision specifications

### Break Monopoly, Contribute to the Green Development of New Materials

PA66, due to its high mechanical strength and good fiber elasticity, is widely used in the fields of high-end engineering plastics and high-end industrial fibers, becoming a highly prosperous track in the field of new materials in China. By adopting industry-leading green cleaning processes and Sinochem International, a subsidiary of Sinochem Holdings, **has broken through the "bottleneck" production technology of hexanediamine, a key raw material for PA66**, and has achieved stable mass production, helping the green development of China's new materials industry.

### Integrated Solution of Organic Silicone in the Field of New Energy Vehicles

Elkem Silicone, a subsidiary of Sinochem Holdings, has launched innovative foam sealing products called BLUESIL RT Foam series. Such products are suitable for various sealing surfaces of battery packs, and can improve the sealing performance of battery packs, reduce battery pack costs, make battery packs more lightweight, and effectively reduce carbon emissions. Currently, BLUESIL RT Foam series products have safeguarded the travel safety of 3 million new energy vehicles worldwide.

### Epoxy Resin Supports Renewable Energy

Epoxy resin is a high-performance chemical material with high environmental tolerance, low shrinkage and good mechanical properties. It is widely used in wind power, electronics and electrical, industrial coatings and other fields. Sinochem Holdings has become a major supplier of epoxy resin for the wind power field in China, **ranking first in China and third globally in terms of production capacity**.





## Green Energy

In 2022, Sinochem Holdings actively developed green energy, increased the annual installation and usage of renewable energy, set foot in the energy storage field, and made the use of green energy an important part of the Company's green transformation.

### Green Growth Secret of an International Enterprise

More than **80%** of electricity used by Elkem, a subsidiary of Sinochem Holdings, is provided by renewable energy. In 2022, its total greenhouse gas emissions decreased by **7.5%** year-on-year, and the use of biochar accounted for **20%** of carbon used in the production of its products. Elkem factories recovered a total of **892** million kilowatt hours of heat and electricity globally in 2022, achieving the green growth of green low-carbon technology system & production system and revenue.



### A Solar Thermal Power Generation Facility

Solar thermal power generation is known as the true clean green energy, with a total lifecycle carbon emission of only 15.3 grams of carbon dioxide per kilowatt hour, which is about 1/50 of that of thermal power generation and 1/6 of that of photovoltaic power generation. SUPCON Delingha 50 MW molten salt tower solar thermal power generation project, jointly built by BlueStar (Beijing) Chemical Machinery Co., Ltd. ("BCMC" for short), a subsidiary of Sinochem Holdings, is **one of China's first solar thermal power generation demonstration projects** and is also **the first solar thermal power generation project achieving grid connected power generation in China**. At the same time, **the world's largest and most advanced tower solar thermal power generatio project, the Dubai 950 MW solar thermal and photovoltaic power generation project (Phase I 100 MW molten salt tower project), constructed by BCMS**, was officially put into operation in 2022.



## Green Building

Characterized with green health and guided by smart technology, China Jinmao Holdings Group Co., Ltd. (China Jinmao for short), a subsidiary of Sinochem Holdings, has been integrating green, low-carbon and sustainable concepts into the entire lifecycle of buildings ranging from building development & design, material selection, construction and operation management. It has kept carrying out exploration and practice in areas such as ultra-low energy consumption buildings, zero carbon buildings, and existing building energy conservation, continuously leading the evolution of green living.

In 2022, China Jinmao participated in the certification of passive buildings, including ultra-low energy consumption buildings and net zero energy consumption buildings, covering multiple business formats such as residential buildings, office buildings, commercial buildings, and schools. **100%** of its newly built projects reached green building standards. It has achieved full coverage of building design energy efficiency review drawings.

Built new green certification projects

**34**

high star green building certifications and logos

**77.1%**

Obtained new green building certifications and logos

**35**

Obtained new green building certifications and logos

**3,763** thousand square meters

### Golden Reed in Xiong'an New District



The 001 Building, Sinochem Holdings Xiong'an headquarters, is the first super high-rise building in northern China to obtain **the highest-level whole-process dual certification of the National Green Building Standard and LEED Standard**, and has been named "Xiong'an New Area Near Zero Energy Consumption Demonstration Building" and selected as "2022 Xiong'an New Area Green Building Demonstration Project". The building applies passive energy-saving design and active energy system technology. The comprehensive energy efficiency rate of the building can reach 71.57%, and the relative energy efficiency rate of the building reaches 50.26%. **The project has achieved the largest scale application of BIPV technology on super high-rise curtain walls in China**, with a curtain wall BIPV area of over 3700 square meters. Nearly 4500 square meters of photovoltaic power generation products are laid in the building park. The total annual power generation of the building reaches 450,000 kilowatt hours and its carbon dioxide emissions reduce by 2.6 million metric tons.



## Green Finance

Sinochem Holdings actively lays out its presence in the green finance field, and is committed to promoting the sustainable development of the Company's businesses and the whole society. Sinochem Capital, a subsidiary of Sinochem Holdings, collaborates with multiple financial institutions both at home and abroad, aiming to contribute its financial force to the sustainable and high-quality development of economy and society through financial support, to promote sustainable development and the development of the environmental protection industry and to drive economic transformation and upgrading.

### Open Up Green Finance Service Models

Sinochem Capital gives full play to its comprehensive financial service capability to actively develop diversified green finance service models.

In the trust field, China Foreign Economy and Trade Trust Co., Ltd. (FOTIC) has kept carrying out investment and financing business in the environmental protection field through business models such as equity investment, mergers & acquisitions of listed companies as well as project loans, actively exploring its green trust business.

In terms of supply chain financial services, Sinochem Commercial Factoring Co., Ltd. (SCFC) works with several companies under Sinochem Holdings to jointly develop the Guizhou Crystal project (i.e. Guizhou Crystal Organic Chemical (Group) Co., Ltd.) and provide financial support for the land management work of the project such as soil excavation, restoration and evaluation.

### Green Finance Helps Build a Better Life

FOTIC co-works with Sinochem Commerce and Sinochem Environmental to promote an atmospheric environmental governance project, carrying out the reduction, stabilization and harmless disposal of industrial hazardous waste. While constantly exploring the green finance business, CFETT has also played the role of financial "running water". In the "Low-carbon Life for a Better World" credit mall renewal activity launched by its Fortune Center, several environmental welfares benefited customers.



## Green Factories

Sinochem Holdings has achieved fruitful results in green manufacturing. In 2022, 8 of its factories were newly named as provincial or national green factories. So far, a total of 35 enterprises of Sinochem Holdings have been named as green parks, green factories, green products, green mines, etc.

### 8 Factories Newly Awarded as Green Factories

The 8 new green factories are Sinochem Fuheng, Sinochem Xinbao, Sinochem Lithium Battery Material (Ningxia), Sinochem Yunlong, Youke Plant Protection, Dezhou Shihua, Yangnong Ruitai, and Elkem Foundry China.



### A Smart, Green and Sustainable World-class Factory

Sinochem Sennics Thailand Co., Ltd. is located in the Loghana Industrial Park, Chunburi Province, Thailand. It has the characteristics of "intelligence, green and sustainability", and follows the concept of "low-carbon, energy-saving, and environmental friendliness". Guided by "Smart Sennics" (an agile supply chain), it has built an integrated operation system. It utilizes information systems to efficiently match customer orders with production plans, raw material procurement, production process control, sales, logistics and distribution. It is built into a modern chemical factory with an agile supply chain model.



## Green Supply Chain

Under the wave of sustainable development, the value of the green supply chain has become increasingly prominent. Taking enterprises as the core to drive the green transformation of the supply chain is an important measure to improve the green and low-carbon cycle development of the production system. Guided with green development, Sinochem Holdings promotes the collaborative, win-win and high-quality development of the industrial chain, playing the main role of core enterprises in the supply chain, and leading and driving upstream and downstream enterprises in the supply chain to continuously increase resource and energy utilization efficiency, improve environmental performance and achieve green development.

### Intelligence and Carbon Reduction Empower Green Logistics

Syngenta Crop Protection, a subsidiary of Sinochem Holdings, has written "Reducing carbon emissions and leading the industry to achieve carbon peaking and carbon neutrality" into its supply chain strategy. It sold third-party biopharmaceuticals Daibolu series products. When delivering the products to customers, it reduced the original delivery distance through logistics simulation, thus saving logistics costs while improving delivery efficiency and achieving carbon reduction. In 2022, this series of products had a sales volume of 1600 metric tons. This method helped Syngenta Crop Protection reduce transportation carbon emissions by a total of 141 metric tons.



### P&S Team (Pakistan) Has Cleaner Fuels And a More Efficient Supply Chain

Pakistan P&S team of Syngenta Crop Protection, a subsidiary of Sinochem Holdings, reviewed the carbon emissions impact of the packaging and transportation process of insecticide Virtako 0.6 GR product in 2022. Through cooperation with the strategic toll collector in Multan, the team adjusted the original packaging and transportation plan, effectively reducing carbon emissions, costs and time. Taking Multan freight station as an example, for every 1000 metric tons of Virtako 0.6 GR prepared, the station saved \$30000 in transportation costs, shortened product delivery time by 3 days, and reduced carbon emissions by 90 metric tons.



### Build a Green Supply Chain for Organic Silicone

Elkem Xinghuo Silicones Co., Ltd. ("Elkem Xinghuo" for short), a subsidiary of Sinochem Holdings, has achieved significant results in making ecological design for products, limiting the use of harmful substances in raw materials and promoting green recycling and utilization of waste. In China's organic silicone industry, it is **the only enterprise that has been named both "National Green Factory" and "National Green Supply Chain Management Demonstration Enterprise"**. It has developed the **only continuous production line of raw silicone rubber in China**, which reduces waste gas pollution by about 20%, saves energy by about 7% and improves production efficiency by more than 50%. It has developed a continuous green key process for the production of mixed rubber, which saves energy by about 8% and is **China's first and the world's third continuous mixed rubber production line**.







## Topic 2: Food Security is a Matter of National Significance

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**“The Belt and Road”** 23

As the main force in the agricultural field, Sinochem Holdings conscientiously implements the important discourse and instructions of General Secretary Xi Jinping on food security, keeps in mind matters of national significance, makes unremitting efforts in seed industry revitalization, modern agricultural services, scientific and technological agriculture, green agriculture and other aspects, and truly implements the concept of "getting grain from the soil and increasing grain yield with technology"



# Seed Industry Revitalization

Sinochem Holdings gathers world-leading technologies and resources to promote the construction of germplasm resource banks, consolidating the foundation of germplasm resources, comprehensively enhancing China's original innovation capability in seed technology, successfully revitalizing China's seed industry, and safeguarding China's food security.

## The Construction of the "Silicon Valley" of the Chinese Seed Industry

In 2022, General Secretary Xi Jinping visited Yazhou Bay Seed Laboratory. Sinochem Holdings has resolutely implemented the relevant important instructions of General Secretary Xi Jinping. China Seed Group, the core enterprises of Syngenta Group China (SGC) in the seed business, and China Jinmao are rooted in scientific research and in-depth services, fully drive the construction of City of the Future, a "Silicon Valley" of the Chinese seed industry in Yazhou, Hainan Province, from dimensions such as carrier construction and industry introduction. Among them, China Seed Group is the first central SOE specialized in seeds settled in Hainan, striving to accelerate the creation of the "Silicon Valley" of the Chinese seed industry.



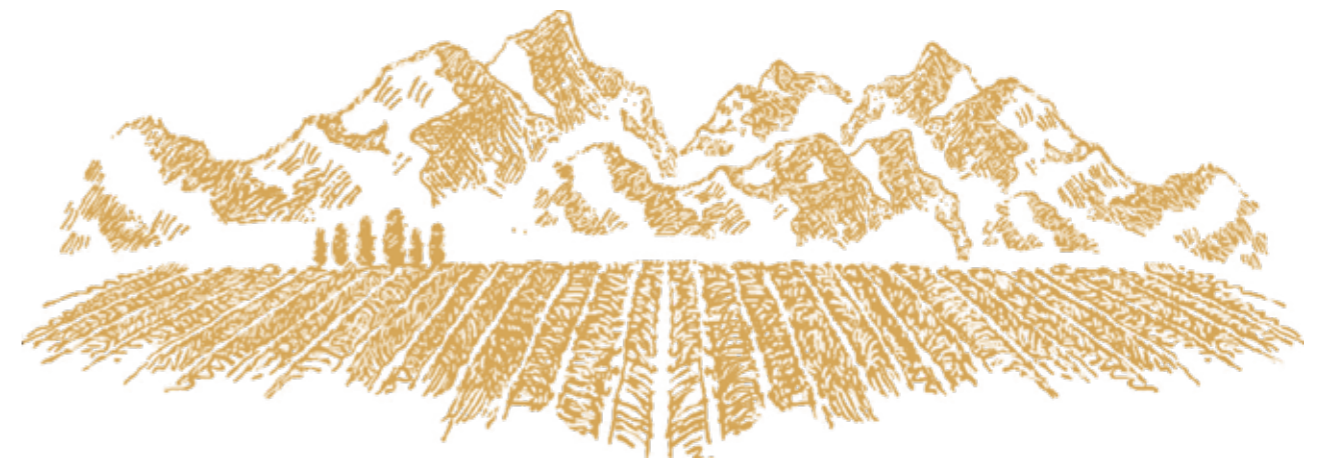
## Create a Seed Industry Platform for Cultivating China's Seeds and Strengthening China's Agricultural Base

In 2022, the launch ceremony of Sinochem Holdings' seed platform themed on "Building a Seed Platform, Cultivating China's Seeds and Strengthening China's Agricultural Base" and the second phase of Sinochem Yangling Technology Center were successfully held in Shaanxi Province. **The Yangling Technology Center will become one of the most advanced digital high-throughput commercial seed breeding centers in China** after it is fully put into operation. The center focuses on the research and development of corn seeds, and will gradually turn to the research of crops such as rice and vegetables in the future. It will create an internally open R&D resource sharing platform, becoming a high-efficiency R&D and innovation system center of the modern seed industry with international first-class level.



## Several Enterprises of Sinochem Holdings Are Enlisted As National Seed Industry Formation Enterprises

Several seed enterprises of Sinochem Holdings have been selected into the list of national seed industry formation enterprises. The list was proposed by the *Notice on Supporting the Development of National Seed Industry Enterprises* issued by the General Office of the Ministry of Agriculture and Rural Affairs. It covers three types of national seed enterprise formations which can tackle difficult problems, bolster areas of weakness or strengthen advantages, and targets rice, corn, wheat, vegetables, sugar, cotton and other crops.



## The Largest Experimental Planting Site for Crispy Straw Rice in China Harvests Double Benefits From This New Rice Variety

Crispy straw rice is a new rice variety jointly bred by Anhui Quanyin High Tech Seed Industry Co., Ltd., a subsidiary of Sinochem Holdings, and Hefei Institute of Physical Sciences, the Chinese Academy of Sciences. It has the feature that the straw of rice becomes crispy but is not prone to lodging. This can turn the straw, which was previously difficult for cattle and sheep to eat, into silage suitable for cattle and sheep to eat on the premise of ensuring a bumper harvest of rice. **On the one hand, this technology solves the environmental impact caused by the full return of straw to the field from the source; on the other hand, it can also save about 25% of feed costs annually.**



## A Hybrid Rice Variety Bred by China Seed Group Fills Up China's Vacancy in High-quality Hybrid Rice Varieties With Resistance to Three Major Pests

The high-quality hybrid rice "Keguiyou 4302"(nationally approved rice 20220226), jointly bred by China Seed Group, a subsidiary of Sinochem Holdings, and the Rice Research Institute of the Guangdong Academy of Agricultural Sciences under the leadership of the Institute of Subtropical Agroecology of the Chinese Academy of Sciences, was approved by the National Crop Variety Approval Committee. **It fills up China's gap in high-quality hybrid rice varieties with resistance to rice blast, bacterial blight and brown planthopper (at the same time, it has the most economical and effective resistance to the three pests),** and it can significantly reduce the use of pesticides.





## Food Security

Sinochem Holdings deeply knows "matters of national significance", upholds the concept of "In Science We Trust", fully implements the responsibility of state-owned central enterprises, and works together with local governments and agricultural production enterprises to solve practical difficulties in agricultural production, to strengthen the development of agricultural technology, to establish a solid foundation for food security, and to comprehensively guarantee food security.

### ADEPIDYN Series Products Increase Crop Yields and Farmers' Income, Ensuring Food Security

Syngenta Crop Protection, a subsidiary of Sinochem Holdings, has launched ADEPIDYN series products to achieve the efficient control of wheat scab and peanut leaf spot. Since their launch in 2020, ADEPIDYN series products have been promoted on a total of 10 million mu or 666.667 thousand hectares of wheat fields to control wheat scab, increasing wheat yield by an average of more than **12%** compared to conventional pesticide products available in the market, bringing about **500 million** more kilograms of wheat to farmers and reducing the use of pesticide by 380 metric tons compared with the use of cyanobacterium. In 2022, the series products were promoted on a total of 26 million mu or 1.7333 million hectares of peanut fields to control peanut leaf spot, increasing peanut yield by an average of more than 29% compared to conventional pesticide products available in the market, and reducing the use of pesticide by 118 metric tons compared to the use of pyrazolin.



### Get More Land, Grain and Meat by Leveraging Technology

In 2022, the total grain consumption in China was about 800 million metric tons, of which about 380 million metric tons were used for animal feed, accounting for 47.5% of the total. As a major livestock and poultry breeder in the world, China ranks first in terms of pork output and poultry output. How to solve the problem of feed grain supply, coordinate the use of grain and feed land, balance planting and breeding and build a diversified food supply system are important issues for food security. The methionine product of Adisseo, a subsidiary of Sinochem Holdings, is an important carrier for connecting the upstream (feed) and the downstream (the breeding industry), and can fully compensate for the shortage of plant-based raw material methionine, thereby reducing the consumption and waste of feed grains. According to Adisseo's calculation, adding sufficient high-quality methionine to livestock and poultry feed is expected to save **10 million** metric tons of feed throughout the year and reduce the use area of feed grain land by 7-10 million mu or 466.667-666.667 thousand hectares.



## Green Agriculture

Green agriculture is an important part of the sustainable development of global agriculture. In 2022, Sinochem Holdings made a series of important achievements in the field of green agriculture, including the promotion of green planting technology, the construction of a number of green agriculture demonstration bases, and the implementation of a series of agricultural waste recycling projects, continuously strengthening the sustainable development of green agriculture.

### Climate Smart Agriculture - Field Conservation Program

Syngenta Group China (SGC), a subsidiary of Sinochem Holdings, has actively responded to the United Nations "Climate Smart Agriculture" program, and launched the Field Conservation Program (also called Runtian Program) together with the United Nations Development Programme, the Chinese Ministry of Agriculture and Rural Affairs, and the Nature Conservancy. It has been committed to promoting the scientific return of straw to fields and the application of wheat conservation tillage technology in the Northeast China Plain and the Yellow River-Huaihe River-Haihe River valleys. **In 2022, the cumulative application area of this technology reached 250,000 mu or 16.67 thousand hectares, its promotion area was 4 million mu or 266.67 thousand hectares, and the cumulative number of farmers trained with the technology exceeded 30,000. Conservation tillage and the scientific return of straw to fields can increase the organic matter content of soil by 4%-9%, increase wheat yield by 8%-13%, and reduce greenhouse gas emissions by 15%, achieving the goals of reducing carbon emissions and increasing crop yields in the farmland.**



### Regenerative Agriculture Helps Improve Farming in Brazil's Portillo Group

Syngenta Group and the Nature Conservancy have jointly initiated the Reverte Program. According to the program, **1 million** hectares of degraded pastures will be restored to productive agricultural land by 2030, and crop yields will continue to increase during this period. This program has assisted Portillo Group's farms in Brazil in adopting a comprehensive system of integrating animal husbandry and planting for agricultural production, overcoming the serious impact of high temperatures on farm productivity. Sinochem Holdings, along with long-term partners such as environmentalists, agricultural experts and policy makers, is committed to utilizing the Reverte Program to ensure the resumption of important agricultural activities on approximately **11 million** hectares of degraded grasslands that can be reclaimed, while protecting the eco-environment and achieving economic benefits through non-expansion.



### Fertigation Technology Promotes Soil Health and Greenhouse Gas Emission Reduction

In 2022, Syngenta Group China (SGC), a subsidiary of Sinochem Holdings, and Solidaridad jointly launched the Farmer Empowerment Program, officially introducing fertigation technology into Dunhuang and Guazhou regions of Gansu Province. By relying on the advanced fertigation technology as well as comprehensive crop protection and crop nutrition solutions, SGC has effectively explored, summarized and promoted the implementation techniques and experience models of cotton planting and crop rotation. Precise control of water and fertilizer usages can improve the effective utilization efficiency of water and fertilizer while reducing the leaching of nitrate nitrogen and the volatilization of ammonium nitrogen and decreasing soil non-point source pollution and greenhouse gas emissions.



### Establish the Agricultural and Food Climate Change Response Enterprise Alliance to Promote the Green And Sustainable Development of Agriculture

Syngenta Group China (SGC) joined hands with 10 companies, including Beidahuang, Budweiser, Mengniu, Novozymen, Nestle, Xinle, John Deere, Yara and XAG, to jointly initiate and establish the Agricultural and Food Climate Change Response Enterprise Alliance to contribute to addressing climate change.



## MAP (Modern Agriculture Platform)

Sinochem Holdings has actively explored new agricultural models, improved agricultural production efficiency and product quality through digital technology and intelligent equipment, and developed a series of advanced agricultural technology products and services, such as precision monitoring, precision meteorology, precision water and fertilizer usage, precision crop protection and digital soil, to help agricultural production become more intelligent, efficient and sustainable, and to promote the modernization process of China's agriculture.

In 2022, the digital agriculture business of Syngenta Group, a subsidiary of Sinochem Holdings, ushered in an important milestone - realizing 200 million mu or 13.333 million hectares of digital farmland management. Based on big data, remote sensing and geographic information systems, Syngenta Group drives agricultural transformation through advanced monitoring, seed selection, image decision support, weather risk management, financial planning, crop and farm operation management as well as advanced digital management and service capabilities, helping to promote the development of renewable agriculture.

### Combine Digital and Industrial Technologies to Help Agriculture Save Costs and Increase Efficiency

Syngenta Group China (SGC), a subsidiary of Sinochem Holdings, relies on MAP (Modern Agriculture Platform) tools to combine digital technology with frontline crop protection solutions. Through industry-leading AI-based weed control solutions, it has created industry-leading rapid and accurate pest and disease photo recognition technology and real-time pest and disease risk rolling warning technology. Moreover, it uses multiple precise planting techniques, such as crop protection & monitoring as well as the integration water, fertilizer and pesticide, to achieve cost saving and efficiency improvement.

In 2022, MAP Intelligent Agriculture Digital Terminal won the Red Dot Brand and Communication Design Award, and the digital case was included in the Party history education cases of the Publicity Department of CPC, and the R&D management of MAP passed CMMI3 international certification. By combining digital and industrial technology, MAP has served over 26 million mu or 1.733 million hectares of farm fields growing grain crops such as rice, wheat and corn across China, with an average yield increase of over 8% per mu, helping the country increase grain production by 1.2 billion kilograms. At the same time, MAP has actively participated in soybean planting expansion actions by demonstrating soybean planting technology and building high-quality soybean production bases. In 2022, it served 550,000 mu or 36.667 thousand hectares of soybean fields nationwide, increasing soybean production by nearly 20 million kilograms.



### Helping Key Supporting Counties Consolidate the Achievements of Poverty Alleviation - Gansu Gulang

Through the cooperation model of "government-led, capital introduction/asset revitalization and central enterprise operation", the company will build a whole industry chain of grain and fresh corn in Gulang County, and promote the linked development of primary and secondary industries. It will promote the linked development of primary and secondary industries and help consolidate the results of poverty alleviation in the national key helping county. After the preliminary industrial consultation, on the one hand, the government will take the lead in introducing social capital, revitalizing the stock of assets, and investing in the construction of the MAP Grain Crops whole industry chain technical service center and supporting facilities and equipment, handed over to MAP Grain Crops operation, covering corn and wheat crop service area of more than 200,000 mu, greatly enhancing the level of modern agricultural technology. On the other hand, oriented by industrial assistance, the government utilizes the assistance funds to build a sweet corn production and processing line with a capacity of 8 million rods, which is operated by MAP Grain Crops. The sweet corn order planting of 2500 mu, annual output value of up to 25 million yuan, to solve the employment of more than 250 jobs, to help the transformation and upgrading of the agricultural industry.



## "The Belt and Road"

Sinochem Holdings actively responds to the national "Belt and Road" initiative, strengthens agricultural cooperation with countries along the Belt and Road, promotes the export of agricultural technology and products, and enhances the global influence and competitiveness of Chinese agriculture. It has launched agricultural ecosystems in some countries along the Belt and Road, providing high-quality technical services to local farmers, helping local agricultural development, and achieving mutual benefit and win-win results.

### CENTRIGO™ Agricultural Ecosystem in the Asia Pacific Region

Syngenta Group has launched CENTRIGO™ agricultural ecosystem in Bangladesh, Indonesia and Pakistan. The system includes physical centers and digital services, focusing on the needs of local farmers, and helping local farmers improve productivity and overcome barriers to profitability. CENTRIGO™ makes farmers more entrepreneurial and helps them adopt sustainable farming methods to achieve local agricultural modernization. Syngenta Group is planning to promote this ecosystem to other countries along the Belt and Road.





# Topic 3: Technology-driven, Innovative Development

Technology Innovation System 24

Technology Talents 24

Technological Innovation 25

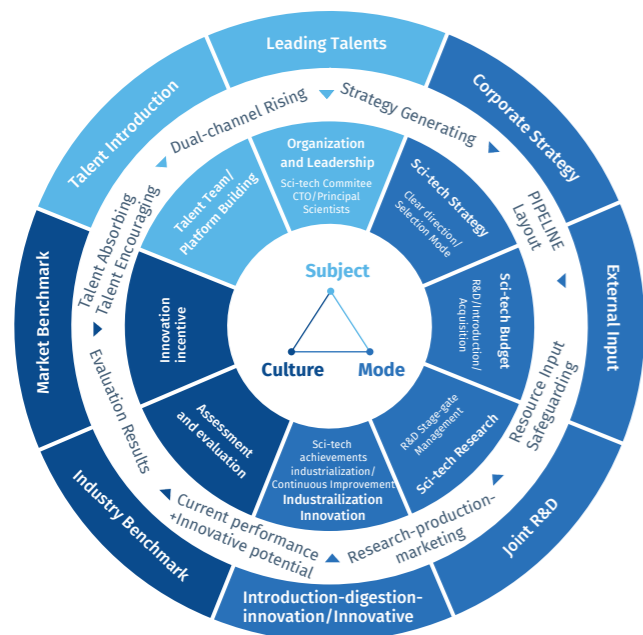
Scientific and Technological  
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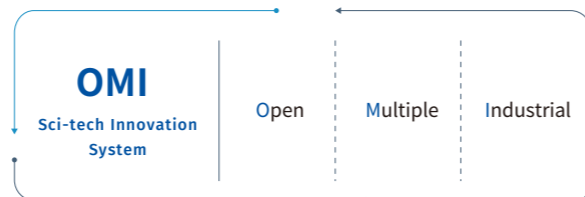
Technological innovation is the only way forward and top priority for the company to achieve high-quality development. Sinochem Holdings adheres to the innovation-driven development strategy, continuously improving its technological innovation capabilities and levels, and promoting the Company to achieve breakthroughs and leadership in key areas and core links. It actively carries out international cooperation, establishing good partnerships with well-known enterprises and institutions from multiple countries and regions, jointly promoting the implementation and application of scientific and technological innovation projects, and boosting the transformation and sharing of scientific and technological achievements.



