The 2022 sustainability report (hereinafter referred to “SR”) is the 17th sustainability report of China Petroleum & Chemical Corporation (hereinafter referred to as “Sinopec Corp.”, “the Company” or “We”). The report introduces our sustainability philosophy and policies and our environmental protection, social responsibility, and corporate governance (hereinafter referred to as “ESG”) performances in 2022, and highlights on how we responded to the expectations and concerns of our stakeholders.

This report covers our business activities from 1 January to 31 December 2022, with some content from beyond this time span for continuity reasons. The information herein comes from internal data and relevant public information. Unless otherwise specified, all monetary figures shown in this SR are expressed in RMB (yuan). Unless otherwise specified, the data in this SR covers the data of Sinopec Corp. and its wholly-owned and controlled subsidiaries. The Company’s Board of Directors reviewed and approved this report on 24 March 2023. The report is available in Chinese and English versions, and the Chinese version shall prevail in case of any conflict or inconsistency. The report can be downloaded at the website: http://www.sinopec.com/listco/en.

Report Perimeters
This report is prepared in accordance with the Guideline for the Self-Regulatory Supervision of Listed Companies of Shanghai Stock Exchange (SSE) No. 1 - Standardised Operation, the Environmental, Social and Governance Reporting Guide issued by Hong Kong Stock Exchange (HKEX), Ten Principles of the United Nations Global Compact (UNGC), and the criteria of the Global Compact Advanced Communication on Progress, and with reference to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), the 2021 GRI Universal Standards (GRI Standards) and GRI 11: Oil and Gas Sector 2021 issued by the GRI Global Sustainability Standards Board (GSSB).

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Disclaimer
This report includes certain forward-looking statements with respect to the results of our business operations and certain plans and conditions. All statements that address activities, events or developments that we expect will or may occur in the future, other than statements of historical fact, are forward-looking statements and by their nature involve risk and uncertainty. This means that actual results may differ materially from those indicated in the forward-looking statement due to a number of factors and uncertainties. The forward-looking statements are made by 24 March 2023 and the Company undertakes no obligation to update these forward-looking statements unless required by an appropriate regulatory authority.
Letter from Chairman

Dear Friends,

On behalf of the Board of Sinopec Corp., I would like to express our sincere gratitude for your continued attention and support! Sustainable development is a “golden key” to addressing the current global challenges. ESG, as a tangible manifestation of a company’s development philosophy at the micro-level, aligns closely with the Chinese government’s fundamental principles of high-quality development and harmonious coexistence between man and nature. Strengthening ESG governance is a crucial step in fully and accurately executing the new development concept and an inherent necessity for promoting high-quality economic and social growth. As we navigate through the complex challenges of geopolitical conflicts, energy security, and climate change in 2022, Sinopec Corp. – an integrated energy and chemical company and a LEAD member of the United Nations Global Compact – is resolutely committed to sustainable, low-carbon, safe, and responsible development. We have fully integrated environmental, social, and governance (ESG) considerations into our corporate operations and development strategies. In the past year, we have made significant progress in strengthening corporate governance, ensuring a secure and stable energy supply, promoting green and low-carbon development, driving technological innovation, enhancing safety management, and fulfilling social responsibility.

We strive to improve our corporate governance. The Board of Directors is wholly dedicated to enhancing strategic planning and has thoroughly deliberated and approved the Company’s medium and long-term development plans. Our independent directors have carried out their duties and offered valuable suggestions for corporate reform and development. We have revised multiple governance policies to consolidate the institutional foundation for standardised governance and deepened the construction of internal control system to continuously improve its effectiveness. For the first time, we repurchased shares both domestically and overseas to increase our value and shareholder returns. We deeply promoted the “Demonstration Action for Scientific and Technological Reform” to stimulate the impetus and vitality of technological innovation. We have formulated and implemented the Sinopec Medium and Long-term Talent Development Plan in the 14th Five-Year Plan Period to build a team of high-quality and professional talent. We carried out regular audits and supervision to strengthen anti-corruption and continuously enhance our compliance management.

We strive to ensure a secure and stable supply of energy. Regarding upstream oil and gas exploration and production, we have improved our reserve capacity, stabilised oil and gas production, and reduced costs. We have also increased investment in oil and gas exploration and production, achieving new domestic oil and gas production records, reaching a reserve-replacement ratio of 165%, and ensuring natural gas supply for the warmth of millions of households during the heating season. Regarding oil refining and marketing, we have supplied cleaner V92 refined oils and ensured stable supply of refined oil products. We are actively promoting the development of the domestic hydrogen energy industrial chain, ranking the first globally in terms of hydrogen refuelling stations in operation and under construction. We have accelerated the development of charging and battery replacement infrastructure and built over 1,000 charging and battery replacement refuelling stations. Our business in wind power, photovoltaic, and other sectors also developing well, and our bio-jet fuel business has achieved large-scale production and application.

We strive to improve our green and low-carbon competitiveness. We are committed to promoting carbon peaking and carbon neutrality in an integrated and orderly manner with the launching and implementation of the Action Plan for Carbon Dioxide Peaking Before 2030. Adhering to the principle of “reducing carbon emissions of existing energy consumption, lowering carbon emissions of energy consumption increment, seeking zero carbon emissions, and developing carbon-negative technologies”, we have completed and put into operation China’s first million-tonne CCUS demonstration project. This achievement has made Sinopec Corp., a technology company with a complete carbon-related industrial chain. We have comprehensively strengthened our environmental compliance management, established a supervision mechanism for ecological and environmental protection, and conducted environmental compliance verification of construction projects. We have continued to deepen pollution prevention and control actions and effectively implemented our “Green Enterprise Campaign”. We promoted the protection and restoration of major ecosystems and launched the Sinopec SaShunha Ecological Demonstration Forest Project.

We strive to strengthen technological innovation. We have accelerated the cultivation of innovative enterprises, continuously strengthened the whole-process innovation from basic research to industrial application, and achieved numerous key innovation results. We have made significant breakthroughs in key technologies such as large tow carbon fibre and high gauge polybutene-1, and new progress in major technologies including the exploration and development of ultra-deep-oil/gas, direct crude oil cracking for producing ethylene, and special rubber. We actively promoted digital transformation and enhanced the digitalisation and intelligence of our business via demonstration projects such as “Industrial Internet +”.

We strive to build a solid line of defence for safety. In response to the once-severe situation of safety production, we took decisive measures to strengthen hazard inspection and rectification while increasing supervision on key links. These actions were instrumental in effectively reversing the negative situation. We strengthened the implementation of safety responsibilities, promoted the efficiency of the HSE system, and strengthened emergency management, thereby improving our emergency response capacity. By optimising the allocation of safety equipment and improving the working environment, we have consolidated the foundation of occupational health management, effectively ensuring the physical and mental well-being of our employees. We strive to fulfill social responsibility. We have made every effort to ensure the supply of petroleum and petrochemical products, maintaining the stability of our industrial chain and supply chain. Our performance in serving the Beijing Winter Olympic Games and the Winter Paralympic Games was highly recognised by all parties. We actively explored distinctive modes of rural revitalisation to promote industrial development with marketing support, boost revitalisation by industry, and enhance rural development through education. During the emergency disaster relief tasks, we always took proactive actions and donated funds and relief supplies. We further implemented public welfare and charity projects such as “Spring Bud Gas Station Programme”, “Driver’s Home Programme” and “Warm Stations Programme”, and conducted international business with the concept of “paying back to the local communities and contributing to the local economy”, and continued to improve our image as a responsible international company.

Looking ahead to 2023, Sinopec Corp. is determined to accelerate to become a world-leading company, further integrate ESG into all aspects of corporate strategic planning, production and operation, strengthen the top-level design of ESG governance, and consolidate its management foundation, actively participating in the construction of China’s ESG ecosystem. We hope to work with stakeholders to promote sustainable development, enter a new stage of high-quality development, and confidently write a new chapter of Sinopec following the Chinese path to modernisation. We cherish your valuable suggestions for the Company’s sustainable development and look forward to joining hands with you to build a better life and create a brighter future!

Ma Yongsheng, Chairman

March 24, 2023

Sinopec Corp.
Board's Statement on ESG Governance

The Company’s Board of Directors made the following statement in accordance with the requirements of the Environmental, Social and Governance Reporting Guidelines of the Stock Exchange of Hong Kong Limited (hereinafter referred to as the “Hong Kong Stock Exchange”).

The Board of the Company promises that the Company and its Board of Directors strive to follow the Requirements of the Guidelines for the Governance of Listed Companies issued by the China Securities Regulatory Commission, the Environmental, Social and Governance Reporting Guidelines issued by Hong Kong Stock Exchange, and continuously optimise its environmental, social and corporate governance mechanism. We will further strengthen the Board’s role in supervising and participation in ESG related issues, and vigorously integrate ESG considerations into the Company’s major decision-making processes and various business practices.

Board’s Role in ESG Governance

The Board of Directors is responsible for overseeing and deliberating the implementation and progress of the Company’s sustainability and ESG strategies and plans; overseeing the commitments and performances of the Company on key ESG issues such as climate change, environmental protection and compliance management; overseeing key information regarding sustainability issues related to the Company’s businesses and approving the Company’s annual sustainability reports; coordinating with other committees and functional departments to incorporate ESG factors into internal control, risk management, strategic planning, remuneration and incentives, etc.; and reporting ESG performances and major plans to the Board of Directors. The Sustainability Committee is composed of four directors, including one independent director, with Chairman of the Board serves as the chairperson of the Committee. The Committee convenes at least once each year, and can hold ad hoc meetings when necessary. The Committee shall inform the Board on ESG related issues in a timely manner.

ESG Management Strategy and Policy

The Company attaches great importance to ESG management, adheres to the development concept of “innovation, coordination, green, open, and sharing”, and deeply implements development strategies of “value-leading, market-oriented, innovation-driven, green and clean, open and cooperation, and talents to revitalise the enterprise”. The Company analyses ESG-related risks and opportunities in the context of macro policies, socio-economic environment, and the strategy, production and operation, and stakeholder engagement of the Company. It also carries out materiality analysis by conducting stakeholder research and expert consultation, to identify key ESG issues for the Company’s development, continuously optimise its ESG governance and risk control, and improve the overall ESG management level.

Targets, Indicators and Review of Progresses

The Company has established an ESG target management mechanism, and set up ESG performance targets in its development plans and key tasks, such as clean energy, climate change, environmental protection, resource utilisation, safe production management, occupational health and safety, anti-corruption and compliance, etc. The Sustainability Committee regularly reviews the progress of the targets and reports it to the Board of Directors. To ensure the achievement of these targets, the Company signs annual performance commitment documents with management staff and subsidiaries to integrate part of key ESG performance indicators as the KPIs for key management staff.

About Us

Sinopec Corp. was established on February 25 in 2000, listed in the Hong Kong Stock Exchange, New York Stock Exchange and London Stock Exchange in October 2000 and the Shanghai Stock Exchange in August 2001. Sinopec Corp. is one of the largest integrated energy and chemical companies in China, with its business scope all over the world, mainly including oil and gas exploration and production, oil refining, oil sales and chemical industry. It is a large oil and gas and petrochemical product manufacturer in China and has a complete sales network of refined oil and chemical products in China.

China Petroleum & Chemical Corporation Board of Directors
March 24, 2023
Recognition and Awards

- The Golden Bauhinia-The Best Listed Company (China Securities)
- Contribution to Sustainable Development Award by 2022 Changqing Awards (CAIJING Magazine)
- Responsible Enterprise in 2022 (China Newsweek)
- Contribution to Sustainable Development Award by 2022 Changqing Awards (China Newsweek)
- The 12th China Low Carbon Model (China Low Carbon Model for the 12th consecutive year, China Newsweek)
- The 2022 Corporate Leadership Award (International Association for Continuing Engineering Education (IACEE))
- 2022 China Corporate ESG Best Social (S) Responsibility Award (Sina Finance)
- Chinese Central State-owned Enterprises ESG - Pioneer 50 (China Social Responsibility 100 Forum)
Corporate Governance

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### Sustainability Management

Sinopec Corp. actively fulfills its sustainable development concept by focusing on the objective of “refuelling for a better life”, establishes and continues to improve ESG governance structure and ESG management policies, and promotes the integration of ESG into corporate strategy, production and operation and corporate culture. The Company keeps strengthening the CSR management and practice, and attaches importance to communications with stakeholders, to promote a win-win situation for the economy, environment and society.

The Company establishes the Sustainability Committee under the Board and promotes the integration of ESG factors into corporate decisions by improving ESG top-level design, providing a solid foundation for the Company’s sustainable development.

### ESG Structure

- **Board of Directors**
  - Nomination Committee
  - Strategy Committee
  - Sustainability Committee
  - Audit Committee
  - Remuneration and Appraisal Committee
- **Corporate Headquarters**
  - Communication
  - Coordination / Implementation
- **HQ Departments / Subsidiaries**
  - Anti-corruption Management System
  - Human Rights Management System
  - HSE Management System
  - Risk Management System

### Key Communication Topics

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<th>Stakeholders</th>
<th>Key Communication Topics</th>
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<tr>
<td>Shareholders and Investors</td>
<td>Business performance, Address climate change, Green-oriented transition of energy, Invest in new energy, Research and innovation, Risk management and operation compliance</td>
</tr>
<tr>
<td>Government and Regulators</td>
<td>Business ethics and anti-corruption, Risk management and operation compliance, Invest in new energy, Address climate change, Ensure energy supply, Taxation and job creation, Research and innovation</td>
</tr>
<tr>
<td>Customers</td>
<td>Quality of products and services, Invest in new energy, Ensure energy supply, Research and innovation, Digital transformation</td>
</tr>
<tr>
<td>Employees</td>
<td>Workplace health and safety, Training and career development, Diversity and equal opportunity, Respect human rights</td>
</tr>
<tr>
<td>Communities</td>
<td>Address climate change, Green-oriented transition of energy, Pollution and emission management, Biodiversity and land use, Resource recycling and reuse, Water resource management</td>
</tr>
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</table>

### Investor Relations Management and Stakeholder Engagement

In accordance with relevant laws, regulations and supervision rules of securities both home and abroad, Sinopec Corp. attaches great importance to investor relations management, and formulates the Sinopec Management Regulations on Information Disclosure and Sinopec Management Regulations on Investor Relations. Conforming to regulatory requirements, the Company maintains positive interaction and communication with investors through the General Meeting of Shareholders, institutional investor meetings, roadshows, investor hotlines, and online platform communication.

The Company strengthens the communications with stakeholders, including government, regulators, customers, employees, communities, etc., and has established various channels for regular and special communication with multiple stakeholders to thoroughly understand their demands and expectations.

- **Board of Directors**
  - Reporting / Approval
  - Decision-making / Feedback
- **Sustainability Committee**
  - Reporting / Approval
  - Decision-making / Feedback
- **Corporate Headquarters**
  - Communication
  - Coordination / Implementation
- **HQ Departments / Subsidiaries**
  - Anti-corruption Management System
  - Human Rights Management System
  - HSE Management System
  - Risk Management System
Materiality Analysis

In 2022, the Company continued to identify, screen, and evaluate sustainability issues. This report discloses and responds to the Company's management and practical performance in addressing the 21 identified issues. The sustainability issues for 2022 remained largely unchanged from those in 2021. The relevant changes come from the in-depth interpretation of the issues based on the national macro-policy guidance, such as “energy supply guarantee and green-oriented transition” and “community communication and engagement”.

We studied macro policies, energy and chemical industry trends and regulatory requirements, and benchmarked with the sustainability performance of industry peers as well as business characteristics and strategic plans of the Company. We reviewed our development strategy and plans, and identified 21 issues of significance both to the Company and its stakeholders.

Identification

We invited both key stakeholders, such as investors and sustainability experts, and employee representatives, to evaluate the identified issues from their perspectives, and constructed a two-dimensional mapping of the issues based on their significance.

Evaluation

Based on the materiality matrix constructed, we ranked the material issues based on their significance, and selected the issues with high significance for focused disclosure in this report.

Screening

<table>
<thead>
<tr>
<th>Issue hierarchy</th>
<th>No.</th>
<th>Material issue</th>
<th>Indicator aspect</th>
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<tbody>
<tr>
<td>Core</td>
<td>1</td>
<td>Risk management and operation compliance</td>
<td>-</td>
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<tr>
<td></td>
<td>2</td>
<td>Invest in new energy</td>
<td>A4 Climate Change</td>
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<tr>
<td></td>
<td>3</td>
<td>Address climate change</td>
<td>A4 Climate Change</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Research and innovation</td>
<td>-</td>
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<tr>
<td></td>
<td>5</td>
<td>Occupational health and safety</td>
<td>B2 Health and Safety</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Energy supply guarantee and green-oriented transition</td>
<td>A4 Climate Change</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Pollution and emissions control</td>
<td>A2 Emissions, A3 The Environment and Natural Resources</td>
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<td></td>
<td>8</td>
<td>Corporate governance</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Business ethics and anti-corruption</td>
<td>B7 Anti-corruption</td>
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<tr>
<td></td>
<td>10</td>
<td>Quality of products and services</td>
<td>B6 Product Responsibility</td>
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<td></td>
<td>11</td>
<td>Digital transformation</td>
<td>-</td>
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<tr>
<td></td>
<td>12</td>
<td>Respect human rights</td>
<td>B1 Employment, B4 Labour Standards</td>
</tr>
<tr>
<td>Important</td>
<td>13</td>
<td>Resource recycling and reuse</td>
<td>A2 Use of Resources</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Employee training and career development</td>
<td>B3 Development and Training</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Support common prosperity</td>
<td>B8 Community Investment</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Biodiversity and land use</td>
<td>A3 The Environment and Natural Resources</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Water resource management</td>
<td>A2 Use of Resources</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Community communication and engagement</td>
<td>B8 Community Investment</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Responsible supply chain</td>
<td>B5 Supply Chain Management</td>
</tr>
<tr>
<td>Regular</td>
<td>20</td>
<td>Taxation and job creation</td>
<td>B8 Community Investment</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Diversity and equal opportunity</td>
<td>B1 Employment</td>
</tr>
</tbody>
</table>
In accordance with the Company Law of the People’s Republic of China, the Securities Law of the People’s Republic of China, the Mandatory Provisions of the Articles of Association of Companies Listed Overseas and other national and regional laws, as well as the provisions on the supervision and administration of securities at both domestic and international levels, Sinopec Corp. has formulated the Articles of Association and other governance documents, to continuously improve the corporate governance system.

The General Meeting of Shareholders of the Company approved and adopted the Articles of Association and the Rules of Procedure of the Board of Directors to establish legally binding provisions on the composition, functions and authorities, rules of procedure, and other related matters of the Board and its committees. The session of the Board of Directors is responsible for reviewing and adopting the working rules and amendments of its committees.

**Diversity of the Board**
The Company has formulated and implemented a Diverse Director Candidate Policy, taking several factors in relation to the diversity of the Board into consideration during Board selections. These factors include professional experience, skills, knowledge, length of service, regions, cultural and educational backgrounds, gender, and age, etc. This policy aims to enhance the sensitivity of the Board to a wider range of risks and effectively improve its scientific decision-making abilities. The present Board of Directors has extensive professional theoretical and practical experience in different industries both home and abroad. Their professional backgrounds include petroleum and petroleum engineering, economics, law, accounting, finance, management, etc. As of the end of 2022, the proportion of female directors in the Company was 10%.

**In accordance with the relevant requirements of China Securities Regulatory Commission, and to ensure that independent directors have enough time and energy-to-effectively perform their duties, the Company stipulates in the Articles of Association that “those who have concurrently served as an independent director in five listed companies” are not eligible to be an independent director of the Company.

In accordance with relevant laws, regulations, and the Articles of Association, all members of the Board are diligent and conscientious in exercising their professional knowledge and skills, standardising the exercise of their functions and authorities, earnestly implementing the resolutions of the General Meeting of Shareholders, and making scientific decisions for the sustainable development of the Company. In 2022, the Company held nine Board meetings with full attendance of the directors, and approved 42 resolutions. Relevant information about the meetings is disclosed on the websites of related stock exchanges and our corporate websites in the form of announcements.
The Company stipulates the terms of appointment and election procedures of independent non-executive directors in the Articles of Association. The number of independent non-executive directors shall account for at least one-third of the Board’s total members. The nominations to express their opinions on the qualifications and independence of the nominees as independent directors, and the nominees shall make a public statement to declare that they do not have a relationship with the Company that would influence their independent and objective judgment. The Company confirms the independence of its independent non-executive directors annually. The Board reviewed and approved the Terms of Reference of the Independent Non-Executive Directors in November 2021. Each independent non-executive director fulfills his or her duties in good faith as required by the Company’s Terms of Reference of the Independent Non-Executive Directors, providing independent opinions on matters such as the Company’s appointment of senior management personnel, related transactions, profit distribution plans and other matters, and safeguarding the legitimate rights and interests of small and medium-sized investors. Independent directors are also granted special powers, such as putting forward specific requirements for audit work, participating in the selection of external auditing agencies, proposing to convene a Board meeting, etc. By the end of 2022, the Company had four independent non-executive directors in the Board, accounting for 40% of its total members. Independent non-executive directors participate deeply in the work of each committee of the Board and contribute to the reform and development of the Company, three of whom serve as chairperson of the Remuneration and Appraisal Committee, the Audit Committee, and the Nomination Committee respectively. The Company has established five committees under the Board, which are the Strategy Committee, the Audit Committee, the Nomination Committee, the Remuneration and Appraisal Committee, and the Sustainability Committee. The committees conduct research on professional matters, and present opinions and suggestions to the Board for decision-making. The members of the Board committees are directors of the Company. The Chairman of the Board serves as chairperson of the Sustainability Committee to promote the in-depth integration of sustainable development with the Company’s operations.

### Board Committees

**Strategy Committee**
- Making recommendations to the Board on long-term development strategies and significant investment decisions of the Company.
- Consists of eight directors, including Chairman of the Board, who serves as chairperson of the Committee, and three independent non-executive directors, who serve as members. In 2022, the Strategy Committee convened one meeting in total, with a 100% attendance rate, and approved the Sinopec’s 2022 Five-Year Plan for Economic and Social Development and the Long Range Objectives through the Year 2023 and the Motion on 2022 Investment Plan.

**Audit Committee**
- Responsible for proposing to hire and replace external auditing agencies, supervising the Company’s internal audit system and its implementation, handling the communication between internal auditing and external auditing agencies, reviewing the Company’s financial information and its disclosure policies, reviewing the Company’s internal control system, etc.

**Remuneration and Appraisal Committee**
- Researching and reviewing the remuneration policies and plans of directors, supervisors and senior managers. Researching the evaluation criteria for directors and senior managers, conducting evaluations and making recommendations.
- Composed of three directors, with an independent non-executive director serving as chairperson of the Committee.
- In 2022, the Remuneration and Appraisal Committee convened one meeting, with a 100% attendance rate, and approved the Report on the Implementation of the Remuneration System for Directors, Supervisors and Senior Managers in 2021.

**Nomination Committee**
- Making recommendations to the Board on the size and composition of the Board, as well as the selection criteria, procedure and candidates for directors and senior management personnel based on the Company’s requirements.
- Composed of three directors, with an independent non-executive director serving as chairperson of the Committee.
- In 2022, the Nomination Committee convened one meeting in total, with a 100% attendance rate, and approved the Motion on the Appointment of Senior Vice President.

**Sustainability Committee**
- Making recommendations to the Board on major decisions related to the Company’s sustainable development. Supervising the implementation and progress of the Company’s sustainable development strategies and plans. Supervising the Company’s commitment and performance on key issues such as climate change, health and safety, and social responsibilities.
- Composed of four directors, including Chairman of the Board, who serves as chairperson of the Committee, and one independent non-executive director.
- In 2022, the Sustainability Committee convened one meeting, with a 100% attendance rate, and approved the 2021 Sinopec Corp. Sustainability Report, the Report on Environmental Protection Work in 2021 and Work Plan for 2022, and the Report on Anti-corruption Compliance Work in 2021 and the Working Arrangements in 2022.

### Board of Supervisors

The Board of Supervisors is accountable to the General Meeting of Shareholders. The Board of Supervisors is responsible for safeguarding the legitimate rights and interests of the Company and its shareholders by inspecting and supervising the legality of the performance of the directors and senior management personnel. To standardise the discussion methods and voting procedures of the Board of Supervisors, and improve the corporate governance structure, the Company has formulated the Rules of Procedure of the Board of Supervisors in accordance with the regulatory laws and regulations of listed companies at home and abroad as well as the Articles of Association, which specifies the powers, composition, meeting system, discussion procedures, information disclosure and other contents of the Board of Supervisors. In addition to the qualifications specified in the Company Law of the People’s Republic of China and the Articles of Association, supervisors of the Board of Supervisors must possess professional knowledge and working experience in legal, accounting or other professional fields to effectively support the stable and orderly operation of the Company.

Supervisors who are not employee representatives of the Company are elected and dismissed by the General Meeting of Shareholders, and those who are employee representatives are democratically elected and dismissed by employees of the Company via employee congress or other means. According to the Articles of Association, employee representative supervisors must constitute at least one-third of the total number of supervisors. By the end of 2022, the Company’s Board of Supervisors consisted of eight members, of whom three were employee representatives, accounting for 37.5% of the Board. In 2022, the Board of Supervisors convened four meetings and deliberated on nine topics, with a 100% attendance rate of supervisors.
Remuneration and Appraisal of Directors and Senior Management Personnel

The Remuneration and Appraisal Committee of the Board of Directors formulates and reviews the remuneration policies and plans for directors and senior management personnel according to the corporate policies and goals set by the Board of Directors. The Committee also takes into account the remuneration level of peer companies, as well as their specific responsibilities and the time they paid, and puts forward suggestions on their appraisal. Meanwhile, the Committee supervises the implementation of the remuneration system, ensuring that neither any director nor their contact person participates in the formulation of their own remuneration.

The remuneration structure of the Company’s senior management personnel includes basic salary and performance bonus, which are implemented in accordance with the Company’s Measures for the Implementation of Senior Management Remuneration. The annual performance bonus is determined mainly based on the appraisal of key performance indicators. The Company discloses the remuneration information of the Board of Directors and senior management in the annual report, which can be found in the Sinopec Annual Report 2022. The Company conducts regular market benchmarking of salary performance, utilizing the results to guide subsidiaries in controlling income distribution gaps between personnel at different positions and levels. This is achieved by referring to labour market prices, improving salary competitiveness for key talents, and establishing a reasonable distribution system.

To enhance its medium and long-term incentive mechanism, the Company has developed comprehensive guidelines for incentives, including the implementation rules of equity and dividend incentives for technology-based enterprises, employee stock ownership, excess profit sharing and joint investment for mixed ownership enterprises. The Company has also established other systems to encourage eligible subsidiaries to expedite the implementation of medium and long-term incentives, thereby effectively stimulating the innovation capacity and efficiency of management personnel and key employees. The Company incorporates ESG indicators into the performance appraisal in the form of obligatory targets, mainly including workplace safety (including but not limited to safety violations, accidents), energy conservation and environmental protection (including but not limited to greenhouse gas emission, pollutant discharges and emissions, energy efficiency management, environmental protection violation), anti-corruption management, operation compliance, risk management, etc. Failure to meet the assessment targets will result in the deduction of the comprehensive appraisal scores. The performance appraisal is tied to the remuneration. For each deduction of 1 point, a certain percentage of the performance bonus, up to 20%, will be deducted. Besides, the Company has set up an incentive mechanism for key ESG indicators, and established a special award for environmental protection and environmental protection, mainly awarded to subsidiaries and individuals who have made outstanding achievements in preventing environmental protection, promoting cleaner production and implementing energy conservation and carbon emission reduction.

Business Integrity and Operation Compliance

Strengthen Compliance Management

The guarantee of integrity and compliance management is the basis of the Company’s stable and long-term development. Sinopec Corp. adheres to the rule of law and continues to improve compliance management policies and systems. The Company has developed compliance-related systems such as Opinions on Strengthening Management in Accordance with the Law, Integrity and Compliance Management Handbook, and Compliance Management Measures, to integrate the compliance into the management system and employee code of conduct. The Company maintains high standards of business ethics, and always implements a “zero tolerance” policy towards corruption and violations of business ethics by strictly eliminating all relevant cases. The Company continuously strives to promote integrity and compliance management and integrity risk prevention and control.

The Company has established the “five in one” law-based governance plan including law, compliance, internal control, risk control and system, and promoted the construction of the compliance risk identification, monitoring, inspection and reporting operation mechanism. In 2022, the Company comprehensively classified and defined the scope of high-risk businesses, high-risk positions and key personnel. Furthermore, the Company has integrated compliance management into internal control, business processes, and individual responsibilities. During the reporting period, the Company had no major legal compliance incidents.

Sinocpet’s Key Compliance Management Measures in 2022

- Formulating and implementing Sinocpet Compliance Management Measures in 2022, as well as special system specifications and business compliance guidelines (issued a total of 12 sets from 2020 to 2022).
- Publishing the revision of Sinocpet Compliance Management Measures in November 2022 to further clarify the division of responsibilities, workflow, operation mechanism and other contents.
- Finishing the pilot construction of the compliance management system in 14 subsidiaries in 2021 to complete the overall construction of the compliance management system and conducting compliance self-inspection via the system in 2022, to rectify relevant problems systematically.
- Formulating and implementing Sinocpet Compliance Management Inspection and Evaluation Guidelines, and evaluated the compliance management of its 134 directly affiliated subsidiaries, completing the construction of the compliance management system for its directly affiliated subsidiaries.
- Identifying compliance risks in the fields of safety in production, ecological environment protection, finance and taxation, bidding, labor and employment, etc.
- Preparing the “two lists”, the compliance responsibility list of key posts and the compliance management list of key business processes. Adding the requirements for compliance risk identification and review in the comprehensive risk management matrix, and preparing the compliance handbooks for different businesses and functional departments.
- Formulating a series of policies and systems in terms of overseas compliance operation, specify 17 aspects and 58 specific provisions on overseas investment and operation behaviour and strictly prevent overseas compliance risks.
- Prioritising the prevention and control of foreign-related compliance risks such as national security review, antitrust, intellectual property, and information disclosure, insisting on holding joint meetings and compiling monthly reports on foreign-related legal compliance risks, and enabling effective risk prevention and response.
- Establishing a laws and regulations database in major overseas compliance areas.
- Making legal compliance training a compulsory course for management training, professional training, new employee training, and foreign-related personnel training, and focusing on strengthening the compliance training for high-risk positions and key personnel.
- Actively promoting compliance culture and integrating the legal compliance concept into the core values of the Company. Setting up the “Civil Code for Better Life” column on the Company’s platform, and sharing explanations of one piece of civil code every day, with a total of 398 articles published and a reading volume exceeding 30 million.
- In 2022, providing compliance training to 330,000 participants, with a coverage rate of 59.13%.

<table>
<thead>
<tr>
<th>Number of Compliance Trainees</th>
<th>Employee Coverage Rate of Compliance Training (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>2020</td>
<td>2021</td>
</tr>
</tbody>
</table>
Employee Codes of Conduct

The Employee Codes of Conduct is formulated in accordance with the law, applying to all employees of the Company. The employees must abide by the laws and regulations of China or the country (region) where the Company operates, as well as the rules and regulations of the Company, including the Employee Codes of Conduct. The Employee Codes of Conduct provides behaviour guidelines in areas such as health and safety, environmental protection, business conduct, ethical standards, workplace protocols, quality requirements, confidentiality, etc., and requires all employees to adhere to relevant rules such as business integrity, anti-discrimination, and information confidentiality. Any employee who violates the Employee Codes of Conduct will face disciplinary measures under the Sinopec Regulations on Punishment for Violations of Disciplines and Rules. In circumstances where the offender may be charged with a crime, the offender will be transferred to the judicial system for legal liabilities.

The Company has developed and continuously optimises the Integrity and Compliance Management Handbook, which focuses on ten key areas such as corporate governance and operation, health, safety and environmental protection, social responsibility and employees’ rights and interests, anti-monopoly and anti-unfair competition, anti-commercial bribery and anti-corruption, consumer rights and interests protection, intellectual property rights and data information, taxation and assets. The Company has specified 54 codes of conduct that the Company should follow and 50 codes of conduct that staff should abide by.

Business Ethics and Anti-Corruption Management

The Company maintains a “zero tolerance” approach to corruption and is committed to improving its anti-corruption and compliance system, as well as the supervision and management procedures. These efforts have enhanced the effectiveness of restriction and supervision on power operations and created a sound working environment with increased employee satisfaction with anti-corruption management.

Anti-Corruption Statement

The Company strictly abides by China’s anti-corruption laws and regulations, the United Nations Convention against Corruption and the anti-corruption and anti-bribery laws applicable to the countries and regions where it operates. The Company complies with the business integrity and anti-corruption regulations and commitments of its business partners and always advocates for an integrity culture.

The Company strictly forbids its subsidiaries and employees, including labours and temporary workers, from giving or accepting bribes, or engaging in corruption, fraud, or monopoly behaviour for any reason, in any form and any location. The Company also requires suppliers, contractors, and service providers to follow these requirements. When conducting business overseas, the Company strictly abides by the principles and regulations of anti-corruption, anti-commercial bribery, anti-fraud, and anti-monopoly.

Anti-Corruption Organisation System

The Board of Directors of Sinopec Corp. is responsible for leading the Company’s anti-corruption efforts, and the Supervision Department of the Company is tasked with organising or coordinating specific anti-corruption work. Each branch (subsidiary) has a special supervisory organisation or post to implement specific anti-corruption measures in accordance with national laws and regulations as well as the Company’s regulations. The Company continues to improve its internal supervision system, ensuring that directors, supervisors, senior management personnel, and all institutions and personnel are properly supervised while exercising their management power. The Company also regularly conducts research and deploys key supervision tasks. In March 2023, the Company’s anti-corruption and compliance management and its performance in 2022 was reviewed by the Sustainability Committee of the Board.

Anti-Corruption System

The Company has established and continued to improve the anti-corruption policy and system, which fully cover all its affiliated institutions, businesses and personnel, providing a solid guarantee for the Company’s long-term and stable development. In 2022, the Company introduced several relevant systems, including the management regulations for business enterprises operated by relatives of management personnel, the interview mechanism for daily supervision, and the procedures for recording and reporting management personnel intervention in major matters. Management personnel and employees who are also CPC members must strictly abide by party regulations, such as the CPC Code of Integrity and CPC Self-Discipline, the CPC Regulations on Anti-Corruption, and other regulations, and are subject to relevant supervision accordingly.

The Company incorporated the anti-corruption assessment into the performance assessment system. The results of which are tied to salary, position, and rank adjustments. The assessment indicators mainly include three aspects: the performance of anti-corruption responsibilities and support for supervision institutions by the management; the performance of supervision; the performance of accountability.

Main existing anti-corruption policies of Sinopec Corp.

• Regulation on the Punishment of Employees Who Violate Disciplines or Regulations
• Supervision and Discipline Measures of Discipline Inspection and Supervision Institutions (Trial)
• Opinions on Strengthening Daily Supervision of Discipline Inspection and Supervision Institutions (Trial)
• Implementation Measures on Accountability for Non-compliance in Investment Management
• Regulations on Working Procedures for Accountability Investigation (Trial)
• Measures of Disciplinary Inspection and Supervision Agency for Handling Reports and Accusations
• Management Regulations on Business Enterprises Run by Relatives of Management Personnel (2022)
• Measures of Talk for Daily Supervision (2022)
• Recording and Reporting Procedures for Management Personnel Intervention in Major Matters (2022)
Anti-Corruption Risk Assessment

To ensure effective risk management, the Company considers prevention and control of integrity risk as an essential component of its risk management plan. This includes conducting regular comprehensive risk identification, with a focus on anti-corruption and compliance risks. The Supervision Department regularly reports the overall state of anti-corruption and important matters to the Sustainability Committee and the Board. The Company prepares major risk management reports every quarter. According to the risk assessment in 2022, the Company’s integrity risk is controllable, without significant changes in risk levels.

Key Efforts in 2022

Strengthening anti-corruption education comprehensively

The Company conducted the Anti-Corruption and Integrity Education Month event, organised cautionary education by using typical cases in the Company, and set up columns in the Company’s internal media to strengthen publicity and education, guiding all employees to consciously keep integrity, and creating a strong atmosphere of strict management and integrity. The Company integrated anti-corruption education into business training, defined specific contents in the induction training for new employees, and provided relevant education and training to employees at all levels, achieving a training coverage rate of 100%. Management personnel of all levels are also given due attention in terms of anti-corruption education, with centralised cautionary education, interviews, and case studies carried out to guide and urge them to follow business ethics. In 2022, the headquarters and subsidiaries of the Company provided 1,633 anti-corruption related courses, totaling 35,964 hours and maintained a 100% anti-corruption training coverage rate.

Continuously improving the anti-corruption and compliance systems

We have made continuous efforts to strengthen the construction of internal control, risk control, and compliance management systems, focusing on the restriction and supervision of power operations. We reviewed our internal control system based on the latest requirements of anti-corruption and compliance as well as the problems found during internal audits and external inspections, reducing limitations on discretion and promoting standardised power operation through authoritative guidance. We have also made timely revisions and improvements to our investment and operation management system, as well as the management personnel’s benefits and business expenses systems, to reduce the risk of integrity. We also revised and upgraded the system for handling reports and accusations, which serves to safeguard the legitimate rights and interests of our employees while ensuring that investigations are conducted in accordance with regulations and disciplinary procedures.

Deeply conducting daily supervision and special governance

We have clarified the responsibilities of the management, supervision institutions and business departments (subsidiaries) at all levels to carry out normalised daily supervision through coordination, prompt identification and resolution of operation and management issues, and safeguard the rights and interests of shareholders and the public. Based on the actual situation of the Company and the needs of supervision, we strengthened the power operation through authoritative guidance. We have also made timely revisions and improvements to our investment and operation management system, as well as the management personnel’s benefits and business expenses systems, to reduce the risk of integrity. We also reviewed and upgraded the system for handling reports and accusations, which serves to safeguard the legitimate rights and interests of our employees while ensuring that investigations are conducted in accordance with regulations and disciplinary procedures.

Strictly investigating and dealing with corruption

The Company maintains a strict “zero tolerance” stance towards corruption. Drawing lessons from past corruption-related cases, the Company has conducted root cause analysis with relevant subsidiaries, strengthened employee education, management and supervision, and improved systems and procedures to prevent the recurrence of similar problems. In 2022, a total of 27 people were punished for violating the Company’s anti-corruption rules, and the court concluded three corruption lawsuits.

Indicators

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees participated in anti-corruption training (10,000 person-times)</td>
<td>105.2</td>
<td>116.7</td>
<td>119.5</td>
</tr>
<tr>
<td>Coverage of anti-corruption training (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of disciplinary legal education (10,000)</td>
<td>3.1</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Number of employees participated in CPC integrity and anti-corruption trainings (10,000 person-times)</td>
<td>86.2</td>
<td>86.9</td>
<td>88.2</td>
</tr>
<tr>
<td>Total number of public entries in the Business Disclosure Information System (10,000)</td>
<td>533.78</td>
<td>444.09</td>
<td>489.37</td>
</tr>
</tbody>
</table>

Anti-Corruption and Compliance of Supply Chain

The Company has developed a series of systems related to the anti-corruption code of conduct for contractors and suppliers, including Management Regulations on the Letter of Responsibility for Business Ethics, Management Measures for Market Integrity System of Construction Projects, Management Regulations on Bidding and Submission of Tendering for Construction Projects, Management Measures for Market Procurement and Resources Supply, etc. In 2022, the Company expanded its focus on integrity control by adding a dedicated section in the Overall Control Plan of Engineering Construction Projects, the Project Management Handbook and the Integrity Control of Engineering Construction (Template). The Company clearly embedded integrity risk control into key project stages such as project bidding, project change, contract settlement, quality and safety management, contractor management, acceptance of projects, and on-site inspection throughout the project preparation, implementation, trial production and acceptance. We determine the risk level according to the types and causes of integrity risks and formulate effective preventive measures based on factors such as system provisions, management responsibilities, working standards and post features.

The Company requires all suppliers and contractors to sign a Letter of Responsibility for Business Ethics (including those registered on the EPEC online platform) to clarify the Company’s requirements for business ethics and anti-corruption. The Letter of Responsibility for Business Ethics is legally binding as an appendix to the procurement contract and agreement. Meanwhile, the Company entrusts a third-party commercial credit evaluation agency to conduct corporate credit certification for suppliers; regularly monitors the credit changes and abnormal operation of its suppliers and contractors using big data technologies, and tracks their operations for any administrative sanctions or penalties for faith-breaking. By doing so, we are able to promptly identify any potential risks associated with our suppliers and contractors, and proactively avoid business risks.

The Company has established explicit handling measures effectively address any violations of anti-corruption regulations. Depending on the severity of the circumstances, the measures may range from issuing a warning, to suspension or termination of business cooperation, placing the offender on the “blacklist”, and reporting to the judicial authorities for criminal prosecutions, etc. For registered suppliers of the EPEC platform who violate relevant regulations, the Company will also release the handling results on the platform.

In 2022, 2,937 suppliers passed the corporate credit certification, bringing the accumulative number to 10,327. In 2022, six suppliers were penalised for violating the Company’s regulations on business ethics.

Guangdong Company builds the first “Integrity Culture Demonstration Station” and organises employees to learn and visit the Integrity Culture Wall
Petition and Whistle-Blowing Mechanism

- The Company has set up unimpeded petition and whistle-blowing channels, including mail, phone, email and face-to-face reports.
- Reviewing materials. Review the written materials of allegations received to master the basic information of the whistle-blower, major problems, the nature of the problems, etc. Summarising and registration. Summarise the main contents of the complaint materials according to relevant regulations and enter them into the petition and whistle-blowing management system.
- Handling procedures. The handling personnel shall put forward suggestions for handling the problems reflected in the complaint materials, and submit them level by level to relevant responsible person of the supervisory authorities for approval before handling.
- Statistical analysis. The Complaint Management Department regularly makes statistics and comprehensive analysis of the handled data.
- The Company fully complies with applicable national laws and regulations on whistle-blower protection, regards the protection of whistle-blowers’ privacy as a significant responsibility, enhances the internal confidentiality mechanism and formulates the Company’s approaches to accusations.
- The Company allows anonymous reporting and stipulates that the whistle-blower’s handwriting, network IP address, and other information shall not be investigated without authorisation. If the whistle-blower is suspected of making false accusations, framing, or other violations of discipline and laws, the investigation of his identity should follow the approval process. Those who intentionally disclose the whistle-blower’s information or retaliate against the whistle-blower will face serious consequences once verified.