## Technology Innovation System



Sinochem Sci-tech Innovation System OMI



Sinochem Holdings adheres to using technological innovation as the driving force to enhance the core competitiveness of the brand. With the "Innovation Triangle" as the core, it closely combines the innovation characteristics of the industry and industrial development stages, forming an open, multiple and industrial (OMI) technology innovation system construction plan. By focusing on the R&D directions of key business areas and coordinating its technological innovation resources, Sinochem Holdings has established the Central Research Institute of Sinochem Holdings and 21 professional research centers. By strengthening top-level design, it has reshaped its technology innovation system, focusing on strengthening its independent innovation capabilities and promoting its industrial transformation and development momentum transformation.

## Technology Talents

Total number of technology talents	Ratio of technology talents in the staff	Ratio of PhD degree holders	Ratio of master degree holders
<b>28000+</b>	<b>12.56%</b>	<b>6.03%</b>	<b>18.14%</b>

Sinochem Holdings pays great attention to the training and motivation of technology talents, providing them with training courses in professional skills, management skills and professional literacy. It attaches great importance to the construction of the technology talent team and has established various reward mechanisms, including performance bonuses, equity incentives and patent incentives, to encourage technology talents to create more value. It promotes communication and cooperation among technology talents, and regularly organizes various activities for them, such as technology salons and innovation competitions, to enhance and stimulate their communication and collaboration skills, creativity and potential.

### Phase One Technology Talent Innovation Training Camp

Sinochem Holdings has implemented the "technological innovation is a top priority" strategy, strengthened service support for frontline technology talents, and explored a four-in-one technology talent training model of "empowerment - coaching - practice - evaluation". After a year of training, the first batch of 46 trainees produced over **150** innovative results, including **67** patents, **27** technological R&D grants, **36** materialized as mass production, and pilot-scale and small-scale trials, **4** involved in the formulation of industry or group standards, **9** awards, and **9** published or accepted academic papers. The Company has truly achieved the goal of outputting practical results through training, empowering the Company's businesses through training and assisting the Company in innovation through training.



## Strengthen Technical Cooperation With The Outside

The new site of Sinochem International Technology Innovation Center, a subsidiary of Sinochem Holdings, has been officially opened. The Technology Innovation Center will continue to shoulder the important mission of "bolstering areas of weakness" and "filling gaps", focusing on key R&D projects with "high market size, high growth, and high technological barriers", accelerating the development of new products and creating an innovation engine for chemical technology. The Technology Innovation Center actively attempts "open innovation". For example, in the field of composite materials, it has established "Sinochem-SRICI Composite Materials Joint Laboratory" with Shanghai Research Institute of Chemical Industry (SRICI), jointly developing high-performance polyolefin resins, which can be combined with high-performance fibers such as carbon fibers and used in fields such as new energy vehicles and wind power generation



## Technological Innovation

Focusing on its core businesses in life sciences, materials science, petrochemicals as well as environmental science, Sinochem focused on common technologies and product development in the industry to promote product restructuring and technological upgrading and enhance its core competitiveness. The company has focused on the development of high-quality germplasm resources and plant protection products to help the sustainable development of agriculture; continued to increase the scientific and technological research of new chemical materials to provide comprehensive solutions for customer needs; focused on carbon dioxide capture, chemical utilization of carbon resources, hydrogen energy, energy-saving and carbon-reducing processes and other technological directions to provide innovative power for green and low-carbon transformation.

### The World's First Non-petroleum Route for Synthesizing Acrylic Acid

The successful commissioning of the world's first 1000t/a acetic acid-formaldehyde process-based acrylic acid pilot plant, whose process technology was provided to partners by Southwest Research & Design Institute of Chemical Industry Co., Ltd., a subsidiary of Sinochem Holdings, marks an important step for China's non-petroleum-based acrylic acid synthesis route to go from laboratory to industrialization. The "coal based instead of petroleum based" acetic acid-formaldehyde process-based acrylic acid synthesis process route is a green and innovative process route, effectively reducing dependence on petroleum, further expanding and improving the downstream industry chain using coal-based formaldehyde and acetic acid as raw materials, and providing a new growth point for the coal chemical industry.



### China's First Home-made Polypropylene Polymerization Reactor Was Made By Tianhua Institute

The first set of Novolen process-based polypropylene polymerization reactor designed and manufactured by Tianhua Institute of Chemical Machinery & Automation Co., Ltd. ("Tianhua Institute" for short), a subsidiary of Sinochem Holdings, was successfully put into operation, filling China's gap in the design and manufacturing of polypropylene reaction equipment. The Novolen process is one of the most widely licensed polypropylene technologies in the world in recent years, characterized by low operating costs, high reliability, and the widest range of product combinations. Compared with imported polypropylene polymerization equipment, the Novolen process-based polypropylene polymerization reactor designed and manufactured by Tianhua Institute can save more than 50% of cost per set of equipment.





### The World's First Large-scale Application Of Supercritical CO<sub>2</sub> Anhydrous Dyeing Technology Boosts The Low-carbon Development Of The Printing And Dyeing Industry

The 2250L supercritical CO<sub>2</sub> (carbon dioxide) anhydrous dyeing equipment developed and delivered by Guangming Research & Design Institute of Chemical Industry Co., Ltd. ("Guangming Institute" for short), a subsidiary of Sinochem Holdings, **is the first large-scale application of supercritical CO<sub>2</sub> anhydrous dyeing technology in the world, and is currently China's largest and the world's only industrialized supercritical CO<sub>2</sub> anhydrous dyeing demonstration equipment that can operate continuously and smoothly.** The CO<sub>2</sub> medium used in the equipment can be recycled and reused, and the thermal energy consumption of the equipment is only 20% of the previous equipment. Moreover, the new equipment eliminates the use of water and chemical additives, thus removing the generation of wastewater from the source, and saving over 100,000 metric tons of freshwater annually. The new equipment is expected to reverse the high energy consumption and high water consumption situation of the traditional printing and dyeing industry and is of great significance for driving the upgrading and low-carbon sustainable development of China's textile industry.

## Scientific and Technological Research Awards

Sinochem Holdings is committed to technological innovation, promoting industrial upgrading and social progress. As of the end of 2022, Sinochem Holdings has won multiple national and industry level scientific and technological innovation awards, including National Science and Technology Progress Awards, China Industrial Awards, and China Technology Market Golden Bridge Awards, showcasing Sinochem Holdings' leading position and social influence in the scientific and technological research field. Sinochem Holdings' invention patents cover multiple fields such as artificial intelligence, biomedicine, and new energy.

Number of national level specialized and sophisticated enterprises that produce new and unique products

13

Accumulated number of authorized patents as of 2022

30000+

Number of patent applications in 2022

3176

Accumulated number of authorized invention patents as of 2022

20000+

Number of invention patent applications in 2022

2288

Place in the SASAC state-owned central enterprises patent quality ranking

No. 2

### 13 National-level Specialized And Sophisticated Enterprises/"Little Giants" That Produce New and Unique Products

Sinochem Holdings has always been committed to promoting corporate innovation, thus stimulating the emergence of more specialized and innovative small and medium-sized enterprises. In the fourth list of national-level specialized and sophisticated "Little Giant" enterprises that produce new and unique products announced by the Chinese Ministry of Industry and Information Technology, 7 enterprises of Sinochem Holdings are newly selected. By far, a total of 13 enterprises of Sinochem Holdings are named as national-level specialized, sophisticated "Little Giant" enterprises that produce new and unique products, becoming an important force in promoting the technological innovation of the Company:

Sennics Anhui

Sinochem Fuheng

Yangnong Jinhu

Jinxi Institute

Yiyang Rubber Machinery

Northwest Institute

Tianhua Institute

Hubei New Energy

North Institute

Shuguang Institute

Guangming Institute

Ocean Chemical Research Institute

Sinochem Research Institute

### Sinochem Holdings' Technological Achievements Selected in the Handbook of Technology Innovation Products of State Owned Central Enterprises

Sinochem Holdings has independently developed a new hexafluorobutadiene synthesis route using by-product fluorinated olefins as the main raw material for the synthesis of hexafluorobutadiene, broken through technical bottlenecks in the synthesis, purification and industrialization of hexafluorobutadiene, and **built China's first hexafluorobutadiene production facility with independent intellectual property rights, filling up China's vacancy in the production of high-end fluorinated electronic gases.**

Sinochem Holdings has developed 11 key technologies for energy conservation and consumption reduction, including ultrafiltration-reverse osmosis direct connection process, comprehensive utilization of low-grade waste heat, and utilization of concentrated water. It has also developed 7 core equipment and components with independent intellectual property rights, including high-throughput seawater membrane components and high selectivity separation nanofiltration membrane components.

By relying on corresponding technological achievements, Sinochem Holdings has built a 245kt/d membrane desalination system for Zhejiang Petrochemical Refining and Chemical Integrated Project. **The desalination system has the largest scale in China and a world-leading single-unit scale,** having a desalination rate of 99.53%, an average electricity consumption of 2 kilowatt hours per metric ton of fresh water, and a maximum single-unit capacity of 35kt/d. **All of its economic and technical indicators have reached international advanced levels.**

**Key materials:** Hexafluorobutadiene; high shielding specialty conductive silicone rubber materials and products; high shielding conductive silicone rubber; para-aramid high-strength products; key technologies and equipment of membrane seawater desalination for large scale applications.

**Advanced technology:** Technology and equipment for preparing hydrogen gas for fuel cell vehicles from industrial by-product gas.



## Standard Formulation

Standard formulation is the necessary path for the high-quality development of Sinochem Holdings, and can help the Company improve its competitiveness, protect product quality and consumer rights, and promote healthy competition and sustainable development in the industry.

### The World's First Quantitative Risk Assessment Standard for Fine Chemical Reaction Safety

The national standard "Risk Assessment Standard for Fine Chemical Reaction Safety" (GB/T 42300-2022), mainly formulated by Shenyang Research Institute of Chemical Industry, has been officially released and enacted. **This standard is the world's first quantitative risk assessment standard for fine chemical reaction safety,** achieving a leap from qualitative to quantitative risk assessment, improving risk perception and risk prevention & control capabilities, effectively preventing major accidents, promoting the transformation of the public safety governance mode to advance prevention, and pushing the fine chemical industry to a new level of precision production.

### The New National Standard Transforms Organic Waste into Green Energy!

The national standard "Biogas" (GB/T41328-2022), mainly formulated by Haohua Gas, has been officially enacted. The standard specifies the application scope, technical requirements, inspection rules, testing methods, transportation, labeling, storage, transportation and use of biogas, **filling domestic gap in the field of biogas standards.** The standard will help promote the healthy development of the industry, reduce human dependence on traditional energy, and help achieve green, circular and low-carbon development.

Total number of standards formulated in 2022

77

Number of international standards

7

Number of national standards

25





## Corporate Governance Aiming to Improve Quality and Efficiency



中化  
sinochem  
| 科 | 学 | 至 | 上 |

Sinochem Holdings complies with local laws and regulations attaches great importance to the integration of ESG and corporate governance concepts, solidly promotes the modernization of its governance system and capabilities, enhances the scientific level of its decision making, the effectiveness of checks and balances as well as the standardization of its operations, continuously increases its competitiveness, innovation, control, influence and risk resistance capabilities, keeps improving its governance efficiency, promotes the high-quality development of the Company, and actively safeguards the rights and interests of various stakeholders.

### Contribution to Sustainable Development Goals (SDGs)





# Governance Structure

## Board of Directors

Sinochem Holdings' Board of Directors ("BoD" for short) consists of 9 directors. Sinochem Holdings attaches importance to gender equality, diversity, independence and balance of the Board of Directors to help improve the quality of decision-making and innovation of the Board of Directors.



The average age of BoD members is 60.55 years old. 55.6% of BoD members are over 60 years old and 44.4% are under 60 years old. This takes into account both experience and vitality.

BoD members have different professional backgrounds, including chemical, energy, finance, law, management, etc.

BoD members include 5 outside directors, which account for 55.6% of all BoD members. BoD members include 1 female director, representing 11.1% of all BoD members.

## Hold The First Sinochem Holdings Director and Supervisor Training Class

Such a training class was aimed to implement the requirements of the State owned Assets Supervision and Administration Commission ("SASAC" for short). Relevant leaders of Enterprise Leadership Management Bureau 1 of SASAC, some non-executive directors of Sinochem Holdings as well as experts from related fields were invited to give lectures at the class through both offline and online ways. More than 60 trainees completed the training on-site or through video connections. This class further improved the performance ability of the Company's directors and supervisors, promoting the deep implementation of "Adhering to the Party's leadership over state-owned enterprises is a major political principle that must be consistently implemented; Establishing a modern enterprise system is the direction of state-owned enterprise reform and must be consistently implemented".

2022

Sinochem Holdings held

21

Board of Directors meetings



Sinochem Holdings' Board of Directors is composed of five specialized committees: the Strategy and Investment Committee, the Compensation and Evaluation Committee, the Audit and Risk Committee, the Supervision Committee, and the Nomination Committee. The specialized committees are the specialized working bodies of the Board of Directors, responsible for providing advice and recommendations for the Board of Directors' decision-making.

### The Strategy and Investment Committee

Responsible for researching corporate strategic planning, business plans, comprehensive budgets, investment plans, as well as matters that require the Board of Directors' decision-making, such as major business adjustments, the negative list of investment projects, investment and financing, asset restructuring, asset disposal, property rights transfer, capital operation, and reform and restructuring, and providing review opinions to the Board of Directors.

### The Compensation and Evaluation Committee

Responsible for studying the salary and bonus distribution system and scheme of the Company. According to relevant regulations, it shall organize the formulation of executives' performance evaluation method and compensation management method, organize the evaluation of executives' performance, and propose evaluation results and compensation implementation suggestions to the Board of Directors.

### The Audit and Risk Committee

Responsible for guiding the construction of enterprise risk management system, internal control system, compliance management system, and accountability system for illegal operations and investments, supervising the formulation and implementation of the internal audit system, and inspecting and evaluating relevant rules and their implementation situations. It shall review the financial reports of the Company, review the accounting policies and changes of the Company, and provide opinions to the Board of Directors. It shall review the annual audit plan and key audit tasks, supervise their implementation after approval by the Board of Directors, study major audit conclusions and rectification work, and promote the application of audit results. It shall evaluate the work effectiveness of the internal audit agency and propose suggestions to the Board of Directors for adjusting the head of the Audit Department. It shall provide recommendations to the Board of Directors on hiring or dismissing accounting firms and on their compensations, and maintain good communication with external audit agencies. It shall promote the construction of corporate rule of law, review the basic system of compliance management, response plans for major compliance risk events, and disposal plans for major litigations, arbitrations and other legal affairs, and provide opinions to the Board of Directors.

### The Supervision Committee

Responsible for supervising the Company's implementation of the decisions and deployments of the Party Central Committee and the State Council; supervising how the management team implement the Board of Directors' resolutions, decisions made by relevant authorized parties, and the management conduct code of senior management personnel; learning and grasping the Company's operations and financial situation, and supervising the Company's financial management and business operations; urging the Company to rectify and solve problems found in audits, state-owned asset supervision and special inspections, organizing the post-evaluation of investment projects in accordance with regulations, and carrying out special inspections on them when necessary; making prompts and timely reports when finding major issues and anomalies.

### The Nomination Committee

Responsible for drafting criteria and procedures for the selection of senior management personnel in accordance with relevant regulations, making recommendations to the Board of Directors on the selection of the general manager, reviewing the Secretary candidate nominated by the Chairman as well as deputy managers and general legal advisor nominated by the general manager, and making recommendations to the Board of Directors about them after fully considering their professional qualities, moral qualities, social reputation and other factors and fully considering the Company's development strategy and needs.



# ESG Awards

## EcoVadis Platinum Sustainability Rating

ELIX Polymers, a subsidiary of Sinochem International, was awarded Platinum Rating by EcoVadis, one of the world's leading sustainability rating agency companies, whose certification aims to increase the ability to leverage the impacts of the global supply chain to improve the performance of a company's environmental and social practices

## EcoVadis Platinum Sustainability Rating

Sinochem International and Sennics won the EcoVadis Silver Rating, ranking in the top 14% of its industry in terms of corporate social responsibility performance, up 4% over the previous year

## EcoVadis Silver Sustainability Rating

Elkem was awarded a Platinum Sustainability Rating for 2022 by EcoVadis, which only grants Platinum ratings to the top 1% of rated companies in terms of global CSR performance, its highest recognition of corporate social responsibility

## Sinochem International won four awards of Wind 2022 ESG Best Practice Listed Companies

Sinochem International was selected for the 2022 "State owned Central Enterprise ESG · Pioneer 50 Series Index" and ranked 37th. At the same time, it ranked 6th in the "State owned Central Enterprise ESG · Risk Management Pioneer 50 Index" and reached a five-star level

## ESG Leading Enterprise Awards 2022 - Leading Social Initiative Award

Sinofert won the fourth Bloomberg Businessweek "ESG Leading Enterprise Awards 2022 - Leading Social Initiative Award"

## ESG Annual Innovation Experiment List

MAP Tianjin Xiaozhan Rice Revitalization Program was listed on the first "ESG Annual Innovation Experiment List" by Wall Street News

## State owned Central Enterprise ESG · Pioneer 50 Series Index

Sinochem International was selected for the 2022 "State owned Central Enterprise ESG · Pioneer 50 Series Index" and ranked 37th. At the same time, it ranked 6th in the "State owned Central Enterprise ESG · Risk Management Pioneer 50 Index" and reached a five-star level

## 2022 Enterprise ESG Impact Model

Syngenta Group China was awarded the title of "2022 Enterprise ESG Impact Model"

## China Social Responsibility Report International Symposium

Sinochem Holdings and its subsidiaries won social responsibility related awards at the 15th China Social Responsibility Report International Symposium

## Bluebook of Social Responsibility of Central SOEs

The "finance+technology" charity work model of China Foreign Economy And Trade Trust Co., Ltd (FOTIC) was selected as a case in the Bluebook of Social Responsibility of Central SOEs

## 2022 Carbon Neutrality Model Enterprise

Sennics won "2022 Carbon Neutrality Model Enterprise" award at the 2022 International Green Zero-Carbon Festival and the 2022 ESG Leaders Summit

## China Excellent Health Employer 2022-2023

Syngenta Group China was awarded the title of "China Excellent Health Employer 2022-2023"

## Aon 2022 China Best ESG Employer

Sinochem International was awarded "Aon 2022 China Best ESG Employer", becoming the only chemical enterprise selected for the list this time

## "A-" Rating by CDP Climate and Forest Project

Elkem received an "A -" rating from the Global Environmental Information Research Center's CDP Climate and Forest Project

## 2022 Green Three Star by GRESB

China Jinmao won "2022 Green Three Star" from GRESB (Global Real Estate Sustainability Benchmark)

## "Low Risk" Rating from Sustainalytics

Sinochem Hong Kong won "Low Risk" rating from Sustainalytics for the first time

## Class A by Position Green

Elkem ESG report was rated Class A by Position Green

Sinochem Holdings' subsidiaries are deeply involved in the ESG field, actively participating in global ESG activities, and winning multiple ESG honors.





# Governance Mechanism

Sinochem Holdings tries its best to ensure the realization of the strategic goal of "building Sinochem Holdings into a world-leading chemical conglomerate" by upholding the core theme, that is, "unifying thoughts, focusing on practical work and promoting the modernization of governance of state-owned multinational corporations" and adhering to four basic principles. Establishing a modern enterprise system is the direction of state-owned enterprise reform and must be consistently implemented", follows the "readjustment, consolidation, filling out, and raising standards" corporate governance policy, builds the "standardization, proceduralization, legalization, scientification, informatization, and refinement" governance capability, strengthens the construction of six management systems and gradually establishes a "four-beam and eight-pillar" framework for internal reform.



## Compliance Management

### Construction of a Competent Compliance System

Sinochem Holdings is committed to building a perfect compliance management system. By developing an annual compliance plan each year, it publishes its compliance management system, compliance manual and compliance obligation convention to ensure compliance with relevant laws and regulations at all levels.

#### 1. Compliance Culture Building

Sinochem Holdings continues to conduct compliance training for its management teams at all levels, develop compliance training plans, incorporate the employee compliance conduct code and the compliance commitment into the employee manual, and strengthen compliance awareness and culture construction. All employees of the company are required to sign "Sinochem Holdings Compliance Obligation Convention" and "Compliance Commitment Letter" to clarify compliance concepts and enhance their legal compliance awareness. The Company carries out a series of specialized training themed on "Compliance management of state-owned enterprises", and seizes "key minority" in the cultivation of compliance awareness and the construction of compliance culture by taking the company's management team as the main training object to effectively improve the company's compliance culture.

#### 2. Compliance System Building

Sinochem Holdings clarifies the content and specification of the construction of the institutional system, follows unified standards for the formulation, revision, review and release of rules and regulations, and clarifies approval responsibilities and authorized release entities of system documents based on the hierarchy of system documents. It implements a "Formulate, Revise and Abolish" full lifecycle management in the construction of corporate systems, clarifies the management standards of rules and regulations, and issues "Sinochem Holdings Regulation on the Management of Rules, Regulations and the Accountability Manual" and "Management Rules". It has optimized and improved its management system, and **released 12 corporate governance documents, 103 management rules and 105 operational standards**. It has strengthened the collaborative management of the institutional system and the accountability manual, completed the annual revision of "Sinochem Holdings Accountability Manual (Headquarters)", promoted the construction of the accountability system for secondary business units, and established a bottom-to-top and interconnected accountability system.

#### 3. Compliance Operation Mechanism

Sinochem Holdings has implemented the requirements of SASAC's "Central State owned Enterprise Compliance Management Measures" and issued a plan for implementing SASAC's "Central State owned Enterprise Compliance Management Measures". It clarifies and stresses the compliance management responsibilities of the person primarily liable in charge of each department and enterprise of the Company, establishes the general legal advisor/chief compliance officer system, clarifies that "business managers must also manage compliance", and promotes the implementation of the company's compliance management system.

Sinochem Holdings strengthens legal compliance audits to boost the company's business development. It strictly implements the requirements for compliance review of rules and regulations, economic contracts and important decisions. By formulating and implementing *Sinochem Holdings Rules and Regulations Management Regulations, Sinochem Holdings Contract Management Measures, Sinochem Holdings Legal Affairs Management Regulations* as well as the advance compliance review mechanism for major decision-making matters, **it clearly defines legal compliance review as a necessary link. The legal compliance review rate of rules and regulations, economic contracts and important decisions has reached 100% in the company.**

Number of compliance risk warnings/reminders in 2022

A total of **23**  
compliance risk alerts published

Total number and attending person-times of legal compliance trainings in 2022

**16** ; A total of **15,000**  
person-times

### Compliance Risk Identification and Assessment

Sinochem Holdings tracks and analyzes regulatory policies, promotes compliance risk identification and evaluation, comprehensively evaluates compliance risks, develops risk prevention measures, and continuously follows up on evaluating and revising them.

It has organized various headquarters departments and affiliated enterprises to complete the preparation of "Compliance Risk Identification List", "Job Compliance Responsibility List" and "Compliance Process Control List". The compliance lists cover key businesses, key links and key positions. By seizing the key points of compliance management and focusing on the job compliance responsibility list, the Company breaks down compliance responsibilities and requirements to every specific job, in order to identify compliance risks and implement process control.

**Related third parties:** Sinochem Holdings strictly reviews suppliers, agents, distributors, consultants and contractors, requires them to provide relevant proof materials, and conducts regular audits on them to ensure that they can comply with relevant laws and regulations.

### Compliance Risk Response and Control

Sinochem Holdings keeps improving its compliance management mechanism, strengthens legal compliance risk prevention from both domestic and overseas dimensions, and guides its overseas enterprises how to handle major litigation cases to effectively protect the Company's interests. The Law and Compliance Department is responsible for the Company's major foreign-related risk response work, properly responds to various unexpected events and risks, and improves the Company's compliance event risk prevention capabilities.

### Evaluation and Improvement of Compliance Effectiveness

Sinochem Holdings attaches great importance to the effectiveness evaluation and improvement of compliance management, and regularly checks the compliance management situation of its subsidiary enterprises to determine the effectiveness of its compliance management system.

It has established a legal compliance business evaluation system, and formulated corresponding evaluation standards and implementation rules. It promotes its units at all levels to rectify their compliance management issues based on the evaluation standards, and provides targeted evaluation guidance for the construction of the compliance management system.

It promotes the construction of the general legal advisor and chief compliance officer system for its secondary business units and key subsidiaries to play the role of the general legal advisor and chief compliance officer in overseeing major decisions and promoting the construction of the compliance system.

### Information Disclosure

**Sinochem Holdings has formulated and released the Management Measures for Information Disclosure of Listed Companies of Sinochem Holdings for the first time, filling up its institutional vacancy in this area.** The *Management Measures* clarify the main responsibilities of each listed company, and also make institutional requirements for the information disclosure principles of "timeliness, fairness" and "accuracy, objectivity, and completeness". The Company actively fulfills the requirements of SASAC on improving the quality of information disclosure of listed companies held by state owned central enterprises, continuously improves the quality of information disclosure, and enhances the transparency of listed companies. In 2022, all listed companies held by the Company completed high-quality information disclosure work in accordance with external regulatory requirements and internal management requirements.

### 1. Legal and Compliance Risk Investigation

Guided by compliance risks, Sinochem Holdings conducts special investigations on compliance risks in trade compliance, antitrust and other key areas and carries out on-site inspections and training for key enterprises.

### 2. Trade Compliance Management

Sinochem Holdings has released a special compliance manual to strengthen research on legal and regulatory requirements in countries where its major investments are located, formulated specialized research reports on them, adhered to bottom line thinking, and developed response plans.