Risk Management and Internal Control

Comprehensive Risk Management

Risk Management Framework

- The Audit Committee, set up under the Board of Directors, is responsible for reviewing risk management and reporting to the Board. The Committee evaluates the Company’s annual comprehensive risk management report and conducts timely hearings on significant internal control and risk problems.
- The Company has developed its relevant departments to manage risks linked to environmental protection, addressing climate change, production safety, finance, legal affairs, anti-corruption, and overseas security. Each department collects risk information through multiple channels, conducts research and judgment, and then takes effective measures to actively deal with risks.
- In accordance with the requirements of comprehensive risk management, subsidiaries and professional companies of Sinopec have set up their comprehensive risk management leading groups to promote the effective implementation of risk management.

Positive Achievements in Annual Risk Identification and Assessment

- Questionnaire investigation. We organised 2,576 employees from the headquarters and subsidiaries to carry out risk assessment from the two dimensions of risk occurrence possibility and impact level.
- Specific analysis and research. We entrusted the internal and external consulting agencies to identify, study and analyse the main risks faced by the Company in 2023, and compiled a risk assessment report.
- Collecting risk reports. We collected the major risk reports of the headquarters and subsidiaries to carry out risk assessment from the two dimensions of risk occurrence possibility and impact level.

Intellectual Property Protection

The Company strictly abides by the Civil Code of the People’s Republic of China, national criminal law, tort liability law, patent law, trademark law, copyright law, anti-unfair competition law, and other relevant laws and regulations related to intellectual property protection, fully undertaking intellectual property protection work. Based on these legal norms, the Company formulates and continuously amends relevant policies and systems, such as the Sinopec Measures for Patent Management and Opinions on Strengthening the Legal Protection of Intellectual Property Rights to provide clear implementation regulations on the Company’s patent management and the legal protection of intellectual property rights.
The Board of Directors is responsible for establishing and optimising the Company’s internal control system and ensuring its effective implementation. The Audit Committee of the Board is tasked with supervising and evaluating the company’s internal control. The Company established a comprehensive risk management leading group to promote the construction of the internal control system, and set up a specialised agency at the headquarters to organise and implement work related to internal control, and corresponding organisations undertook the daily internal control management at each branch or subsidiary.

The Company’s internal control system is supported by three lines of defence, including daily supervision by business departments, special supervision by internal control departments, and comprehensive supervision by audit, patrol inspection, and discipline inspection and supervision departments, achieving full coverage of annual self-assessment of all subsidiaries. In addition, the Company has integrated the daily work of internal control, the inspection and evaluation of internal control, and the implementation of rectification into the annual performance appraisal system of management at all levels, assessed and provided cash incentives for the performance of annual internal control.

The Company’s internal control system is formulated in the form of internal control systems for subsidiaries (Framework). The subsidiaries are required to follow the framework requirements of the headquarters and develop detailed rules for the implementation of internal control based on their actual situation. The internal control Handbook for the Headquarters covers the general principles, company-level system, business-level system, authoritative guidelines, inspection, evaluation and assessment methods, etc. Among them, the company-level system includes four parts: internal environment, risk assessment, information and communication, and internal supervision. The business-level system covers 24 categories such as capital activities, procurement, and production. The Company established a mechanism for amending the internal control system to identify defects in the system and relevant processes and dynamically update and adjust the system according to policy requirements, market changes, new business formats, and other factors.

In 2022, KPMG, an external auditor, conducted internal control audits of 43 subsidiaries of the Company, covering monetary capital management, asset management, project management, information management systems and other businesses. The Company promptly addressed and corrected any issues uncovered during the audit process, and no major and prominent defects have been found during the auditing.

Internal Control Management

Implement a two-level internal control system. The Company has formulated the internal Control Handbook for the Headquarters and the Internal Control Handbook for Subsidiaries (Framework). The subsidiaries are required to follow the framework requirements of the headquarters and develop detailed rules for the implementation of internal control based on their actual situation. The internal Control Handbook for the Headquarters covers the general principles, company-level system, business-level system, authoritative guidelines, inspection, evaluation and assessment methods, etc. Among them, the company-level system includes four parts: internal environment, risk assessment, information and communication, and internal supervision. The business-level system covers 24 categories such as capital activities, procurement, and production. The Company established a mechanism for amending the internal control system to identify defects in the system and relevant processes and dynamically update and adjust the system according to policy requirements, market changes, new business formats, and other factors.

Stimulating Innovation Vitality

The Company continues to improve the support and guarantee mechanism for tackling key technological problems, and continues to smooth the path of technological achievements transformation. We organised to formulate the Implementation Plan of the “Being the First to Accept Challenges” and “Horse-Racing” New Science and Technology Projects, launched the first batch of the projects, and built a competitive mechanism for tackling key core technologies, to unlock innovation potential and stimulate innovation vitality within the Company.

The Company continues to strengthen the construction of the basic research capacity system. We organised the preparation of medium and long-term plans for basic research, to further strengthen the top-level design and system layout of strategic basic research. Initiatives such as the “Programme for Supporting Young Doctors” encourage innovation to support and lead high-quality development.

Hydrogen Energy Industrial Chain

The Company has accelerated energy transformation and industrial upgrading. It has comprehensively promoted the construction of the entire hydrogen energy industrial chain, achieving breakthroughs in fields such as hydrogen refuelling stations, hydrogen production technology, hydrogen fuel cells, and hydrogen storage materials. The self-developed megawatt Proton Exchange Membrane (PEM) electrolytic water hydrogen production device was successfully launched in Yanshan Petrochemical Company, producing qualified high-purity hydrogen. It marked the industrial application of Sinopec’s complete technology of PEM electrolytic water hydrogen production. We developed a complete set of hydrogen purification technologies for fuel cell vehicles, and built a 3000Nm³/h purification unit and a 1000-tonne primary hydrogen supply station. Through tackling key challenges, we have also developed a standard system for the design, construction, and operation of hydrogen refuelling stations and oil and hydrogen co-construction stations, which has supported the commercial operation of five highly integrated hydrogen refuelling stations and oil and hydrogen co-construction stations. We also built six regional hydrogen detection and quality inspection labs, and obtained the first national hydrogen detection CMA certification and CNAS approval, providing strong support for building China’s leading hydrogen energy company.

In response to the fast-growing hydrogen energy industry and the rising need for large-scale hydrogen storage, Sinopec Corp. has undertaken engineering and technical research on ultra-high-strength high-pressure hydrogen storage materials and equipment, as well as a large-scale shell vacuum insulated liquid hydrogen spherical tank. This effort lays the groundwork for storage tank expansion tests and relevant industrial applications, and provides robust technological support for Sinopec’s development of green hydrogen energy.

Core Technologies Breakthrough

The Company maintained its focus on core technologies and achieved significant advancements in various fields of technology research and development in 2022.

Biomass Energy

In May 2022, China’s first 100 thousand tonnes/year bio-jet fuel production unit was successfully put into large-scale trial production and won the first global RSB sustainable bio-jet fuel certificate. In Asia, the first commercial cargo flight in China using sustainable jet fuel completed its first international flight, marking the shift from large-scale production towards large-scale application of China’s bio-jet fuel by independent research and development. Compared with those of traditional petroleum-based jet fuel, the carbon emissions of bio-jet fuel in the whole life cycle can be reduced by more than 50%.

Technological Innovation

Sinopec Corp. is committed to building itself into a technology-leading enterprise, and remains dedicated to the implementation of its innovation-driven development strategy, striving to achieve breakthroughs in core technologies, strengthening major basic research at the forefront, and promoting reform of the technological system and mechanism. This includes a continuous effort to improve the efficiency of scientific and technological innovation to support and lead high-quality development.
### High-End Materials

The Company has developed a new process of homogeneous bulk olefin polymerisation, built a 1000-tonne high-specified polybutene-1 industrial demonstration unit, and achieved stable operation at full load. Many brands of product have reached the level of similar international products. We conquered the industrial technology of 48K large tow carbon fibre and realised the localisation of key equipment. The 10000-tonne industrial plant (Phase 1) has been completed and put into operation. The product performance has reached the international advanced level, and the composite materials have been used for demonstration application. It marked the large tow carbon fibre’s entry into the stage of large-scale production and application.

### Degradable Plastic

We formulated the processing technology and product formula of bio-degradable materials with independent intellectual property rights. Bio-degradable materials such as PBST, PBAT and PBSA have been introduced to the market. Ecorigin, a bio-degradable material brand featuring technical innovation with industrial influence has been established. In August 2022, the bio-degradable material PBAT passed the review of DIN CERTCO, and obtained the certificate of PBAT bio-degradable industrial compost and the passport for product export to the EU. The construction of the PBTbio-degradable material flexible transformation project, with a capacity of 120,000 tonnes of PBT and 60,000 tonnes of bio-degradable material, began in October 2022.

### CCUS Technologies

The Company continued to increase investment in CCUS technology research and development, accelerated the development of high-efficiency carbon capture solvent, and completed the pilot experiment of new high-efficiency ionic liquid capture solvent, reducing the average energy consumption by 40%, and reducing cost by about 20%. The Company built the first domestic industrial demonstration device of 50,000 km2/d Membrane gas separation processes for CO2 capture with independent intellectual property rights, reaching an internationally advanced level of CO2 capture with a product gas CO2 concentration of over 96% after evaluation by third-party testing institutions and industrial experts.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patent applications filed in the year</td>
<td>6,808</td>
<td>8,045</td>
<td>8,687</td>
</tr>
<tr>
<td>Number of patent applications granted in the year</td>
<td>4,254</td>
<td>4,853</td>
<td>5,289</td>
</tr>
<tr>
<td>Cumulative number of patents granted globally</td>
<td>38,695</td>
<td>43,563</td>
<td>49,852</td>
</tr>
<tr>
<td>R&amp;D investment (RMB 100 million)</td>
<td>152</td>
<td>211</td>
<td>225</td>
</tr>
</tbody>
</table>

### Enhancing External Cooperation

Sinopec Corp. took proactive steps to integrate into the global innovation network, actively implement the “going global” strategy and enhance its innovation capabilities in the open and cooperative innovation ecosystem. The Company has set up a number of overseas R&D centres, communicated and cooperated with local enterprises to carry out scientific research and provide technical support. The Company enhances the cooperation with internationally renowned research institutions, and, by the end of 2022, has successively joined the International Institute of Synthetic Rubber Producers (IISRP), International Union of Pure and Applied Chemistry - Committee on Chemistry and Industry (IUPAC-COCI), Society of Petroleum Engineers (SPE), Society of Exploration Geophysicists (SEG), American Fuel & Petrochemical Manufacturers (AFPM) and actively participated in a variety of related activities to provide support for the construction of technology-leading company.

### Digital and Intelligent Development

Sinopec Corp. focuses on energy transformation and industrial upgrading, and vigorously promotes digital and intelligent transformation. The new model of “data-platform + digitalization” has proven to be highly efficient in supporting the Company’s management innovation, business innovation and commercial model innovation.

In 2022, the Company achieved a leading position in the domestic industry with regard to its efforts towards digital and intelligent transformation. For example, our practice of business-driven digital transformation won the first prize in the National Enterprise Management Modernisation Innovation Achievement Award. The integrated innovation platform for the steel and iron, and management platform for the high quality 2022 IDC China Future Enterprise Award, the intelligent contract service won the title of 2022 Pioneer of Industrial Intelligence, and the data service platform won the DAMA China Award for Best Product in Data Management.

- The in-depth application of financial digital and intelligent analysis, optimised management and control of investment integration, integrated big data of industrial auditing, and intelligent operation centre has effectively improved the Company’s fine management level and risk prevention ability.
- Deepen the application of the intelligent operation centre at the headquarters, strengthen the collection and value mining of professional data such as procurement, production and sales, promote the application of models, and effectively support the operation analysis and plan optimisation of cross-business sectors.
- Accelerate the digital and intelligent transformation in oil and gas production, refining and chemical production, oil sales and other business sectors, including online intelligent applications, the building and upgrading of intelligent factories, and the new fuel card systems. In 2022, Beijing Oil Products Company and Hubei Oil Products Company provided “drive-by, window-up, touch-free” refuelling and hydrogenation services for the Winter Olympic motorcade.
- Significantly improve the informationisation level of safety and environmental protection management. The accident rate of hazardous chemical transportation has decreased significantly. Achieve company-wide visual supervision of environmental protection and emissions. 40 subsidiaries have launched the carbon asset system, with the carbon mapping granularity refined to the device-level, reducing the carbon mapping period by half.

- Undertake more than 10 national pilot demonstration projects, including the “Industrial Internet + Production Safety” programme which has successfully completed 7 pilot projects. The “Digital twin of Intelligent Ethylene Plant” programme has been selected as one of the top ten application scenarios by the Ministry of Science and Technology of the People’s Republic of China. In addition, the application of 5G+AI and other new technologies has effectively improved the level of safety, environmental protection, and production and operation.
- The Hohhot data centre was completed and put into operation. Our backbone network was upgraded to enhance the capability of mutual backup of applications, cloud resources, and video conferencing support.
Addressing Climate Change

- Climate Strategies and Actions 31
- Reducing GHG Emissions 37
- Promoting Energy Transition 43
Sinopec Corp. actively implemented the major strategic decisions and arrangements of the central authorities and national governments on carbon peaking and carbon neutrality. The Company has made the Sinopec Action Plan for Carbon Peaking by 2030 as the main task in the carbon peaking and carbon neutrality work, formulated annual carbon peaking plans, and fully implemented the “Eight Actions for Carbon Peaking” and 33 practical measures to actively mitigate and adapt to climate change. The Company also discloses its climate change management strategies and progress in line with the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Climate Strategies and Actions

The Company is committed to fully integrating climate change into its strategic planning, corporate governance system, comprehensive risk management system as well as daily operation and management. The Company has established a three-level climate governance structure, with a clear division of responsibilities at the “Board of Directors - Management Level - Executive Body”. This structure lays a solid foundation for improving climate governance and coping capacities.

Climate Governance

Board of Directors

- Strategy Committee
  - Responsible for reviewing development plans, policies, and systems related to climate change, and providing the Board with suggestions on the strategic positioning and industrial layout of the Company.
  - Responsible for reviewing and supervising the development plan and business performance in natural gas, hydrogen energy, renewable energy, energy conservation and emissions reduction.

- Audit Committee
  - Responsible for identifying, assessing, and managing the risks and impacts related to climate change and ecological environment protection, and reviewing the list of major risks and annual evaluation reports.

- Sustainability Committee
  - Responsible for supervising the commitment and performance of the Company on key issues such as climate change, and providing suggestions to the Board.
  - Responsible for reviewing the Company’s annual sustainability report and supervising climate-related information disclosure of the Company.

Management level

Comprehensive Risk Management Implementation Leading Group

- Responsible for identifying risks and opportunities related to climate change and relevant countermeasures under the comprehensive risk management system, and reporting to the Board, the Audit Committee, and the Sustainability Committee.

Executive Body

- Headquarters and affiliated enterprises
  - Responsible for implementing the Company’s carbon peaking and carbon neutrality strategies, and formulating department/subsidiary level carbon peaking and carbon neutrality targets and action plans; and

- Responsible for implementing the Energy Efficiency Improvement Plan and the Green Enterprise Action Plan, and strictly managing greenhouse gas emissions and energy efficiency targets.

- Responsible for the implementation of carbon asset management, carbon mapping, and carbon audits, establishing a dedicated carbon trading team to ensure the fulfillment of the carbon quota of the Company.
## Analysis of Climate-Related Risks

<table>
<thead>
<tr>
<th>Type of Risks</th>
<th>Risk Descriptions</th>
<th>Countermeasures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Risks-Acute Risks</td>
<td>• Increasing frequency of extreme weather events such as rainstorms, typhoons and floods cause damage to manufacturing facilities, transportation difficulties, supply chain disruptions and other risks, leading to decreased operating capacity, increased operating costs, and reduced profitability. • Extreme weather events may cause secondary disasters and production accidents, posing threats to both personal safety and ecological environment and causing economic losses.</td>
<td>• Monitor extreme weather effectively and implement early warning systems, formulate disaster emergency plans according to local conditions, carry out disaster preparedness and emergency drills regularly, and set up materials reserve for disaster prevention and mitigation. • Regularly inspect the production and operation facilities and upgrade them as needed to improve disaster protection levels.</td>
</tr>
<tr>
<td>Physical Risks-Chronic Risks</td>
<td>• Changes in rainfall, extreme fluctuations in climate patterns and long-term average temperature rise may increase construction costs (such as due to extended construction period, early damage of equipment, etc.), and insurance costs for equipment and personnel. • An increase or decrease in the average temperature may increase operating costs, such as increased demand for equipment cooling water, and increased demand for cooling and heating of production and office premises.</td>
<td>• Encourage the subsidiaries to identify the climate vulnerability of their operating regions and consider climate risks in infrastructure construction. • Continue to strengthen energy conservation and emission reduction efforts, improve energy, water and other resources efficiency, and reduce dependence on natural resources. • Conduct extensive climate change-related education for stakeholders and advocate the implementation of low-carbon and environmental protection concepts.</td>
</tr>
<tr>
<td>Transition Risks-Policy and Legal Risks</td>
<td>• Under the background of the carbon peaking and carbon neutrality goals, the government is shifting the focus of the &quot;dual control&quot; mechanism from energy consumption to the total amount and intensity of carbon emissions. More stringent laws and regulations will be imposed to limit or reduce carbon emissions, and promote the green and low-carbon transformation of enterprises. This could bring compliance risks to high-emission and high-carbon consumption industries, and increase the Company’s investment in energy conservation and emission reduction, leading to an increase in compliance operating costs. • The national carbon emission trading market has established and implemented a carbon quota system. In the future, key emission industries such as the petrochemical industry may be included in the system, which could potentially increase the Company’s carbon emission costs for compliance. • The government is implementing stricter regulations to reduce methane emissions and venting and leaks. As a result, the Company may need to invest in improving its methane emission monitoring, reporting and verification system, increase additional facilities and technical investment, and take more effective measures to minimise methane leakage. This may lead to an increase in the Company’s operating costs.</td>
<td>• Promote the Green and Clean strategy, deepen the implementation of the Energy Efficiency Improvement Plan, and strictly control the energy consumption level; increase the application of Carbon Capture, Utilisation, and Storage (CCUS) technology and other emission reduction technologies and continue to promote clean utilisation of fossil energy, scaling-up of clean energy, and low-carbon production processes. • Strengthen the monitoring of greenhouse gas (GHG) emissions, and conduct thorough inventory and verification of carbon emissions across subsidiaries; actively participate in national-level carbon trading, optimise the trading strategies, and meet carbon quota obligations. • Conduct methane emission detection in a normalised manner, strengthen methane recycling and reduce methane emissions.</td>
</tr>
</tbody>
</table>
Climate Action Strategies

Adopting Green and Clean as one of the six strategies of the “14th Five-Year Plan”, the Company places emphasis on transitioning from traditional energy to clean energy sources. The focus is on ecological priority, green transition, and clean development, and promotes the clean utilisation of fossil energy, scaling-up of clean energy, and low-carbon production processes. The goal is to lower energy consumption and emission intensity, firmly moving towards the targets of “net zero emissions”, and making the Company a benchmark for green, clean, and low-carbon development.

Sinopac’s Carbon Peaking and Carbon Neutrality Strategic Road Map

Accelerate the construction of a clean and low-carbon energy supply system
- Accelerate the development of new energy business with hydrogen energy as the core, take the development from hydrogen to hydrogen as the highest priority, and accelerate the development of China’s leading hydrogen energy company with a hydrogen energy industrial chain.
- Promote large-scale development of bio diesel and bio jet fuel, and stand at the forefront of clean and low carbon fuel industry.
- Continue to expand new, green, and low carbon infrastructure and services, such as charging and replacement power stations and hydrogen refuelling stations, and help the development of low carbon transportation and hydrogen energy transportation.
- Actively develop photovoltaic and wind power businesses, promote the in-depth integration between wind and solar “green electricity” and traditional businesses, and continue to increase the utilisation of “green electricity”.
- By 2025, the supply capacity of new energy will strive to reach the equivalent of 10 million tonnes of standard coal.

Lead the green and low-carbon circular development of the industry
- Accelerate industrial structure adjustments, retire low production capacity with high energy consumption and low-energy efficiency, and promote industrial upgrading and efficiency improvement.
- Actively develop molecular oil refining, green hydrogen refining, and continue to increase the utilisation of low-carbon raw materials.
- Accelerate the pace of natural gas and electricity replacement for coal, to promote a low-carbon energy structure.
- Strengthen the recycling of waste oil and grease, waste plastics, and waste rubber products, to encourage the recycle and reuse of resources.
- Adhere to the principle of prioritising conservation, continue to implement the Energy Efficiency Improvement Plan, and comprehensively implement the Energy Efficiency Leadership initiative to achieve global leadership in the energy efficiency of key products.

Promote breakthroughs in green and low-carbon technologies
- Increase investment in R&D, develop complete sets of low-carbon processes and technologies, and promote the green and low-carbon transition of the petrochemical industry.
- Promote technological R&D and industrial applications for using carbon dioxide as raw material to produce methanol, lithium battery electrolyte, degradable plastics, and other chemical products and high-end materials.
- Continue to research and promote CCUS technologies, and leveraged the integrated operation of the Company to build a million-tonne whole-industrial chain CCUS demonstration project.

Actively participate in the global response to climate change
- Carry out methane emission reduction actions, promote the detection and repair of methane leakage, increase the recovery and utilisation of venting gas, and enhance the transformation towards closed process.
- Establish an internal carbon price mechanism, integrate the green and clean strategy into the whole process of the Company’s development and operation, and reduce the carbon footprint of the entire product life cycle.
- Actively carry out exchanges and cooperation with international petroleum corporations on green and low-carbon technologies, standards, and services to contribute the corporate practices to China’s participation in global climate governance.

Indicators and Targets

In the Green Enterprise Action Plan, Sinopac Corp. has set greenhouse gas emission reduction targets for the period of 2018 to 2023, and was well on track to meet the greenhouse gas emission reduction targets in 2022.

<table>
<thead>
<tr>
<th>Targets</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Company strives to achieve these goals by 2023</td>
<td></td>
</tr>
<tr>
<td>Reduce carbon dioxide emissions 12.6 million tonnes</td>
<td>In 2022, recovered carbon dioxide 1.534 million tonnes</td>
</tr>
<tr>
<td>Store carbon dioxide each year 0.3 million tonnes</td>
<td>Used carbon dioxide for oil displacement 0.657 million tonnes</td>
</tr>
<tr>
<td>Recover carbon dioxide each year 200 million cubic metres</td>
<td>From 2018 to 2022, totally reduced carbon dioxide emissions 19.68 million tonnes</td>
</tr>
<tr>
<td>Recovered methane 834 million cubic metres</td>
<td>In 2022, implemented new energy projects, saving 550,000 tonnes of standard coal of energy, equivalent to a reduction of 1.44 million tonnes of carbon dioxide emissions</td>
</tr>
</tbody>
</table>

Carbon dioxide capture (thousand tonnes) and Methane recovery (million cubic metres)
Reducing GHG Emissions

Carbon Emission Monitoring and Management

The Company organizes a special team to monitor and control GHG emissions, and it regularly assesses the carbon emissions of each subsidiary and establishes a scientific carbon asset management system. The Company has reduced GHG emissions by implementing "energy efficiency improvement" projects, researching and applying the CCUS technology, controlling methane emissions and implementing measures to strengthen the "dual control" management of the amount and intensity of energy consumption.

The Company continues to carry out GHG inventory audits and verification, which encompasses all production units and subsidiaries. Sinopec's Energy Conservation Monitoring Centre conducts internal auditing and verification of relevant data to ensure accuracy. The Company continues to optimise the accounting modules of the carbon asset management information system, streamline data collection processes, and complete the group-wide carbon audit and carbon verification of all devices, laying a solid foundation for formulating emission control measures.

Direct GHG emissions (Scope 1) and indirect GHG emissions (Scope 2) have been included in the scope of the audit process. The carbon emission accounting shall comply with the ISO14064-1:2006 standards, the China Oil and Gas Production Enterprises Greenhouse Gas Emission Accounting Methods and Reporting Guidelines, and the China Petrochemical Enterprise Greenhouse Gas Emission Accounting Methods and Reporting Guidelines.

The plastic film plays a great important role in the agricultural production process in terms of temperature control, moisture retention and moisture preservation. To prevent the "white pollution", caused by the extensive use of plastic film, Sinopec Corp. leveraged the advantage of its "production, promotion, research and utilization" integration and successfully developed a green agricultural film special material with low environmental pollution, strong weather resistance, affordable price, and recyclability, which not only increased production and income for farmers, but also promoted the local to achieve green and low-carbon development. Sinopec Corp. also made full use of its own advantages in R&D capacity and resource supply to guide local recycling enterprises to process the residual films by "film-residue separation, granulation, and reprocessing", making the films into reusable recycled materials. Through the whole process of "raw material supply - film production - film paving - residual film recovery - recycling of recycled materials", the Company has formed a set of economic and pragmatic demonstration schemes for residual film pollution control, realised the cycle of "plastics - applications - raw materials - plastics", and significantly reduced the carbon footprint of the products.

The project not only helped the local to achieve green and low-carbon development, but also effectively promoted the increase of production and income for farmers. Since the establishment of a thousand-mu demonstration cotton field with high-strength weather-resistant film in Shaya County, Aksu City in April 2022, the Company has been tracking the operation of the cotton field together with local agricultural experts. During this period, the record cotton seedlings emerged neatly and kept growing well. The high-strength weather-resistant film paved was also in excellent condition, with almost no cracks. After cotton-picking, the head of the local cooperative said that the yield of the demonstration field was significantly better than that of the nearby fields, and the cotton baled earlier and white in colour with excellent quality. The yield per mu of the demonstration field has reached about 480 kg, a new high in recent years.

Energy Conservation

The Company formulated and issued the 2022 Energy and Environment Responsibility Commitment, implementing the target of "strictly controlling the total energy consumption and improving energy efficiency". The Company dynamically tracked the energy intensity and total consumption control indicators of its subsidiaries, implementing various energy efficiency improvement projects, and successfully developed a green agriculture film material with low environmental pollution, strong weather resistance, affordable price, and recyclability, which not only increased production and income for farmers, but also promoted the local to achieve green and low-carbon development. In addition, the Company organised subsidiaries to actively participate in the selection of Energy Efficiency "Front-runner" Enterprises organised by national and industrial associations. In 2022, several subsidiaries won the title of Energy Efficiency "Front-runner" Model Enterprises of the petroleum and chemical industry.

In 2022, the Company revised the Green Enterprise Construction and Re-Check Index (2022 version), conducted quantitative evaluation and improvement on the procurement of motor transformers, the utilisation of green packaging, the optimisation of material logistics, and the disposal of waste and used materials, and promoted the implementation of green materials, and promoted the implementation of green materials, and promoted the implementation of green materials, and promoted the implementation of green materials, and promoted the implementation of green materials. The key energy-consuming products include Xylene, Xylene, Xylene, and Chemical Enterprises in 2022.

Zhonghai Refining & Chemical Company

Energy Efficiency "Front-runner" Enterprises of key energy-saving industries in 2022

Zhangbei Refining & Chemical Company

Energy Efficiency "Front-runner" Enterprises of the petroleum and chemical industry in 2022


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The company actively optimised the utilisation of resources, and accumulated recycled 16,850 tonnes of standard oil in 2022, which is equivalent to reducing the comprehensive energy consumption of oil refining by 1.7 kg standard oil/tonne.

The energy conservation target of Sinopec Corp. for Five-Year Plan: Reducing the consumption of comprehensive energy per RMB 10,000 of production value by 5% by 2025.

The Company has vigorously implemented the Energy Efficiency Improvement Plan to promote the integrated regional energy efficiency improvement of oil injection, production and transportation in oilfields, energy system optimisation, low-temperature heat utilisation and other energy conservation projects. The Company further strengthened energy measurement and statistics management, and the energy efficiency improvement and supervision over electromechanical equipment. The Company has carried out energy efficiency benchmarking activities, and developed an energy efficiency benchmarking index system, to encourage subsidiaries to strengthen energy efficiency management and improve energy efficiency. In addition, the Company organised subsidiaries to actively participate in the selection of Energy Efficiency "Front-runner" Enterprises organised by national and industrial associations. In 2022, several subsidiaries won the title of Energy Efficiency "Front-runner" Model Enterprises of the petroleum and chemical industry.

Energy Efficiency "Front-runner" Enterprises of key energy-saving industries in 2022

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Energy Efficiency "Front-runner" Enterprises of the petroleum and chemical industry in 2022


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Energy Efficiency "Front-runner" Enterprises of key energy-saving industries in 2022

Zhangbei Refining & Chemical Company

Energy Efficiency "Front-runner" Enterprises of the petroleum and chemical industry in 2022


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The company actively optimised the utilisation of resources, and accumulated recycled 16,850 tonnes of standard oil in 2022, which is equivalent to reducing the comprehensive energy consumption of oil refining by 1.7 kg standard oil/tonne.
The Company implements strict measures to control the consumption of thermal coal, and formulated action plans for "energy conservation, carbon reduction, and efficiency upgrading" for coal-fired thermal power units. The plan focuses on replacing high-carbon fuels, enhancing operational efficiency, upgrading equipment, and optimising processes to ensure that the energy efficiency of coal-fired units is improved. The Company replaces high-carbon fuels such as coal and coke with low-carbon options such as natural gas and fuel gas, and promotes the cogeneration of heat and power and simultaneous cooling, heating, and power generation of natural gas. The Company has strengthened cooperation with neighboring enterprises to enhance heat and power utilisation, opting for more efficient outsourcing solutions instead of relying on self-generated heat and power.

The Company continues to strengthen R&D and promotion of energy-saving and low-carbon technologies. Through research and innovation, the Company upgrades its energy-saving methods, technologies, and equipment, and actively participates in the creation of pilot and demonstration projects to showcase the effectiveness and potential of these technologies.

The Company continues to conduct key CCUS technologies and industrialisation application, and has intensified R&D investment and implemented key projects, actively promoting to build a demonstration project of the whole CCUS industrial chain in 2022. This project is the first million-tonne CCUS project in China, which serves as a model for the integration of the whole industrial chain and the upgrading of the value chain with the innovation chain. The project has established a series of technologies for the entire CCUS industrial chain that can be industrialised and scaled up, driving significant advancement in the industry.

**Technical features of million-tonne CCUS project**

- Innovatively put forward the CO₂ high-pressure miscible oil displacement technology, and establish the injection mode of "pressure displacement + alternative displacement of water and gas", which can effectively solve the problem of "no injection, no production, low recovery speed and low oil recovery" in low-permeability reservoirs, and improve oil recovery and CO₂ storage.

- Optimise the first set of high-efficiency low-temperature closed loop liquid injection equipment in China, and solve key technical problems such as zero emission, low-temperature measurement, partial pressure and partial injection.

- Develop and test the first set of dense phase injection device in China, filling the gap in equipment manufacturing and application in this field in China.

- Jointly research and develop localised liquid CO₂, multi-stage centrifugal transfer pump to ensure safe and stable long-distance high-pressure and normal temperature liquid phase CO₂ pipeline transportation.

- Develop intelligent control module of the gas injection station based on the oil and gas production command system to realise the production and operation mode of "unmanned, mobile patrol and centralised control" in the whole production region.

- Build CCUS oil-carrying pressure real-time monitoring and early warning module to realise real-time monitoring, analysis, abnormal early warning and disposal injection-production end pressure.

- Build CCUS operation tracking management module to realise the summary query of gas injection and production conditions of blocks and single wells.

**Qilu Petrochemical-Shengli Oilfield million-tonne CCUS project**

The Qilu Petrochemical-Shengli Oilfield CCUS Demonstration Project launched by the Company in July 2021 was completed and put into operation in August 2022. This project is the first million-tonne CCUS project in China, which serves as a model for the integration of the whole industrial chain and the upgrading of the value chain with the innovation chain. The project has established a series of technologies for the entire CCUS industrial chain that can be industrialised and scaled up, driving significant advancement in the industry.

**Qilu Petrochemical-Shengli Oilfield CCUS Demonstration Project is put into operation in Zibo, Shandong**

**East China Oil and Gas Company CCUS Peak Shaving Centre**
**Methane Emission Control**

As a national pilot for carbon emission monitoring and assessment for the oil and gas extraction industry, Sinopec Corp. formulated the Sinopec Implementation Plan of Methane Monitoring and Assessment Pilot Projects, and implemented a series of measures, including personnel monitoring, satellite remote sensing, cruising observation, drone sensing, etc., to monitor the methane concentration in escape, process venting, and flare combustion. At the same time, as a member of the China Oil and Gas Methane Alliance, the Company actively undertakes the tasks of the methane detection working group of the alliance. In 2022, the Company selected Shengli Oilfield, Zhengyuan Oilfield, Southwest Oil and Gas Branch and other oil and gas fields to carry out methane detection, and collate and analyze the detection data, laying a solid foundation for the methane emission data statistics and the development of methane emission reduction measures. In 2022, our oilfield subsidiaries recovered approximately 834 million cubic metres of methane, which was the equivalent to a greenhouse gas emissions reduction of approximately 12.3 million tonnes of carbon dioxide.

**Oilfield subsidiaries**

By continuously strengthening the application of closed-loop mixed transmission process, we vigorously implement the recovery of casing gas, promoted the comprehensive utilisation of flare gas, and strengthened the recovery from remote scattered wells, thereby reducing methane emissions.

Refining and chemical subsidiaries continued to carry out flare elimination, promoting process management stability and efficiency and reducing flare discharge caused by production fluctuations and unexpected shutdown, and made full use of information technology to strengthen the balance management of high and low pressure gas and hydrogen, reducing the flare discharge caused by excess gas or hydrogen. In addition, refining and chemical subsidiaries optimised startup and shutdown operations, implemented closed-purging measures, reducing or even eliminating the discharge of flare, strengthened bench-marking management, and established flare venting time and venting loss indicators in the refining production technology management system, urging subsidiaries to strengthen relevant management.

**Participating in Carbon Trading**

Sinopec Corp. actively participated in the national carbon emission trading market, formulated and implemented the Sinopec Carbon Trading Administration Measures, and standardised the fulfilment of carbon quotas. The Company established a dedicated carbon trading team, made comprehensive arrangement based on carbon quota surpluses and shortages of its subsidiaries, formulated carbon trading plans scientifically, and centralised management of carbon trading, ensuring that all its subsidiaries fulfilled their carbon quotas on schedule. In 2022, Sinopec Corp. had 15 subsidiaries participated in the national carbon trading market, and 19 subsidiaries participated in pilot regional carbon trading market, with a carbon trading volume of 2.41 million tonnes.

**Refining and chemical segment**

<table>
<thead>
<tr>
<th>2021</th>
<th>2022</th>
<th>Year-on-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane recovery</td>
<td>717</td>
<td></td>
</tr>
<tr>
<td>Methane emissions</td>
<td>299.90</td>
<td>253.79</td>
</tr>
<tr>
<td>Oil &amp; gas exploration and production segment</td>
<td>269.88</td>
<td>222.32</td>
</tr>
<tr>
<td>Refining and chemical segment</td>
<td>10.01</td>
<td>11.06</td>
</tr>
<tr>
<td>Marketing segment</td>
<td>20.01</td>
<td>20.41</td>
</tr>
</tbody>
</table>

### Indicators (million cubic metres)

- **Methane recovery**: 717 million cubic metres
- **Methane emissions**: 299.90 million cubic metres
- **Oil & gas exploration and production segment**: 269.88 million cubic metres
- **Refining and chemical segment**: 10.01 million cubic metres
- **Marketing segment**: 20.01 million cubic metres

**Forest Carbon Sink**

Sinopec Corp. actively practises the concept of green development, vigorously promotes corporate greening management, and enhances the greening of its facility. The Company guides and encourages its employees to participate in tree-planting activities to increase forest reserves and maximise the positive effects of forests on carbon storage and ecological improvement. In line with this commitment, Shanghai Petrochemical Co., Ltd., Zhenhai Refining and Chemical Company, Tianjin Oil Products Company, Ningbo Engineering Co., Ltd., and other Sinopec subsidiaries participated in the “Ecological Protection and Restoration of the Yellow River Basin - Special Action for Voluntary Tree Planting” demonstration project launched by the Office of the National Greening Commission and donated nearly RMB 100,000 to help improve the ecological environment and land greening of the Yellow River Basin.

**Case**

In March 2022, before Tree Planting Day, Sinopec Corp. and the China Greening Foundation launched the Sinopec Saihanba Ecological Demonstration Forest “Internet + Voluntary Tree Planting” project on the platform of the National Voluntary Tree Planting official website. The project received warm responses from the Company’s employees and the public. More than 154,000 people participated in the donation and raised a total of RMB 6.75 million. The Company adjusted the implementation plan according to the scale of funds, and planned to implement the afforestation area of 1,600 mu, plant 263,600 trees, build 17.3 kilometres of forest roads and erect 20.1 kilometres of fences within 2 years. In May 2022, the construction of the ecological demonstration forest project was officially implemented. By the end of 2022, the Company has completed 1,000 mu of land preparation and afforestation and 13.1 kilometres of management and protection fence, and planted 162,500 trees.

<table>
<thead>
<tr>
<th>Case</th>
<th>Sinopec Corp. launched the &quot;Internet + Voluntary Tree Planting&quot; project of Saihanba Ecological Demonstration Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 2022</td>
<td>The total amount of green space was 118.05 million square metres. The area of newly built or restored green space was 1.869 million square metres.</td>
</tr>
<tr>
<td></td>
<td>The greening rate of the industrial area of the Company was 28.5%.</td>
</tr>
<tr>
<td></td>
<td>The green coverage rate was 32.3%.</td>
</tr>
<tr>
<td></td>
<td>Employee volunteers planted 1.939 million trees.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicators (million trees)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Addressing Climate Change**

- **Forest Carbon Sink**

**Protecting the Environment**

- **Employee volunteers planted 1.939 million trees.**
Promoting Energy Transition

Green and Clean Energy Strategy
Sinopec Corp. takes "green and clean" as one of its development strategies, adheres to ecological priority, green transition, and clean development, actively promotes energy transformation and development, and commits to constructing a clean and low-carbon modern energy supply system and a safe and efficient production, supply, storage, and marketing system, to achieve clean, diverse, and safe energy supply.

As a fossil energy with low carbon emission intensity, natural gas plays a key role in the process of energy transition towards green and low-carbon development. The Company accelerates the construction of natural gas production, supply, storage and marketing, and continues to enhance the natural gas supply capacity. In 2022, the Company’s newly built natural gas production capacity reached 7.44 billion cubic metres, a year-on-year increase of 610 million cubic metres. The production of natural gas was 35.3 billion cubic metres, a year-on-year increase of 1.38 billion cubic metres. In the future, the Company will continue to expand the scale of natural gas business, and improve the supply capacity of natural gas and its proportion in oil and gas production.

Hydrogen Energy
The development of hydrogen energy is one of the essential paths to achieve the transformation of global energy structure to cleaner and low-carbon models. With its extensive industry experience and competitive advantages in the hydrogen energy sector, Sinopec Corp. is strategically positioned to capitalise on the major opportunities for the development of hydrogen energy. The Company is accelerating the development of hydrogen energy as a core business of its new energy portfolio, with a particular focus on the utilisation of clean transportation energy and green refining hydrogen energy, and strives to build China’s largest and leading hydrogen energy company with leading technologies and first-class management.

The Company leverages its industry, technology, and network resources to establish a comprehensive industrial chain of hydrogen energy production, purification, transportation, and sales. Its oilfield subsidiaries are actively developing green electricity for hydrogen production, while its refining and chemical subsidiaries are focused on building national fuel-cell electric vehicle demonstration city clusters, and promote the construction of fuel cell hydrogen supply centres by utilising product hydrogen resources. Meanwhile, its marketing subsidiaries are actively and steadily promoting the hydrogen economy business, and collaborating with research institutions and relevant enterprises to jointly promote the construction of China’s modern hydrogen energy industrial chain.

Tianjin LNG Terminals

<table>
<thead>
<tr>
<th>Natural Gas</th>
<th>Domestic natural gas production (100 million cubic metres)</th>
<th>Proportion of natural gas in domestic oil and gas equivalent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>216 256 303 339 353</td>
<td>39 41 42 44 45</td>
</tr>
</tbody>
</table>

Sinopec’s 2050 Hydrogen Energy Vision
- Maintain the largest number of hydrogen refuelling stations and the largest hydrogen refuelling capacity in the country.
- 100% of hydrogen produced with non-fossil energy, develop a fully functional and nationwide low-carbon transportation energy supply network to help the national road transportation system achieve carbon neutrality.
- 100% of the hydrogen used by refineries is blue hydrogen or produced with non-fossil energy, and help Sinopec Corp. achieve its carbon neutrality target with high quality through green hydrogen refining.