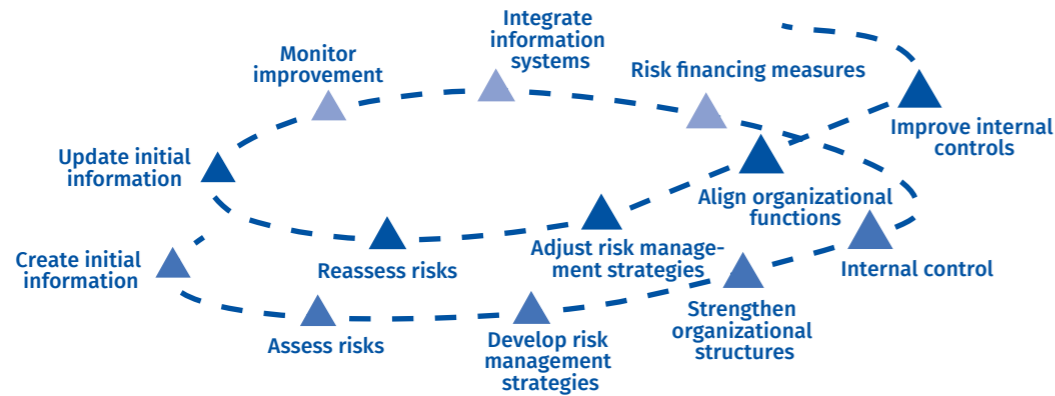
# A

**The 2021-2022 information disclosure work of Yangnong Chemical, a subsidiary of Sinochem Holdings, was evaluated as "A" by Shanghai Stock Exchange, and its information disclosure work has been evaluated as "A" for 8 years in a row.**



# Risk Management

Sinochem Holdings continues to establish and improve the risk prevention and control mechanism, integrates risk management into the company's production, operation and management activities in accordance with the cost-effective principle, adheres to the work concept of "continuous assessment, continuous matching, and continuous effectiveness", and promotes the risk management system to be compatible with the company's business development, so as to enhance the overall value of the company through the dynamic operation of the risk management system in the long term.



## Risk Management System

Sinochem Holdings always adheres to a systematic concept, plans to promote risk management and internal control construction, strengthens the comprehensive leadership of the Company Party Branch Committee on risk internal control management, establishes a standardized organizational structure system, clarifies the division of responsibilities for risk internal control, and ensures the effective implementation of management at all levels.

The Board of Directors of the Company is responsible for promoting and improving the risk management system, internal control system and compliance management system of the Company, and determining major matters in these areas. The Audit and Risk Committee under the Board of Directors of the Company is authorized by the Board of Directors to be responsible for the organization and implementation of the Company's comprehensive risk management and internal control work, to formulate and continuously supervise the risk management and internal control system, and to report regularly to the Audit and Risk Committee and the Board of Directors on the status of the Company's risk management, internal control and compliance management and control.

The Board of Directors and the Audit and Risk Committee regularly review the effectiveness of ESG-related risk management.

### 1. Risk Culture Development

Based on the actual situation of the Company, we continuously improve the culture of risk management to keep pace with time, and in the integration of risk management with organizational governance and operation and management decisions, we continuously promote the understanding and recognition of the risk culture among all employees; through proactive identification and management of risks, we balance the relationship between risks and benefits, promote the achievement of strategic and operational objectives, and thus enhance the performance of operation and management activities. The Company's risk management system is dynamically evaluated and adjusted according to changes in the strategy and organizational structure to continuously promote mutual matching and system effectiveness.

#### Preliminary Development of a New Risk Culture Concept and Consensus

Risk management is the responsibility of the leader, and my responsibility as well	We believe that proactively identifying and managing risk enhances and improves our performance.	Risk management is not static and needs to be adapted in a timely manner to changes in the external and internal environment	Risk management needs to take full advantage of information technology developments to improve management capabilities
Risk management should not be isolated and needs to be integrated into all business activities	There is no perfect paradigm for risk management, what is appropriate and effective is best	Risk management needs to be open and inclusive, and risk management solutions are an option to maximize value for participants	Risk management should be continuously assessed, continuously matched and continuously effective

### 2. Risk Management System

With the management and control objective of "Strengthening internal control, Preventing risks and Promoting compliance", Sinochem Holdings has clarified the principles, basic processes and main contents of risk management, and taken the Sinochem Risk Management Measures as the programmatic document for risk management of the company, identified the deficiencies of the system from the perspective of different levels of risk, internal control and compliance, and perfected the risk management system at the top level, sorted out and solidified the responsibility of risk management of the management entities of all levels in a systematic form, and clarified the framework of risk management requirements, so as to push the management system forward to be continuously perfected and upgraded and promote and drive the integration and construction of the system at the same time.

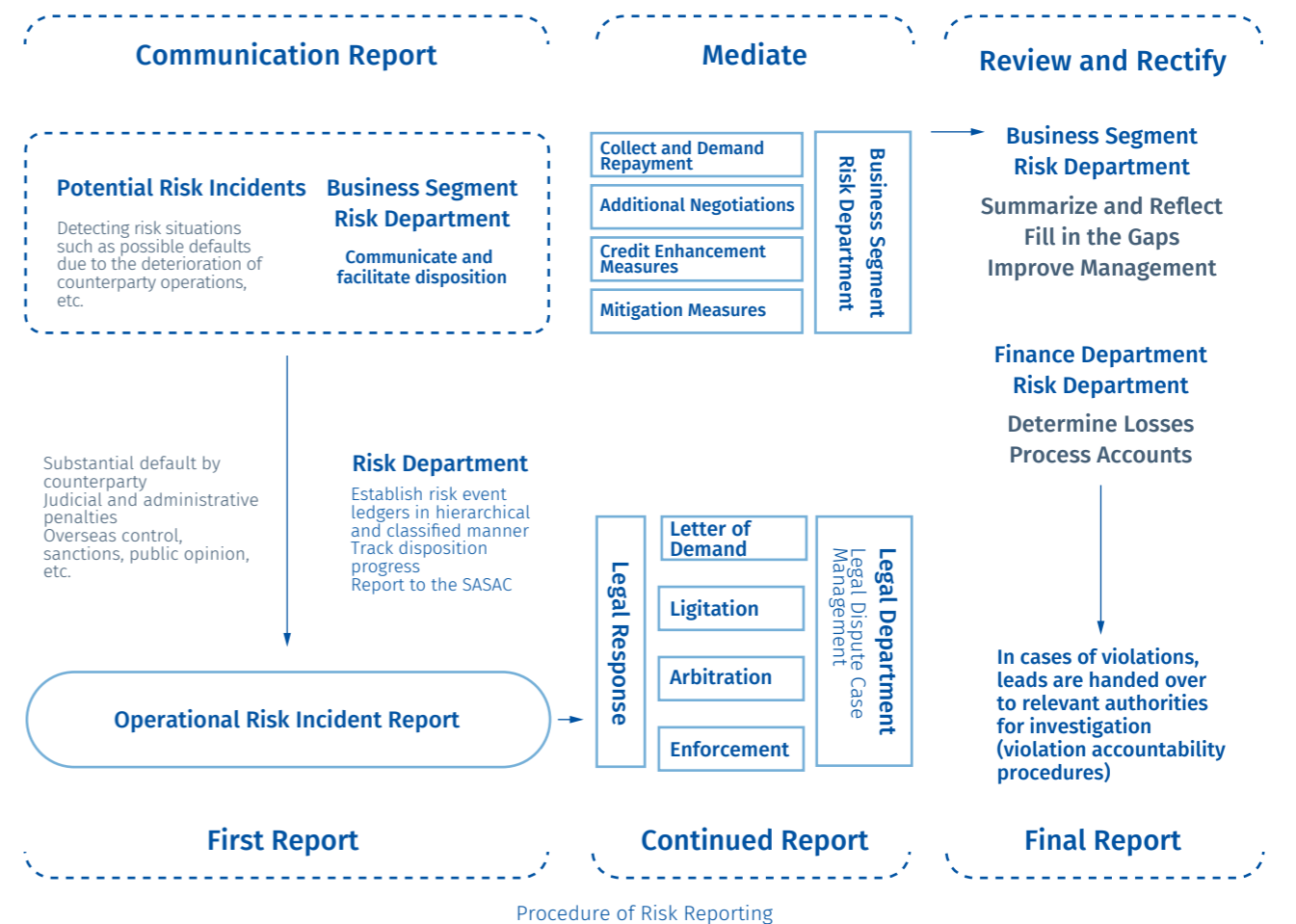
### 3. Risk Assessment and Response

With the goal of "Knowable, Controllable and Affordable Risks", Sinochem Holdings continuously establishes and improves the risk prevention and control mechanism, and carries out the annual identification and assessment of major risks on a regular basis, closely focusing on the company's strategy and business objectives.

In 2022, Sinochem Holdings made a comprehensive consideration of the two dimensions of risk impact and possibility of occurrence, and based on "Key areas, Key business and Key impact", it made a comprehensive assessment and evaluation, and came up with the top five major risks of the current year in the following order: HSE risk, international operation risk, debt risk, macroeconomic risk and compliance risk. With regards to each of the five major risks, the responsible departments were clarified to further deepen the mechanism of risk management coordination and division of labor, formulate targeted control measures and risk response plans, and perform dynamic assessment and quarterly monitoring of major risks to ensure that major risks are detected, reported and disposed of at an early stage.

### 4. Operational Risk Incident Reporting and Disposition

Sinochem Holdings has continuously improved the working mechanism for accurate reporting, timely investigation and judgment, effective response and prudent disposition of operational risk incidents. Sinochem Holdings has set up a vertically and horizontally coordinated reporting channel for operational risk incidents, and takes the monthly report of operational risk incidents as a guide to comprehensively sort out and investigate various types of operational risk incidents, and with the goal of "reducing inventory and curbing new additions", closely tracks the progress of the disposition of operational risk incidents, comprehensively implements the main responsibility for the management of risk and the disposition of major risks, and firmly adheres to the bottom-line thinking and effectively achieves the principle that "risks are watched, things are managed and responsibilities are borne, actively and steadily respond to the disposition of various types of business risk incidents, timely reduce the risk, recover losses, and contribute to operational security.



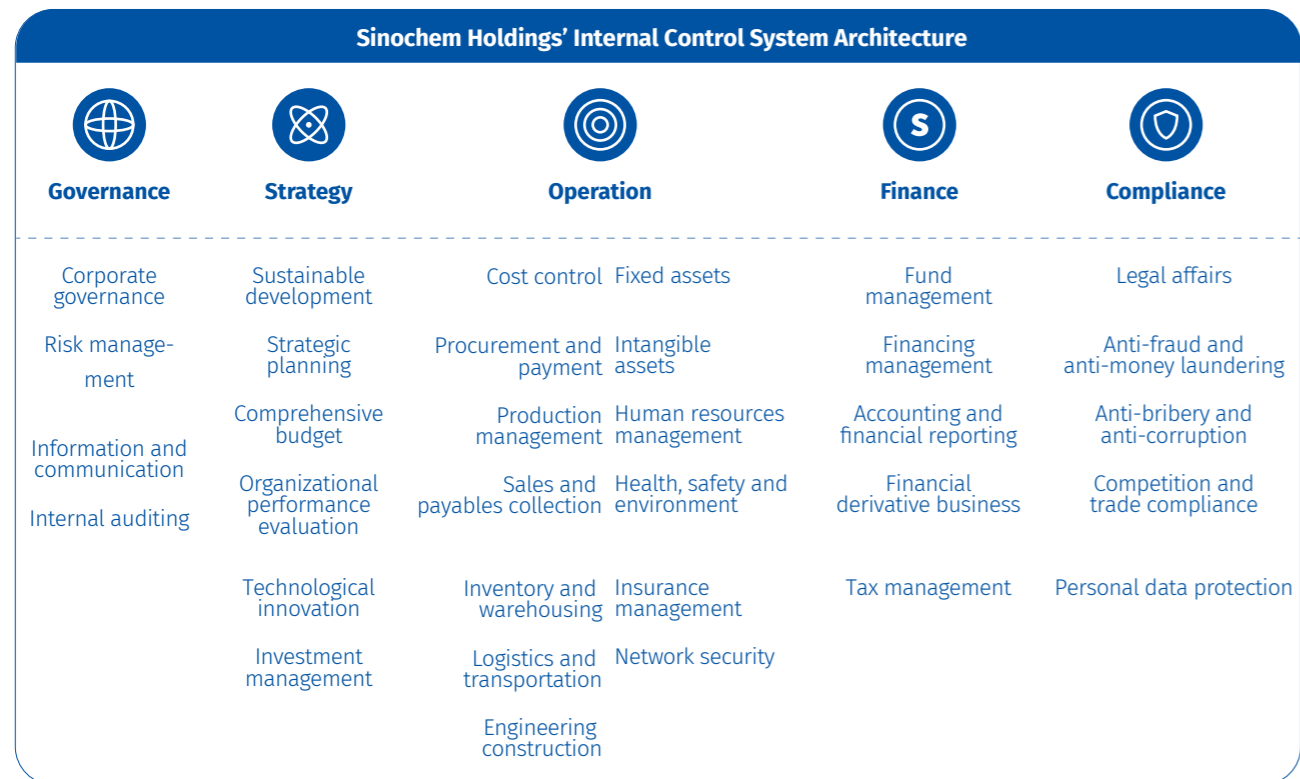


## Establish and Publicize the Internal Control System

Sinochem Holdings adheres to keeping up with the times and improving its internal risk control system. It continuously carries out the cultivation and promotion of internal risk control culture, and urges its subsidiary enterprises at all levels to keep improving the internal control system construction and firmly to establish the awareness of legal and compliant operation, so as to ensure the effective operation of the company's overall internal risk control system.

### Unify "Basic Law" in the Internal Control Field of the Company

Sinochem Holdings has released and implemented the *Sinochem Holdings Corporation Ltd. Internal Control Standard* in both Chinese and English. By focusing on important areas and key links of business management, the Standard can promote the formation of a relatively unified management language within Sinochem Holdings, boost the integration of management culture, drive the optimization and improvement of the company's internal control system, and enhance the company's risk resistance capability. It clarifies mandatory and bottom line requirements, and clearly conveys the company's unified management policies and requirements to domestic and overseas affiliated enterprises.



### Risk Control Communication and Training Content: Sinochem Holdings Corporation Ltd. Internal Control Standard Training Conference Online

In 2022, Sinochem Holdings held relevant specialized training on risk control, including the first English publicity meeting to share advanced risk management and internal control evaluation experience, with a total of over 2200 attendees.



## Digital Transformation Risk Management

Sinochem Holdings has set up a risk prevention and control project group to deal with the risks of digital transformation, and built an online legal compliance system, a quick query system for querying the eight regulations and their implementation rules as well as a quick query system for querying rules and regulations, so as to realize query at any time and enhance the timeliness and effectiveness of supervision and reminder. It has released 9 cyber security regulations in terms of network security, established an HSE risk monitoring and early warning system, and completed the upgraded construction of the HSE risk warning and monitoring platform and emergency management system, turning static analysis and post processing into dynamic perception and advance prevention.

### HSE Risk Warning and Monitoring Platform

**Rapid perception of risk data.** Collect real-time monitoring data from 91 major hazard source enterprises, achieve real-time monitoring of the risk status of major hazard sources, dynamic management of risk barriers as well as early warning of risk mutations, and assist decision-making through methods such as risk ranking, trend analysis, and recommendation of control strategies.

**Closed loop management of risks and hidden dangers.** Achieve closed-loop management of risks and hazards by systematically conducting risk analysis and hazard investigation and management, stress the responsibilities of various levels of positions in the Company, and implement the "last mile" of dual prevention.

## Data Security

Data security is an important foundation and guarantee for digital transformation, and is also a necessary condition for enterprises to fulfill their social responsibilities and enhance brand reputation. Sinochem Holdings strictly implements the cyber security level protection system in accordance with the requirements of laws and regulations such as the *Cybersecurity Law*, and comprehensively carries out the grading, filing and evaluation of information systems and industrial control systems. In order to respond to the increasingly severe cyber security situation, Sinochem Holdings regularly conducts annual attack and defense drills to find weak links and identify risks and hidden dangers, and stresses rectification responsibilities to consolidate the security foundation. It participates in practical exercises organized by higher-level units, and strengthens training and preparedness to effectively enhance its emergency response capabilities.

### 1. Improve the Collaborative Protection Mechanism for Cyber Security

Sinochem Holdings has kept improving the collaborative protection mechanism for cyber security. The first phase of the Cyber Security Operations Center was completed and put into operation in October 2022, effectively enhancing the company's capabilities of network asset detection and identification, network attack warning and monitoring, security event linkage handling, and closed-loop rectification of risks and hazards. In response to the threat of phishing emails, the company has opened up a dedicated reporting email and set up an emergency response mechanism to promptly detect any bad signs. Once any bad sign is found, a dedicated team will quickly respond and accurately block the risk path.

### 2. Sinochem Holdings' Cyber Security Drills

#### Internal Attack and Defense Drill

Hire an attack team to conduct drills, and discover that 61 systems/equipment have security risks, exposing five prominent problems: phishing, weak passwords, unfix vulnerabilities, insecure supply chain, and insufficient system protection.

#### Full Staff Email Phishing Test

Emails with phishing links were sent to 50,625 email boxes throughout the company in 2022. A total of 1767 employees clicked on phishing links and filled in personal information, accounting for 3.49% of the total number of emails sent. Compared to 5.31% in 2021 and 11.9% in 2020, this ratio dropped significantly in 2022.

#### Attack and Defense Practical Drills

Blocked 2417 attacks and banned a total of 99,478 attack IPs.

#### Add protective equipment

Deployed **646** internet application protection programs and **7119** sets of host security software

#### Check weak passwords

Scan and eliminate **1949** system weak passwords

#### Eliminate vulnerabilities

Find and fix **20592** vulnerabilities

#### Rectify risks and hidden dangers

Complete the rectification of **61** systems



## Supervision Management

### Internal Audit Oversight

In 2022, the party group and board of directors of Sinochem strengthened the leadership of audit work, established an audit management mechanism with integrated management at headquarters, vertical and horizontal coordination, and hierarchical coverage around the deployment of "uilding a centralized, unified, comprehensive, authoritative and efficient audit supervision system", focused on the main responsibility and main business, and carried out supervision covering major policies, major projects and important aspects of the company to promote the company's high quality development with high level supervision, In 2022, thenumber of internal audit projects carried out by the Company further increased by 28% year-on-year.

Sinochem continuously promoted the institutionalization and standardization of audit rectification work, regularly followed up and assessed the rectification situation in accordance with the principle of "Three Don'ts", adhered to the combination of rectification and system improvement, and the unification of loophole plugging and accountability, and took audit rectification as a hand to promote the treatment of both the symptoms and root causes of the problems. 2022, the completion rate of rectification of problems was 100%. In 2022, the completion rate of rectification of problems was 100%, and more than 100 items of rules and regulations were established through audit supervision, which effectively promoted the efficient transformation of audit results into management result.

### Complaint, Reporting System and its Implementation

Sinochem Holdings attaches great importance to the opinions and suggestions of stakeholders such as employees, customers, suppliers, partners and the general public, and has established a complaint and reporting system to promptly detect and correct possible illegal, incompliant, unethical or irresponsible behaviors within the company. The company will carefully investigate and handle all complaints or reports, and protect the legitimate rights and interests of complainants or informants.



In 2022, all complaints and reports were promptly accepted and responded

an acceptance rate of **100%**.

The directly affiliated disciplinary commission of the company handled a total of **12** problem-related clues

It received **1733** complaints and reports resolved **9** problems

handled **796** problem-related clues

officially investigated **161** cases increased by **26%** year on year

In 2022, Sinochem Holdings continued to strengthen its political construction and also deepened and strengthened its political supervision by focusing on "matters of national significance". It has consolidated and expanded the achievements of supervision, discipline and law enforcement, and has always adhered to the principles of no prohibited areas, zero tolerance, full coverage, heavy containment, strong pressure, and long-term deterrence.

## Business Ethics and Anti-Corruption Management

### Business Ethics Management

Sinochem Holdings adheres to the principles of honesty and trustworthiness, equal consultation and mutual benefit, sticks to business ethics, and complies with relevant laws and regulations. The company carries out market competition in accordance with the law, places the concept of integrity and compliance above its economic interests, prohibits unfair competition such as commercial bribery and monopoly, and fully respects relevant laws and regulations such as trade control.

Establish good business partnerships. The company is committed to establishing a partnership with each partner that respects, trusts and deals fairly with each other.

Prohibit any commercial bribery. The company strictly complies with all applicable anti-commercial bribery laws and regulations, and prohibits any form of bribery and corrupt behavior, including but not limited to direct or indirect payment and receipt of cash, gifts, securities, physical goods, kickbacks, tourism and entertainment expenses, as well as non-property benefits such as employment opportunities. The company adopts a "zero tolerance" policy towards commercial bribery.

Prohibit unfair competition. Unfair competition refers to the act of competing with other operators in ways that violate laws and regulations, disobey business ethics and disrupt the market competition order, and harming the legitimate rights and interests of other operators or consumers. When doing business, employees should strictly abide by the Anti Unfair Competition Law and other applicable laws and regulations related to fair competition, and participate in competition in a legal and legitimate manner.

### Anti-Corruption Management

Sinochem Holdings strictly abides by the law, scrupulously complies with business ethics and market rules, and continues to strengthen discipline and anti-corruption, so as to cultivate a clean and upright enterprise ecosystem.

#### 1. Clarify the importance and goals of anti-corruption in the sustainable development strategy

Sinochem Holdings regards anti-corruption as an important aspect of sustainable development, incorporating it into the company's strategic planning and annual work plan, formulating specific anti-corruption policies and measures, and strengthening the organizational leadership and responsibility implementation of anti-corruption.

#### 2. Establish a comprehensive anti-corruption risk assessment procedure

Sinochem Holdings regularly conducts anti-corruption risk assessments on various business areas and key positions of the company in accordance with relevant national and industry regulations, analyzes risk sources, risk points and risk levels, and develops targeted prevention and rectification measures, effectively preventing the occurrence of corruption issues.

#### 3. Establish a sound and effective supervision mechanism

Sinochem Holdings has established a code of conduct as well as disciplinary norms, clarifying the rights and obligations of employees, and regulating their behaviors and work.

#### 4. Fight against corruption and promote integrity

We shall keep in mind "matters of national significance", and firmly defend "Two Establishes" and consciously implement "Two Upholds" throughout the whole reform, development, production and operation process of the company. The Company adheres to a strict tone unwaveringly, continues to increase efforts in handling corruption cases, and resolutely punishes corruption with a "zero tolerance" attitude. We routinely hold company-wide warning education conferences, report and expose typical cases, and strengthen warning deterrence. The Company will deepen the integrated push of not daring to corrupt, being unable to corrupt and not wanting to corrupt, and continuously improve the effectiveness of supervision and governance, strengthen the construction of work style with the spirit of nail, formulate and implement the *Eight Prohibitions on Further Strengthening the Construction of Work Style and Strictly Implementing the Spirit of the Eight-point Regulation* (*Eight Prohibitions* for short), urge and promote units at all levels to strictly implement it, continue to strengthen the spiritual levee of the Eight-point Regulation, and provide political guarantee for the construction of a world-leading chemical conglomerate.



Sinochem Holds 2022 Work Conference on Party Integrity Building and Anti-Corruption.



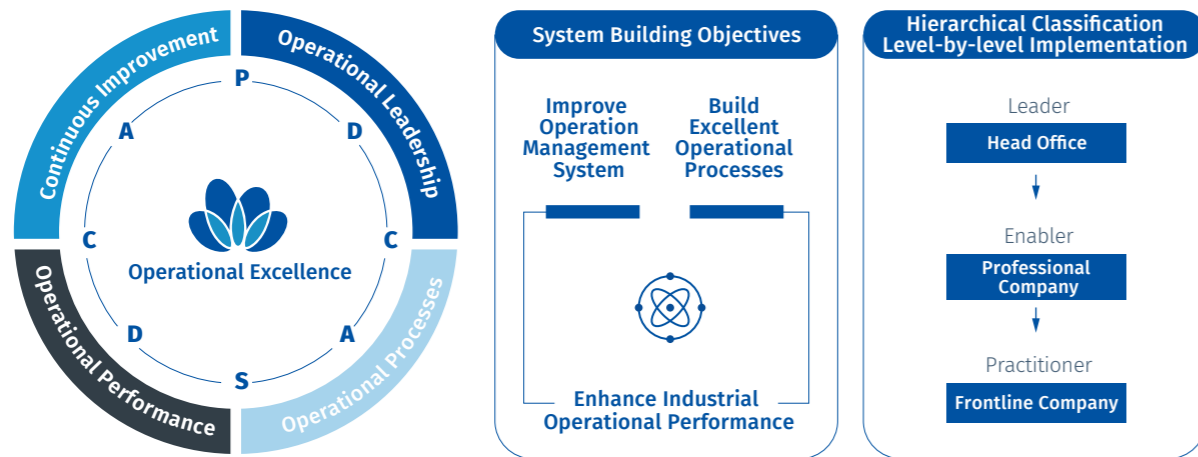
The Qingdao Project of Syngenta Group China's vegetable business puts the Eight Prohibitions on the wall, and its cadres and employees are studying and understanding them carefully.



# Operational Efficiency Enhancement

## Operational Efficiency Enhancement

In 2022, the company focused on high-quality development. With an excellent operational system and capacity building as the starting point, and with benchmarking management and 6S system as important levers, it continued to carry out actions to improve quality and efficiency, continuously solidifying the business foundation, improving asset quality, operational efficiency and profitability, and safeguarding the company's stability and long-term development.



### 1. Carry Out Actions to Improve Quality and Efficiency

The company has organized relevant experts to formulate a special work plan for improving quality and efficiency, forming **6** major aspects and **30** overall company level tasks.

Adhere to the problem-oriented principle, hold production and operation meetings on a monthly basis, and irregularly hold special meetings centered on key links for improving quality and efficiency, such as loss-making enterprise governance, debt risk management and investment management, to urge the implementation of rectification measures. By this way, the rolling prediction mechanism covering the whole chain has been continuously improved, the ability to calculate and win in advance has been gradually enhanced, the efficiency of working capital has been initially increased, and key loss-making enterprises have achieved remarkable results.

### 3. Benchmark First-class Improvement Actions

The company has systematically conducted comprehensive benchmarking analysis and evaluation: Based on strategic benchmarking, centered on 5 dimensions, that is, industry, innovation, performance, governance and value, and focused on 10 core benchmarking indicators, the company has integrated benchmarking results into the comprehensive budget, performance evaluation and management reporting system, and managed them in a closed-loop way.

### 2. Excellent Operational Management

Strengthen top-level design and promote the construction of the system in a coordinated way. Based on the principles of goal orientation, focus on key issues, hierarchical classification, layer-by-layer implementation, resource integration and the pursuit of practical results, we have established an institutionalized, proceduralized and standardized operational management work model, and built an operational management system that is in line with the company's management reality and is interconnected from top to bottom and horizontally connected. The system construction standard integrates industry guidelines, management theories and methods as well as best practices. The system is committed to achieving first-class operational performance and value creation. It follows the management logic of PDCA cycle for operational leadership, operational processes, operational performance and continuous improvement, and covers the entire value chain operation process ranging from sales leads to payment collection in marketing, procurement, production, logistics, etc. It integrates, connects and coordinates all links of production, supply and sales, and results in an endogenous and spontaneous improvement of the company's refined management level.

## Synergy and Efficiency Enhancement

### Business Synergy and Efficiency Enhancement

Sinochem Holdings has formulated the *Overall Plan for Reorganization and Integration of Sinochem Holdings Corporation Ltd.* Based on the Plan, it has specifically promoted and implemented the management relationship adjustment of more than 60 enterprises in total in two batches, forming the current overall organizational structure: "13 professional companies + 7 directly affiliated units". The company has explored and established a scientific synergy system of Sinochem Holdings. With the internal supply chain synergy as the entry point, the company has gradually expanding business synergy to strategic synergies such as investment, centralized procurement and comprehensive solutions synergies. **In 2022, the synergy budget was for the first time included into the comprehensive budget management system. With the synergy project as the lever, the company conducted management push, determining the annual synergy revenue and synergy EBITDA targets.**

2022

the company achieved a cumulative synergistic effect (synergy EBITDA) of **8.2** billion yuan

Through the comprehensive advance of **641** synergy projects

company achieved a total of **26.649** billion yuan of synergy revenue up

**80.1%** year-on-year

synergy EBITDA of **5.744** billion yuan up

**129.8%** year-on-year which fully exceeded the annual budget

### "Synergistic Efficiency Improvement System" (TOP-VIP)

<b>Target</b>	Cultivate the company's synergy competitiveness Realize scientific synergy Synergy planning and budgeting
<b>Organization</b>	TPMO for the headquarters PMO for each unit PMO for each project
<b>Process</b>	Whole lifecycle management of synergy projects Full coverage of business units Industrial chain end-to-end Synergistic digital platform
<b>Value</b>	Comparative analysis of budget and actual expenditure Certify to data Control the financial situation well
<b>Incentive</b>	Accurate assessment Synergy award Excellent synergy staff
<b>Promotion</b>	Strategic synergy Plan and deploy synergy New products, new processes, new business models



## Industrial Synergy

Industrial synergy is an important means to tap potential and increase efficiency. The company has achieved resource sharing, complementary capabilities and exchange of advantages through industrial synergy, improving resource utilization and environmental benefits, reducing waste and pollution, and enhancing social responsibility and credibility.

### ■ Create Value Through Industrial Synergy

Behind the synergy value figures lies a wealth of synergy practices.

For example, Syngenta Group China has achieved cumulative synergy revenue of **2.8 billion yuan** by selling fertilizer and pesticide products through the synergy of fertilizer channel, MAP and other channels. For Yangnong Group and Nantong Xingchen, which ensured stable supply through the long-term contracted supply, one party supplied about **20,000 metric tons** of epichlorohydrin to the other party, who then supplied **20,000 metric tons** of bisphenol A (BPA) to the former, throughout the year of 2022. As for cross-sector synergy, Shengyang Paraffin Chemical transported about **120,000 metric tons** of crude oil in the inventory to related petrochemical enterprises for blending. This has not only solved the inventory problem for Shengyang Paraffin Chemical, but also reduced the raw material cost of such related petrochemical enterprises.

## Business Synergy

Sinochem Holdings have **eight business sectors** covering life science, materials science, petrochemicals, environmental science, rubber & tire, machinery & equipment, city operation, and industrial finance. The integration and synergy among these businesses can achieve multiple benefits such as resource sharing, efficiency improvement, risk diversification and value creation.

### ■ Sinochem International Dares to Pave a Way on Dangerous Shoals, Achieving the Production of Aramid Fibers With Its Own Technology in China

The technical barriers and production difficulties of aramid are very great, and the requirements for polymerization and spinning processes are very strict. Especially, high-strength and high-modulus aramid products have extremely high requirements for the quality of polymer raw materials. Sinochem International, a subsidiary of Sinochem Holdings, has achieved significant technological breakthroughs in the field of high-strength and high modulus para-aramid. Its aramid products have reached industry-leading level in terms of product performance and the rate of super-grade products. Through integration, it has made its management, technology, brand and customer channel teams complement each other in terms of advantages. As a result, its new aramid plants quickly reached the design quality criteria and design output scale, and its products have been certified by customers in the fields of tires, rubber and optical cables and its product sales have rapidly increased. It has achieved production based on sales and is ranked in the world's second tier of aramid producers.

### ■ Differentiated Credit Allocation Strategies Help the Company Reduce Its Debt Scale

Sinochem Finance, a subsidiary of Sinochem Holdings, actively collaborates with the headquarters and member units to develop differentiated credit allocation strategies. It has provided over 10 billion yuan of credit support for the agricultural sector and optimized financing conditions, effectively ensuring spring plowing and sowing and their preparations as well as the purchase of summer and autumn grain through special agricultural loans. It has provided a cumulative loan of nearly **5 billion yuan** for these purposes;

It has provided nearly **4 billion yuan** of syndicated loans and project loans for the key projects of the company to help them fill up domestic vacancies in the field of chemical new materials;

It has contributed to "energy supply guarantee", providing financial services to energy enterprises through various methods such as working capital loans and bill synergy management;

It has supported the debt optimization work of some member units, and cooperated and collaborated with the Finance Department of the headquarters to carry out special enterprise financing improvement work, optimize the financing environment and reduce financial expenses.



## Supply Chain Management

### Vendor Management

In 2022, the Integration Department strengthened the construction of the procurement management system. Through the construction of Sinochem Holdings' excellent operational management system, the procurement management system has been optimized from the original "1 regulation + 1 method" to "**1 regulation + 3 methods + 14 guidelines**". Additionally, 19 procurement management assessment indicators and corresponding evaluation criteria have also been released. In terms of supplier management, a total of 1 method and 4 guidelines have been issued to strengthen the full lifecycle management of suppliers, including vendor approval, evaluation, classification and blacklist.

#### 1. Supplier Management System Documents:

Sinochem Holdings Vendor Management Measures  
Sinochem Holdings Vendor Approval Management Guidelines  
Guidelines of Sinochem Holdings for Vendor Review and Performance Evaluation  
Guidelines of Sinochem Holdings for Vendor Classification and Grading Management and Vendor Relationship Management  
Guidelines of Sinochem Holdings for Vendor Blacklist Management

#### 2. Vendor Approval Principles:

Each unit of Sinochem Holdings shall strictly implement the vendor approval management and the qualified supplier's licensed product catalog management. All suppliers must pass the supplier qualification review before entering the qualified supplier's licensed product catalog of the company. Each unit shall purchase products within the scope of the qualified supplier's licensed product catalog.

Establish a vendor approval management mechanism and process, including preparing supplier qualification review, capability evaluation and credit evaluation standards, developing sample verification and batch trial methods, establishing vendor approval review processes, etc., covering the entire process management ranging from procurement demand to qualified supplier certification.

Vendor approval management mainly includes procurement demand management, supplier selection, supplier qualification review, sample verification and batch trial (as needed), as well as qualified supplier confirmation and other control processes.

Sinochem Holdings conducts regular review of core vendors based on the vendor classification management strategy. Evaluate the vendor's supply capacity or special issue improvement situation, including reviewing the inspection and use of purchased materials/services as well as complaints, and handling of non-conforming products, and keeping records, so as to ensure that the purchased materials/services continue to meet the requirements during use. Propose improvement suggestions and requirements to suppliers based on the review results, so as to promote the continuous improvement of qualified vendors' supply capacity, and to deepen the company's partnership with strategic vendors.

#### 3. Vendor Assessment Process:

Establish a supplier review and evaluation mechanism: supplier review management strategy, evaluation criteria, evaluation team, evaluation process, and application of evaluation results.

Establish a performance evaluation system for qualified suppliers: cost, quality, delivery, service, technical capabilities, and HSE. Conduct vendor review: data review, comprehensive review and special review.

#### Develop a hierarchical management strategy for incentives, rewards and punishments for vendors:

##### ★ Excellent suppliers

Maintain long-term cooperation and increase procurement volume or proportion

##### ★ Good suppliers

Continue to maintain partnerships and promote continuous improvement of the suppliers

##### ★ Qualified suppliers

Require suppliers to carry out rectification and improvement according to the specified schedule, and find more competitive partners

##### ★ Unqualified suppliers

Promote and help suppliers to conduct rectification and improvement. If they are unwilling to cooperate or fail to fulfill the rectification and improvement requirements as scheduled, their supply qualification will be cancelled and they will be withdrawn.

#### 4. Protection of Small and Micro Suppliers as Well as Their Rights Protection

Sinochem Holdings attaches great importance to supporting individuals and small and micro suppliers, and has formulated a series of protective policies that clearly stipulate that suppliers shall not be subjected to differential or discriminatory treatment under unreasonable conditions.



## Procurement Management

Sinochem Holdings emphasizes and strengthens procurement management, vigorously promoting strategic procurement, green procurement and digital procurement. It has developed online sustainable supply chain training, including 19 online training packages, with 399 internal participants and 485 supplier participants.

### 1. Strategic Procurement

We actively promote strategic procurement. In 2022, the company actively promoted the centralized strategic procurement of coal, phenol and acetone, and established long-term and stable strategic partnerships with industry leading enterprises, achieving supply guarantee and cost reduction, and creating value.

### 2. Green Procurement

We actively promote corporate green procurement. The company purchases renewable raw materials, recyclable packaging materials, etc. to promote recycling; it purchases water-saving and energy-saving equipment, actively promotes process optimization, and uses green processes to reduce resource consumption.

### 3. Digital Procurement

We build a unified SCM digital procurement e-commerce platform, achieving the institutionalization, processization, standardization, electronicization, openness and transparency of the entire procurement process, and accumulating rich practical experience for comprehensively promoting the construction of the procurement platform.

## Digital and Intelligent Empowerment

In 2022, Sinochem Holdings released the overall plan for digital transformation. The plan adheres to the problem oriented, goal oriented and result oriented principle, defines the "1333" overall strategy, plots the implementation path, and determines key tasks. The company is promoting the construction of Online Sinochem, Digital Sinochem and Intelligent Sinochem to create a comprehensively digital world-leading chemical conglomerate.

<b>Adhere to three transformation directions</b>	<ol style="list-style-type: none"> <li>1. standardization of corporate management</li> <li>2. platformization of resource sharing</li> <li>3. ecologicalization of industrial synergy</li> </ol>	<b>Improve three support guarantees</b>	<ol style="list-style-type: none"> <li>1. governance system</li> <li>2. network security</li> <li>3. platform architecture</li> </ol>
<b>Implement three major projects</b>	<ol style="list-style-type: none"> <li>1. strategic leadership</li> <li>2. excellent operation</li> <li>3. management upgrading</li> </ol>		

In 2022, the company won **44** external excellent awards for its digital transformation practices, including **14** national and ministerial awards and **30** local government and industry association awards (just those in display).

**Excellent Case of the Pilot Construction Scheme of "Industrial Internet + Safe Production of Dangerous Chemicals"**  
Award winning topic: Pilot construction scheme of "Industrial Internet + Safety Production of Dangerous Chemicals"  
Award-winning units: Sinochem Holdings, Luxi Chemical  
**Awarded by: The Chinese Ministry of Emergency Management**

**2022 Intelligent Manufacturing Pilot Demonstration**  
Award-winning topic: Lean Manufacturing Management  
Award-winning unit: Cangzhou Dahua  
**Awarded by: The Chinese Ministry of Industry and Information Technology**

**2022 Energy Enterprise Informatization Innovation Achievements and Practice Cases**  
Award winning topic: HSE management information platform  
Award-winning unit: Sinochem International  
**Awarded by: China Information Association**

## Security Empowerment

In 2022, Sinochem Holdings released a white paper to guide the construction of "smart factory + smart HSE", and carried out a special improvement action on "smart factory + smart HSE". With focus on key business areas of safety production, it constructed professional systems and safety production risk monitoring platforms for dual prevention, intelligent inspection, unconventional operations, major hazard sources, personnel positioning and emergency management, systematically improving the safety risk prevention and control level of frontline enterprises.



### Market Empowerment - Digital Transformation is Booming, and Online Sinochem Has Entered the Execution Stage

Sinochem Holdings' Digitization Department has launched Sinochem e-commerce platform, which covers over 60,000 grades of over 8,000 products, and forms 12 industry solutions and 6 types of specialized services. The platform gathers nearly 100,000 customers, allowing the company to connect upstream and downstream stakeholders through the digital platform, further empowering the company's operations.

### Technological Empowerment - Sinochem Commerce's "Huayun Digital Intelligence 1.0"

"Huayun Digital Intelligence 1.0" launched by Sinochem Commerce's digital team was officially launched. It is a digital service platform with delivery, interaction and other characteristics. It connects purchasers, agencies, bidders, suppliers, contractors, supervisors, value-added service providers and other relevant parties through the Internet and big data, helping multiple parties establish convenient, efficient and reliable customer-supplier links and professional support channels.

**2021 Industrial Internet Pilot Demonstration Project**  
Award winning topic: Xinghuo Intelligent Factory Based on 5G Full Connection  
Award-winning unit: Bluestar Xinghuo  
**Awarded by: The Chinese Ministry of Industry and Information Technology**

**Excellent Case of the 5th Digital China Construction Summit**  
Award winning topic: Sinochem Holdings Environmental Monitoring System Construction Project Case  
Award winning unit: Sinochem Environmental  
**Awarded by: The Chinese Ministry of Ecological Environment, Fujian Provincial Government**

**2022 Pilot Demonstration of the Integration of New-Generation Information Technology and Manufacturing Industry**  
Award winning topic: "Smart Factory + Smart HSE" Industrial Internet Platform  
Award-winning unit: Sinochem IT  
**Awarded by: The Chinese Ministry of Industry and Information Technology**

**Excellent Case of the Construction of a Security Risk Intelligent Control Platform for Large Oil and Gas Storage Bases**  
Award winning topic: Security Risk Intelligent Control Platform  
Award-winning unit: Sinochem Xingzhong  
**Awarded by: The Chinese Ministry of Emergency Management**

**2021 IoT Demonstration Project**  
Award winning topic: Intelligent Equipment and Digital Management Solution for Water and Fertilizer Management  
Award-winning unit: Sinofert  
**Awarded by: The Chinese Ministry of Industry and Information Technology**

**Digital Workshop**  
Award winning topic: Guilin Rubber Machinery's Digital Workshop, Heilongjiang Haohua's Chlor-alkali Digital Workshop  
Award winning units: Guilin Rubber Machinery, Heilongjiang Haohua  
**Awarded by: Guangxi Department of Industry and Information Technology, Heilongjiang Provincial Department of Industry and Information Technology**

Note: Only selected awards are shown.



## Product Services

### Product Safety and Quality

#### Product Safety and Quality Policy

Sinochem Holdings is always committed to providing high-quality, safe and environment friendly products and services to meet customer needs and expectations.

- Comply with all applicable laws, regulations and industry standards, and continuously improve the quality level and safety performance of products and services;
- Establish and continuously improve a comprehensive quality management system to ensure that the quality of products and services is controllable, traceable, and sustainable;
- Establish and implement strict product and service quality testing and management certification mechanisms, regularly conduct internal and external audits and evaluations, and promptly identify and correct non-compliant issues;
- Establish and implement a health and safety risk investigation mechanism, conduct risk assessment and control over the lifecycle of products and services, and prevent and reduce potential hazards to personnel, equipment and the environment;
- Strengthen communication and collaboration with customers, suppliers, partners, regulatory agencies and other relevant parties to jointly improve the quality and safety level of products and services;
- Cultivate and motivate employees to actively participate in quality management activities, enhance their quality awareness and safety responsibility, and encourage them to propose improvement suggestions and innovative solutions.



#### Product Withdrawal and Recall

Sinochem Holdings attaches great importance to product quality and safety, and has established a comprehensive product withdrawal and recall mechanism.

- Product quality and safety monitoring: Sinochem Holdings regularly conducts quality and safety inspections on its products, collects and analyzes market feedback, and promptly identifies and addresses potential problems.
- Product withdrawal and recall process: Sinochem Holdings has developed a clear product withdrawal and recall process, including problem confirmation, risk assessment, withdrawal and recall decision-making, implementation plan, execution supervision, effectiveness evaluation, and other links.
- Product withdrawal and recall information disclosure: Sinochem Holdings will promptly disclose information to relevant agencies, customers, consumers and the media and explain the reasons, scope, measures and subsequent disposal in case of product withdrawal and recall events.
- Product withdrawal and recall accountability: Sinochem Holdings will strictly follow laws, regulations, and company regulations to hold responsible individuals accountable for product withdrawals and recalls caused by product quality and safety issues, and impose corresponding penalties to them.

### Customer service and customer rights and interests

#### Customer Service

Sinochem Holdings is committed to providing customers with high-quality products and services, continuously improving customer satisfaction and loyalty. In order to achieve this goal, Sinochem Holdings continuously makes efforts in terms of product and service accessibility, after-sales service system, customer satisfaction survey, customer needs survey and other aspects.

##### ■ Regarding Product and Service Accessibility

Sinochem Holdings' products and services cover multiple fields such as petrochemicals, agriculture, new materials, new energy, and can meet the diverse needs of vast customers. Our products and services cover 31 provinces, autonomous regions, municipalities, Hong Kong, Macao and Taiwan regions, as well as overseas markets. The company has developed an online sales platform to provide customers with convenient online purchasing, payment, inquiry, consulting and other services.

##### ■ Regarding After-sales Service System for Products and Services

Sinochem Holdings has established a comprehensive after-sales service system, including a 24-hour customer service hotline, professional technical personnel, and fast logistics delivery, to ensure the rights and interests of customers during the purchase and use of products. In accordance with national laws and regulations and company regulations, we handle customer complaints and return/exchange issues, and actively communicate and resolve them in a timely manner, striving to achieve customer satisfaction. We provide technical support and training to help customers use and maintain our products correctly, improve product performance and efficiency, and ensure that customers receive the best service experience.

##### ■ Regarding Customer Satisfaction Survey

Sinochem Holdings regularly conducts customer satisfaction surveys, collecting customers' opinions and suggestions on product quality, service level, price rationality and other aspects through phone calls, emails, questionnaires, etc. We establish a customer feedback information management system, analyze and organize the collected information, develop corresponding improvement measures, and timely provide to customers with feedback on the solving status of the problems reflected by them.

##### ■ Regarding Customer Needs Survey

Sinochem Holdings continues to conduct customer needs surveys, and identify and predict customer needs changes through market research, industry analysis, competitor comparison and other methods. Based on customer needs survey results, we adjust and optimize product structure and service models, develop new products and services to meet customers' personalized and differentiated needs. Based on market changes and industry development trends, we continuously innovate and improve our own work to adapt to and lead customer needs changes.

### Customer Rights and Interests Protection

In order to protect the legitimate rights and interests of customers, Sinochem Holdings has taken effective measures in the following areas.

#### 1 Reminder Mechanism for Potential Security Risks of Products and Services

Sinochem Holdings strictly adheres to relevant laws, regulations and standards in the design, production, transportation, sales and use of its products and services to ensure that they meet quality requirements and safety standards. At the same time, Sinochem Holdings provides customers with complete, accurate and timely product and service information through various methods such as product manuals, labels, websites and customer service hotlines, including product and service performance, functions, uses, precautions, risk warnings, etc., to help customers use products and services correctly and avoid or reduce potential safety risks.

#### 2 Return, Exchange and Compensation Mechanism

Sinochem Holdings respects and protects customers' return and exchange rights, and has formulated reasonable return and exchange policies based on different product and service types and publicly disclosed the policies in product manuals, labels, websites and other channels. If customers are not satisfied with the products or services provided by Sinochem Holdings, they can apply for a return or exchange within the specified time and enjoy corresponding compensation. Sinochem Holdings has established a dedicated return and exchange processing department to promptly respond to and process customers' return and exchange requests, so as to ensure the smooth and efficient return and exchange process.

#### 3 Response Mechanisms for Situations Involving Misleading or Erroneous Information

Sinochem Holdings values and upholds customers' right to know, adheres to honest business operations, and does not engage in any misleading or fraudulent marketing activities. If any misleading or incorrect information is found by us or reflected by customers, Sinochem Holdings will immediately initiate an emergency plan, quickly identify the facts, take corrective measures, and publicly apologize and explain to customers. Meanwhile, Sinochem Holdings will take the personnel involved seriously and strengthen internal management and supervision to prevent similar situations from happening again.





## Environment Friendliness and Resource Sharing



Sinochem Holdings respects nature, protects nature, and actively participates in global environmental governance. It deeply implements the thoughts about ecological civilization, closely focuses on its green, low-carbon and high-quality development goal, and resolutely implements the national green development strategy. It promotes the resource sharing model from the overall development planning level of the company, vigorously develops efficient and green energy applications, and continuously improves its environmental pollution prevention and control level. Guided by the green development goals, it is committed to becoming a leader in the green transformation of the chemical industry.

### Contribution to Sustainable Development Goals (SDGs)





# Resource Management and Protection

## Environmental Risk Identification and Management

### Environmental Risk Identification and Management

Sinochem Holdings adheres to the principle of "environmental priority" and is committed to fully integrating environmental management into the company's development strategy and business decisions, building a scientific and professional environmental management framework from top to bottom, and continuously improving and perfecting its environmental management system.

Sinochem Holdings attaches great importance to environmental risk management and takes it as an important part of the company's sustainable development. Sinochem Holdings has effectively reduced various risks caused by environmental pollution and promoted harmonious coexistence between the enterprise and environment by establishing mechanisms for environmental risk identification, assessment, prevention and response.

The company has established and kept improving the top-level design of its environmental management system, **forming an environmental management system based on 34 regulations such as the Sinochem Holdings HSE Management Regulations, Sinochem Holdings Environmental Protection Management Measures and Sinochem Holdings Eco-environmental Protection Responsibility System.** It clarifies the responsibilities and requirements for environmental management at three levels: the headquarters, secondary business units and affiliated enterprises, providing institutional basis for environmental risk control, environmental information disclosure and stakeholders communication, and offering strong support for ensuring the standardization and continuity of environmental management.

**As of the end of 2022, a total of 95 subsidiary enterprises of Sinochem Holdings had achieved ISO14001 certifications. There were 0 general or above environmental events occurring within the company in 2022.**

### Environmental risk identification and assesment assessment

Sinochem Holdings builds an emergency environmental event risk assessment system, implements risk classification and grading management, and improves risk prevention and emergency measures.

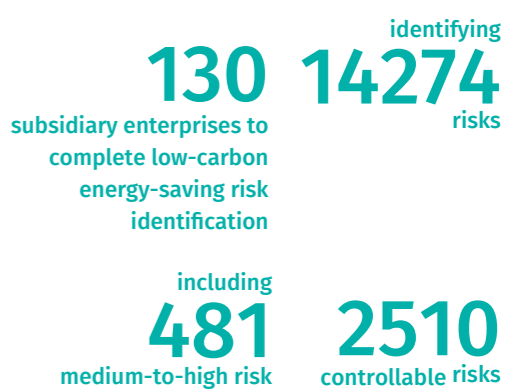
- 1 - Build an emergency environmental event risk identification and treatment system, arrange an annual risk identification plan, implement the graded management of risks, formulate specific treatments and inspections plan for major risks, and establish records for identifying and addressing environmental risks.
- 2 - Establish an environmental emergency management system and improve the environmental emergency network. Subordinate enterprises shall develop emergency plans for sudden environmental events as required, and connect them with the corresponding plans of the government, relevant administrative agencies and superior units. They shall report such events to the government for filing as required, and upload them to the company's HSE information system.
- 3 - Be equipped with emergency equipment and facilities for pollution control, and ensure that they are in normal use at all times.
- 4 - Subsidiary enterprises that develop emergency plans for sudden environmental events regularly conduct drills, evaluate the effectiveness of the plans, and continuously improve them.
- 5 - Conduct environmental emergency capability assessment, and improve environmental emergency facilities, equipment, material reserves and emergency team construction.

### Environmental Risk Prevention

When sudden environmental events occur or may occur, Sinochem Holdings will immediately initiate an emergency plan, take measures to cut off or control pollution sources as well as other measures to prevent the spread of harm, promptly notify units and residents who may be affected, carry out emergency environmental monitoring, and immediately report events to the company's HSE department and relevant departments. At the same time, it will report the event to the relevant government in accordance with local regulations. After an environmental event occurs, the company will report, investigate and handle it as required based on the level of the event. The company will implement ecological and environmental restoration measures in the aftermath of the sudden environmental event.

Meanwhile, the company has introduced **FMEA (Failure Mode and Effect Analysis)** risk identification tools into energy-saving and low-carbon management, conducted in-depth investigation of energy-saving and carbon reduction risks and opportunities in enterprises, formed a list of energy-saving and carbon reduction risks, and strengthened product low-carbon indicator monitoring and benchmarking evaluation. Guided by the risk list, the company promotes the improvement of key control and emission indicators.

In 2022, The company organized



## Resource and Energy Management

### Resource Management

Sinochem Holdings attaches great importance to resource management and vigorously promotes the protection and management of water and soil resources. It adheres to the principles of water conservation, scientific management, comprehensive utilization and environmental protection, reasonably controlling the methods and locations of water intake, consumption and drainage, reducing the infections of enterprise activities, products and services on water resources, improving water resources utilization efficiency, protecting the quality of water resources, and supporting the sustainable development of water resources. Each unit of Sinochem Holdings attaches great importance to water resources conservation and protection, conducts in-depth water-saving and water control actions, innovate the "Guidelines for Evaluation of Water-saving Enterprises" to conduct water-saving evaluation, renovate reclaimed water reuse facilities,, and achieves a waste water reuse rate of **97.7%**.

At of the end of 2022



#### ZRICI Membrane Technology Boosts Water Purification

Membrane water treatment technology utilizes the selective separation characteristics of membranes for water treatment. It has low energy consumption, simple and efficient operation, stable operation and other advantages. Zhejiang Research Institute of Chemical Industry co, Ltd. ("ZRICI" for short), a subsidiary of Sinochem Holdings, has deeply studied the membrane preparation process, and used PVDF and ECTFE resins to prepare different grades of hollow fiber membranes, which are widely used in wastewater treatment, sewage purification, ultrapure water preparation, the pre-treatment of seawater desalination, as well as civil and domestic water filter, making water cleaner and safer.