Progress and Achievements of Hydrogen Energy Business in 2022
- The first proton exchange membrane (PEM) hydrogen production demonstration unit with a capacity of 30 normal cubic metres/hour and the first megawatt level (200 Nm³/h) PEM hydrogen production unit have been put into use in Yanshan Petrochemical Company.
- As of the end of 2022, nine hydrogen supply centres had been built to provide high-purity hydrogen for fuel cells, with a capacity of 19,000 normal cubic metres/hour (about 15,600 tonnes per year).
- During the Beijing 2022 Winter Olympics, Yanshan Petrochemical Company and Tianjin Petrochemical Company ensured the hydrogen demand for the event. The four hydrogen refuelling stations added 87 tonnes of hydrogen to the vehicles for the Olympic Games, serving 8,689 vehicles, effectively guaranteeing the hydrogen energy supply for the Beijing Olympic Winter Games.
- As of the end of 2022, the Company has built and operated 98 hydrogen refuelling stations, with a total hydrogen refuelling capacity of about 45 tonnes/day, making the Company with the most hydrogen refuelling stations in the world.
- To ensure the supply of oil, gas and hydrogen for the Beijing 2022 Olympics and Paralympic Winter Games, the Company has built three new hydrogen refuelling stations and one oil and hydrogen mixing station, and rebuilt 49 refuelling stations of Beijing Oil Products and Hexiao Oil Products for the Winter Olympics. Four hydrogen refuelling stations, three CNG stations, two LNG stations and 15 gas stations have been set as the supply guarantee stations. The Company served 5,000 Winter Olympic vehicles in total for more than 30,000 times of refuelling services and provided 1,100 tonnes of diesel, hydrogen and natural gas.

In September 2022, Sinopec’s first short-pipeline hydrogen transmission station was put into operation.

Clean energy boosting green Winter Olympics
In September 2022, Sinopec’s first short-pipeline hydrogen transmission station, the Pinghu Binhai Comprehensive Energy Station in Jiangxi City, Zhejiang Province, was put into operation. Relying on the advantages of integration, the station actively constructs the application scenario of hydrogen energy transportation, rearing the pipeline hydrogen transmission within the station. The pipeline is 1.7 kilometres long and the pressure is 1.2 MPa. It can effectively reduce energy consumption while improving the safety of the hydrogen refuelling station. The station can also serve as a hydrogen parent fueling station, and provide filling services for 5-6 tube trailers every day, realising the whole function of hydrogen filling, and improving energy efficiency and economic benefits of the hydrogen refuelling station.
Sinopec’s marketing subsidiaries have continued to promote the construction of Building Integrated Photovoltaic (BIPV) systems, fully utilising the spare space on canopies and rooftops of over 30,000 gas stations nationwide. The Company has developed distributed photovoltaic power generation, built “Carbon Neutral” gas stations, and fully combined photovoltaic power generation with energy conservation, carbon reduction, and brand marketing.

Sinopec’s oilfield subsidiaries continue to promote the large-scale photovoltaic power generation, and have developed a regional energy management mode of “waste heat + photovoltaic + oil production” and other multi-energy complementation and the “load and storage between source and network” integration for oil and gas fields. Shengli Oilfield has successfully commissioned a 100 MW distributed photovoltaic power generation project, increasing the installed capacity of photovoltaic power generation by 1.86 MW throughout the year and annual power generation capacity by 120 million kWh, and reducing annual carbon dioxide emissions by 104,000 tonnes.

Sinopec’s refining and chemical subsidiaries have been actively developing centralised photovoltaic resources in the surrounding areas. As of the end of 2022, the Company has 30 photovoltaic projects underway and planned, with a combined capacity of 246 MW.

In 2022, subsidiaries such as Northwest China Petroleum Bureau, Jianghan Oilfield, Maoming Petrochemical Company, Luyang Petrochemical Co., Ltd., Guangzhou Petrochemical Company, Yangzi Petrochemical Co., Ltd., Jingmen Petrochemical Company and Zhongke Refining and Petrochemical Co., Ltd. actively carried out “green electricity” transactions, with a trading volume of green electricity exceeding 3 billion kWh.

**Photovoltaic Project**

In 2022, Sinopec’s refining and chemical subsidiaries actively participated in the green electricity transaction pilot project, successfully commissioned a 100 MW distributed photovoltaic power generation project, which took the area of open space such as parking lots to install the photovoltaic car shed by adopting the technical scheme of zonal power generation and nearby grid connection. The installed capacity was about 1.2 MW. It is estimated that the annual power generation will reach 1.55 million kWh, and the annual carbon dioxide emissions will be reduced by about 465 tonnes. The second project is the “regional photovoltaic power generation project”, which installed photovoltaic modules on the rooftop of the Company’s energy conservation and carbon reduction efforts.

**Green Electricity Transaction**

The largest photovoltaic power generation projects of Shengli offshore oil field is synchronised to the grid for power generation.

In 2022, Qingdao Refining and Chemical Co., Ltd. actively carried out research on “green electricity” trading policies in the power market, and actively coordinated the trading centre, power selling companies and new energy power generation enterprises. The company became one of the first enterprises in Shandong Province to participate in the green electricity transaction and obtained a green electricity consumption certificate, and was one of the first units to have the qualifications for the “green electricity” pilot transaction in Shandong Province in 2022. In March 2022, the company completed the “green electricity” transaction of 5 million kWh and obtained the green electricity consumption certificate issued by the Beijing Power Exchange Centre, opening a “new chapter” for the company’s energy conservation and carbon reduction efforts.

Qingdao Refining and Chemical Co., Ltd. made use of its geographical advantages to vigorously promote photovoltaic power generation projects.
Biomass Energy

Sinpec Corp. actively explores the research and application of bio-jet fuels and increases the production, promotion and supply of biomass energy.

Carbon emissions resulting from the combustion of jet fuel account for approximately 79% of the total aviation transport industry emissions. Therefore, the adoption of more environmentally friendly and sustainable jet fuel has become crucial to reducing carbon emissions in the civil aviation industry. Bio-jet fuel, generated from renewable resources such as vegetable oils, animal fats, and catering waste oil, is a sustainable alternative to traditional petroleum-based jet fuel. Over the course of its life cycle, bio-jet fuel can reduce carbon emissions by more than 50% compared to traditional jet fuel.

In August 2020, Zhenhai Refining and Chemical Company completed the construction of China’s first bio-jet fuel production facility with a production capacity of 100,000 tonnes/year and won the first global RSB certification in Asia. By the end of 2022, the Company had built 2,171 charging and replacement refuelling stations. It cooperates with relevant enterprises to build replacement refuelling stations and actively promote the power bank service.

In July 2022, Sinpec Corp. constructed its first heavy truck replacement station at the Baijiangawang Comprehensive Energy Station in Yibin, Sichuan. The station provides battery replacement services for trucks transporting ore, commercial concrete, and waste in the surrounding areas. The replacement station uses a top-mounted battery replacement mode and carries seven 282 kWh power batteries, each capable of supporting vehicle operations for approximately 150 kilometres. Since every single battery replacement needs to take about 3 minutes, the station is able to meet the battery replacement demands of 168 electric heavy trucks per day.

Cases

- **Case 1:** Sinpec Zhenhai Refining and Chemical Company built China’s first bio-jet fuel production facility with a production capacity of 100,000 tonnes/year and won the first global RSB certification in Asia.

- **Case 2:** Sinpec Corp. built the first heavy truck replacement station at the Baijiangawang Comprehensive Energy Station in Yibin, Sichuan. The station provides battery replacement services for trucks transporting ore, commercial concrete, and waste in the surrounding areas.

- **Case 3:** Comprehensive services for customers at the Lianhua Charging Station in Fujian Province.
Protecting the Environment

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Environmental Protection Management and Targets

Environmental Management System and Targets

In line with its commitment to sustainable development concept, Sinopec Corp. strictly abides by relevant laws and regulations on environmental protection. The Company has established and continuously improved its environmental protection policies and systems. Through its "Green Enterprise Campaign", the Company has implemented a series of measures aimed at actively encouraging all subsidiaries to strengthen their environmental impact and risk management efforts, with the ultimate goal of minimising their operational environmental footprint.

The Board of Directors and its Sustainability Committee are responsible for reviewing the Company’s major environment-related decisions. The HSE Management Committee which is part of the management body, is responsible for reviewing the Company’s environmental protection plans, relevant regulations and rules, and supervising the implementation of environmental protection initiatives.

The Company continues to improve the HSE (Health, Safety and Environment) management system, and officially issued the Manual for the HSE Management System in 2022. Each subsidiary has issued its specific version of the manual according to its own production and operation characteristics. These manuals form the foundation of the environmental protection system, consisting of 56 core policies as the main body, including the Measures for the Environmental Information Management, the Measures for Ecological Environment Events Management, the Measures for Accountability of Ecological Environment Events Management, the Measures for Response to Environmental Emergency-Risk and Management, the Measures for Radioactive Accident Management, etc.

In 2022, the Environmental Protection Sub-Committee of the HSE Management Committee implemented a series of measures aimed at optimising the monitoring indicators of environmental protection. These measures included monthly tracking and analysis of indicators, with improvements and rectifications made as necessary, promoting the completion of 17 research topics and key tasks, completing the professional review of 7 first-level environmental protection enterprise standards, and gradually improving the Company’s environmental protection standard system. In addition, the Company formulated a special supervision mechanism for ecological and environmental protection, and appointed environmental protection supervisors to carry out special supervision on 30 subsidiaries including oil and gas field subsidiaries, refining and chemical subsidiaries and marketing subsidiaries, to identify the shortcomings of environmental protection management, put forward systematic solutions, raise the awareness and ability of all employees in ecological and environmental protection, and demonstrate its commitment to fulfilling its ecological and environmental protection responsibilities.

By the end of 2022, a total of 28 subsidiaries of the Company had obtained the certification of the ISO14000 environmental management system.

Sinopec Corp. launched the “Green Enterprise Campaign” in 2018 as an essential step in implementing its green and clean development strategy. In 2022, the Company made significant headway by implementing various measures under the campaign with particular emphasis on the grassroots level. All subsidiaries were directed to establish green grassroots units, resulting in comprehensive consolidation of the foundation for green development. Indicators such as clean energy, green products, resource and energy utilisation, pollutant emissions, GHG emissions, and facility greening were completed as planned. 12 subsidiaries were awarded the title of "Sinopec’s Green Enterprise" in 2022. By the end of 2022, the Company had established 114 green enterprises, and 19,900 green grassroots units, meeting the annual goals and requirements.

The Company continues to strengthen the management of environmental impact. To this end, it has formulated regulations such as the Measures for Environmental Management, the Measures for Ecological Management, the Measures for Environmental Management of Construction Projects, and the Management Regulations for Environmental Protection Inspection after Completion of Construction Projects to strengthen the environmental protection management throughout the construction projects and minimise any negative impact on the surrounding ecological environment and communities.

Policy Assurance

The Company set up a team of HSE management system auditors to regularly review the system documents of its subsidiaries. By the end of 2022, a total of 28 subsidiaries of the Company had obtained the certification of the ISO14000 environmental management system.

The Green Enterprise Campaign

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System Assurance

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Environmental Monitoring

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Management of Environmental Impact

• Strictly checked on the environmental protection-related content within the feasibility studies and the design of construction projects in the report, such as the identification of environmentally sensitive targets, pollution prevention and control measures, ecological protection measures, strictly controlled the total amount and intensity of energy consumption and other environmental indicators of projects, took the environmental protection feasibility as the foundation of the project feasibility studies and design approval, and improved the environmental protection efficiency of construction projects.

• Adopted green construction plans, conducted special action to improve the standardised management of solid waste at construction sites, and clarified and strictly implemented the measures of "three simultaneities" for environmental protection.

• All production facilities belonging to the upstream, midstream and downstream subsidiaries of the Company, including their subordinate units, have obtained the pollutant discharge permits or have completed the registration of the pollutant discharge permit information. Relevant information is available on the national management information platform for pollutant discharge permit.

• Key pollutant discharge units have cooperated fully with regulatory authorities to conduct monitoring activities. The units have installed online monitoring facilities that transmit real-time data to national and local regulatory platforms.

• Actively implemented the national Notice on the In-Depth Implementation of the Clean Production Audit Work in Key Industries, continued to optimise clean production-related systems and processes, and supervised and guided subsidiaries to continuously reduce the total amount of pollutant emissions.

• Cleaned the waste materials and garbage on the construction sites after completing the project according to the principle of "work completed, material collected, site cleaned", and recycled the waste as much as possible.

• Formulated the Guidelines for the Preparation of Emergency Plans for Emergent Environmental Incidents and the Guiding Opinions on the Provision of Emergency Supplies for Emergent Environmental Incidents to ensure timely and proper treatment of environmental incidents to reduce pollution loss and mitigate the ecological damage.

• Standardised the conduction of environmental protection inspection after completion, and controlled the audit and verification pass before the project is officially put into production.

• Conducted post-environmental impact assessments as required, carried out ecological rectification and restoration according to the assessment results, and continuously improved the environmental protection management level of the whole life cycle of construction projects.
Environmental Risk Management

Sinopec Corp. organises and conducts annual environmental risk identification and assessment to comprehensively prevent and control various environmental emergency risks. The Company has optimised the environmental risk identification and assessment methods and processes by assigning risk control capability index, risk index correction coefficient, and environmental risk level distribution. The Company has also prepared the Technical Guidelines for the Assessment of Environmental Emergencies Risk Index, and organised its subsidiaries in all sectors to carry out trial assessments.

In 2022, the Company identified a total of 41 Tier-1 environmental risks. Through the formulation and implementation of a tiered environmental risk management and control plan, as well as by implementing environmental risk management and control accountabilities and addressing potential environmental risks, the Company successfully degraded 30 of these risks, accelerating the withdrawal of facilities in the ecological protection red-line areas.

Environmental Complaint and Handling Mechanism

The Company attaches great importance to communications with stakeholders such as local government and community members, establishes the environment complaint mechanism, discloses environmental information and sets up the 24-hour complaint hotline at key well sites and stations, and takes the initiative to accept social supervision. In the Sinopec Environmental Protection Management Regulations, the Company stipulates that “With regards to negative environmental information on environmental issues such as being listed on national and local government supervisory agendas, receipt of notices or environmental administrative penalties, excessive amounts beyond standards and violations found in government supervision and monitoring at all levels, being sued for environmental issues or being exposed by the media, etc., the Company shall report the information through the environmental protection information system within three working days. Late reporting or concealment of information shall be severely punished”. Through the appointment of external community supervisors and regular and occasional seminars, all subsidiaries have established the mechanism to engage local communities and the public to collect and handle opinions and make feedback. Significant environmental incidents shall be promptly reported to relevant departments at the headquarters to promote its rectification through the joint working mechanism.

Water Resources Management

Adhering to the water resource management principle of “prioritising conservation and balancing the production and supply”, Sinopec Corp. formulated and implemented the Measures for Water Resources Conservation and aims to reduce the amount of freshwater for industrial use by 1% annually. Additionally, the Company systematically optimises the water consumption structure, implements the project of replacing clean water with wastewater, and strengthens the reuse of sewage and wastewater. Moreover, the Company attaches great importance to the investigation and monitoring of groundwater to prevent groundwater pollution.
Building a Solid Safety Defence Line

Water Conservation

Sinopec Corp.'s industrial water mainly comes from surface water, groundwater and municipal water supply. The Company has obtained water withdrawal permits for all of these sources. The Company strictly abides by the Water Law of the People's Republic of China, the Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees, the Administrative Measures for the Water Resources Testimony of Construction Projects and other policies and regulations. The Company has formulated and implemented the Sinopec Measures for Water Resources Conservation, the Guidelines for Water Conservation in Sinopec's 14th Five-Year Plan and other documents, formulated water conservation plans according to the principle of "one specific plan for one subsidiary", and continued to strengthen water conservation management, adopting more economical and intensive water use modes, comprehensively improving water efficiency and effectiveness, and building water-saving enterprises.

To ensure the effectiveness of the ecological protection in the Yangtze and Yellow River basins, the Company has undertaken a comprehensive study and formulated the Action Plan to Further Advance the Ecological and Environmental Protection and Restoration of the Yangtze River basin and the Guiding Opinions on the Ecological Environment Protection of Enterprises in the Yellow River basin. The Company has established clear ecological protection responsibilities for the Yangtze and Yellow River basins, including developing water conservation and emission reduction plans for subsidiaries located in the basins, and compiling a list of related issues to promote relevant subsidiaries to strengthen water conservation and emission reduction.

In 2022, the Company's industrial freshwater consumption was 219.10 million cubic meters, a year-on-year decrease of 1.1%. In the selection of the 2022 Water Efficiency "Front-runner" Enterprise in petroleum and chemical industry, 8 subsidiaries of the Company including Jingli Petrochemical Company, Qingdao Refining and Chemical Co., Ltd., Shijiazhuang Refining and Chemical Company, Zhenhai Refining and Chemical Company were named as Water Efficiency "Front-runner" Model Enterprises.

Water Efficiency "Front-runner" Enterprise of national key water-using enterprises in 2022

- Qingdao Refining & Chemical Co., Ltd.
- Tianjin Petrochemical Company
- Qingdao Petrochemical Co., Ltd.
- Zhenhai Refining & Chemical Company

Water Efficiency "Front-runner" Model Enterprises of the petroleum and chemical industry in 2022

- Maoming Petrochemical Company
- Zhenhai Refining & Chemical Company
- Sinopec Great Wall Energy & Chemical (Ningxia) Co., Ltd.
- Zhenhai Refining & Chemical Company, Yanshan Sino-Korea (Wuhan) Petrochemical Co., Ltd., Zhenhai Refining & Chemical Company

Groundwater Management

Sinopec Corp. comprehensively promotes clean production, strengthens the management of water pollution prevention and control facilities, and improves water pollution prevention and control in a way stricter than national and local discharge standards, with a focus on strictly controlling the risk of water pollution. As required by the government, to monitor water pollutant discharge in real-time, the Company has implemented early warning and alarm systems to quickly detect and manage issues, to achieve the standard discharge of water pollutants.

In 2022, the annual comprehensive wastewater compliance rate of all subsidiaries of the Company was 100%, with the total amount of water pollutant discharge constantly decreasing.

Water Withdrawal Control at the Source

- Adhered to the principle of determining production volume based on the water use-plan, strengthened the constraints on the carrying capacity of water resources and water environment, flattened rational water withdrawal, accurately measured and adjusted the industrial structure.
- Supervised subsidiaries to establish standing books of water withdrawal points and water withdrawal permits, formulated and traced the implementation of notification measures to troubleshoot any problems, ensuring that the water is taken in accordance with permits.
- Optimised water consumption structure, used unconventional water resources to replace fresh water, and reduced the consumption of fresh water.

Water Resources Recycling

- Optimised the operation of the water circulation system, and reused water as replacement water to reduce the make-up rate of fresh water.
- Conducted ramwater and sewage diversion upgrade, visualised sewage pipe network upgrade, and sewage plant upgrade, build the information module of sewage and rainwater pipe network, and increased the intensity of sewage reuse.
- Promoted subsidiaries at all levels to strengthen the utilisation of sewage resources and reduce external drainage through technological innovation, process improvement and other methods.

Water Consumption Metering Management

- Vigorously conducted water balance test, and leakage detection and elimination of water supply pipe networks, upgraded and transformed old pipelines, to reduce water loss due to leakage.
- Improved the water supply and consumption metering system, and enhanced the level of water consumption informationisation.

Sewage Treatment

The Company comprehensively promotes clean production, strengthens the management of water pollution prevention and control facilities, and improves water pollution prevention and control in a way stricter than national and local discharge standards, with a focus on strictly controlling the risk of water pollution. As required by the government, to monitor water pollutant discharge in real-time, the Company has implemented early warning and alarm systems to quickly detect and manage issues, to achieve the standard discharge of water pollutants.

In 2022, the annual comprehensive wastewater compliance rate of all subsidiaries of the Company was 100%, with the total amount of water pollutant discharge constantly decreasing.

Case Improving water efficiency and building water-saving enterprises

- Guangzhou Petrochemical Company: Conducted the high-low salinity sulfur-containing sewage source-separate treatment, and controlled the discharge of sulfur-containing sewage, achieving 100% reuse of low salt sulfur-containing sewage, reducing the external discharge of sewage by 30.3%, increasing the amount of recycled sewage by 16.1% and the sewage reuse rate from 62% to 68%, and saving more than RMB 3.8 million annually.
- Zhenhai Refining and Chemical Company: Controlled the concentration of suspended solids in the desulphurised purified water and increased the reuse amount of the purified water during the water injection process of the hydrogenation unit, which raised from 9.1 m³/h to 54.1 m³/h. Increased the reuse amount of the power centre's up-to-standard discharged sewage by optimising pipe network and improving water treatment scheme, with the highest reuse rate of 76%.

In 2022, the Company completed the review of the corporate standard Technical Specification for Groundwater Investigation and Evaluation of Land for Corporate Use. All subsidiaries continued to conduct self-monitoring of groundwater and strictly implemented the system for investigating potential soil pollution hazards and corporate requirements for self-monitoring. The Company actively organised its subsidiaries to apply for the Major State Projects for Soil Pollution Source Control Projects and the pilot project of “controlling while producing”. We conducted special supervision and inspection on potential soil hazards and monitored key soil regulatory enterprises in major basins of the Yangtze River and the Yellow River. The marketing subsidiaries actively investigate and prevent groundwater pollution. In 2022, the Company organised subsidiaries along the Yangtze River and Yellow River basins to clean up and dispose of 105,000 tonnes of solid waste in solid waste landfills.
Land Resource Management

The Company strictly abides by national policies and regulations such as the Land Administration Law of the People’s Republic of China and the Soil Pollution Prevention and Control Law of the People’s Republic of China and has formulated the Sinopec Land Management Measures, to strengthen the management of land resources and standardize the handling of land use procedures according to the principle of “intensive, efficient and green land use”. The subsidiaries are required to minimise the use of arable land, timely reclaim idle land, and restore soil after land use in accordance with relevant national regulations to promote sustainable land resource use.