Sinochem Holdings has actively engaged in soil management. In production sites, it strictly implements the environmental safety management system, standardizes the storage, transportation, use and disposal of hazardous chemicals, and prevents leakage and overflow. In contaminated sites, it conducts soil pollution risk assessment and monitoring, develops soil remediation schemes and plans, and uses physical, chemical or biological methods for soil remediation. In agricultural and forestry land, it carries out measures such as afforestation and turf coverage to increase vegetation coverage, improve soil quality and eco-environment.

#### Guizhou Crystal plots have been withdrawn from the Guizhou provincial list of construction land under soil pollution risk control and remediation

In 2022, the Department of Ecology and Environment of Guizhou Province and the Department of Natural Resources of Guizhou Province jointly issued a document to withdraw Guizhou Crystal plots A and B1 from the Guizhou provincial list of construction land under soil pollution risk control and remediation. This marks that plots A and B1 have met the overall land supply standard and meet the conditions for listing, and that the Phase I remediation project of the polluted land plots has achieved substantial results.





## Energy Management

As a comprehensive enterprise involving multiple fields such as energy industry, chemical industry and agriculture, Sinochem Holdings has formulated the *Sinochem Holdings Energy Conservation and Low Carbon Management Measures* to manage energy applications across the entire system in accordance with relevant national laws, regulations, regulatory policies and the actual situation of Sinochem Holdings, in order to strengthen the company's energy-saving and low-carbon management, strive to build Sinochem into a resource saving and environmental enterprise, and to improve energy utilization efficiency as well as the application proportion of renewable energy.

### 2022

emission of carbon dioxide of ten thousand yuan output value y-o-y  
**↓ 4.03%**

comprehensive energy consumption of ten thousand yuan output value y-o-y  
**↓ 7.63%**

It invested to establish low-carbon management information systems for new subsidiary companies and pilot enterprises, actively promoting the progress of energy-saving and low-carbon digitization and informatization.

As of the end of 2022, **40** key energy consuming enterprises of the company have passed the energy management system certification.

implementing over **400** energy-saving technology improvement and technological measures projects throughout the year

energy saving and carbon reduction investment y-o-y  
**40%**

key enterprises energy management system certification rate  
**60%**



### Waste Heat Utilization Can Be Traced Back to the 1970s

Elkem, a subsidiary of Sinochem Holdings, installed its first energy recovery system on a metal silicon smelting furnace in the 1970s, becoming an industry pioneer in waste heat utilization. The heat recovered from the smelting furnace can be used as a steam source for local heating or other production processes, or even for power generation. The energy conservation and carbon reduction efforts of Elkem keep pace with the times. Elkem has continuously improved, updated and replaced its factory equipment to reduce energy consumption and save costs.

Nowadays, most Elkem factories have installed high-temperature waste heat recovery devices to provide electricity to the power grid and steam or hot water for internal and external heating of the enterprise. **In 2022, Elkem's factories across the world recovered 892 million kilowatt hours of thermal and electrical energy, equivalent to the total annual electricity consumption of approximately 55,000 households in Norway, accounting for 11% of Elkem's total annual energy consumption.**

### Carry Out an Intelligent Steam Renovation Project For PVC Drying Equipment

Dezhou Shihua's polymerization drying process reduces steam consumption through automation control. After optimization, the average water content of the product reduces to 0.30%. This increases product output by 40,000 metric tons a year, saves 20,000 metric tons of steam annually, and **reduces 6,200 metric tons of carbon dioxide emissions a year.**

### Carry Out the Desorbed Gas Technical Renovation Project for the Natural Gas-to-hydrogen Unit of the Big Gas Generation System

Cangzhou Dahua attaches great importance to energy conservation and carbon reduction. Since the implementation of the desorbed gas technical renovation project for the natural gas-to-hydrogen unit of the big gas generation system, under the premise of unchanged production capacity, the gasifier load has been reduced by **13%**, **the monthly natural gas consumption of the unit has been decreased by 749,000 Nm<sup>3</sup>, and the monthly operating cost of the unit has been cut by 1.65 million yuan.**

## Improvement and Training of Environmental Protection Capabilities

In order to enhance employees' environmental awareness and capabilities, Sinochem Holdings has conducted various forms of internal training activities on energy conservation and emission reduction, green production, waste management, emergency disposal, carbon neutrality, and other aspects.

Sinochem Holdings actively carries out promotional activities with distinct themes, diverse forms and rich content on World Earth Day, World Environment Day, National Low Carbon Day, and Energy Conservation Week, advocating company employees to save resources and protect the environment, to follow a green, environmentally friendly and low-carbon lifestyle models consciously, and strengthening the ecological protection awareness of all employees.

### Sharing a Beautiful Environment, Participating in Environmental Protection and Discussing Environmental Protection Together

Under the theme of "steadfastly adhering to the green, low-carbon and sustainable development path", we promoted and implemented the thoughts of General Secretary Xi Jinping on ecological civilization as well as the key points and achievements of environmental protection and low-carbon work on the company's internal publication "*Sinochem Holdings*". We solicited works on the theme of "World Environment Day" and showcased outstanding works through the company's internal publication "*Sinochem Holdings*" with the theme of "Sharing a beautiful environment, participating in environmental protection and discussing environmental protection together".





# Pollutant Emission Reduction and Governance

## Pollutant Prevention and Control Management System

Sinochem Holdings has strengthened the top-down design for pollution prevention and control, and formulated and released the *Action Plan of Sinochem Holdings for Deepening Eco-environment Protection in the 14th Five-Year Plan Period*, which focuses on seven key tasks, that is, accelerating the promotion of green and low-carbon development, fighting deeply for blue sky protection, fighting deeply for clean water protection, fighting deeply for clean land protection, strictly adhering to the red line of eco-environment protection, solidly carrying out the investigation and management of environmental risks and hidden dangers, and strengthening the organization and implementation of eco-environment protection work. The Plan points out the direction, sets goals and clarifies paths for the company to respond to the 14th Five-Year Plan.

### Water Pollution Prevention and Control

Sinochem Holdings has established and improved a wastewater pollution prevention and control system based on the *Standard of Sinochem Holdings on Effluent Pollution Prevention and Control*, and strictly complied with relevant national and local regulations on wastewater pollution prevention and control. According to the principles of "diversion of clean water and wastewater, diversion of rainwater and sewage, separated treatment of industrial wastewater and domestic wastewater, as well as classified control, classified utilization, compliant discharge, total amount control, and total process governance", the company implements effluent pollution prevention and control in the total process including the collection, storage, transportation, utilization, treatment and discharge of effluent, and actively promotes the reduction and reuse of effluent from the source by adopting new processes and technologies and optimizing process measures.

### Air Pollution Prevention and Control

Sinochem Holdings has established and improved an exhaust gas pollution prevention and control system based on the *Standard of Sinochem Holdings on Air Pollution Prevention and Control*, actively fulfilled environmental responsibilities, and strictly complied with national and local environmental regulations and standards. It has continuously improved its comprehensive prevention and control level and effectively reduced the generation and emission of atmospheric pollutants by optimizing energy structure, adopting clean fuels, raw materials and auxiliaries, promoting clean production processes and adopting advanced governance technologies.

### Soil Pollution Prevention and Control

Sinochem Holdings has established and improved a soil pollution prevention and control system based on the *Standard of Sinochem Holdings on Soil Pollution Prevention and Control*. According to the principle of "full process supervision, classified management, prevention first, and combination of prevention and control", it has established a long-term mechanism for soil pollution prevention and control throughout the entire lifecycle of an enterprise, which starts from the acquisition & merger of the enterprise, to its production and operation and until its closure and exit. It has solidly carried out soil pollution risk assessment and hidden danger investigation, soil and groundwater environment monitoring as well as soil treatment and restoration.

### Solid Waste Pollution Prevention and Control

Sinochem Holdings has established and improved a solid waste pollution prevention and control system based on the *Standard of Sinochem Holdings on Solid Waste Pollution Prevention and Control*, and followed the principle of "reduction, resource utilization, and harmless treatment" to dispose of solid waste. By starting from the source, it reasonably selects and utilizes raw materials, energy and other resources and adopts advanced production processes and equipment so as to reduce the amount of solid waste generated. It also actively carries out the comprehensive utilization of solid waste to turn waste into treasure. Solid waste that forever or temporarily can't be recycled is classified for harmless disposal to minimize landfill.

#### Establish a Complete Hazardous Waste Management Process

- 1 Conduct comprehensive monitoring and recording of the type, quantity, flow direction, storage, disposal and other information of hazardous waste, regularly report them to the environmental protection agency, and accept supervision and audit.
- 2 Classify and label hazardous waste, and submit it to qualified third-party institutions for safe disposal in accordance with national and local regulations to avoid harm to the environment and personnel.
- 3 Standardize the management of hazardous waste storage sites, set up safety facilities such as fire prevention, explosion prevention and leakage prevention facilities, and conduct regular inspections and maintenance on them.
- 4 Actively carry out the resource utilization of hazardous waste, such as converting oil-containing mud, oil-containing sludge, etc. into fuel or raw materials, and recycling and reusing waste batteries, catalysts, etc., to reduce the production and disposal of hazardous waste.
- 5 Strengthen training and publicity on hazardous waste management, enhance employees' environmental awareness and sense of responsibility, and standardize the operation and treatment of hazardous waste.

### Prevention and Control of Other Types of Pollution

Sinochem Holdings has formulated a series of prevention and control standards for noise pollutions, radioactive pollutions and other types of pollutions, and defined specific management requirements and measures for them, thus laying a foundation for standardizing the relevant prevention and control work.

- Monitor and evaluate noise pollution, develop noise-control plans, and adopt technical measures such as sound insulation, sound muffling and noise reduction techniques to reduce the impact of noise on the surrounding environment and communities.
- Strictly manage radioactive pollution, establish a radioactive source ledger according to the requirements of the National Nuclear Safety Law, implement the licensing system, and conduct regular testing and maintenance to ensure the safe use and disposal of radioactive sources.
- Monitor and control electromagnetic radiation pollution, deploy electromagnetic radiation equipment reasonably in accordance with national standards and industry norms, and set warning signs and protective facilities to limit the harm of electromagnetic radiation to personnel and equipment.

## Pollutant Discharge and Treatment

Compared to 2021



### Improve the utilization efficiency of water resource

Sinochem Holdings is committed to incorporating water resource conservation into its entire production and operation process. By taking the creation of a water-saving enterprise as the starting point, the company strengthens saving water at the source, controlling water use in the process and recycling water at the end, continuously optimizing the water use structure, and continuously reducing fresh water usage. **In 2022, the company's repeated water usage rate increased by 0.8% year-on-year.** Sinochem Holdings has deeply implemented major decisions and deployments such as the Battle for the Protection of Clear Water, the Great Protection of the Yangtze River, and the protection of the Yellow River's eco-environment. It actively promotes the deep treatment of high concentration wastewater, continues to renovate and improve the way of "diversion of rainwater and sewage, and separated treatment of industrial wastewater and domestic wastewater", solidly manages and controls the risk of discharge outlets along the Yangtze River and the Yellow River, and tries to build itself into a benchmark enterprise with zero discharge of wastewater. It has achieved significant results in reducing wastewater pollutants. **In 2022, its compliant discharge rate of wastewater reached 100%.**

### Renovate Deep Treatment Facilities to Ensure That Wastewater Meets Discharge Standards

For some intractable wastewater with high concentrations and complex compositions, we have renovated and upgraded deep treatment facilities. According to online monitoring results, the compliant discharge rate of wastewater in our factories has reached 100%. Among them, TDI Company has built LDO deep oxidation and ISBAS biochemical treatment systems for the treatment of intractable wastewater such as nitrified red and yellow water, hydrogenated water and waste acid condensate. The COD removal rate of the effluent at the plant reaches 99.2%, the ammonia nitrogen removal rate reaches 99.5%, and the annual effluent treatment cost of the plant is reduced by more than 18 million yuan, so the plant has achieved a win-win situation in both environmental and economic benefits. In order to overcome the challenges of treating organic silicone effluent which has complex compositions and high toxicities and is difficult to degrade, Elkem Elkem Xinghuo Silicones has invested over 70 million yuan to renovate its wastewater treatment plant by installing new LBO-ABR anaerobic and LBO aerobic treatment processes and equipments. It has become China's first organic silicone enterprise to achieve the stable treatments and compliant discharge of effluent, providing strong guarantee for rivers full of clear water flowing eastward.





### Sinochem Quanzhou Petrochemical Has a Total Annual Effluent Reuse Amount of Approximately 4 Million Metric Tons

Sinochem Quanzhou Petrochemical adheres to the industrial water-saving policy of "prioritizing water conservation and strengthening water resource management", adopting various technologies and measures to continuously reduce the use of production water. The entire plant adopts optimized water-saving processes and recycles various types of effluent according to the principle of "diversion of clean water and effluent, diversion of industrial effluent and domestic effluent, and diversion of clean industrial effluent and clean domestic effluent". **The total amount of effluent reuse in the plant in 2022 was about 4 million metric tons.**

### Deeply Implement Water-saving and Water Control Actions to Boost the Protection of the Yangtze River and the Yellow River

39 subsidiary enterprises of the company in the Yangtze River and Yellow River basins have carried out water-saving and water control actions, introduced the Guidelines for Evaluation of Water-saving Enterprises to carry out water-saving assessments, renovated and upgraded many reclaimed water reuse facilities, and added a reclaimed water reuse capacity of 2.6 million cubic meters/year. Aeolus Tyre was awarded the title of "National Advanced Water Saving Unit in Petrochemical Industry", and Shenyang Chemical was honoured with "Water Saving Enterprise of Liaoning Province".



## Significant Achievements in Reducing Atmospheric Pollutants

Sinochem Holdings has implemented the requirements of the "Action Plan for Deeply Fighting the Battle for Heavy Polluted Weather Elimination, Ozone Pollution Prevention and Control as well as Diesel Truck Pollution Control". With focus on key tasks such as the ultra-low emission renovation of industrial furnaces, the comprehensive treatment of volatile organic compounds (VOCs) as well as mobile source pollution control, the company has implemented 55 air pollution prevention and control projects with a total investment of nearly 700 million yuan, fully demonstrating the company's responsibility in deeply fighting the battle for defending the blue sky.

### Accelerate Promoting the Renovation of Ultra-low Emission Boilers, and Comprehensively Deepen the Pollution Control of Industrial Furnaces and Kilns

Anhui, Xinghuo silicones and other key industry enterprises, have implemented 13 renovation projects related to the renovation of ultra-low emission coal-fired boilers and the low nitrogen combustion technology renovation of process furnaces and kilns, fully completing the elimination of coal-fired boilers less than 35t/h and the renovation of ultra-low emission industrial furnaces and kilns in key areas. Sinochem Quanzhou Petrochemical has implemented the renovation of power station boilers having ultra-low emissions, stably controlling the nitrogen oxide emission concentration in boiler flue gas below 50 mg/m<sup>3</sup> and particulate matter emission concentration below 10 mg/m<sup>3</sup>. Sennics Shandong has implemented the low-nitrogen combustion technology renovation of gas thermal oil furnaces, stably controlling the nitrogen oxide concentration in the flue gas below 30mg/m<sup>3</sup>.

### Deepen the investigation and rectification of VOCs pollution to fill gaps in pollution prevention and control

With focus on 10 VOCs sources, including organic material storage and handling as well as VOCs collection and governance, Sinochem Holdings has conducted in-depth investigation and rectification work and implemented 44 VOCs governance projects, **reducing VOCs emission by over 1,400 metric tons.** For example, Huaxing Petrochemical invested 37 million yuan to carry out the sealed renovation for the coke removal unit of the delayed coking facility, building an intelligent coke grabbing system, and leading the exhaust gas to the heating furnace of the coking facility for incineration. Yangnong Ruiheng invested 7 million yuan to implement a renovation project to use resin to adsorb the tail gas of dichlorobenzene, dichlorobenzene and nitrochlorobenzene plants, adding 4 resin adsorption devices and supporting facilities for these plants, achieving an economic benefit of over 1.9 million yuan.

### Effectively Ensure Air Quality to Strive for High Performance Ratings in Heavily Polluted Weather

Subsidiary enterprises of Sinochem Holdings, including Luxi Chemical and other key industrial enterprises, have formulated plans to reduce emissions in heavily polluted weather in accordance with the principle of "operability, monitorability and verifiability", breaking down emission reduction measures to specific production lines, production devices and production facilities. They have invested 150 million yuan to implement projects such as sealing coal sheds, replacing outdated vehicles with low-emission standard vehicles and carrying out the deep treatment of VOCs, actively striving to achieve high performance levels in heavily polluted weather. At present, **Sinochem Environmental Protection Chemical Co., Sinochem Changshan, Elkem Silicones Guangdong as well as Luxi Chemical Group's No.1 Coal Chemical Company, No. 2 Coal Chemical Company and Polyol New Materials Company have been rated as A-level performance in heavily polluted weather.**

## Soil Pollution Risks Are Effectively Controlled

Sinochem Holdings implements the soil lifecycle management, and solidly promotes the source control of enterprises in production, the soil environment investigation of key enterprises, and the treatment and restoration of polluted land plots. It has conducted the special treatment of heavy metal pollution in key industries and eco-environmental risks in mining tailings ponds, effectively controlling soil pollution risks.

### Adopt Advanced Technology to Protect Soil Health

Sinochem Holdings has always taken ensuring food security as a key task of its business, continuously exploring using advanced technologies to ensure soil and crop health. In 2022, Syngenta Group, a subsidiary of Sinochem Holdings, launched soil health service **InterraScan technology**, which can generate high-resolution soil attribute maps, to help growers improve their farming systems and promote long-term soil health. It has also launched **TYMIRIUM technology**, a seed treatment and soil application solution, which can provide strong activity against plant parasitic nematodes and soil borne diseases. By protecting root biomass and maintaining various vibrant life forms in the soil, this technology can help protect soil biodiversity while increasing productivity and strengthening the protection of agricultural ecosystems.



### Make Solid Efforts to Control the Source of Soil Pollution of Enterprises in Production, and Orderly Promote Enterprises in Production to Control Soil Pollution During the Production Process

Heavily regulated enterprises in production have actively carried out investigation on soil hazards. Based on the investigation results, they have formed soil pollution source control projects. The content of the projects includes the ground anti-seepage renovation of the factory areas, the anti-leakage, anti-rain and anti-runoff renovation of solid waste storage, the anti-corrosion renovation of underground pipelines, the anti-seepage and anti-corrosion renovation of the equipment, pool renovation, etc. The enterprises have strictly promoted project implementation according to the schedule. All enterprises in industries which can generate heavy soil pollution have completed the self-monitoring of soil and groundwater according to requirements and identified the soil environmental situation. They implement the "controlling soil pollution while making production" policy, and strictly prevent the occurrence of new soil pollution problems.

### Conduct a Special Assessment of Ecological Risks in Mining Tailings Ponds to Build a Strong Risk Prevention and Control Barrier

Sinochem Holdings has conducted a special assessment of the ecological risks of mines, tailings ponds, slag yards and storage yards from multiple dimensions such as environmental risks, the sensitivity of the surrounding environment, and the effectiveness of risk control mechanisms. In response to identified problems, the company does its best to solve them to ensure that the eco-environmental management and control of mining tailings ponds have a clear bottom line, clear responsibilities, high standards and effective results.



## Strengthen Solid Waste Disposal

Sinochem Holdings actively explores the whole-lifecycle intelligent management of hazardous waste. **Through smart terminals + mobile APP + PC terminals + cloud systems**, it records and displays real-time information on hazardous waste, such as the type, generation, flow, storage and disposal of hazardous waste, achieving "digital dynamic management of hazardous waste". It adheres to making layout in the comprehensive utilization of hazardous waste. It has built a new urban resource and recycling ecological disposal center in Fuyang City, to deepen the recycling of solid waste resources. Sinochem Holdings has kept improving the resource utilization level of phosphogypsum, calcium carbide slag, fly ashes and other bulk industrial general solid wastes, and promoted the construction of the comprehensive phosphogypsum utilization capacity of Sinochem Fuling and Sinochem Yunlong in accordance with the principle of "setting the utilization capacity based on the slag output", so as to eliminate the bottleneck of enterprise development.

### Realize the Recycling of Industrial Waste Salt in the Industrial System

Sinochem Environmental, a subsidiary of Sinochem Holdings, has increased its efforts in tackling key technologies for the resource utilization of solid waste, resulting in a series of economically feasible, green, low-carbon and significantly effective new technological research results. For example, the utilization of industrial waste salt, a byproduct of the production processes of pesticides, pharmaceuticals and chemical intermediates, as raw material and then processes the industrial waste salt through the entire process of "incineration + salt dissolution + salt water electrocatalytic oxidation treatment + evaporation crystallization + salt washing" to make it meet the standards of industrial raw materials such as chlor alkali and soda ash, thus achieving the circular utilization of industrial waste salt in the industrial system.





## Climate Response and Green Cycle



Sinochem Holdings pays attention to addressing climate change and green cycle, actively identifies and addresses climate risks, sets goals for "carbon peaking and carbon neutrality", and continuously invests and innovates in the R&D of energy conservation, carbon reduction, clean energy and low-carbon technology. It adheres to the concept of circular economy, is committed to building a green production system, develops a batch of green products, such as bio-based materials and environmentally friendly chemical products, actively promotes the utilization of waste resources, minimizes resource waste, and promotes green circulation.

### Contribution to Sustainable Development Goals (SDGs)





# Climate Response



## Risk Identification and Prevention

Climate change poses significant risks to the global economy as well as the sustainable development of enterprises. Sinochem Holdings always adheres to the bottom line thinking and risk awareness for climate change, strengthens the identification and assessment of climate risks, and focuses on orderly promoting climate risk management in areas such as cash flow risk, customer credit risk, engineering project management risk, public opinion risk and legal risk, to address climate change challenges. Starting from its operational reality, the company actively responds to the goals of carbon peaking and carbon neutrality, continuously improves the risk management system related to climate change, and regards addressing climate change as a major opportunity to achieve its development mode transformation.

### Climate Risk Identification

Sinochem Holdings has established a climate change risk management framework and risk response mechanism, identified relevant entity risks and transformation risks, and developed response plans and measures to comprehensively reduce the impact of climate risks.

#### Entity Risks

Risk Type	Risk Identification and Description	Response Scheme of Sinochem Holdings
 Acute Risks	<b>Typhoon</b> Typhoons may cause damage to production facilities in some areas, obstruction to transportation channels, and threats to personal safety of employees.	Improve emergency plans at all levels, purchase equipment insurance, enhance protection and risk resistance capabilities of facilities, improve supply chain stability, and increase employees' safety awareness and response capabilities through training
	<b>Extreme Rainfall/Flooding</b> Floods or extreme rainfalls may cause damage to production facilities in some areas, leakage risk to chemical raw materials, and harm to the environment and public safety.	Implement the FORUS system, launch system documents such as the <i>Sinochem Holdings Emergency Plan for Environmental Emergencies and Sinochem Holdings Emergency Plan for Natural Disaster Emergencies</i> , and establish an emergency command headquarters organizational structure.
	<b>High Temperature/Drought</b> Extreme weather such as high temperatures and drought may cause a reduction in grain production, and result in difficulties in business operations, rising costs as well as heatstroke hazards to employees' safety.	Ensure the safety of chemical raw materials; Set up dedicated personnel to be fully responsible for managing the transportation and storage of hazardous chemicals, raw materials, etc; Establish a digital management platform to comprehensively grasp the warehousing trends of raw materials and products.
	<b>Extreme Cold/Freezing</b> Cold weather may cause disruptions to production facilities, increases in production and operating costs, and adverse road traffic conditions that can affect supply chain stability.	Seed industry revitalization; Food security; Humanized management, extreme weather subsidies.
 Chronic Risks	<b>Sea Level Rise and Climate Warming</b> Sea level rise may reduce the lifespan of equipment in coastal areas and affect factory operations and personnel safety.	The new factory area shall fully consider regional factors and incorporate chronic climate risks such as sea level rise into the site selection evaluation indicators.



#### Transformation Risks

Risk Type	Risk Identification and Description	Response Scheme of Sinochem Holdings
 Policy and Regulatory Risks	<b>Carbon Allowances and Tax</b> The national carbon market is incorporated into the power generation industry. The EU proposes a new battery trading law, CBAM and other mechanisms. These may cause additional costs to production and operation in the future.	Actively respond to policy calls and ensure that key emission units fulfill their obligations. Carry out company-wide carbon survey, and sort out the company's emission structure and level. Plan to comprehensively conduct carbon footprint survey to master the carbon footprint of products. Promote carbon emission reduction work and reduce the company's own carbon emissions level through measures such as energy conservation and emission reduction.
	<b>Energy consumption indicators and emission reduction targets</b> Subsidiary enterprises of Sinochem Holdings are widely distributed. Different regions involve different energy consumption indicators and emission reduction targets.	Prepare relevant action plan documents such as <i>Sinochem Holdings Carbon Peaking Action Plan</i> , and comprehensively and accurately implement various policy requirements by promoting energy structure transformation and actively utilizing renewable energy.
	<b>Environmental Information Disclosure Requirements</b> Regulatory bodies such as SASAC and stock exchanges require mandatory disclosure of climate and environmental information.	Fully respond to regulatory requirements. To comply with the requirements of regulatory documents that require clear disclosure, such as the <i>Work Plan for Improving the Quality of Listed Companies Held by Central SOEs</i> , Sinochem Holdings will issue relevant information disclosure reports on an annual basis.
 Technical Risks	<b>Technological Innovation and R&amp;D Risks</b> The cost increase and energy supply crisis brought by technological innovation R&D in response to climate change.	Improve the energy supply system to ensure its stable operation, and adhere to developing and innovating technology. Plan the path to gradually achieve substitution with renewable energy, hydrogen energy, energy storage and CCUS technology. Implement comprehensive utilization projects such as comprehensive utilization of desorbed gas in the natural gas-to-hydrogen process to reduce transformation costs.
 Market Risks	<b>Supply and Demand Risks</b> Consumers are increasing their market awareness of green and low-carbon and gradually tending to use green, circular and harmless products.	Increase the R&D of green products to provide more green label products. Try to disclose the carbon footprint of products.
	<b>Image Risks</b> The market places higher demands on corporate image and favors environmentally friendly enterprises such as green and low-carbon ones.	Accelerate the transformation process and implement action plans. Increase the green and low-carbon attributes of products and improve the utilization rate of recycled materials.



## Climate Management Mechanism

The company has established and improved a carbon peaking and carbon neutrality management mechanism, formulated a series of regulations such as "Sinochem Holdings Energy Conservation and Low Carbon Management Measures," "Sinochem Holdings Carbon Emission Monitoring, Statistics and Reporting Management Standards," "Sinochem Holdings Environmental Monitoring System Operation Management Standards" and "Sinochem Holdings Eco-environmental Protection Responsibility System". Under the direction of the carbon peaking and carbon neutrality leadership group, the company supervises, inspects, guides and assesses greenhouse gas emissions from various directly managed units and professional companies.

### Responsibilities of the Company

- |   |  |   |
|---|--|---|
| <p><b>1</b></p> <p>Organize the development and implementation of relevant management regulations, standards and processes of the company</p> | <p><b>2</b></p> <p>Regularly conduct situation prediction and analysis, and propose countermeasures and suggestions for major issues</p>   | <p><b>3</b></p> <p>Research, develop and improve the company's low-carbon indicators, target responsibilities and evaluation and assessment system, and break down and implement annual low-carbon work assessment indicators</p> |
| <p><b>4</b></p> <p>Organize low-carbon benchmarking as well as the exchange, promotion and application of low-carbon technology</p>           | <p><b>5</b></p> <p>Guide subsidiary enterprises to comprehensively and systematically improve their low-carbon management work and summarize good practices to promote continuous improvement of low-carbon management performance</p> | <p><b>6</b></p> <p>Supervise, guide and assess the low-carbon work of directly managed units, professional companies and their subordinate enterprises</p>  |

### Responsibilities of Directly Managed Units and Professional Companies

- |   |   |
|---|---|
| <p><b>1</b> Actively practice the concept of green, low-carbon and circular development, formulate special plans and incorporate them into enterprise development plans and annual plans, and establish and improve the energy-saving and low-carbon responsibility system level by level</p>                   | <p><b>4</b> The chief person in charge of a unit shall bear the main leadership responsibility for the energy-saving and low-carbon work of the unit, and the manager specifically responsible for the energy-saving and low-carbon work shall coordinate and organize the implementation of various energy-saving and low-carbon regulations and measures and bear the responsibility of the responsible manager</p> |
| <p><b>2</b> Strictly comply with local energy-saving and low-carbon laws, strictly control the total and intensity of energy consumption, and reduce the amount and intensity of greenhouse gas emissions</p>   | <p><b>5</b> Establish and improve an energy-saving and low-carbon organizational structure, appoint a department responsible for energy-saving and low-carbon work, assign energy-saving and low-carbon staffers as required, and organize and implement energy-saving and low-carbon education and training to enhance employees' professional capabilities</p>  |
| <p><b>3</b> Sign a responsibility letter containing energy-saving and low-carbon indicators, and fully transform, break down and implement it to subordinate enterprises to achieve hierarchical decomposition of energy-saving and low-carbon tasks as well as hierarchical assignment of responsibilities</p> | <p><b>6</b> Responsible for the energy-saving and low-carbon management and carbon asset management of fixed assets investment projects, as well as the development and utilization of energy-saving and low-carbon technologies, and the monitoring, statistics and cultural publicity of energy-saving and low-carbon work</p>  |

## Greenhouse Gas Reduction Action

The company is accelerating the implementation of greenhouse gas emission reduction actions, promoting the implementation of energy-saving and carbon reduction projects, low-carbon technology development, minus carbon and renewable energy projects, and boosting the company's green and low-carbon transformation and development.

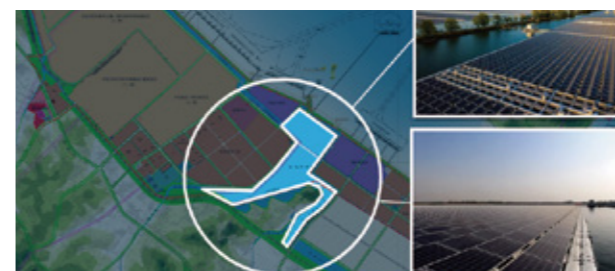
### Carbon Dioxide Transformed into New Energy Materials

The 440kt/a new energy material project jointly constructed by Quanzhou Petrochemical, a subsidiary of Sinochem Holdings, and its partners uses the captured carbon dioxide emitted from the production process of ethylene oxide/ethylene glycol plant of Quanzhou Petrochemical as raw material to produce ethylene carbonate, next converts dimethyl carbonate. After the project was completed and put into use, **it can capture and recycle 140,000 metric tons of carbon dioxide annually, creating a low-carbon circular and green industrial chain.**



### Green and Low-Carbon Transformation of Energy Structure

Photovoltaic power generation can significantly reduce the carbon emissions and electricity costs and increase the proportion of green electricity of the enterprises. Sinochem Quanzhou Park Development Co., Ltd. ("Quanzhou Park" for short) has over 9000 mu or 600 hectares of water area for flood detention and drainage, among which Banyu flood detention area with a size of 400 hectares is an ideal place for the development and construction of a centralized photovoltaic power generation project on water. Quanzhou Park actively plans to build a 250MW-300MW scale centralized photovoltaic power generation project there. According to preliminary estimates, after the project is completed, **it will achieve an annual power generation of 250 million to 300 million kilowatt hours, reduce carbon dioxide emissions by 300,000 metric tons and decreases standard coal consumption by 120,000 metric tons.**



## Current status of greenhouse gas emissions



### Energy-Saving and Carbon-Reduction Technology Applies for a Patent

BlueStar Chengrand, a subsidiary of Sinochem Holdings, organized a full production process carbon emission analysis in accordance with the *Implementation Plan for Improving Low Carbon and Energy Conservation Management*, and carried out a project to reduce the unit steam consumption of solvent DMAC. The project was successfully implemented and has applied for 1 invention patent. **It can reduce carbon dioxide emissions by 817 metric tons a year and save standard coal by 253 metric tons a year.**



### Waste reuse to promote the efficient utilization of energy

The coke oven gas-to-LNG + liquid ammonia co-production project built by Southwest Research & Design Institute of Chemical Industry Co., Ltd. ("Southwest Institute" for short), a subsidiary of Sinochem Holdings, using the "gas purification – separation – methanation" technology with independent intellectual property rights was successfully put into operation only once. After going into operation, the project can achieve the conversion of waste gas into natural gas, having an annual processing capacity of 400 million cubic meters of coke oven gas and an annual production capacity of 110 million cubic meters of natural gas, which can meet the need of approximately 400,000 households for civil gas. Since 2011, Southwest Institute has designed and built 20 industrial units for producing SNG/CNG/LNG from coke oven gas, **achieving an annual processing capacity of 6.784 billion cubic meters of coke oven gas and an annual production capacity of 3 billion cubic meters of natural gas, ranking first in China in terms of market share.**





# Circular Economy

Sinochem Holdings is committed to promoting the development of green circular economy and actively explores sustainable development models for resource recycling. It strengthens cooperations with governments and enterprises at all aspect, promote the constructions of resource comprehensive utilization demonstration parks, actively explores and practices in industries and fields such as rubber, plastics and water resources, and drives the development of circular economy through green design and green manufacturing.

## Insulin Pen Caps Are Transformed into Auto Parts

KraussMaffei, a subsidiary of Sinochem Holdings, is a promoter of circular economy in the plastic industry and has been committed to using advanced plastic recycling technology to reduce the production of plastic waste, **helping customers reduce production line downtime and carbon dioxide emissions and achieve the Sustainable Development Goals of "zero carbon footprint" by 2030.** For example, the use of KraussMaffei's equipments combinations and solutions can realize the whole process from the productions of insulin pen caps to material recycling to the conversion of the recycled materials into high-quality auto parts.



## Build a Professional Platform to Support the Circular Development of the Petrochemical Industry

In order to implement the spirit of the 20th National Congress of the Communist Party of China on "promoting green development and boosting harmonious coexistence between humanity and nature" and to help the Chinese petrochemical industry achieve the goal of "carbon peaking and carbon neutrality", China National Chemical Information Center (CNCIC) and China Association of Circular Economy have jointly sponsored to establish the Petrochemical Specialized Committee of China Association of Circular Economy, so as to explore new models for the green transformation of the chemical industry. The specialized committee has now released a series of research results, boosting the circular economy development of China's petrochemical industry.



## Phosphogypsum Storage Yard Is Turned into A Leisure Park

Sinochem Fuling is a national key phosphate fertilizer production enterprise. Its original factory is located in Nananpu, Longqiao Subdistrict, Fuling District, Chongqing Municipality. In 2019, Sinochem Fuling started to be relocated as a whole due to environmental reasons, and its old factory area in Nananpu was fully closed. With the support of the local government, Sinochem Fuling invested 209 million yuan in the ecological restoration of the abandoned phosphogypsum storage yard in the old factory area. The phosphogypsum storage yard has now turned into Shilongshan park full of plants and flowers.



## Build a Circular Economy Industrial Park

Sinochem International started to construct Sinochem Lianyungang Circular Economy Industrial Park in Lianyungang, Jiangsu Province in 2022 and is now gradually putting the industrial park or base into operation step by step. Based on the C3 industry, the park will focus on building four industrial chains, including epoxy resin, polymer additives, electronic chemicals, and ABS. By leveraging the characteristics and advantages of "integrated circular development", the park has effectively improved the economic operation level of facilities in the park and the added value of their products, achieving efficient and comprehensive utilization of resources, reducing the environmental impact through green and circular development, and playing an important role in promoting the development of circular economy.



# Biodiversity

## Policy and Practice of Sinochem Holdings on Protecting Biodiversity

Management Process	Content and Measures
<b>Formulate company's biodiversity protection policies and management regulations</b>	<ol style="list-style-type: none"> <li>1. Strengthen the awareness and attention of the company on biodiversity protection</li> <li>2. Establish a responsibility and obligation system, incorporate biodiversity protection into assessment and management evaluation, and effectively implement and fulfill relevant responsibilities and obligations</li> </ol>
<b>Conduct biodiversity risk assessment</b>	<b>Identify and manage the impact of company activities on biodiversity:</b> <ol style="list-style-type: none"> <li>1. Type and scale of activities</li> <li>2. The impact of activities on local species and ecosystems</li> <li>3. The degree of dependence of the ecosystem on company activities</li> <li>4. Feedback from local communities and stakeholders</li> </ol>
<b>Identify key species and ecosystems, and take corresponding protection measures</b>	<ol style="list-style-type: none"> <li>1. Construction and maintenance of protected areas</li> <li>2. Reduce emissions, and control waste and pollutant emissions</li> </ol>
<b>Strengthen monitoring and evaluation</b>	<ol style="list-style-type: none"> <li>1. Ensure the effective implementation and continuous improvement of biodiversity protection measures</li> <li>2. Monitor the status and changes of biodiversity</li> <li>3. Assess the impact of company activities on the ecosystem</li> <li>4. Monitor the restoration and protection effectiveness of ecosystems</li> <li>5. Collect feedback and suggestions from stakeholders</li> </ol>





## Biodiversity Practice and Results

Sinochem Holdings actively practices the thoughts of ecological civilization and adheres to harmonious coexistence between humanity and nature. By practicing the concept that clear waters and green mountains are treasures, we have deeply understood the significance of protecting biodiversity and maintaining the ecological balance of the earth.

### Provide a Shelter for Wild Animals

In order to promote the prosperity of biodiversity, Syngenta Group has made great efforts to improve the biodiversity of agricultural farmland by protecting the habitat of pollinating insects, enriching the food source of pollinating insects and preventing and controlling their natural enemies. Syngenta Group is committed to restoring agricultural biodiversity, improving the eco-environment and enhancing agricultural productivity and agricultural economic returns.



### The good practices of Syngenta Group China are selected into "Business Biodiversity Protection Cases"

The case of Syngenta Group China (SGC) in promoting biodiversity was selected into "Business Biodiversity Protection Cases" released by the 15th Conference of the Parties to the United Nations Convention on Biodiversity (COP15).



### Replace Fish Meal Protein With Man-made Protein to Reduce The Fishing of Marine Fish

With the continuous growth of aquaculture scale, overfishing of fish and shrimp from the ocean as raw materials for aquatic feed will inevitably lead to a decrease in fish species in the ocean. FeedKind single cell protein, a specialized aquatic feed produced by Adisseo, a subsidiary of Sinochem Holdings, is generated by natural gas fermentation, and is a new sustainable non-genetically modified protein rich in nutrients. This protein does not occupy arable land during production and does not use animal or plant derived materials, but only consumes minimal water resources. **According to calculations, if 100,000 metric tons of FeedKind protein is used to replace traditional protein sources of the same scale, this can reduce the consumption of approximately 420,000 to 450,000 metric tons of wild marine fish, thus effectively protecting wild marine fish.**



### Promote The Application of Biodegradable Plastics Through Technology to Protect Wildlife Habitats

Biodegradable plastics have good degradability and can effectively reduce the impact of plastic waste on the environment and wildlife. Krauss-Maffei, a subsidiary of Sinochem Holdings, uses technology to promote the application of biodegradable plastics to protect wildlife habitats. This technology can flexibly respond to the new demand for blending and modification, helping the development and application of biodegradable plastics, and make biodegradable plastics become part of people's green life and contribute to the protection of wildlife and biodiversity.







## Put People First and Be Responsible for Occupational Safety



Believing that "Safety is essential to life", Sinochem Holdings implements the strategy of achieving safety through technology, actively promotes the FORUS system and the safety management mode, vigorously improves its efficient and safe production capacity, continuously enhances its health and safety prevention and control levels, and strives to achieve the goal of zero loss. "All extraordinary achievements must be completed by extraordinary talents". Sinochem Holdings implements the strategy of making the country stronger through talents, comprehensively promotes the plan of developing the company through talents, continuously deepens the reform of the talent system and mechanism, strengthens talent cultivation, and cultivates young backbone forces.

### Contribution to Sustainable Development Goals (SDGs)





# Consolidate the Foundation Under the Guidance of the System

In 2022, Sinochem Holdings had no new occupational diseases and no new major negative public opinions on HSE, and key performance indicators such as the total recordable incident rate (TRIR) of 200,000 working hours and the lost time injury rate (LTIR) of 200,000 working hours exceeded the historical performance of both Sinochem Group and ChemChina.

**0** New occupational diseases

**0** New major negative public opinions on HSE

Indicator Name	Data of 2022	Data of 2021	Risen rate 2022 YOY	Target for 2025
Total recordable incident rate (TRIR) of 200,000 working hours	<b>0.096</b>	<b>0.14</b>	<b>↓31.4%</b>	<b>&lt;0.1</b>
Lost time injury rate (LTIR) of 200,000 working hours	<b>0.053</b>	<b>0.076</b>	<b>↓30.3%</b>	<b>&lt;0.1</b>

## FORUS "Building Foundation, Climbing, and Leading"

2022 was the first year for the implementation of Sinochem Holdings' FORUS system. Guided by the vision of being a "global HSE leader" and led by the concept of "HSE always comes first" and the policy of "life first, environment first, loss control, and continuous improvement", Sinochem Holdings takes the comprehensive promotion of the FORUS system as the main line, adheres to the "full mobilization, thought first" principle, insists on training the full staff, strengthening their cognition, clarifying responsibilities and connecting processes, and adheres to brand building, cultural integration, benchmark creation and continuous improvement. By this way, we have effectively promoted the implementation of the FORUS system, achieved continuous improvement in our HSE performance, and provided reliable guarantee for the stable and high-quality development of the company.

### Strengthen the awareness and recognition of all employees

The company has extensively propagating FORUS, and organized FORUS trainings for all employees in a hierarchical, multi-channel and high-frequency way, so as to create a good atmosphere for everyone to learn and participate in FORUS, completing the rapid introduction of FORUS concepts and knowledge and achieving the awareness and recognition of all employees on FORUS.

Regulations of the company

**91** pieces

Focus on policies and general management requirements

Regulations of secondary business units

**1423** pieces

Focus on the formulation of professional standards

Regulations of enterprises

**16454** pieces

Focus on process transformation in the execution layer

**2.823** million hours

Accumulated class hours for all participants

**1.498** million person-times

Accumulated attending persons-times

**21.3** hours

Per capita class hours (domestic)

### Promote the effective connection of system mechanisms

We have carried out a comprehensive combing of system processes, completed the undertaking and transformation of the FORUS system in terms of management guidelines and operational procedures, and achieved the unification of HSE management requirements from top to bottom, thus opening up the HSE management process.

### Promote the integration of FORUS culture

Establish a FORUS visual recognition system to better promote and showcase the FORUS brand and culture in terms of propagate plan, visual recognition, visual display and products of cultural originality, making the FORUS brand more vibrant, propagating and contagious. Establish a good practical management mechanism, widely summarize and promote the sharing of good enterprise practices. Unfold the "Travel 10,000 Miles" activity to provide services to the grassroots and help enterprises solve practical problems in system promotion. Take multiple measures simultaneously to help enterprises better understand the company's core HSE values and system requirements to promote the integration of FORUS culture.

## Establish a Visual System: FORUS Forerunner System

Communication Plan	Visual Norm	Visual Presentation	Cultural and creative surroundings
Brand building path	1 FORUS logo	FORUS promotional video	FORUS merch products
Visual promotion path	1 VI system manual	FORUS concept-related short video	
Theme event planning	1 cultural corridor 1 information system UI	FORUS series posters	



**FORUS**



### The "Travelling 10,000 Miles" activity of FORUS

Sinochem Holdings mobilized backbone forces to form a system promotion group to communicate with frontline enterprises and to provide services to them, and established a 72-hour "Any question will be answered" working mechanism to listen to the demands of enterprises and to provide targeted service support to them to help the enterprises better understand and master the HSE core values and system requirements.

### Realize continuous improvement

The company conducted initial FORUS ratings for various enterprises, determined management benchmarks and improvement directions, and implemented the benchmark creation plan for systematical improvement and enhancement. On the basis of improvement, the company carried out annual audit ratings to verify the effectiveness of improvement and enhancement. Through a year of hard work, subordinate enterprises have improved in various system elements, and the level of systematic management has been further improved.

### Benchmark creation and system improvement

Audit rating is an important tool and method for promoting the effective implementation and continuous improvement of the FORUS system. Enterprises at all levels carefully planned and successfully completed the initial rating. After they clearly learned the current situation, they identified the benchmark for continuous improvement. Based on this, they determined goals, formulated benchmark creation and improvement plans, and completed **10,844** improvement measures. In the annual audit rating, enterprises at all levels within the company made a comprehensive evaluation on their progress and implementation of FORUS over the past year, successfully achieving their annual rating goals. Enterprises at all levels fulfilled their commitments through practical actions and followed the path planned by the leader strategy, taking a step closer to becoming the "global HSE leader".





## Workplace safety

### Strengthen Management and Legal Awareness

In order to strengthen Workplace safety management, prevent production safety accidents and effectively ensure the safety of employees' lives and property, Sinochem Holdings has formulated two management measures, that is, *Sinochem Holdings Safety Production Management Measures* and *Sinochem Holdings Life Assurance Rules Management Measures*, according to the company's actual safety production situation. Based on actual production operations, **a total of 82 management standards have been established to achieve systematic and standardized management.**

The company has kept improving the dual prevention mechanism, that is, the hierarchical management and control of safety risks as well as the investigation and control of hidden dangers. Sinochem Holdings' subordinate enterprises have comprehensively and deeply carried out risk identification and assessment, reduced existing risks, vigorously promoted the "Red ribbon and yellow vest" activity, and continued to pay attention to the regular investigation and control of hidden dangers. **They have eliminated 374 unacceptable risks, and identified and rectified 135,000 hidden dangers.**

#### 1. Strengthen Effective Leadership at All Levels

Strengthen theoretical learning, carry out HSE job reporting, and promote the implementation of meaningful leadership

Organized employees to watch **3339** safety production warning education videos and special exhibitions

#### 2. Strengthen the construction of job capabilities

Promote skill training themed on "five understandings, five abilities, and five skills". Subsidiary frontline enterprises of **all 15 production-type** secondary business units have completed manual preparation, completed the preparation of **3490** job manuals, and initiated employee training.

Held **185** times of "Anchor's talks on Safety" and "Expert Remote Consultation"

Fully carry out **"STOP" training**. Employees of domestic enterprises participated in online training for more than 130,000 person-times, and each enterprise used observation results to improve safety behaviors in a targeted manner.

Launched the "Starting from Safety for a Better Life" topic collection campaign and collected **565** topics

**Organize the rotation training and certification for shift leaders of hazardous chemical enterprises.** The company conducted rotation training for **6150 shift leaders of hazardous chemical enterprises** at Aoshan Academy and 13 regional centers, and completed **12 sessions of 762-person training.**

Held **1339** times of activities including "How Much Do You Know the New Safety Production Law?" and "Funny Tests on Rescue Skills", with a total of **296,183** participants

Vigorously implement the "one job, one card" training. **The company has prepared 9,865 cards based on the "one job, one card" principle. 55,825 employees** have participated in the assessment through on-site operations and other methods, with a pass rate of 100%. All employees go to their posts with internal certificates.

Produced **17,550** pieces/copies of public welfare advertisements, posters, short videos, etc.

By Following the three steps, that is, "studying the law, conducting comparative inspections, and rectifying problems", we have carried out a "Study Law, Understand Law and Act by Law" special action in stages to achieve the goal of all employees learning the law and all employees understanding the law. Through comparative inspection and rectification implementation, we have actively cultivated and further strengthened the awareness of the rule of law among all employees. We have also held the safety month themed activity themed on "Abiding by the Production Safety Law and Being the First Responsible Person", deeply promoting the study of the Production Safety Law, and pushing the implementation of safety production responsibilities.

Carried out **1745** emergency drills and experience activities

### 3. Strengthen the Management of Grassroots Teams

Strengthen the construction of grassroots teams. All 15 production-type secondary business units have completed the comprehensive sorting and revision of job responsibility systems; **7594** frontline shift teams have been equipped with 7712 full-time and part-time safety officers, and the safety officer allocation rate of shift teams has reached **100%.**

Emphasize "standardized operations, standardized sites, and team standardization" ("Three Standards" for short) for posts. **32** key benchmark enterprises have completed the preparation of the "Three Standards" standards for their posts and initiated the "Three Standards" campaign among their employees.

Implement "Three Systems". Frontline shift teams of every production enterprise have established three systems, that is, the shift handover system, the pre-shift and post-shift meeting system, and the patrol inspection system, as well as corresponding management processes.

Set up benchmarks and cultivate motivation. The company increased positive incentives to employees. It distributed **over 15.28 million yuan** in material incentives and offered **7,883** spiritual incentives to relevant employees to promote the implementation of safety management.

Strengthen accident warning education. The company has established a pre-meeting safety warning education system and kept carrying out monthly warning education activities. It conducted a total of **3,927** warning education sessions, gave warning education to **91,273** employees, identified 3,730 risks, and found and rectified **5,958** hidden dangers.

### Improve the Effectiveness of the Prevention Mechanism

Sinochem Holdings has actively constructed and continuously improved the dual prevention mechanism, that is, the hierarchical control of safety risks as well as the identification and governance of hidden dangers, comprehensively and deeply carried out risk identification and assessment, reduced existing risks, continued to pay attention to the regular troubleshooting and governance of hidden dangers, enhanced the special safety management of construction projects, contractors, special operations, electrical instrumentation & equipment and scientific research institutions, and achieved closed-loop management of hidden danger rectification, so as to continuously improve the level of intrinsic safety.

#### 1. Emphasize the Troubleshooting and Governance of Hidden Dangers

The company has identified and rectified a total of **135,283** hidden dangers, rewarded **1.345 million yuan** to relevant employees and issued rewards for **47,000** times. Quanzhou Petrochemical launched a comprehensive safety risk identification campaign to encourage its employees to shoot images of safety risks found by them and send the images to relevant departments. By this way, it identified and rectified a total of **24,274** safety risks throughout the year of 2022.

Vigorously promote the "Red Ribbon and Yellow Vest" activity. By carrying out the "Red Ribbon and Yellow Vest" activity, 354 production and operation enterprises of 15 production-type secondary business units have established the list of unsafe behaviors of employees and the list of unsafe conditions of equipment and facilities. A total of 12,537 hidden dangers were found, including 5,810 unsafe conditions of equipment and facilities and 11,447 unsafe behaviors of employees, and 1595 employees wore yellow vests due to violations of relevant safety regulations.

#### 2. Enhance Intrinsic Safety

Strengthen the contractor safety management, and implement the "nine-step" method for contractor safety management. In 2022, the company **eliminated 20 unqualified contractors and 934 unqualified contractor personnel**, so as to continuously improve the contractor safety management.

Strengthen the management of special operations. In 2022, the company carried out special improvement actions for special operation management, and achieved a work permit pass rate of 99.1%, up 1.84% compared to the end of 2021. The management of special operations is gradually improving.

Strengthen the management of electrical instruments. In 2022, the company released "Sinochem Holdings Electrical Safety Management Standard", carried out a safety instrument management activity themed on "Looking back to check and find omitted risks, and further improving safety with reference to the standard", and identified and **rectified 1,736 hidden dangers.**

"Work Plan of Special Action for Intrinsic Safety Improvement of Scientific Research Institutes" was released, and 44 enterprises transformed from scientific research institutes determined **252** rectification and improvement items, with a rectification completion rate of **100%.**



### Carry Out Special Rectification Activities

In 2022, which was the year when the three-year special rectification of work safety came to an end, we completed 27,267 annual node tasks as scheduled, and completed 55,196 rectification tasks in total. Key and difficult problems have been comprehensively solved, intrinsic safety level has been further improved, and the three-year special rectification has come to a successful end.

Special Rectification Tasks	Task	Progress
<b>Topic 1:</b> Learn, publicize and implement the important comment of safety production	8478	100%
<b>Topic 2:</b> Implement the entity responsibilities of enterprises for safety production	4350	100%
<b>Special topic 1:</b> Special rectification on the safety of hazardous chemicals	5842	100%
<b>Special topic 2:</b> Special rectification on the safety of non-coal mines (including tailings ponds)	638	100%
<b>Special topic 3:</b> Special rectification on the safety of fires	2640	100%
<b>Special topic 4:</b> Special rectification on the safety of road transportation	378	100%
<b>Special topic 5:</b> Special rectification on the safety of port and water transportation	439	100%
<b>Special topic 6:</b> Special rectification on the safety of urban construction	3369	100%
<b>Special topic 7:</b> Special rectification on the safety of functional areas such as industrial parks	306	100%
<b>Special topic 8:</b> Special rectification on the safety of hazardous waste, etc.	827	100%

### Resolve Major Risks

We have implemented the requirements of the *Notice on Effectively Strengthening the Prevention and Resolution of Major Safety Risks* issued by the Office of the State Council Safety Commission as well as the spirit of relevant meetings of the Chinese Ministry of Emergency Management and SASAC, conscientiously implemented "15 hard measures", made arrangements carefully, deployed and carried out safety production inspection and rectification actions, achieved the closed-loop management of all problems and hidden dangers, and effectively resolved and prevented major risks.

#### Focus on Risks and Carry Out Special Troubleshooting and Rectification

We carried out a special action to rectify outdated equipment in hazardous chemical enterprises, involving **39** sets of outdated equipment in **15** enterprises, and identified **242** problems for rectification.