Control of Atmospheric Pollutants

The Company strictly implements the Atmospheric Pollution Prevention and Control Law of the People’s Republic of China and other national and local regulations for air pollution prevention and control. The Company has issued the energy and environmental responsibility commitment to all subsidiaries, which outlines emission reduction goals and control tasks and includes them in the annual evaluation process. To fully promote air pollution prevention and control, the Company has issued the Notice on the Implementation of the Key Tasks of the Opinions of the CPC Central Committee and the State Council on Promoting the National Pollution Prevention and Control Campaign. The Company has adjusted the control scope in a scientific manner and timely initiated emergency plans during severely polluted weather conditions and made timely adjustments to production equipment and environmental protection device to fully meet the requirements of air pollution control, emission reduction targets and air quality assurance requirements during major activities. The Company formulated and implemented the Special Action Plan for Ozone Pollution Prevention and Control and vigorously promoted the implementation of emission reduction projects in a way stricter than national and local standards for emission concentration of NOx and VOCs. In 2022, all subsidiaries of the Company achieved the annual target for comprehensive control of exhaust gas, with a compliance rate of 99.5%.
Solid Waste Management

In accordance with the Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution Caused by Solid Wastes, Sinopec Corp. classified and managed the wastes generated from production and operation, and disposed of all of them in a proper and comprehensive utilisation manner or in a harmless manner. Adhering to the principle of “reduction, recycling, harmless disposal of waste, and planned management” for solid waste disposal, the Company continuously improved relevant policies and systems in alignment with the solid waste management goals and tasks during the “14th Five-Year Plan” period. In 2022, the Company achieved a 100% disposal rate for hazardous waste, fully meeting the target for the year.

In 2022, the Company launched the pilot construction of the “Waste-Free Group”, issued the “Waste-Free Group” Pilot Construction Work Programme, the Construction Index System for “Waste-Free Group”, the Evaluation Index for “Waste-Free Group” Construction, the Implementation Plan for Special Safety Rectification of Hazardous Waste Disposal, and other policies, and conducted solid waste reduction in various forms. In 2022, the Company’s hazardous waste production decreased by 5% year on year.

In addition, the Company has developed the Reference List for Classification of General Industrial Solid Wastes for Inspection, Maintenance, Overhaul and Reconstruction of Refining and Chemical Enterprises and the Reference List for Classification of Construction Wastes for Inspection, Maintenance, Overhaul and Reconstruction of Refining and Chemical Enterprises to improve source identification and classified storage management of hazardous wastes and other solid wastes. In 2022, the Company’s comprehensive utilisation rate of solid waste was 84.6%, up 1 percentage point year on year.

In 2022, the Company intensified its efforts in R&D of eco-friendly packaging and the promotion of high-performance materials and thinning technology for packaging bags. The Company prioritised the enhancement of packaging recycling and conducted beneficial explorations and practices to conserve resources and mitigate plastic pollution.

### Solid waste categorisation

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Management Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous waste</td>
<td>Mainly utilised or disposed in the Company’s own facilities, or handled by qualified third parties.</td>
</tr>
<tr>
<td>General industrial solid waste</td>
<td>Handled by entities with proper technologies for comprehensive utilisation or sent to landfills for safe treatment.</td>
</tr>
<tr>
<td>Construction waste</td>
<td>Utilised in accordance with the disposal plan approved by the local government, or sent to designated landfills.</td>
</tr>
<tr>
<td>Domestic waste</td>
<td>Collected and disposed by qualified entities with approval from local authorities.</td>
</tr>
</tbody>
</table>

### Case

**Shared pallet recycling**

By promoting the use of shared pallets, Sinopec Corp. has realised the delivery of synthetic resin products with pallets and film, which has comprehensively improved the speed and efficiency of logistics operations. In 2022, the Company reduced the use of 140,000 wooden pallets and reduced the cost by RMB 9 million via shared pallet recycling. If wooden pallets is useless after three cycles, the carbon emissions generated by solid waste incineration each year will be 6,722 tonnes. If one timber tree can be made into six standardised pallets, the recycling can save 23,000 trees from being cut down. Since 2019, the Company has officially used shared pallets in 27 subsidiaries, leading the development direction of domestic synthetic resin industry logistics. Nowadays, shared pallets have been promoted and applied widely by manufacturers and logistics carriers.

**Thinning the FFS heavy film packaging bags**

Before the thinning, in 2020, the thickness of the FFS heavy film packaging bags of Sinopec’s resin products was 0.16-0.18 mm, with an average thickness of 0.168 mm. By adopting the thinning technology, the average thickness of the bags has been reduced to 0.137 mm in 2022. Some of the Company’s subsidiaries such as Fujian Refining and Petrochemical Co., Ltd. have started to use 0.10 mm packaging bags within a small scale. In 2022, 16.5 million tonnes of resin products were packed with the thinned FFS heavy film packaging bags, reducing the use of 17,000 tonnes of FFS heavy film and carbon emissions by 85,000 tonnes per year.

### Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of non-hazardous solid waste (thousand tonnes)</td>
<td>1,710.8</td>
<td>1,931.8</td>
<td>2,036.9</td>
</tr>
<tr>
<td>Amount of hazardous solid waste (thousand tonnes)</td>
<td>731.1</td>
<td>461.0</td>
<td>515.0</td>
</tr>
<tr>
<td>Compliance rate of solid waste disposal (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Percentage of hazardous solid waste disposed properly (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Prevention of Hydrocarbon Leakage

The Company formulates management regulations such as the Manual for the HSE Management System, the Sinopec Environmental Management and Protection Regulations, and the Sinopec Pollution Prevention and Control Management Regulations to guide subsidiaries to carry out hydrocarbon leakage prevention and control. The headquarters of the Company and the management departments of each subsidiary regularly conduct on-site inspections using infrared detectors and other equipment to strengthen leak detection and repair (LDAR) management and control of odour in the plant. The Company has prepared the Environmental Technical Requirements for the Treatment of VOCs in Storage Tanks to guide subsidiaries to carry out tank VOCs treatment. Cooperating with the Chinese Academy of Environmental Planning, the Assessment Centre for Environmental Engineering of the Ministry of Ecology and Environment, the Dalian Research Institute of Petroleum and Petrochemicals and the Qingdao Institute of Safety Engineering, the Company studied the accounting and monitoring methods of fugitive emissions of volatile organic compounds from petrochemical enterprises, and jointly pushed forward the “Research on VOCs Emission Accounting Methods for Petrochemical Enterprises” and the “Research on VOCs Monitoring System for Petrochemical Enterprises”. The marketing subsidiaries have installed oil and gas recovery equipment and facilities in all warehouses and stations, achieving 100% up-to-standard emission of VOCs, actively implemented the requirements of the Emission Standard of Air Pollutants for Oil Storage Tanks, and conducted troubleshooting for potential hazards in oil depots. In 2022, the marketing subsidiaries closed and unloaded a total of 86 oil depots to eliminate environmental hazards. In accordance with the requirements of the Volatile Organic Pollutants Fugitive Emission Standard, in 2022, the marketing subsidiaries conducted LDAR maintenance for 137 oil depots and completed the detection and repair of the leakage points. The marketing subsidiaries carried out statistical analysis on key equipment such as the vacuum pump, refuelling gun, and oil and gas recovery and treatment device, and optimised equipment selection to improve the stability and compliance of the oil and gas recovery system of gas stations.

Biodiversity Conservation

In strict compliance with the Environmental Protection Law of the People’s Republic of China and the United Nations Convention on Biological Diversity, the Company attaches great importance to the protection of the ecological environment. The Company established and completed the ecological management system, and formulated documents such as the Sinopec Environmental Management Regulations and the Sinopec Ecological Management Measures to regulate the ecological protection work at all stages of the project construction and operation period. The Company required all construction projects in ecologically sensitive areas to adopt strict ecological protection and restoration measures. When carrying out feasibility studies and environmental impact assessments for projects with ecological impact, the Company regularly investigates potential hazards involving ecological redline to ensure maximum mitigation or elimination of impacts. The Company requires related parties to strictly comply with the “Three Lines and One List” regulation as well as the general requirements for relevant planning and environmental impact assessment, with regard to the site (route) selection, layout, and scale of construction projects.

In 2022, the Company continues to improve its ecological monitoring and evaluation system and the environmental monitoring network, and to engage in ecological monitoring on a pilot basis in subsidiaries. For 13 consecutive years, it has monitored six major elements of the environment, including air, surface water, land, vegetation, etc. in the Puguang gas field and surrounding areas, with a total of more than 34,000 entries of monitoring data and 3,000 comparison photos obtained so far. The ecological tracking results show that the local ecological functions have not been affected by gas field development. In 2022, there were 78 ecological monitoring sites deployed, obtaining 13,500 sets of ecological monitoring data.

The Company integrated biodiversity conservation into annual energy and environment performance evaluation system. In 2022, there was no incident involving the subsidiaries that was harmful to biodiversity.
Main Actions for Biodiversity Conservation

- **Operation site recovery and improvement**
  - Removed oil and gas production facilities in the ecological protection redline area, followed the "Three-in-One" operation mode of well closure, facility removal and ecological restoration, thoroughly cleaned the well pad, loosened the soil, and carried out ecological restoration.

- **Contractor and supplier management**
  - Proposed that the construction unit is the responsible subject of environmental protection during construction. As such, they must follow and implement relevant environmental protection laws and regulations, formulate environmental protection plans for the construction work, and refine environmental protection measures.
  - Urged construction units to implement various environmental protection measures and requirements during the construction period.

- **Maintaining the biodiversity of waters**
  - Conducted fish and shrimp proliferation and release, supplemented and restored aquatic biological resources, improved the water environment, and optimised the structure of the fishery resource community.
  - Actively cooperated with the Anqing Municipal Government to restore the National Aquatic Germplasm Resources Protection Zone of leiocassis longirostris, catfish and mandarin fish in the Anqing section of the Yangtze River, and invested RMB 800,000 as financial support.

- **Action against deforestation**
  - Defined the requirements for ecological protection without deforestation in relevant systems, avoiding areas protected by the ecological redline as well as ecologically sensitive areas such as forest parks and natural forests to minimise ecological damage. In case of ecological damage, restoration shall be carried out according to the requirements of the competent department of ecologically sensitive areas.
  - Subsidiaries have formulated their own management requirements for ecological protection and implemented them in specific work.

- **Ecological protection of mining areas**
  - For mining areas containing major wetlands, nature reserves, forest parks and other environmentally sensitive areas, the extension and change process of mining rights should avoid all kinds of sensitive areas.
  - Ensured the effective use of costs for the prevention and control of water and soil conservation during the construction of development projects, effectively controlled the water and soil loss and continuously improved the ecological environment around the construction sites.

### Sinopec Environmental Management Regulations

- "Strictly in compliance with state environmental protection requirements, project construction, operation and decommissioning (relocation) shall have their respective ecological protection plans formulated and implemented, shall take effective measures to reduce the disturbance to the ecological environment, shall carry out the necessary ecological assessment, monitoring, restoration, and statistic studies as required, to protect biodiversity in surrounding areas and ensure ecological safety and stability."

### Sinopec Ecological Management Measures

- "All units shall strictly manage their production and operation, reduce the disturbance of production and operation to the ecological environment, protect biodiversity, and ensure ecological safety."
- "Strictly abide by the relevant special management regulations of the national and local governments on the ecologically sensitive areas. New projects should give priority to avoiding ecologically sensitive areas. If it is impossible to avoid, special demonstrations should be carried out according to the requirements of the competent department of the ecologically sensitive areas after obtaining permission from the competent department. Projects are not allowed to start without permits."

### Case

**In December 2022, Sinopec Corp. and other two Chinese enterprises were selected into the Business Handbook for Biodiversity Conservation Cases Summary**, which was jointly prepared by the World Business Council for Sustainable Development (WBCSD) and other institutions and released at the China Corner side event of the second phase of the Fifteenth Conference of the Parties to the United Nations Framework Convention on climate change (COP15) in Montreal, Canada. The Company's Sinopec: Construction of a Park for Fostering Biodiversity Benefits introduced in detail its two representative cases for improving biodiversity benefits, namely Zhenhai Refining and Chemical Company’s egret habitat, the only egret habitat of petrochemical enterprise in China, and the “industrial sewage treatment with standard discharge + wetland natural ecological restoration system”, a comprehensive purification practice of eco-type industrial sewage of Yanshan Petrochemical Company.

**Case**

Mansarover Energy Colombia Ltd. took the initiative to investigate the status of the ecosystem in the region, arranged operation activities according to the regional characteristics, and monitored the changes of the ecosystem. The company carries out ecological surveys every year to track the status of fauna and flora in the area where it operates, and monitor the development of key species, helping find the endangered species to a certain extent. Since 2018, Mansarover has found 57 species of herbaceous plants, 22 species of amphibians and 104 species of birds in the forest area near the oilfields, including 33 species of endangered animals, contributing to the local conservation of species diversity. In addition, Mansarover rescued local representative species in its oilfield blocks, such as red-footed sea turtles and white-faced capuchins after joining the biological protection and release program in 2018.

**Mansarover actively protects the ecosystem and biodiversity**
Building a Solid Safety Defence Line

- Safety Management System
- Production Safety
- Contractor Safety
- Occupational Health
- Logistics Safety
- Information Security
- Security
Sinopec Corp. has set a goal of achieving “zero casualties, zero pollution, zero accidents”. To this end, the Company follows the basic policies of “organisation leads, and all employees participate; manage and control risks, and strength the fundamentals”, adheres to the concept of “safety first, environmental protection foremost, physical and mental health of employees, and strict, detailed, effective and consistent implementation”, and has formulated and implemented management measures such as the Sinopec HSE Management System Manual. The HSE Committee holds monthly and quarterly meetings to summarise and analyse the critical aspects of HSE management and plan for the next steps to enhance the efficient operation of the HSE management system.

Important Practices of Safety Management in 2022

- Actively carried out safety production cautionary education to improve employees’ safety awareness.
- Organised personnel at key HSE posts to participate in training and acquire certification.
- Conducted special rectification actions for safety production and promoted the centralised tackling of safety risk control and hazards.
- Completed the construction of an “intelligent control platform for dual prevention” in 109 manufacturing subsidiaries, established the “offshore oil safety risk monitoring and early warning system”, and carried out in-depth safety risk assessment of manned platform and safety assessment of the main structure of the aging platform.
- Revised a series of safety management systems for direct operation links and produced an accident and incident prevention training video for high-risk operations.
- Reviewed the emergency plans of 78 enterprises and organised them to conduct emergency drills in a normalised manner.
- Prepared the Work Plan for Strengthening the Construction of Full-time Fire Fighting Teams of Enterprises and carried out special fire safety evaluation.

Sinopec Corp. continues to uphold a strong commitment to optimising its safety risk identification mechanism. To this end, the Company has implemented a range of measures aimed at deepening the application of the risk assessment management platform, promoting systematic, regular, standardised and informationised identification and assessment of risks, and building a dual prevention mechanism of tiered control and hazard detection and management and eliminating the weak links of safety management. The Company carries out an annual safety risk identification and assessment. This process firstly involves creating a risk identification list from the bottom to the top level, followed by determining the list of major risks under the Company’s special supervision based on the identification and evaluation results of its subsidiaries. In 2022, the Company identified and assessed 7 major risks requiring special attention.

In 2022, the Company conducted HSE management system audits for its 82 subsidiaries and incorporated the audit results into the performance evaluation system. Work plans for enterprise safety performance evaluation were formulated and the evaluation results were taken into account while selecting advanced enterprises of safety production.

Safety Management System

HSE Management System

Safety Risk Identification and Mitigation

Safety Management Goals of Sinopec Corp.

- Achieving an advanced level in the industry’s third-party assessment of the HSE management system.
- Achieving a 100% ratification rate of major hidden safety hazards on the watch list.
- Achieving a 100% detection rate of occupational hazard factors; 100% effective prevention and control rate of occupational disease hazards; 100% rate of occupational health check-ups; 100% intervention of high-risk personnel.
- Achieving an advanced level in the industry’s third-party assessment of the HSE management system.
Sinopec Corp. strictly abides by laws and regulations such as the Safety Production Law of the People’s Republic of China, the Production Safety Law Interim Measures for the investigation and treatment of hidden dangers of production safety accidents, the Implementation Guidelines for the Investigation and Treatment of Hidden Dangers of Hazardous Chemical Companies; and has formulated rules and regulations such as the Management Regulations on the Dual Prevention Mechanism of Hierarchical Management and Control of Production Safety Risks Investigation and Treatment of Hidden Dangers of Sinopec, committed to strengthening production safety, preventing safety risks, enhancing hidden danger investigation and management, and systematically preventing and reducing the occurrence of production safety accidents.

Focusing on the improvement of contractors’ safety awareness and management level, the Company has developed systems such as the Measures for Safety Supervision and Management of Contractors, and the Measures for Safety Supervision and Management of Key Materials Supply. These systems clearly define the requirements for contractor safety qualification review, safety supervision and management, inspection and supervision, and assessment of bidding, contract signing, subcontracting, project commencement, on-site construction, special operations, and other processes.

In 2022, the Company organised the whole system to carry out special rectification for contractor safety, and conducted special supervision and inspection on several high-risk construction projects. For any contractor violations found, the enterprise was ordered to immediately suspend construction, undergo accountability evaluation and carry out necessary rectification measures. The Company strictly controlled the safety risks of high-risk construction projects and released a series of cautionary videos of high-risk operation accidents, to enhance the safety awareness of the contractor’s personnel. The Company conducted quantitative assessment of contractors, evaluating their safety, quality, and comprehensive management behaviour throughout the entire construction process, thereby promoting contractors to comprehensively inspect and improve their own compliance behaviours.

In 2022, the Company conducted safety assessments on 2,857 direct operators, cleared 67 operators from the construction site and cancelled the operating qualifications of 134 personnel.
Occupational Health

Management of Hazard Risks for Occupational Diseases

The Company attaches great importance to identifying, evaluating, and controlling occupational health risks and has integrated the management of occupational disease hazard risks into its comprehensive risk management system for an integrated approach to management. Together with the national departments of disease control and prevention, the Company conducted a thorough investigation to grasp the pattern of occupational diseases, analysing and summarising the incidence of occupational diseases in the past decade, and formulated targeted improvement measures for key occupational diseases such as noise deafness and benzene poisoning, to effectively protect the health of employees.

To address the occupational disease risk of noise deafness, the Company formulated and implemented the Guidance on the Implementation of Excessive Noise Treatment and compiled the Guidance on the Management of Noise Hazards in Petrochemical Enterprises. These guides provided guidance and direction to subsidiaries in the inspection and management of excessive noise positions and workplaces. The Company has effectively managed and controlled noise hazards, as well as required subsidiaries to treat excessive noise as an occupational health hazard, and tracked the progress of excessive noise treatment in each subsidiary. We conducted noise control experience-sharing activities to promote advanced noise control technologies and management measures and summarised the noise control experience. In 2022, the Company spot-checked the occupational disease evaluation reports of 33 oil fields and refining subsidiaries. Any existing management and technical problems were immediately notified, and specific rectification measures were proposed. Enterprises with serious hazards, such as oilfield, refining and chemical subsidiaries, were thoroughly reviewed and monitored to ensure the occupational health and safety of all employees.

Organising staff to learn about the Occupational Diseases Prevention and Control Law

Sinopec Corp. actively promotes the management of employees’ occupational health by combining the occupational health management concept with the HSE management system. The Company has set up an Occupational Health Sub-Committee under the HSE Committee to coordinate the management of employees’ occupational health, track the implementation of key indicators and ensure their occupational health.

Sinopec Corp. has actively promoted the management of employees’ occupational health by holding professional consultation activities, awareness promotion training, and issuing Sinopec Corp. Health Management Practice Manual for Petrochemical Enterprises to guide the occupational health and safety management of front-line employees. The Company’s occupational health and safety activities in 2022

- Set the two indicators of new occupational diseases and non-productive death as the monitoring indicators of the Company’s HSE Committee.
- Indicators such as the control of excessive hazards, the provision of flame-retardant work clothes, the quality inspection of labour protection materials, the occupational health knowledge education, and the implementation of EAP, are set as the monitoring indicators of the sub-committee.
- Coordinated and conducted the certification training for professional auditors on occupational health to provide human resources for professional audit.
- Tracked and overviewed the training system review and provided rectification measures for the problems found.
- Organised a series of professional video-watching training on occupational health monthly to convey the requirements of national laws and regulations and share the typical experience of noise control.
- Completed the initial research of the occupational health digital module pilot project and successfully launched it for trial at Yanshan Petrochemical Company.
- The Smart Helmet Project has completed the site construction and entered the trial operation stage.
- New technologies such as hazard alarm smart chip and portable hydrogen sulfide alarm have entered the development stage, providing convenient and safe protection for employees who works in the hydrogen sulfide distribution environment.
- Organised a series of professional video-watching training on occupational health monthly to convey the requirements of national laws and regulations and share the typical experience of noise control.
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The Company’s health and safety activities in 2022

More than 9,000 thematic publicity activities
More than 6,000 consultation activities
Creating over 30,000 slogan banners
Deploying more than 30,000 publicity personnel
Covering 500,000 audiences

500,000 audiences
Care for Employees’ Mental Health

Mental health is an important factor in ensuring employees’ safety and health. Sinopec Corp. adheres to operating modes of the Employee Assistance Programmes (EAP) and scientifically protects the mental health of employees. In 2022, the Company further expanded the coverage of EAP service, integrated EAP with production safety management, and strengthened the range of psychological counselling services so that the EAP can reach more employees.