## Occupational Health

### Occupational Health Management

Sinochem Holdings has deeply studied and implemented the instructions of health and hygiene, and adhered to the principle of "putting the people first, putting life first". By regarding the promotion and implementation of FORUS as the guide and taking the source control of occupational disease hazards as the starting point, the company has continuously improved the workplace environment and working conditions. Through the combination of prevention, treatment, management and education, it has enhanced the awareness of occupational health among all employees, strived to improve the working environment, effectively controlled occupational disease hazards, ensured the physical health and safety of employees, achieved zero new occupational diseases and promoted the harmonious, stable and healthy development of the company.

In 2022, we organized all subsidiaries of the company to actively promote the prevention of occupational disease hazards at the source, implement the entity responsibility for occupational disease prevention and control, deeply carry out the special treatment of occupational disease hazards, further improve the working environment, and protect the occupational health rights and interests of employees. We designed our work clothes, unified our work clothes standard and strengthened labor protection for frontline workers. We held a publicity week for "Occupational Disease Prevention and Control Law" to popularize the knowledge of occupational disease prevention and control and to enhance employees' awareness of protection. We promoted the creation of health enterprises and launched the "Occupational Health Stars" activity, guiding all employees to actively pursue healthy work and healthy life, and promoting the improvement of employees' occupational health literacy.

Implementation rate of controlling excessive occupational disease hazards

**100%**

Coverage rate of occupational health examination

**100%**

Transfer rate of personnel with occupational contraindications

**100%**

company completed a total of **70** occupational disease hazard treatment projects

a total investment of **1531.68** million yuan, continuously improving the working environment and working conditions

company conducted regular testing of occupational disease hazards, covering **29220** work sites

achieving an occupational health examination coverage rate of **100%**

a pass rate of **99.8%** up 0.6% over 2021.

the company strictly implemented the requirements for occupational health monitoring management, and conducted occupational health examinations for **53515**

### Promote the Construction of Health Enterprises and Improve the Health Literacy of Employees

The company has released the *Technical Guidelines of Sinochem Holdings on the Construction of Health Enterprises* to guide the cultivation of health enterprises and promote the improvement of occupational disease prevention and control level. **11 subsidiary enterprises of the company, including Changyi Petrochemical, Huaihe Chemical, Bluestar New Materials, Haohua Chengrand, Sinochem Fuheng, Sinochem Xinbao, Adisseo (Nanjing), Cangzhou Dahua Juhai, Luxi Polyamide New Materials, and Shanna Company, have been awarded with the title of provincial-level "Health Enterprise"**. In 2022, we launched the "Occupational Health Stars" campaign, and selected 30 occupational health stars of Sinochem Holdings for 2022, guiding all employees to actively pursue healthy work and healthy life.



## Occupational Health Training

In 2022, Sinochem Holdings actively organized and launched the *Occupational Disease Prevention and Control Law* publicity week activity with the theme of "Everything for employee health" by closely centering around the 20th anniversary of the promulgation and implementation of "Occupational Disease Prevention and Control Law", the implementation of the *National Occupational Disease Prevention and Control Plan (2021-2025)* and the responsibilities of occupational health as well as the promotion of occupational health protection actions. It has strictly abided by the *Occupational Disease Prevention and Control Law*, and emphasized and protected employees' occupational health. It launched the "Cloud Relay" activity of the *Occupational Disease Prevention and Control Law* publicity week to promote "Occupational Disease Prevention and Control Law" through "cloud" and to convey health concepts.

### Strengthen Publicity and Training to Enhance Employees' Awareness of Occupational Health



## Mental Health Assistance

Sinochem Holdings attaches great importance to the mental health of its employees and actively carries out various mental health assistance activities. The company has established employee mental health assistance channels, set up specialized psychological consultation hotlines and email addresses, and provided telephone or online consultation services by professional psychological counselors to resolve employees' psychological confusion, to alleviate their emotional stress and to provide psychological support to them. During the COVID-19 pandemic period, the company organized special livestreaming sessions to help employees relieve psychological stress, suppress negative emotions and overcome difficulties and challenges. In addition, the company regularly conducted psychological counseling activities with themes such as workplace and life, children's education and physical & mental health to help employees adjust their psychology and respond to various pressures and confusions in work and life with a positive and healthy attitude.

## Emergency Management

With focus on improving its overall emergency response capability, Sinochem Holdings has kept improving its emergency management system, perfecting its emergency response system, strengthen emergency preparedness, and enhance the skills of emergency personnel. It has conducted typical HSE accident scenario constructions and emergency drills to identify and prevent major risks. In order to improve its on-site frontline emergency response capabilities, the company has strengthened the construction of emergency rescue, nursing and treatment capabilities, gradually solidifying the foundations of security management, deploying in advance and effectively preventing and responding to natural disasters, gradually enhancing its emergency rescue capabilities, and effectively ensuring stable safety production.

### Strengthen the Basic Managements of Emergencies and Continuously Improve Emergency Capabilities:

- Establish a Emergency Response System**  
Enterprises at all ranks have adjusted emergency response procedures in a timely manner based on their businesses, improved emergency plans, sorted out emergency teams and resources, and carried out special emergency drills, so as to ensure the smooth and orderly operation of the emergency response mechanism of the company.
- Conduct Accident Scenario Construction**  
Enterprises at all ranks constructed **706** typical HSE accident scenarios based on their main business HSE risks in 2022. They have opened a green rescue channel for poisoning, suffocation, fire and explosion accidents, achieving the full coverage of the enterprises.
- Improve Emergency System Standards**  
In 2022, the company formulated and revised four standards for fire, emergency and security management systems, and enterprises at all ranks revised **1427** standards for fire, emergency and security management systems and revised **7631** emergency plans based on HSE risk identification results.
- Enhance Emergency Professional Capabilities**  
In 2022, the company held a total of 6 training classes, and 398 emergency management personnel from 169 high-risk industry enterprises completed theoretical training and practical drills on fire emergency; and frontline enterprises improved the professional abilities of 13 types of emergency action team members in a targeted way.
- Conduct Regular Emergency Drills**  
Enterprises at all ranks carried out over **26,400** times of emergency drills on a regular basis, with over **391,000** people participating in the drills.
- Strengthen Emergency Guards During Key Time Periods**  
Units at all ranks comprehensively upgraded their emergency guards during key periods such as the 2022 Winter Olympics, the 20th National Congress of the Communist Party of China, and holidays.
- Especially improve the safety risk management and control capabilities of overseas institutions (projects)**  
The company strictly carried out safety training for employees who were about to go overseas, with a total of 654 employees completing online classroom training throughout the year of 2022.



# Talents Strategy

## Recruitment and Employment

### Employment Standards

Sinochem Holdings follows the labor standards and employment norms of the International Labour Organization, protects the basic rights and welfare of employees, opposes discrimination, harassment and abuse in any form, respects employees' rights of free association and collective bargaining, and provides a fair, reasonable, safe and healthy working environment for employees. In order to strengthen and standardize the employment management of the headquarters and subordinate units and to protect the legitimate rights and interests of employees and the company, Sinochem Holdings hereby formulates the *Measures of Sinochem Holdings for Labor Employment Management* (the Measures for short) in accordance with the *Labor Law of the People's Republic of China and the Labor Contract Law of the People's Republic of China*. The employment forms of Sinochem Holdings mainly include labor contract employment, labor dispatch employment, part-time employment, and temporary employment. The company implements classified management for various forms of employment. The labor employment of the company is centrally managed by the Human Resources Department. Each subordinate unit can select and determine its own employment forms in accordance with the provisions of the Measures regarding employment forms.

### Employee Diversity and Equality



Note: In the table, the number of employees by gender, age, status and educational level as well as the number of job openings, minority employees and disabled employees are all based on the statistical criteria of enterprises in Chinese Mainland.

### Employment Situation of the Company and its Partners

Based on its positioning as a world-leading chemical conglomerate, Sinochem Holdings actively assumes the social responsibility of an enterprise, organically combines employment expansion with the company's talents work, steadily expands the recruitment scale of college graduates in key business fields such as agriculture, chemical and energy, increases its talents reserves, strengthens team training, and improves the talents pool in key fields, striving to achieve both efficiency improvement and employment expansion.

The company adheres to the management principle of "unified platform, unified publicity, unified assessment, and unified process" for the recruitment of college graduates, strengthens overall management in establishing a professional talents pool, personalized system configuration and intelligent development, standardizes the workflow of recruitment information release, talents selection and employment, comprehensively strengthens process risk control, and continuously enhances the employer reputation of Sinochem Holdings as a state-owned central enterprise. Subsidiary enterprises of the company at all levels publicly recruit employees in a graded and classified way through open recruitment channels such as recruitment websites, job fairs, headhunters and talents searches by focusing on their own development needs and using market-oriented mechanisms. At the same time, the company fully utilizes the online evaluation system to establish a multi-dimensional evaluation system, achieving the full process inspection and data retention of talents selection, employment, education and retention, facilitating to track the entire development process of talents and providing effective data support for the development of young talents.

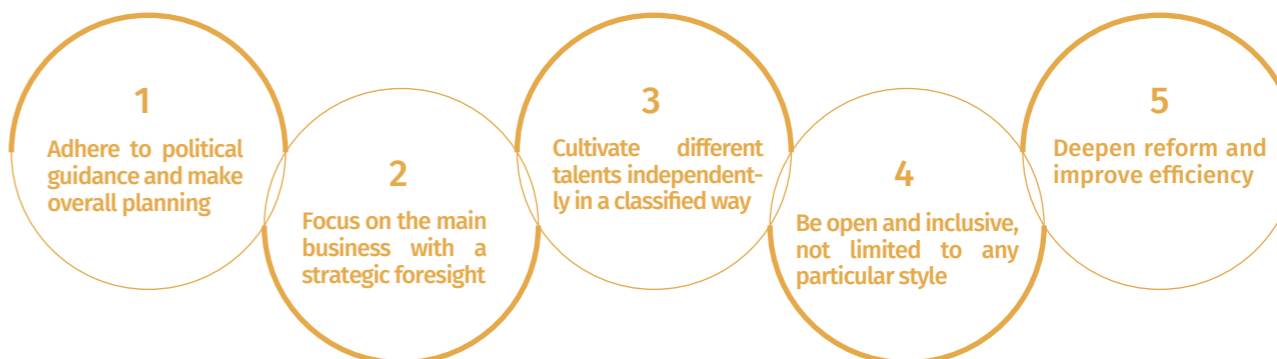
Sinochem Holdings has established talents partnerships with multiple key universities and expanded the targeted and directly recommended sources of high-quality talents. It actively participated in the online two-way selection fairs between college graduates and state-owned central enterprises in 2022. It has actively participated in campus-workplace training activities, and has established contacts with domestic colleges and universities through innovation contests, enterprise open days and coach plans and carried out campus recruitment publicity and student recommendation activities at college campuses. Subsidiary enterprises of the company at all ranks make full use of local policies to attract college graduates from corresponding universities to participate in their scientific research works, and continuously optimize their promotion and incentive measures for scientific and technological personnel, in order to cultivate reserve forces for business development.

## Sustainable development of employees

### Sustainable Development Strategy and Planning of Employees

In the new journey of Sinochem Holdings to deepen its restructuring and integration, achieve technological transformation and build itself into a world leading chemical conglomerate, talents are the primary resource and a key force supporting the realization of the company's strategy and helping the company achieve its long-term growth.

We have especially formulated and implemented the Talent-driven Business Development Plan to provide professional, international and market-oriented talent support for the orderly promotion of the restructuring and integration of Sinochem Group and ChemChina and the building of a world leading chemical conglomerate.



Five Major Principles



## Overall Objectives

Based on the strategic missions and with a focus on strategic goals, we will continue to advocate concepts such as "Leave opportunities for the best employees" and "Make innovation without punishment", and take three years to build a management talents team with entrepreneurial spirit, a technology talents team with scientific spirit and a skilled talents team with craftsmanship spirit through implementing "Special Action for Specialized Talents", "Special Action for Internationalized Talents", "Scientific and Technological Leader Program", "Skilled Talent Craftsmanship Program" and "New Power Program". We will shape the "working hard, struggling tenaciously, being brave to take responsibility, being willing to contribute, seeking truth and being pragmatic, and being truly willing to do practical work" spiritual temperament of the company's new-era talent team, boost the steady enhancement of the company's comparative advantage in talent competition and the continuous improvement of talent efficiency, and accelerate the construction of a comprehensive chemical industry talent highland with global competitiveness and outstanding internationalization, specialization and marketization characteristics.

## The Spirit of Sinochem Holdings in the New Era

### The Spirit of Hard Work Pioneering and Innovation

Don't be afraid of difficulties and hardships, and persevere in overcoming difficulties, honing willpower and striving upward; adhere to reform and innovation, forge ahead with determination, explore to go forward, break the fixed mindset, and promote the spirit of scientists; persist and persevere in forging ahead by targeting the goal of becoming the world leading chemical conglomerate.

### The Value Orientation of Being Brave to Take Responsibility and To Be Willing to Contribute

Keep in mind "matters of national significance", and think and do things from a global perspective; dare to take responsibility, dare to venture and try in the face of difficulties, dare to deal with problems in the face of conflicts, and dare to act in the face of risks; cultivate 'a big self', do not be confused by immediate interests, have less calculation of personal gains and losses, and make more contribution.

### The Work Style of Seeking Truth, Being Pragmatic and Doing Practical Work

Seek truth from facts, tell the truth, report the truth, study problems beyond the surface, and do not bypass problems when encountering them; be down-to-earth, provide practical methods, do practical work, and seek practical results; fulfill every responsibility well, and do not give up until reaching the goal to ensure accurate implementation of tasks; change the work style, and firmly oppose formalism and bureaucracy; act immediately, do practical work, and do a thing successfully once doing it.



## Employee Career Development

Sinochem Holdings has always firmly adhered to the principle of "talents are the major resource". In the new journey of building itself into the world leading chemical conglomerate, the company has created a professional, international and market-oriented first-class high-quality talents team, cultivated the company's strategic talents pool, and accelerated the construction of a talent highland in the comprehensive chemical field.

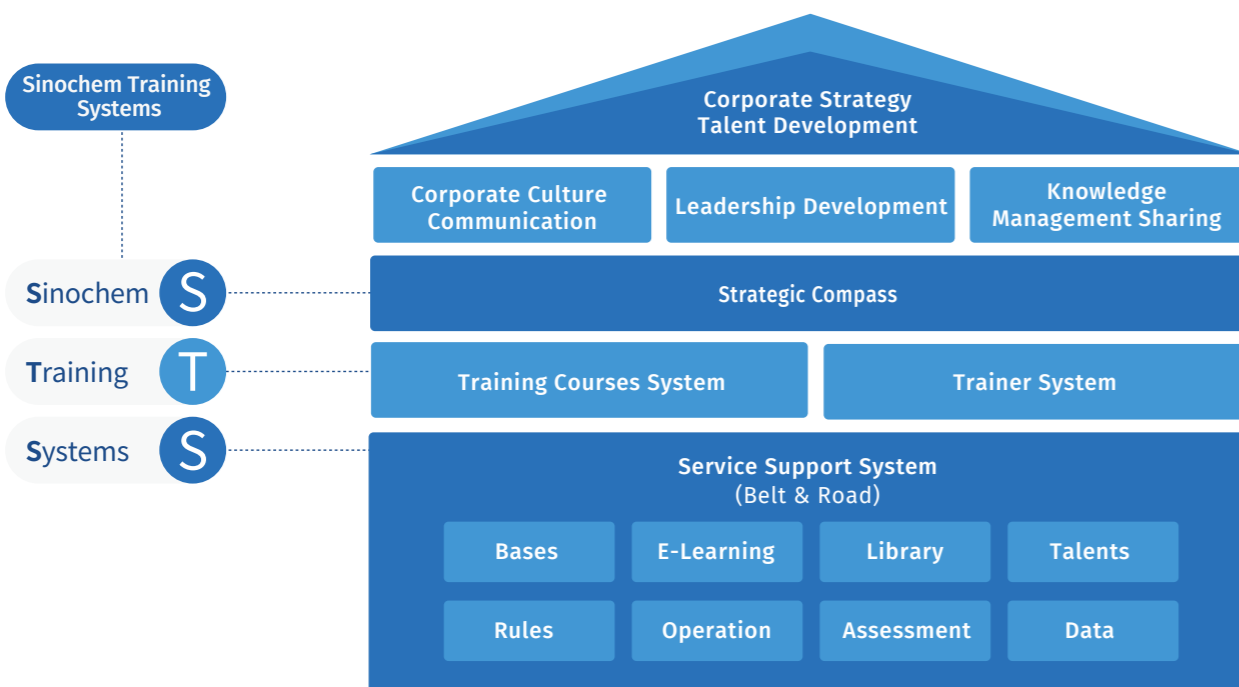
## Classified training targets of three talent teams

Management Talent Team	<b>Special Action for Specialized Talents</b> <b>Target of the specialized leadership team for the "Special Action for Specialized Talents" program:</b> Specialized cadres shall occupy a certain proportion in the leadership teams of professional companies, directly managed units and important production enterprises. <b>Target for specialized reserve cadres:</b> Strengthen the cultivation of specialized reserve cadres in the leadership teams of professional companies and directly managed units, and accelerate the cultivation of specialized reserve cadres at grassroots production enterprises.
	<b>Special Action for Internationalized Talents</b> <b>Training and use targets:</b> Promote the dispatch of high-potential personnel from core functional lines to overseas enterprises for rotated positions <b>Target of the internationalized headquarters:</b> Internationalized talents shall occupy a certain proportion in the talent teams of the headquarters of Sinochem Holdings and the corresponding professional departments of secondary business units with international business. <b>Strategic target for the China region:</b> Build a practice and training platform for the talents of the internationalized headquarters.
Technology Talent Team	<b>Scale target:</b> Realized continuous improvement in the ratio of R&D talents in the integrated chemical business to the number of employees on board, and the ratio of domestic high-level scientific and technological talents to the total number of scientific and technological talents. <b>Structural target:</b> While giving full play to the role of overseas scientific and technological talents, focusing on accelerating the construction of domestic scientific and technological talents. <b>Strategic scientists</b> Strategic scientists with the scientific quality of academician candidates or above. <b>Technology leaders</b> Technology leaders with industry influence.
Skilled Talent Team	Following the "321 approach", we aim to achieve the "three targets" (talent team, qualification system, and institutional mechanism), build "two platforms" (production and digital technology integration enterprises, skill master studios), and promote "one spirit" (craftsmanship spirit). <b>Platform support target</b> Cultivate several internal production and digital technology integration demonstration bases to play a benchmark and leading role. <b>Talent team target</b> Cultivate and build a team of skill masters for the company's major businesses such as petrochemical, materials science, life science, and environmental science.
<b>Reserve talents for the three talent teams</b>	
<b>New Power Program</b>	Select a team of outstanding young cadres to join the Party Branch Committee's management cadre team to continuously optimize the age structure of the team. Build a technology leader team with certain scale. With focus on the "10+5" industrial chain, cultivate a team of young technological talents and an innovative team with industry influence, and cultivate a team of outstanding engineers. Continuously increase the proportion of highly skilled talents in the staff of the company.



## Employee Training

According to the concept of "facing all employees, highlighting key points, implementing hierarchical responsibility, achieving upper-lower linkage, and implementing classified training and individualized teaching", Sinochem Holdings has built a scientific and systematic "Sinochem Training Systems" (STS), focused on providing education and training for six learning groups (i.e. senior managers, high potential talents, newly promoted personnel, newly hired employees, professional technology personnel, and professional functional personnel), and improved the development sequence of management, technology and skill talents. It strengthens source training, tracking training and full-process training, organically integrates career development with education and training, and establishes and improves a training program system and a learning and development map, so as to provide an adequate cadre and talent team to realize Chinese path to modernization and to build the company into a world-leading chemical conglomerate.



### Sinochem Holdings held the first national new employee training class in 2022

The new employees' training adopted a "1+N" hierarchical linkage training model and covered all new employees recruited from college campuses nationwide through online means. **Nearly 2,000 new employees from the headquarters and more than 170 subsidiary enterprises participated in the training.** The training class arranged courses on company history, corporate culture, human resources, company strategy, technological innovation, etc., to help the new employees comprehensively understand the company's development history, management system, and process system. It invited recipients of the National May Day Labor Medal, outstanding CPC members of enterprises and winners of the "Sinochem Skill Masters" title to share their growth experiences at Sinochem Holdings, providing career development references and inspirations for new colleagues who were just starting their careers, and enhancing their senses of belonging, identifications and honors for the company.

### Sinochem Lecture Hall: Open Class on New Strategy, International Forum, and Open Class on Cases

In 2022, by closely following the company's development pace and focusing on the hot topics of the company in the year, Sinochem Lecture Hall held an Open Class on New Strategy to promote all employees to timely understand the company's overall development strategy and core special plans for the 14th Five Year Plan, to gather development consensus, and to promote strategic implementation and business synergy; it also held an International Forum to help cadres and backbone employees gain a deeper understanding of the management models of multinational enterprises, establish global thinking, and enhance their international management capabilities; it also held an Open Class on Cases to summarize and promote the effectiveness of the company's reform, transformation and development, improve internal benchmarking learning, and help employees understand key issues of enterprise reform and development. **Throughout the year, Sinochem Lecture Hall held a total of 13 lectures, which attracted nearly 20,000 participants online and offline.**

## Employee guarantee

### Employee compensation

Sinochem Holdings adheres to the compensation philosophy of "people-oriented, fair and reasonable", providing employees with a competitive salary level in the market, while balancing the internal fairness and market competitiveness of the salary system. Employees' salary is determined based on the comprehensive evaluation of jobs' values, performances and abilities. Performance bonuses are fully linked to the performances of the organizations, teams and individual. The company has established a diversified incentive system, providing effective incentives and reasonable guarantees for employees from the dimensions of fixed salary, performance bonuses, medium to long-term incentives, benefits, honors and career development.

**In 2022, the company continuously optimized both short-term and long-term incentives measures.**

- In terms of short-term incentives, according to the relevant tenures and contract requirements of SASAC, the company improved the linkage between performance assessment and bonus payment, making the performance bonus fully reflect the year-on-year growth of performance, industry benchmarking, and the completion ratio of promised targets. At the same time, differentiated and personalized short-term incentive plans were set up for employees in different industries and positions to encourage subordinate enterprises to implement immediate incentives.
- In terms of long-term incentives, the company promoted the further expansion of the coverage of equity incentives of listed companies, and encouraged subordinate enterprises to explore equity incentives and dividend incentives for technology enterprises.

The company pays social insurance and housing provident fund for employees in accordance with the law, and provides comprehensive welfare guarantees systems for employees in aspects of healthcare, food, housing, appliance and transportation to relieve their worries during their performance of duties. The company fulfills its employer's obligations by purchasing employer liability insurances and providing safety guarantees such as personal accident insurances for employees. The company also cares about the income and welfare of employees after retirement. By establishing and continuously expanding the coverage of enterprise annuities, it provides thoughtful services for retired employees to ensure their living after retirement.

### Employee Welfare and Care

Sinochem Holdings attaches great importance to the welfare and care of its employees, providing them with a series of guarantees and services aimed at enhancing their senses of happiness and belonging, for promoting their growth and development.

### Employee Care

The labor union of the company has taken multiple measures to effectively cares for employees. On traditional festivals, it distributes various benefits to employees strictly according to relevant regulations. It also takes love actions, organizing a series of activities around March 8th Festival and Children's Day every year, so as to create a "family culture", alleviate the physical and mental pressures of female workers and promote parent-child harmonies. It actively carries out various activities, such as visiting and comforting disadvantaged employees, "sending warmth to employees in winter" and "sending coolness to employees in summer", to send the cares of the labor union to employees in need, expatriate employees, and etc, and promptly takes the initiative to comfort lover-losing employees as well as sick, hospitalized and retired employees. It organizes exemplary employees to recuperate, enhancing their senses of happiness and belonging.

**The company carried out youth innovation and efficiency creation practices, with 17 projects obtaining important innovation achievements at the provincial and ministerial levels.** The company organized and participated in the 'Revitalization Cup' National Youth Vocational Skills Competition, with 1 program nominated for the national finals and 1 program winning a prize.

**The company deepened the "I Solve Practical Problems for Youth" activity, conducted online research on youth ideological dynamics, and sorted out a list of over 2,000 practical projects throughout the system, solving 457 problems for youth.** The company empowers young people to grow comprehensively. It has carried out activities centered on career planning, quality development, arts & sports and marriage dating, and organized "Chemistry Gathers Youth" friendship activities for 6 times.







## Contribution & Co-sharing



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Sinochem Holdings actively responds to the national rural revitalization strategy, supports agricultural and rural modernization, and assists in the integration of urban and rural development. The company has deeply participated in the construction of harmonious communities and promoted the concept of social responsibility from the company's strategic perspective. It has widely carried out public welfare and charitable activities to continuously improve social satisfaction and trust. It strongly supported the preparation work for the 2022 Beijing Winter Olympics, showcasing the green, intelligent and shared Olympic concepts, and enhancing friendship and cooperation among people from all countries.

## Contribution to Sustainable Development Goals (SDGs)





# Serve People's Livelihoods

## Rural Revitalization

Sinochem focuses on 6 counties and 5 provinces, districts supported by the company, active plans, coordinates and innovates, consolidates and expands the results of poverty alleviation and rural revitalization, and pushes forward the support work steadily and effectively. Sinochem's "2+4" model of assistance, which is driven by industrial and livelihood support, and supported by helping access to educations, aspirations, consumptions and social mobilization, has been put into practice. In the assessment of the central unit's targeted, the company continued to achieve the highest rating of "good" and was shortlisted for the 12th China Charity Award.

Investing **35,277 million yuan** of uncompensated industrial support funds and **49,673 million yuan** of compensated support funds, we have introduced **69.3 million yuan** of industrial support funds, introduced 8 support projects and enterprises, set up **10** support workshops, transferred **1,498 people** to employment, and recruited **195 people** from poverty.



Sinochem MAP technicians are giving "one-on-one" guidance for laborers fighting poverty.

**Industrial Revitalization**  
Capitalizing on the strengths of the main industry, contributing to industry revitalization

**Talent Revitalization**  
Combining theory with practice, contributing to talent revitalization



Cadres going to villagers' homes to make home visits to students sponsored by the "Operation Dream."

### Five Revitalizations

**Cultural Revitalization**  
Enriching forms and carriers, contributing to cultural revitalization

Sinochem's "Harvest for a New Era" cultural performance going to the company's designated assistance in Arukolqin Banner, Chifeng, Inner Mongolia.



The "Harvest New Era" cultural evening was held in Arukolqin Banner of Chifeng, Inner Mongolia, and watched by more than **190,000 people** in a combination of online and offline broadcasts and covered by more than **10** central and local mainstream media such as Farmer's Daily, People's Three Rural Affairs, and China Youth Net. **Three villages** where the first secretary is stationed and **two other villages** have been remodeled with five cultural squares, cultural walls and bulletin boards built, and venues such as party members' activity rooms, village history exhibition rooms and villagers' reading rooms have been allocated.