- Incorporated mental crisis intervention into the corporate emergency rescue system and established a specialised intervention team to conduct tiered and classified mental intervention based on on-site questionnaire surveys, demand interviews, and face-to-face observations, greatly improving the effect of mental interventions.
- Understood the grass-roots employees’ situation through the “Advancing Sinopec” Platform and conducted an online survey with more than 300,000 employees to accurately understand their mental status.
- Continued to provide psychological assistance to employees deployed overseas via the 7 x 24-hour Employee Psychological Hotline and share psychological knowledge on the “Sinopec Heart Happiness Counselling” Platform.
- Carried out “Heart Happiness Express” EAP Visits to serve front-line subsidiaries and employees in need, getting through the “last mile” towards employees’ minds.
- Implemented the Guidance on Vigorously Implementing the Employee Assistance Programme (EAP) and the Opinions for Improving Overseas EAP Work to strengthen the training of overseas personnel, and provided more targeted mental counselling services, such as the health management platform for overseas employees and the “Offshore Platform Mental Services” module for offshore operations.

Logistics Safety

The Company places great emphasis on the prevention and control of safety risks associated with hazardous chemicals and considers it a top priority in its logistics safety management. To ensure standardised prevention and control of hazardous chemical safety, the Company identified applicable provisions from relevant chemical laws and regulations and incorporated them into its new safety management documents, continued to strengthen HSE management of logistics suppliers, updated the HSE risk list annually, and guided employees and suppliers to improve logistics safety management. In response to the newly released National Centralised Management Plan for Safety Risks of Hazardous Chemicals, the Company has formulated a series of management measures to ensure compliance with the new regulations on hazardous chemicals.

Promote online psychological counselling

- Organised special education and training activities to ensure that employees fully understand and adhere to the new chemical laws and regulations, and integrate them into their daily work.
- Initiated the construction of an intelligent management and control platform for hazardous chemical safety to effectively control operational risks.
- Conducted a comprehensive investigation of the production and operation sites of subsidiaries to identify potential hazards and incorporate protective measures into the annual rectification plan.
- Strengthened supervision and inspection to ensure compliance with the new laws and regulations, and effectively promoted the prevention and control of hazardous chemicals through system audits, professional inspections, and safety supervision to prevent any violations.

Eventually, the Company sees the construction of systematic platforms as one of the important measures to ensure logistics safety. EPEC launched a logistics cloud platform that enables transparent, efficient, and traceable transactions for logistics operations. The platform integrates logistics information with purchase orders and business processes, providing full-process traceability of logistic information from order handling, distribution, storage, to delivery. As of the end of 2022, 4,089 logistics service providers had registered on the platform.
Information Security

In strict compliance with the provisions of the Cyber Security Law of the People’s Republic of China, the Data Security Law of the People’s Republic of China, the Personal Information Protection Law of the People’s Republic of China, the Regulations on Classified Protection of Network Security, the Regulations on Security Protection of Critical Information Infrastructure and other laws and regulations, the Company developed a network security management policy and standard system centred on the Sinopec Network Security Management Measures. The Company has established a Network Security and Informatisation Leading Group to lead the centralised coordination of network security efforts. The group reviews and approves medium and long-term network security plans, annual plans, and key work, providing guidance, coordination, supervision, and inspection of the network security of the Company to ensure the implementation of various network security tasks and responsibilities, to effectively prevent the misuse of customers’ personal information and to ensure that the personal information collected from customers is issued only for lawful and relevant purposes. As of 2022, there have been no major network security incidents reported.

In 2022, the Company conducted a comprehensive analysis of information risks, implemented a series of targeted strategies and measures, and comprehensively enhanced information security management. Employees can report any information or network security concerns to the Sinopec Security Response Centre (SSRC) through three channels when suspicious matters of information security/network security are found: by reporting the incidents through the security operation platform to form a full closed-loop management according to the incident handling process; by contacting the local communication group through the Company’s internal communication software; by preparing a safety incident briefing and reporting it via email.

Improving management mechanism

- Continued to revise and improve management measures such as the Sinopec Network Security Management Measures and Sinopec Network Security and the Informatisation Assessment Regulation, and updated technical specifications such as the Network Equipment Security Baseline.
- Formulated the Key Points of Sinopec’s Network Security in 2022 and proposed 19 key tasks focused on responsibility implementation, compliance management, technical security prevention, operation system construction, and supervision and assessment.
- Continuously optimised the corporate network security evaluation system, with evaluation results directly related to the performance evaluation of Sinopec subsidiaries.
- Strengthened information and network security training and organised 45,521 person-times to learn the Company’s network security system online through Sinopec Online Academy.

Strengthening risk assessment

- Regularly carried out compliance review of data security system, conducted annual self-reviews and network security inspections and quarterly internal audits on ordinary IT controls and invited external audit institutions to conduct IT general control audits every six months.
- Invited national evaluation institutions to carry out three-level system evaluation annually according to the Basic Requirements for Classified Protection of Network Security of Information Security Technology.
- Sinopec Security Response Centre (SSRC) carried out penetration tests on centralised, internet application systems and newly built information systems, identified security risks and identified potential security risks and rectified them in a timely manner.
- Conducted internal attack and defense drills to evaluate the Company’s ability to resist risks, continuously tracked and rectified the problems found in the pre-drill, comprehensively improving the Company’s network security protection and the ability to resist risks.

Establishing a notification emergency mechanism

- Provided regular disclosure on network security trends and various safety rectifications, continuously tracked and revisited the rectified security risks.
- SSRC dynamically monitored the Company’s network, actively identified security hazards and vulnerabilities, analysed network attacks in real-time, and promptly responded to the threats of network irregularities.
- Prepared for the construction of overseas security operation sub-centre and gradually built a normalised network security protection system to prevent and reduce business disruption caused by network security risks.

Security

Adhering to the overseas security concept of “people-oriented, prevention first and safe development”, Sinopec Corp. continues to optimise its overseas security management system and operation mechanism, and has maintained the “zero death” overseas security performance for 15 consecutive years. The Company promotes the development of overseas security emergency command systems and intranet deployment, continues to improve overseas security management systems, focuses on security risks in high-risk countries (regions) and key areas, and strengthens overseas security inspection and emergency drills. We actively organise overseas safety training and place great emphasis on this physical and mental health management of overseas employees.

As of the end of 2022, the Company has published two issues of the Overseas Security Risk Assessment Report, identifying 238 security risks, organised 70 overseas security training courses, covering 1,197 people, as well as the training for all overseas security prevention personnel, with a total of 9,723 participants, and published 124 issues of various publications on risk tracking, risk alert and situation analysis, including an issue of Annual Information Report on Country Risk and 4 issues of Country Risk Alert.
Respecting Human Rights and Cultivating Talents

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Respecting and Protecting Human Rights

The Company strictly abides by the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, the Convention of the People’s Republic of China on the Elimination of Discrimination in Employment and Occupation, and other international covenants and Human Rights Action Plan approved or signed by the Chinese government. It also strictly implements relevant domestic laws such as the Labour Law of the People’s Republic of China, the Labour Contract Law of the People’s Republic of China, and relevant laws, regulations and systems of other countries where it is operated, as well as standards such as the Universal Declaration of Human Rights, the Ten Principles of the United Nations Global Compact, and the National Human Rights Action Plan (2021-2025). Furthermore, the Company never disregards and tramples on human rights, always adheres to the principle of equal and non-discriminatory employment, treats employees of different genders, regions, races and religious belief fairly and equitably, promotes the construction of a diverse workforce, respects and protects the rights and interests of employees, contractors and suppliers as well as occupational health and safety, and builds a harmonious, stable and healthy labour relationship.

Constructing Harmonious Labour Relations

Sinopac Corp. actively implements the Labour Contract Law of the People’s Republic of China, builds harmonious labour relations, and promotes the fundamental principles of decent work. The Company strives to enhance its employees’ sense of inclusion, satisfaction, and security with regard to human rights protection. It consciously resists any violations of human rights and takes a zero-tolerance approach to discrimination based on nationality, gender, age, race, religion, pregnancy, or disability in areas such as recruitment, advancement, remuneration, and compensation. The Company also operates based on the principle of equal communication and mutual benefit, collaborating with employees towards mutual growth and development.

Protecting Legitimate Rights and Interests of Employees

The Company signs written labour contracts with employees based on the principles of “equality, voluntariness, and consensus”. These contracts, approved or supervised by the local labour department, outline the terms of employment including the contract term, job duties and work place, working hours and breaks and vacation clauses, labour remuneration clauses, labour protection and occupational hazard protection clauses, and meet the necessary requirements outlined in labour contract regulations. In addition, the Company has also formulated a supporting labour management system for employees to ensure the strict implementation of these contracts and the protection of its employees’ rights and interests. The Company reviews and confirms its recruitment practices and systems annually to avoid child labour and forced labour. In 2022, there were no incidents of child labour and forced and compulsory labour.

Strengthening the Protection of Human Rights of Overseas Employees

The Company firmly implements the requirements of human rights legislative and international human rights conventions in the host country, thoroughly researched and strictly follows local laws and regulations, and collaborates closely with labour organisations in these countries. Through the formulation of relevant systems and measures, we will supervise the overseas employment process and fully protect the legitimate rights and interests of overseas employees. Meanwhile, we attach importance to the career growth and development of overseas employees, provide support and care, cultivate harmonious labour relations, and balance economic and social benefits for all.

Employee Communication and Participation

The Company has established and continuously improved rules and regulations such as those related to collective consultation as well as employees’ congress and has implemented a democratic management plan. The Company protects the legitimate rights of employees, including the right to know, the right to participate, and the right to supervise, and encouraged employees to actively engage in its democratic management, allowing every employee to play a role in its development.

The employees’ congress serves as a vital communication channel between Sinopac Corp. and its employees. The Company has formulated the Measures for the Implementation of the Employees’ Congress of Units directly under Sinopac Corp. to clarify the basic principles, scope, and procedures for the establishment of the congress. It has also established and improved the system for directors and supervisors, providing a framework for employee representatives to fulfill their duties and participate in corporate governance in a lawful and organized manner. To further strengthen the democratic management of enterprises, the Company has set up specialized working groups to conduct democratic management research in an “online + offline” way. The Company regularly encourages employee representatives to make proposals regarding issues such as safety production, environmental protection, enterprise management, production and operation, salary distribution, employees education and welfare. The responsible departments are required to gather and provide feedback on these proposals. Meanwhile, a sound closed-loop feedback mechanism for processing proposals has been established, and the unprocessed proposals are submitted to the employee representatives in writing in a timely manner to give reasonable explanations.

The Company actively organizes and carries out collective consultation, gathering the opinions of employee representatives in the process. Furthermore, it strengthens the communication between the labour union and the human resources department, and works together to negotiate the terms of the collective contract and special contract. After approval by the employees’ congress, the labour union representative and the human resources representative sign the contract, ensuring that it accurately reflects the needs and interests of employees and protects their rights.

In addition, the working committee of the Company’s labour union insists on carrying out “thousands of grass-root family visits” to engage with employees and their families. The committee has established and improved the long-term “visiting” mechanism, encouraging leaders at all levels to visit grass-roots teams and employees’ families, listen to employee concerns, gather feedback, and actively address pressing issues. In 2012, the working committee of the labour union paid visits to employees and solved practical issues for them, with a total of 18,000 problems identified, of which 17,000 were solved.

Diversity and Equal Opportunity

Sinopac Corp. attaches great importance to the all-around development of its employees, actively promotes workforce diversity, and strives to create a diverse workplace. The Company provides equal opportunities for career development and fair compensation for all employees. Meanwhile, the Company fully protects the employment rights of employees with disabilities, effectively manages the placement and support of its disabled employees, attends to their daily needs, and takes various measures to ensure the stability of their employment.

Concerning addressing the specific needs of female employees, the Company established a female worker committee within the labour union to provide special care to its female workers. To effectively protect the rights and interests of female employees from the source, the Company requires all labour contracts and collective contracts to contain provisions for protecting the rights of female employees to be valid and effective. Regarding its operation, the Company attaches importance to labour safety and the health of female employees in the production process, organizes hygiene supervision and inspection, and continuously improves their work environments and conditions. In the meantime, the Company actively implements legislation and international standards such as the Universal Declaration of Human Rights conventions in the host country, thoroughly researched and strictly follows local laws and regulations, and collaborates closely with labour organisations in these countries. Through the formulation of relevant systems and measures, we will supervise the overseas employment process and fully protect the legitimate rights and interests of overseas employees. Meanwhile, we attach importance to the career growth and development of overseas employees, provide support and care, cultivate harmonious labour relations, and balance economic and social benefits for all.

In 2022

6,548 proposals were collected from employee representatives

2,902 proposals were fixed

100% proposals implementation and response rate

Sinopac Corp.
Human Capital Management

Sinopec Corp. continues to improve the salary and welfare system, strengthen human resource risk management, prevent the risk of brain drain, and actively introduces high-level talents. It prioritizes the development of a scientific and technological talent team, constantly works towards building a dynamic and talented workforce and takes a solid and powerful step towards the construction of an major talent gathering hub and innovation highland in the energy and chemical industry.

Human Resources Risk Management

Sinopec Corp. attaches great importance to the risk management of human resources, specifically in regard to brain drain. The Company systematically and comprehensively monitors brain drain, the factors contributing to higher rates of turnover. By understanding the causes and characteristics of turnover, the Company has a clear goal in implementing its talent-driven development strategy. It aims to improve employee retention by providing greater opportunities for talent development, implementing precise and effective incentives, and fostering a positive and supportive work environment. In recent years, the Company’s turnover rate has stabilised, crossed the “inflection point” and its efforts have effectively addressed the issue of brain drain.

Salary and Benefits

The Company implements a parallel distribution policy for salary and non-salary incentives, utilizing targeted hierarchical management. Its multi-dimensional and multi-level salary distribution system takes into account the value of the position, ability level, and performance contribution. This system covers basic salary, performance bonuses, and medium- to long-term incentives. The Company actively benchmarks its salary performance against the market and integrates these findings to enhance our salary competitiveness to key, core talent and create a fair salary distribution structure.

The Company has established and continuously improved the employee remuneration and welfare security system, ensuring the timely and full payment of the pension, medical, work-related injury, maternity, unemployment and other social insurance and housing provident fund for employees in accordance with the relevant national and local policies and regulations. It has also established a unified enterprise annuity system, and organised supplementary medical insurance for employees. In addition, the Company strictly implements the relevant policies and regulations of the state on maternity leave, parental leave and other employee welfare.

Human Resource Management Measures

- Prepared the Sinopec Medium and Long-term Talent Development Plan in the 14th Five-Year Plan Period
- Launched the Implementation Opinions on Strengthening the Construction of Scientific and Technological Talents and the Implementation Opinions on Strengthening the Construction of Skilled Talents
- Implemented the training schemes of strategic scientists, and the "Future Scientists" training plan
- Launched the Opinions on Strengthening the Incentive and Supporting Mechanism for Scientific and Technological Innovation, and raised the prize money for the Scientific and Technological Innovation Merit Award to RMB 1 million and for the Scientific and Technological Progress Grand Award to RMB 3 million

Salary and Benefits

In 2022, a group of outstanding talents won national honourary titles, including two winners of the Geological Society of China Field Youth Geological Contribution Award, one winner of Outstanding Female Geological Scientist, one winner of the Chinese Skills Award, and three winners of the National Technical Expert.

In terms of talent introduction and allocation, the Company implements a differentiated talent introduction strategy and establishes a three-dimensional approach and a flexible talent acquisition channel. By focusing on targeted talent acquisition, leveraging external resources, and actively participating in the national high-level talent introduction plan, Sinopec Corp. vigorously implements the “Double Hundred Plan” to attract high-level talents at home and abroad. This has led to a steady increase in the number of high-level talents. In 2022, the Company introduced nearly 10,000 graduates to fully guarantee the strategic reserve of talents.
Employee Training and Development

Guided by the principle of "building an important talent gathering centre and innovation highland", Sinopec Corp. is committed to fostering both vertical and horizontal talent development growth opportunities for its employees. The Company provides multi-level, multi-angle and multi-directional development paths to enable employees to acquire knowledge and skills, and to gain valuable professional experience.

Employee Training

The Company continues to enhance its top-level design of employee training and prioritises the development of key personnel such as managers, technical and skilled workers, and international talents. It aims to build a high-quality, high-level employee education and training system and has developed the Outline of Sinopec Education and Training System, which provides path planning and strategic guidance for talent growth and organisational capacity improvement. The Company facilitates training experience exchange among grass-roots front-line employees, raises the quality of front-line employee training, and accelerates the co-construction and sharing of high-quality training resources. In 2022, the Company carried out a total of 33 key training programs, training 1,732 participants. The Sinopec Network College trained a total of 6,375,520 participants, with more than 60 million hours of study. In 2022, investment in vocational training reached RMB 871 million.

Establishing a Multi-level Training System

The Company actively builds a multi-level, efficient and targeted training system that ensures systematic training for managers, professional training for technical personnel, and scientifically-based training for international talents.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online training participation (person-times)</td>
<td>1,259,800</td>
<td>6,152,170</td>
<td>6,375,520</td>
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<tr>
<td>Total amount of online training (hours)</td>
<td>27,721,300</td>
<td>51,432,900</td>
<td>60,847,600</td>
</tr>
</tbody>
</table>

Refining the Cooperative Training Mode

In accordance with the Management Regulations on the Professional Title Evaluation of Sinopec Corp. and the Management Regulations on the Professional Skill Level Recognition of Sinopec Corp., the Company continues to promote the reform of professional title evaluation and professional skill level recognition, and actively carries out talent evaluation. The "Skills Promotion Action", "Skills Competition Action", and "Skills Innovation Action" are implemented to encourage the transformation from "Elite Competition" to "Full Competition". In 2022, the Company declared and undertook 4 national Class II competitions, 5 company-level Class I competitions and 4 Class II competitions, 801 employees passed the evaluation of senior (professor-level) titles and 909 employees were awarded senior technicians.

Promoting the Upgrading of Vocational Skills

In 2022, Sinopec Corp.’s “Zhaoyang (Morning Suns) Program” training system for young talents won the 2022 Corporate Leadership Award of the International Association for Continuing Engineering Education affiliated with United Nations Educational, Scientific and Cultural Organisation (UNESCO), becoming the only Chinese enterprise to win this honour in the past 10 years.

Establishment of a Multi-level Training System

- Management personnel Level
  - Consolidate and improve the 8-level progressive systematic training system, provide specialised training to leaders in areas such as carbon peaking and carbon neutralisation, corporate governance, philosophical thinking and value management, and explore innovative ways to integrate training with practical experience through training programs for young and mid-level managers, elevating the capabilities of leaders and driving the Company’s high-quality growth.

- Technical talent Level
  - Strengthen the echelon training of technical and skilled talents, offer programs for experts and talent development in areas such as the integration and innovation of strategic science, the high-quality development of oil and gas, the green and low-carbon development of refining and chemical industry, forging and upgrading of craftsmen in big countries, and strengthen safety training and basic skills training for grass-roots front-line employees.

- International talent Level
  - Focus on restructuring the system to cultivate overseas project teams, explore building a hierarchical and professional matrix training mode for international talents, strengthen the training of international leading talents, professional backbones and reserve talents, and provide training for overseas project managers, international trade managers, international financial talents and foreign-related legal compliance talents and organise advanced training for the strategic reserve force of reserve talents.

"Teacher-apprentice" improves staff skills and operational level

Specialist technicians conduct the in-depth training at production sites
The “Zhaoyang Program” for young talents is a talent training project launched and implemented by Sinopec Corp. for its 150,000 young employees. Starting with newly recruited college and university graduates, and considering the aims to support the growth strategy of Sinopec Corp. and improve the career prospects of its new hires, the program is delivered in a progressive and systematic manner, with three stages: “Breaking Dawn”, “New Rising Sun” and “Flaming Red Rising Sun”. Taking into account their actual situation, Sinopec Corp. and its subsidiaries studied and put forward detailed implementation measures and plans to include all new employees in the “Zhaoyang Program”, and training was provided at each stage to various young talents. The quality training system was improved to include source training, follow-up training and whole process training. Innovative training was also provided, including the young leaders training, the “Young Marxist Training Project” training, the “Future Scientists” training, the outstanding engineers cultivation training and the internationalised operation strategic reserves intensified training, resulting in significant training outcomes.

The Council of IACEE recognised Sinopec Corp.’s “Zhaoyang Program” training system for young talents as a model for innovative and effective training, and praised the project for its systematic planning of training paths, integrated and innovative training model, integrated school-enterprise cooperation, optimised training organisation and operation, continuous improvement of training quality and gathering advantageous resources from all sides. The “Zhaoyang Program” has set an example for other enterprises globally and showcases the world-class leadership of Sinopec Corp. in continuing engineering education.

In June 2022, the International Association for Continuing Engineering Education (IACEE), an unofficial organisation affiliated with UNESCO, announced the “2022 IACEE Award for Corporate Leadership in Continuing Engineering Education”. Sinopec Corp. was honoured to be the only Chinese enterprise in the past decade to receive this award for its successful implementation and innovative approach to the “Zhaoyang Program” training system for young talents. This recognition has boosted Sinopec Corp.’s brand reputation and increased the international impact of Chinese enterprises in the field of human resource management, particularly in the area of talent learning and development. The "Zhaoyang Program" for young talents is a talent training project launched and implemented by Sinopec Corp. for its 150,000 young employees. Starting with newly recruited college and university graduates, and considering the aims to support the growth strategy of Sinopec Corp. and improve the career prospects of its new hires, the program is delivered in a progressive and systematic manner, with three stages: “Breaking Dawn”, “New Rising Sun” and “Flaming Red Rising Sun”. Taking into account their actual situation, Sinopec Corp. and its subsidiaries studied and put forward detailed implementation measures and plans to include all new employees in the “Zhaoyang Program”, and training was provided at each stage to various young talents. The quality training system was improved to include source training, follow-up training and whole process training. Innovative training was also provided, including the young leaders training, the “Young Marxist Training Project” training, the “Future Scientists” training, the outstanding engineers cultivation training and the internationalised operation strategic reserves intensified training, resulting in significant training outcomes.

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By the end of 2022, Sinopec Corp. had 24 academicians, 7 national young and middle-aged experts with outstanding contributions, 22 national candidates for the National Hundred, Thousand, and Ten Thousand Talent Project, 9 overseas high-level experts, 375 on-the-job employee enjoying special government allowances, 8 winners of the China Skills Award and 104 winners of the National Technical Expert.
Sinopec Corp.

· Corporate Governance
  · Building a Solid Safety Defence Line
  · Addressing Climate Change
  · Respecting Human Rights and Cultivating Talents
  · Protecting the Environment
  · Fulfilling Social Responsibility

Fulfilling Social Responsibility

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**Contributing to Social Philanthropy**

Upholding the principle of supporting rural revitalisation and common prosperity, the Company actively participates in the establishment of a social contribution system to improve people’s livelihood and well-being and promote social equity. The Company has been carrying out nationwide social philanthropy and voluntary activities and has explored and developed a number of Sinopec-style support and assistance modes. Sinopec Corp. is dedicated to addressing people’s concerns, improving their living conditions, and contributing to social development.

According to the 14th Sinopec Five-Year Plan for Rural Revitalisation, the Sinopec Implementation Plan for Education Support, and the Sinopec Implementation Plan for Rural Revitalisation through Product Consumption, the Company accelerates the implementation of poverty alleviation projects on fields of industry, education, and consumption, making practical contributions to rural revitalisation and common prosperity. In 2022, the Company invested RMB 211 million in assistance funds, and introduced RMB 231 million in assistance funds for poverty alleviation. It also trained 65,300 participants, and assisted in marketing RMB 1.156 billion worth of products from targeted poverty areas, leading to new heights in poverty alleviation indicators in six targeted counties. 70 directly affiliated subsidiaries undertook the task of reliving 616 villages from poverty. The Company dispatched 927 cadres stationed in villages and recruited 31 internal volunteers to participate in the education and construction of targeted counties.

**Increasing poverty alleviation efforts**

The Company continues to improve its “one county, one chain” poverty alleviation mode and industrial development plan, promoting the integration of industrial development and poverty alleviation through consumption, forming a positive cycle of “production promoting marketing, marketing-oriented production, mutual promotion of production and marketing, and two-way promotion”. The aim is to extend the industry from farming to deep processing of products, and establish each county with a high-quality agricultural product industry chain and a number of market-competitive products, creating a full chain support mode combining “industry + consumption” and “one county, one chain”.

- **Starting with the source of the industrial chain**, Sinopec Corp. promoted the industrial chain of agricultural products developing from primary processing to intensive processing through large-scale planting, acquisition, storage, transportation and processing. With the assistance of Sinopec Corp., Dongxiang County Quinoa Processing Industrial Park (Phase 2) has been in production smoothly.

- **Relaying on the Company’s advantages** in management and human resources, Sinopec Corp. explored the establishment of a multi-party cooperative development model of “government + scientific research institutions + enterprises + new business entities + farmers” to help regional characteristic industries to gain larger, stronger and better development.

- **The Company gave full play to its advantages of specialised operation and sales channels** to help the integrated development of the tertiary industry in rural areas. In 2022, the Company sold more than RMB 70 million of Dongxiang quinoa by increasing offline marketing efforts and organising social philanthropy live streaming named “Charity Selection”.

**Grouping towards consumption and production**

- **Gradually expanded the coverage of “cloud classroom”,** promoted the programme of “Northern the Same Lessons” in schools in the east and west of China, and significantly improved teaching quality.
- **More than 2,000 teachers have been trained, and more than 170 mentoring pairs of “Leaning Master and Apprentice” have been established.**
- **Hollibiz the Company’s employees to pair up with local students, and totally helped more than 1,500 students.**

**Collecting support with love**

- **Carried out deep cooperation with the China Children and Teenagers’ Fund, implemented the “Springs Bud Power Station” to help get built 11 “Girls’ Growth Friendly Spaces” and distributed 1,500 “Scholards of Spring Bud Love.”**
- **Conducted mandatory promotion activities named “Children’s Remembrance to the Party, Contribute with Love.” among 8,000 teachers and students in 13 schools receiving the assistance from Sinopec Corp. in western China.**

**Three-dimensional assistance**

- **Involved a total of RMB 50 million in hardware renovation, such as equipping schools with smart platforms, and upgrading campus libraries.**
- **Sent a total of 245 volunteers to the schools receiving assistance from Sinopec Corp. for a total of 2,105 days.**
- **Mobilised the EAP counselors of Sinopec Corp. to organise more than 500 psychological counselling sessions for teachers and students.**
- **On the basis of the pairing of sister schools, Sinopec Corp. invited experts and famous teachers to enhance the training of local teachers by adopting the mode of “expert guidance + case study + practice exercise + achievement demonstration”.**

**Giving full play to the advantages of chains, building a support model of “industry + consumption”**

On February 8, 2023, Sinopec Corp. and the People’s Government of Dongxiang Autonomous County, Linxia Prefecture, Gansu Province signed the Framework Agreement on the Five-Year Work Plan for Sinopec Corp. to Help Dongxiang County. In the next five years, Sinopec Corp. will provide further support to Dongxiang by investing over RMB 500 million in assistance funds, helping the county achieve its goal of rural revitalisation.

Dongxiang Autonomous County was once considered a severely poverty-stricken area, designated as one of the “Three Regions and Three Prefectures”, and the primary target for poverty alleviation in Gansu Province. Since 2013, Sinopec Corp. has made significant efforts to provide paired assistance to Dongxiang. The Company has invested over RMB 700 million in assistance funds, implemented 235 assistance projects, and led the local government to achieve its goal of poverty alleviation.

- **The first “Springs Bud Power Station” was built at Dongxiang Petrochemical Middle School, designed as a girl-friendly space.**
- **The project has received high praise from both the local government and residents.**
- **The Company continued to play its own advantages, using 28,000 Easy joy convenience stores, group purchase network for Sinopec Corp. employees and other online and offline platforms, to create a Sinopec-style “industry + consumption” support model. In 2022, Sinopec Corp. provided support and assistance for 1,963 types of products, covering 22 provinces and 149 poverty alleviation counties, with total sales of RMB 1.156 billion for poverty alleviation.**

**Enlightening Locals through Education Assistance: Allowing Children to Enjoy Better Education**

- **Sinopec Corp. regards education assistance as the top priority.** The Company supported the Buletenggou Primary School, which has helped address the issue of local children facing difficulties in attending school. Moreover, the Company set up Sinopec Fellowship and provided support for the Hope project “Care for Girls”. In July 2022, Sinopec Corp. and the China Children and Teenagers’ Fund jointly launched the “Springs Bud Power Station” public welfare project under the guidance of the All China Women’s Federation. The first “Springs Bud Power Station,” designed as a girl-friendly space, has been built at Dongxiang Petrochemical Middle School. Over the past ten years, Sinopec Corp. has invested a total of RMB 174 million in implementing 28 assistance projects and supporting 88,511 students in need, promoting high-quality and balanced development of education.

**Starting from hardware and software, centering on promoting educational assistance from campus, teachers and students, the Company explored a new mode of “collectivised, three-dimensional and paired” educational assistance, aiming to effectively improve the level of basic education in rural areas and create a better environment for children’s growth and success.**

**Featured case**

Sinopec Corp. launched the five-year work plan to help Dongxiang

Starting from hardware and software, centering on promoting educational assistance from campus, teachers and students, the Company explored a new mode of “collectivised, three-dimensional and paired” educational assistance, aiming to effectively improve the level of basic education in rural areas and create a better environment for children's growth and success.
Public Welfare Action

Sinopec has participated in a series of public welfare projects for many years to actively give back to society, such as "Sinopec Lifeline Express", "Warm Stations Programme", "Sanitation Workers’ Stations Programme", "Driver’s Home Programme for Truck Drivers" and "Spring Bud Project for Young Girls". Also, the Company upholds the volunteer service spirit of "dedication, fraternity, mutual-assistance, and progress", and encourages its employees to actively participate in volunteer activities to contribute love and warmth to the society. In 2022, Sinopec set up 3,132 youth volunteer service teams, and 87,000 young people from Sinopec voluntarily registered as young volunteers. They have been actively contributing to rural revitalisation, service guarantee for major events and community harmony construction.

"Home on the Road": "Driver’s Home Programme" and "Warm Stations Programme"

The Company has built the gas station into a window for volunteer services by setting up "Driver’s Home" and "Warm Stations" to provide warm services such as rest, catering, hot water, bathing, laundry, parking, and charging for outdoor and new forms of workers such as truck drivers, sanitation workers, and couriers. It has made every efforts to build a "home on the road" for outdoor workers.

By the end of 2022, Sinopec Corp. has built and operated 3,586 Drivers’ Homes and 5,415 Warm Stations across China.

"Desert Health Express": Medical Assistance Volunteer Service Project in Remote Areas

The "Desert Health Express" medical volunteer service team of Northwest Oilfield was established in May 2015 by leveraging the resources of the gas-defence medical station at the Northwest Oilfield Public Security Fire Control Centre. The team signed cooperation agreements with the Beijing Road Medical Area of the General Hospital of Xinjiang Military Region and the people’s hospitals in Bazhou, Luntai County, Kuqa City, and Shayu County to set up emergency green medical channels. Additionally, the team has implemented a volunteer service model that involves "pairing up" with the masses, providing "menu-based" medical consultations, and utilising hospital linkages to enhance medical care.

The team is composed of 27 medical personnel with professional rescue qualifications, covering the southern Xinjiang work area of Northwest Oilfield and surrounding towns and villages. The team engages in extensive volunteer work, including self-rescue and mutual-rescue knowledge dissemination, telemedicine consultation, free medical treatment, medical delivery, and health knowledge lectures. As a result of their dedication, the team has been praised by the locals as the "lifeline of the desert". In 2022, the "Desert Health Express" medical assistance volunteer service project in remote areas won the bronze prize in the 6th China Youth Volunteer Service Project Competition.

"Sinopec Lifeline Express" marks the first health express donated by domestic enterprises. It is equipped with advanced ophthalmic diagnosis and treatment equipment and professional doctors, with a success rate of cataract surgery more than 99%. The Express enters three regions each year, and stays in each region for three months, treating an average of 3,000 patients annually.

Over the past ten years, Sinopec Corp. has served more than 93 million migrant workers returning to rural areas during the Spring Festival by providing more than 48,000 volunteer services and refuelling more than 132,000 litres of 92,000 motorcycles free of charge.

Sanitation workers taste sweet soup balls at "Warm Stations"

Over the past 18 years, the Company has donated RMB 184 million to public welfare undertakings of Health Express, entered 44 service points in 18 provinces (autonomous regions), and helped more than 50,000 poor cataract patients and their families to get out of the predicament.

The Company also donated 23 cataract treatment centres and provided technical training and advanced diagnostic and therapeutic equipment for local ophthalmologists, serving as "Sinopec Lifeline Express" that never leaves.

For ten consecutive years, Sinopec Corp. has been launching a large-scale public welfare activity called "Warm Stations Help Homebound Migrant Workers during the Spring Festival". With gas stations as the service platform, Sinopec Corp. has provided free refuelling for "homebound Migrant Workers on Motorcycle" in key areas such as Guangdong, Guangxi, and Jiangxi, as well as free services such as hot porridge, ginger soup, rest room, and baby care room. In 2022, the "Warm Stations Programme" was transformed and upgraded by incorporating 243 new gas stations to provide nearly 20 kinds of free convenience services for outdoor workers and left-behind personnel, such as emergency medicines, hot water, and hot food.

Employees of Taizhou Company volunteer to help farmers harvest Wendan

In 2022

The service times of volunteers were 0.965 million person-times with a service duration of 1.601 million hours.

Providing 126 training sessions on prevention of common diseases, trauma first aid, and cardiopulmonary resuscitation, with more than 10,000 attendances.

Opening up a health consultation hotline, and offering more than 12,000 consultations.

Organising more than 30 medical treatment trips to patients in the countryside, helping out more than 7,000 villagers, transferring 1,716 patients with sudden illness, delivering 5 newborns, and saving 307 lives from the death line.

Offering services for 2,769 days in total.

Over the past ten years, Sinopec Corp. has served more than 53 million migrant workers returning to rural areas during the Spring Festival by providing more than 48,000 volunteer services and refuelling more than 132,000 litres of 92,000 motorcycles free of charge.

"Driver's Home Home on the Road": "Home on the Road": "Driver’s Home Programme" and "Warm Stations Programme"
Sinopac Corp. always attaches great importance to the optimisation of supply chain management, and insists on incorporating ESG into its suppliers and contractors management system. The Company actively promotes the principle of honest, safe, timely, green and economic procurement, building a compliant, green and responsible procurement system. The Company prioritises the ESG performance of suppliers and contractors and encourages them to strengthen sustainable development management and practices through risk identification and management mechanisms and supporting social and environmental risk prevention systems.

Supplier Management

Sinopac Corp. evaluates the ESG performance of suppliers in social responsibility, environmental protection, resource conservation, safety management, and other aspects by incorporating health and safety and environmental protection requirements into the supplier qualification audit process. This evaluation process encourages suppliers to continuously improve their own governance level and practise sustainable development. Meanwhile, to further improve the standards and systems of green procurement, the Company compiled and issued the Key Points of Green Procurement Work for Sinopac Corp. in 2022 based on the existing green procurement management measures to actively advance the development of the “Three New” industries, to comprehensively promote the transformation of green and low-carbon procurement.

ESG Risk Management for Suppliers

- The Company includes a clause in the template of tender documents that states any supplier who has experienced major safety accidents, been included in the list of serious illegal and dishonest enterprises or the list of dishonest individuals subject to execution in the past two years will be denied. This measure helps prevent and control supply risks from the source.
- Suppliers must sign the Letter of Responsibility for Business Ethics and promise to strictly abide by the laws and regulations related to anti-corruption and anti-bribery, as well as the internal integrity regulations of both parties.
- Qualification inspection: The Company has integrated environmental protection, resource conservation, safety management, and other aspects by incorporating health and safety and environmental protection requirements into its supplier assessment process. This evaluation process encourages suppliers to continuously improve their own governance level and practise sustainable development. Meanwhile, to further improve the standards and systems of green procurement, the Company compiled and issued the Key Points of Green Procurement Work for Sinopac Corp. in 2022 based on the existing green procurement management measures to actively advance the development of the “Three New” industries, to comprehensively promote the transformation of green and low-carbon procurement.
- On-site inspection: The inspection covers the suppliers’ ISO14000 and ISO18000 system certifications, green products standards, workplace safety emergency management system, labour protection measures, discharge and emissions, and waste treatment. HSE management factors have been given greater weight for on-site inspection criteria.
- A third-party evaluation institution is entrusted to carry out on-site due diligence of suppliers by on-site investigation and interview, covering but not limited to production and operation, equipment plant, company personnel, internal control management, financial management, etc. In 2022, the Company conducted due diligence on 2,933 suppliers, bringing the accumulative total to 10,378.

Vigorously Promoting Green Procurement

In 2022, the Company issued the Key Points of Green Procurement Work for Sinopac Corp. and the Green Material Procurement Catalogue for Sinopac Corp. (2022 Edition) to implement the national energy efficiency enhancement plan. These measures aim to optimise energy-saving technology and equipment, and comprehensively promote the upgrading and procurement of products. To strengthen its commitment to sustainability, Sinopac Corp. incorporates green evaluation indicators such as green management system construction, clean production, safe production, treatment of three wastes, green warehousing, packaging, and logistics into supplier evaluation standards. Moreover, it clarifies the selection conditions and requirements in procurement plans, bid evaluation methods, and contract terms to encourage suppliers into developing green technologies and green products. In this way, it offers support and guidance for the green transformation of suppliers. In the meantime, the Company continuously strengthens the search and cultivation of energy supply resources in geothermal, hydrogen, photovoltaic, wind and other new energy fields, and actively serves the development of the “Three New” industries.

- By the end of 2022, suppliers with A-AAA corporate credit certification accounted for 68.8%, while B-BBB and C-CCC suppliers accounted for 31.1% and 0.1%, respectively.
- The Company established supplier performance evaluation indicators that feature corporate credit certification, product quality evaluation, dynamic performance evaluation, and market performance as the main contents. These indicators help objectively evaluate the comprehensive strength of suppliers.
- The Company focuses on 26 key areas of material procurement, such as bidding and procurement framework agreement, to build a procurement process management and supervision platform. This platform promotes standardised, tool-based, and automated risk prevention and control, and facilitates the construction of a digital procurement business supervision system.
- The Company held supplier training sessions, introducing its principles of material supply and management, critical points of bidding management system, and established stricter anti-corruption, environmental protection, safety management, and green procurement standards, urging suppliers to fulfil their obligations of acting in good faith.
To continuously encourage contractors into enhancing their responsibility performance, the Company incorporates ESG-related requirements such as openness and transparency, integrity, anti-corruption, HSE qualification and management, safety and environmental protection qualification and management, in its management systems such as the Sinopec Management Measures for Market Integrity System of Construction Projects, the Regulations on Sinopec's Quality Accident Management, the Management Regulations on Sinopec Production Safety Accident, the Management Guidelines on Sinopec’s Scoring and Quantitative Assessment of Project Contractors, and the Management Regulations on Sinopec Engineering Construction and Maintenance Contractors.

This Company constantly promotes the scoring and quantitative assessment of contractors and employees, and assesses contractors’ safety, quality, progress, comprehensive management and other behaviours. The Company assesses these behaviours through event records, urging contractors to comprehensively review and improve their own practices. In 2022, the Company scored 2,857 direct operators for safety and identified 67 operators who were given "compulsory departure", and 134 operators were given "suspension of operation qualification". In addition, by applying the contractor management information platform, the Company realised the comprehensive management of contractors and employees, and significantly improved the management and control level.

Sinopec Corp. prioritises coordinated development with the communities where it is operated, and takes swift action in identifying, assessing, and resolving any risks that may conflict with the community. The Company implements a community communication mechanism and development participation plan that respects the cultural customs and rituals of the community, promoting the win-win situation of enterprise development and community prosperity.

The Company formulates social impact assessment procedures covering key stages before project commissioning, such as project proposal development, construction scheme formulation, and environmental protection acceptance, to ensure that the whole life cycle of the project complies with national and local environmental laws and regulations. Overseas subsidiaries often hold public hearings in the communities where they operate before engaging in important construction and production activities. This allows locals to voice their opinions and ensures that community and resident interests are protected as much as possible. In 2022, the Company issued the Sinopec Notice on Strengthening the Prevention and Control of Noise Pollution to investigate risks from the aspects of strengthening noise pollution prevention and ecological protection measures in combination with national and local environmental protection policies and management systems such as the Management Measures on Environmental Protection of Sinopec and the Management Regulations on Sinopec Pollution Prevention and Control. The comprehensive remediation of noise pollution shall be included in the scope of special investigation and remediation of the Company’s environmental protection compliance in accordance with the law, and the Sinopec Noise Pollution Prevention and Control Compliance Checklist shall be prepared and incorporated into the environmental protection information system for real-time monitoring.

![Case](image-url)

**Establishing a Reward System for Environmental Protection Reporting**

Since 2011, Jinling