**Ecological Revitalization**  
Empowering industrial science and technology, contributing to ecological revitalization

Sinochem implements a demonstration project of cultivation cycle in Chifeng, Linxi County, Inner Mongolia--off-season cabbage harvest.



In Tongbu, Linxi County, through scientific and technological empowerment to improve the living environment, and soil fertility, the construction of beef cattle manure collection system and organic and inorganic compound fertilizer production line, treating more than **600,000m<sup>3</sup>** of waste for the local community each year, producing of **250,000 tons** of organic fertilizer, increasing the per mu income from **1,000 yuan to 7,400 yuan**, benefiting more than **5,000 people**. Constructed the "carbon neutral" sewage treatment station in Linxi County and implemented toilet reform for **286 households**.

**Organizational Revitalization**  
Strengthening party building leadership, contributing to ecological revitalization

Organizing all members and cadres of Nanzhuang Village in Pingshan County to receive education in Xibai.



Carrying out various and rich forms of pairing and co-construction with primary and secondary schools in the **four helping counties**, villages linked to the posted cadres, and the village where the first secretary is stationed. Taking MAP help and capital investment as a hand, it supports **10** leading enterprises, cultivates and serves **38** cooperatives, **118** large planting families, **15** agricultural and animal husbandry enterprises, **7** family farms and other **178** new agricultural business subjects, and significantly strengthens the collective economy of villages.

## Financial Technology Assists in the Construction of Sinochem's Agricultural Ecosystem

Sinochem Capital Digital Technology Co., Ltd. ("SCDT" for short), a subsidiary of Sinochem Holdings, has launched a "Data Order Loan" service model and implemented it in various fields of Syngenta Group China. In the field of fertilizers, thanks to the support of "preferential interest rates of agricultural support policies" in the early stage, "Feiyi Loan" products targeting downstream customers of Sinofert and Fertex have been widely used, effectively ensuring the fertilizer needs of farmers; in the seed field, SCDT has customized a credit limit model for downstream distributors of China Seed International Seed Co. The scenario-specific "Diyi Loan" product has been successfully implemented, successfully completing the first business credit and first disbursement.

## Fight Against the Pandemic

All employees within Sinochem Holdings fully utilized their subjective initiatives to assist in the prevention and control of the COVID-19 pandemic and the resumption of production in the past 3 years. According to the pandemic prevention requirements of local governments and the company, subordinate units at all levels strictly implemented the "Pandemic Prevention and Control Plan" (the 9th edition), optimized and adjusted the 20 measures and the new 10 pandemic prevention articles, and regularly conducted daily pandemic situation analysis & research and early warning, health information report, risk personnel screening, personnel quarantine and control, normal nucleic acid test and detection, temperature measurement and code verification, disinfection and sterilization, visitor management, pandemic prevention materials distribution, pandemic prevention publicity and training, emergency preparedness, emergency disposal, employee care, full staff vaccination, inspection and supervision, "daily report" and "weekly summary" and other pandemic prevention work, and took various measures to overcome the difficulties of pandemic prevention work and to ensure the stable operation of production facilities.

According to the deployment of the Sinochem Holdings, the labor union promptly allocated a special fund of **2.536 million yuan** for pandemic prevention and control work to purchase grain, oil and fresh fruit and vegetable gift packages for **4970** employees. At the same time, by opening consultation hotlines, psychological cloud classrooms and other means, we strengthened the psychological guidance and relief of employees, delivered the warmth and care of the organization to the hands of employees, and strongly supported the prevention and control of the pandemic.



In the battle against various pandemics, the modern chemical industry has not only provided ordinary people with all kinds of disinfectants, sterilizers and other pandemic prevention products, but also offered security for public health in the sophisticated field. As a patriotic education base of state owned central enterprises, **the Chemical Industry Museum of China** deeply explored and showcased the ideological connotation and times value of the patriotic education base, and produced a promotional video called "**Chemical Workers Are Acting to Fight against the Pandemic**", showcasing the scientific research spirit and responsibility of Chinese chemical workers. **More than 200,000 students and citizens watched the "Chemical Workers Are Acting to Fight against the Pandemic" video through online and offline ways.**



## Support the Winter Olympics

Sinochem Holdings fully utilizes their subjective initiatives to ensure the smooth launch of the 2022 Beijing Winter Olympics.



### Assist in the First Robot Underwater Torch Relay in Olympic History

In the torch relay event of the 2022 Beijing Winter Olympics, the buoyancy materials developed and manufactured by Ocean Chemical Research Institute, a subsidiary of Haohua Group, which is a subsidiary of Sinochem Holdings, were applied to underwater variable structure robots, successfully supporting the first robot underwater torch relay in the Olympic history.



### Help develop China-made large and medium-sized outdoor snowcats to provide technical support for the Winter Olympics and snow sports in China

Beijing Research & Design Institute of Rubber Industry Co., Ltd. ("Beijing Rubber Institute" for short), a subsidiary of Sinochem Holdings, successfully tackled difficult technical problems for the localization of key components of "lightweight rubber track and rubber suspension under low temperature environment", a R&D topic of the national key special science and technology project for the 2022 Winter Olympics: "Development and application demonstration of outdoor large and medium-sized snowcats", helping to realize the domestic substitution of imported large and medium-sized snowcats.



## Showcasing at CIIE 2022

During the 2022 China International Import Expo (CIIE) period, Sinochem Holdings signed cooperation agreements with over 50 clients from more than 10 countries and regions, including Saudi Arabia, Kuwait, Japan, Singapore, the United Arab Emirates and Malaysia, to purchase high-quality energy and chemical products, and to have cooperation in technology R&D, production digitization and other aspects. The total procurement amount exceeded US\$11 billion.

Chairman Li Fanrong led a team to visit Sinochem Holdings' overseas enterprises and partners' exhibition area opened at CIIE 2022. They visited the overseas enterprise exhibition booths of Sinochem Holdings, such as Elkem Silicones, KraussMaffei, Syngenta Group and Adisseo. They also visited partner booths to learn about the unique products exhibited by each partner company and had in-depth exchanges with exhibitors.



Sinochem Holdings actively organized its overseas subsidiaries to participate in CIIE and promoted their products and technologies that represent advanced global levels to China. While actively integrating into the Chinese market and seizing opportunities, overseas enterprises can also drive domestic enterprises to enhance their technological innovation capabilities and assist in industrial transformation and upgrading. At CIIE 2022, overseas subsidiaries of Sinochem Holdings signed multiple supply agreements with domestic customers, with a total sales volume of more than US\$1.6 billion.

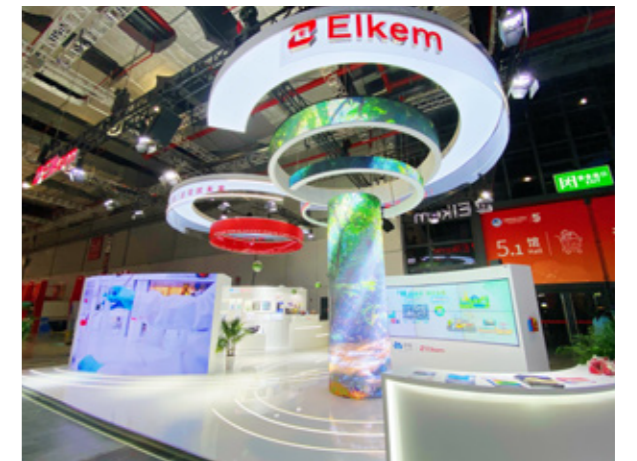
At CIIE 2022, Syngenta Group showcased numerous innovative seeds achievements nurtured by leading breeding technologies, such as colored peppers, tomatoes, pumpkins, sweet corn and other high-quality crops that combine beauty, taste and health. At the same time, it also showcased its unique MAP and digital agriculture business, as well as its global agricultural value chain barter trade results. At the exhibition, visitors could taste traceable premium coffee beans from Brazil, as well as a series of innovative and traceable brand MAP beSide products, including rice, sweet corn and tomatoes. Scanning the QR code on the food packaging can provide a clear introduction of the entire growth process and sustainable development data of the productions.



At CIIE 2022, Adisseo focused on showcasing Adisseo's "20th Anniversary Museum", "Adisseo Series Product Exhibition" and "Digital Intelligence + Sandtray", showcasing Adisseo's technological advantages and innovative products in the field of animal nutrition from multiple perspectives and in all aspects. Specifically, the display of essential nutrients such as liquid and solid methionine, as well as specialty additive products.



Elkem showed its innovative silicone technology and sustainable green solutions in the fields of healthcare, architecture, home furnishings, automobiles, energy and others by centered on four main themes, that is, "Life Science", "Comfortable Life", "Smart City" and "Innovative and Smart Manufacturing" at the Consumer Products Exhibition Area of CIIE 2022.



KraussMaffei showcased a pre-launch new product called "Pioneer Power Foam Extrusion Production Line" at CIIE 2022 to enhance the level of related manufacturing industry; it also showcased "Edelweiss Blending Modification Technology", which can be applied to the entire plastic recycling and remanufacturing industry chain to achieve the recycling and utilization of waste plastics.





# Community Public Welfare

## Education Assistance

Sinochem Holdings adheres to the principle of putting people oriented, pays attention to educational equity, supports the education industry, and makes education assistance an important part of sustainable development. It has established a long-term and stable partnerships with government, social organizations, professional institutions, and etc, forming an educational platform that involves multiple parties and is promoted by them together.

### A Five-star Red Flags Exploring in Special Areas

From the national flag used special areas, which is an exhibit in the Chemical Industry Museum of China, students could understand that China is the third country in the world to master the technology in such special areas. They listened to the story of the R&D team of the flag and learned their spirit of dedication to scientific research and courage for innovation to cultivate students' patriotism.



### Syngenta Mary-dell Chilton Graduate Scholarship Helps Cultivate Modern Agricultural Talents

The 2022 Award Ceremony of Syngenta Mary-Dell Chilton Graduate Scholarship and Academic Forum were held at the Syngenta Group Beijing Innovation Center, and 16 outstanding graduate students from well-known domestic universities and research institutes were recognized by this award. Dr. Mary-Dell Chilton has won the "Nobel Prize of food and agriculture"—"World Food Prize". The establishment of this award aims to inspire and support outstanding Chinese students to participate in research in the field of plant science, and promote innovation and development in the agricultural field.



### Green Pepper Plan

In 2022, China Foreign Economy and Trade Trust Co., Ltd. (FOTIC), a subsidiary of Sinochem Holdings, established its first rural revitalization charity trust, called "FOTIC-2022 Rural Revitalization No.1 Spark Charity Trust", with 82 clients (companies) and a trust scale of 1.06 million yuan, to support "Rural Youth Teacher Social Support Public Welfare Plan" for rural special post teachers and to award outstanding students. This is the first way in the industry to "do charity through trust". It is a collective fund trust-type charitable trust guided by excellent public welfare programs. **Up to now, 2457 special post teachers from 35 districts in Xinjiang, Gansu Province, Inner Mongolia, Tibet, Qinghai and Hebei Province have been provided with one-year systematic network training, including 431 teachers from 6 areas aided by the company.**



### Xinnuo Student Assistance No.1

In 2022, according to the trust agreement, the charitable trust program, "FOTIC - 2020 Xinnuo Student Assistance No.1 Charitable Trust", of Sinochem Capital, a subsidiary of Sinochem Holdings, **allocated 90,300 yuan to 224 teachers and students of Sanying Middle School in Gansu Province to award outstanding teachers and staff as well as students with outstanding academic performance and to help students with financial difficulties.**

## International Public Welfare

Sinochem Holdings actively participates in international public welfare activities, paying attention to vulnerable groups and individuals affected by disasters in society, and providing help and support to them through donations, volunteer services and other means. It pays attention to social development as well as the improvement of people's livelihoods, and participates in the construction and development of multiple social public and welfare undertakings.

### Helping Colombian People's Livelihoods and Protecting Local Culture

In 2022, Emerald Energy Colombia Branch, a subsidiary of Sinochem Holdings, took actual actions to improve local livelihoods and launch public welfare initiatives. Emerald Colombia adheres to the concept of common development with local communities. Through effective measures such as providing technical training for farmers and promoting the establishment of organic coffee production bases, it supports local agricultural economic industries, such as bananas and coffee, and drives farmers to become rich together. In addition, Emerald Colombia organized local training on traditional culture such as dance and handicrafts, established a handicraft exhibition hall, and built a traditional medicinal plant plantation to help protect and pass down local culture and customs.



### Assisted Prosthetic Limbs Help the Disabled Get New Life

At the end of 2022, ELIX Polymers, a subsidiary of Sinochem Holdings, and Ayúdame3D, a Spanish non-profit organization, jointly launched a social care technology program. The program uses recycled ABS (acrylonitrile butadiene styrene) as the raw material for 3D printing prosthetics, and has designed and manufactured a 3D printing arm named Trésdesis for the disabled to help people in need around the world.



### EnaMORate Falls in Love With Blackberry

In 2022, Adama, a subsidiary of Sinochem Holdings, donated **a total of US\$2.8 million** (equivalent to 18.83 million yuan) (9.6% of earnings before taxes) to carry out corporate social responsibility work in Colombia. It launched the EnaMORATE (meaning enamor (love) +mora (blackberry in Spanish)) campaign in Colombia to improve the situation of blackberry cultivation and related associations and farmers. In 2022, it provided technical support and recognition services to **40** blackberry growers; and it continued to support the El Colibri Children's School Foundation and community libraries, providing art, sports and entertainment activities for over **50** children to improve their quality of life.



### AUW Scholarship

Syngenta Group, a subsidiary of Sinochem Holdings, decided to establish a scholarship program in Asian University for Women (AUW) from January 2022 to December 2026, with a grant of about **US\$375,000**, to award five female students who demonstrate outstanding academic abilities and leadership in farming communities in Bangladesh and India. This scholarship enables rural women to fully realize their potential and provides them with better opportunities to improve their livelihoods and take control of their own lives.





## Harmonious Community

Sinochem Holdings adheres to the concept of "co-creation, sharing, and win-win" in community participation and development, and has implemented a series of policies and measures to promote the sustainable development of economy, society and environment in communities where its subsidiaries are located.

### Small Stamps Have a Great Impact

The Chemical Industry Museum of China took "Centennial Stamp Exhibition of the Nobel Prize in Chemistry" into the Old Summer Palace to show the scientific spirit to the audience with small stamps. The exhibition also attracted many people to stop and watch.



### Sparkling Stars in Quanzhou Community

During the pandemic period in Quanzhou, Fujian Province, volunteers from Quanzhou Petrochemical Park participated in the activities of local public welfare organizations to help deliver materials to the pandemic prevention frontline and to maintain the order of nucleic acid test. Their busy figures on the street corner lit up sparkling stars, dispelling the haze of the city.



## Centennial History of Chemical Industry

As a national level museum in the chemical industry, the Chemical Industry Museum of China carrying forward the spirit of Sinochem Group and ChemChina, inherits the red genes of the chemical industry, showcases and collects the development process and important achievements of China's chemical industry, spreads chemical industry civilization, popularizes scientific knowledge.

### Centennial History of Chemical Industry

The Chemical Industry Museum of China, a subsidiary of Sinochem Holdings, has compiled a large-scale chronicle historical book titled the *Centennial Development History of Chinese Chemical Industry*, which has been officially published and distributed nationwide. This is another work on chemical industry history, following the pioneering work "General History of Chinese Chemical Industry", which was compiled in 2015. The *Centennial Development History of Chinese Chemical Industry* comprehensively and systematically records the entire development history of China's chemical industry from early modern times to contemporary times, showcasing the magnificent centennial development process of China's chemical industry from multiple levels, angles and perspectives. The book is divided into two volumes, totaling 1.75 million words. Starting from the perspectives of social economy, industrial development and technological progress, the historical stages are arranged in chronological order, showcasing the basic context and tremendous development achievements of China's chemical industry, as well as the development experience and regularity characteristics. It is both professional and historical.



### Spread the Power of Chinese Chemical Workers

The Chemical Industry Museum of China joined hands with CCTV science and education channel to produce programs such as the 'Founder - Hou Debang and Fan Xudong' and 'Founder - Xu Shou' to spread scientist spirit. It cooperated with the "Breeze Beijing" program of BTV to produce "Hou Debang: A Person with Both Virtue and Technology Saved China with Industry" and "Zou Jing: A Life of Adding Glory and Splendor "to China-made Goods" to dig out the stories of historical figures and to promote the construction of clean culture.

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# TCFD Frame Indicators Index

TCFD Disclosure Framework	Chapter Content
<b>Governance</b> Disclose organizational governance around climate related risks and opportunities	
a) Describe the oversight of the Board of Directors over climate related risks and opportunities	Corporate Governance - Governance Mechanism - Risk Management
b) Describe the role of management in assessing and managing climate related risks and opportunities	Climate Response and Green Cycle - Climate response - Climate Management Mechanism
<b>Strategy</b> Disclose the actual and potential impact of climate related risks and opportunities on the organization's business, strategy, and financial planning (if such information is important)	
a) Describe the climate related risks and opportunities identified by the organization in the short, medium and long term	Climate Response and Green Cycle - Climate response - Risk identification and prevention
b) Describe the impact of climate related risks and opportunities on an organization's business, strategy, and financial planning	Topic 1: Make Green Transformation and Practice Low-Carbon Development
c) Describe the flexibility of organizational strategy, taking into account different climate related scenarios, including scenarios at 2 °C or lower	
<b>Risk Management</b> Disclose how the organization identifies, evaluates and manages climate related risks.	
a) Describe the process by which the organization identifies and evaluates climate related risks.	Climate Response and Green Cycle - Climate response - Risk identification and prevention
b) Describe the process by which the organization manages climate related risks.	Climate Response and Green Cycle - Climate response - Risk identification and prevention
c) Describe how to integrate the process of identifying, evaluating and managing climate related risks into the overall risk management of the organization	Climate Response and Green Cycle - Climate response - Risk identification and prevention
<b>Indicators and Objectives</b> Disclose indicators and objectives for evaluating and managing relevant climate related risks and opportunities (if such information is important).	
a) Disclose indicators used by the organization to evaluate climate related risks and opportunities based on its strategies and risk management processes	Corporate Governance - Governance Mechanism - Risk Management
b) Disclose Scope 1, Scope 2 and (if applicable) Scope 3 Greenhouse gas (GHG) emissions and related risks.	Climate Response and Green Cycle - Climate response - Risk identification and prevention

# Table of Enterprise Abbreviations

Abbreviation	Full Name	Abbreviation	Full Name
Sinochem Holdings	Sinochem Holdings Co., Ltd.	Youke Plant Protection	Jiangsu Youke Plant Protection Co., Ltd.
Sinochem Energy	Sinochem Energy Co., Ltd.	Sinochem Quanzhou Park	Sinochem Quanzhou Park Development Co., Ltd.
Syngenta Group	Syngenta Group Co., Ltd.	Dezhou Shihua	Dezhou Shihua Chemical Co., Ltd.
Bluestar	China National Bluestar (Group) Co., Ltd.	Sennics	Sennics Co., Ltd.
Haohua Group	China Haohua Chemical Group Co., Ltd.	Bluestar New Materials	Hunan Bluestar New Materials Co., Ltd.
Luxi Chemical	Luxi Chemical Group Co., Ltd.	China Seed Group	China Seed Group Co., Ltd.
Cangzhou Dahua	Cangzhou Dahua Group Co., Ltd.	Quanyin High Tech	Anhui Quanyin High Tech Seed Industry Co., Ltd.
Rubber Company	China National Tire & Rubber Co., Ltd.	SCDT	Sinochem Capital Digital Technology Co., Ltd.
ChemChina Equipment	China National Chemical Equipment Co., Ltd.	Seed International	China Seed International Seed Co., Ltd.
Sinochem Environmental	Sinochem Environmental Holding Co., Ltd.	Southwest Institute	Southwest Research & Design Institute of Chemical Industry Co., Ltd.
China Jinmao	China Jinmao Holdings Group Co., Ltd.	Guangming Institute	Guangming Research & Design Institute of Chemical Industry Co., Ltd.
Sinochem Capital	Sinochem Capital Co., Ltd.	Yangnong Jinhua	Jiangsu Yangnong Jinhua Chemical Co., Ltd.
Sinochem Hong Kong	Sinochem Hong Kong (Group) Co., Ltd.	Jinxi Institute	Jinxi Research Institute of Chemical Industry Co., Ltd.
SYRICI	Shenyang Research Institute of Chemical Industry Co., Ltd.	Yiyang Rubber Machinery	Yiyang Rubber and Plastic Machinery Group Co., Ltd.
BlueStar Chengrand	Chengrand Research Institute of Chemical Industry Co., Ltd.	Northwest Institute	Northwest Rubber and Plastic Research and Design Institute Co., Ltd.
Sinochem Finance	Sinochem Group Finance Co., Ltd.	Hubei New Energy	Hubei New Energy Material Technology Co., Ltd.
Sinochem Asset	Sinochem Asset Management Company	North Institute	North Paint & Coatings Industry Research and Design Institute
CNCIC	China National Chemical Information Center Co., Ltd.	Shuguang Institute	Shuguang Rubber Industry Research & Design Institute
Sinochem IT	Sinochem Information Technology Co., Ltd.	Ocean Chemical Research Institute	Ocean Chemical Research Institute Co., Ltd.
Yangnong Chemical	Jiangsu Yangnong Chemical Co., Ltd.	Sinochem Research Institute	Sinochem Research Institute of Chemical Technology Co., Ltd.
Adama	Adama Ltd.	Haohua Gas	Haohua Gas Co., Ltd.
Adiseo	Bluestar Adiseo Company	Luxi Polyamide New Materials	Luxi Polyamide New Materials Technology Co., Ltd.
Adiseo Nanjing	Bluestar Adiseo (Nanjing) Co., Ltd.	Sinofert	Sinochem Fertilizer Co.,Ltd
Sinochem International	Sinochem International (Holdings) Co., Ltd.	Sinofert	Sinofert Holding Limited
Haohua Technology	Haohua Chemical Technology Group Co., Ltd.	SGC	Syngenta Group China
Elkem	Elkem ASA	Krauss	KraussMaffei Company Limited(KMCL)
Elkem Xinghuo Silicones	Jiangxi Bluestar Xinghuo Silicones Co., Ltd.	KraussMaffei	KraussMaffei Group GmbH
Elkem Foundry China	Elkem Foundry (China) Co., Ltd.	Haohua Chengrand	Haohua Chengrand Research Institute of Chemical Industry Co., Ltd.
Sinochem Lianyungang	Sinochem Lianyungang Industrial Park Management Co., Ltd.	Shanna Company	Shanna Synthetic Rubber Co., Ltd
Sinochem Liantian	Sinochem Liantian Co., Ltd.	Sinochem Xingzhong	Sinochem Xingzhong Oil Staging (Zhoushan) Co., Ltd.
BCMC	BlueStar (Beijing) Chemical Machinery Co., Ltd.	ZRICI	Zhejiang Research Institute of Chemical Industry Co., Ltd.
CFETT	China Foreign Economic and Trade Trust Co., Ltd.	Guilin Rubber Machinery	Guilin Rubber Machinery Co., Ltd.
SCFC	Sinochem Commercial Factoring Co., Ltd.	Heilongjiang Haohua	Heilongjiang Haohua Chemical Co., Ltd.
Huaihe Chemical	Jiangsu Huaihe Chemical Co., Ltd	Yangnong Group	Jiangsu Yangnong Chemical Group Co., Ltd.
Sinochem Commerce	Sinochem Commerce Co., Ltd.	Shenyang Paraffin Chemical	Shenyang Paraffin Chemical Co., Ltd.
Sinochem Fuheng	Sinochem Hebei Fuheng Co., Ltd.	Quanzhou Petrochemical	Sinochem Quanzhou Petrochemical Co., Ltd.
Sinochem Xinbao	Sinochem Hebei Xinbao Chemical Technology Co., Ltd.	Guizhou Crystal	Guizhou Crystal Organic Chemical (Group) Co., Ltd.
Sinochem Lithium Battery (Ningxia)	Sinochem Lithium Battery Materials (Ningxia) Co., Ltd.	TDI Company	Cangzhou Dahua TDI Co., Ltd.
ELIX Polymers	ELIX Polymers S.L.	Yangnong Ruitai	Ningxia Ruitai Technology Co., Ltd.
Sinochem Fuling	Sinochem Chongqing Fuling Chemical Co., Ltd.	Cangzhou Dahua Juhai	Cangzhou Dahua Co., Ltd. Juhai Branch
Nantong Xingchen	Nantong Xingchen Synthetic Materials Co., Ltd.	Aeolus Tyre	Aeolus Tyre Co., Ltd.
Beijing Rubber Institute	Beijing Research & Design Institute of Rubber Industry Co., Ltd.	Shenyang Chemical	Shenyang Chemical Co., Ltd.
Sinochem Yunlong	Sinochem Yunlong Co., Ltd.	Sennics Anhui	Sennics Co., Ltd. Anhui
Huaxing Petrochemical	Shandong Huaxing Petrochemical Group Co., Ltd.	Sennics Shandong	Sennics Co., Ltd. Shandong
Sinochem Environmental Protection	Sinochem Environmental Protection Chemical Co., Ltd.	Sinochem Changshan	Sinochem Jilin Changshan Chemical Co., Ltd.
Elkem Silicones Guangdong	Elkem Silicones (Guangdong) TCo., Ltd.	Sennics Thailand	Sennics Thailand Polymer Additives Plant
Tianhua Institute	Tianhua Institute of Chemical Machinery & Automation	Adiseo	Adiseo France S.A.S



# Feedback Form

Dear readers,

Thank you very much for taking the time to read the report. In order to improve the report formulation work and enhance Sinochem Holdings' ability to fulfill its responsibilities, Sinochem Holdings particularly hopes to listen to your opinions and suggestions. Please do not hesitate to give us your advice!

## 1. Which type of stakeholders do you belong to?

Government Worker	Regulator	Shareholder and Investor	Employee	Customer
Supplier and partner	Community resident	ESG practitioner	Peer enterprise	Others

## 2. What is your overall evaluation of the report?

Excellent	Good	Satisfactory	Unsatisfactory	Very unsatisfactory
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## 3. How do you think of the quality of the ESG information disclosed in the report?

Excellent	Good	Satisfactory	Unsatisfactory	Very unsatisfactory
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## 4. How do you think of the structure arrangement of the report?

Very reasonable	Reasonable	Satisfactory	Unsatisfactory	Very unsatisfactory
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## 5. How do you think of the layout design of the report?

Very reasonable	Reasonable	Satisfactory	Unsatisfactory	Very unsatisfactory
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## 6. How do you think of the readability of the report?

Excellent	Good	Satisfactory	Unsatisfactory	Very unsatisfactory
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## 7. You are welcome to give your opinions and suggestions on Sinochem Holdings' ESG work and the report here: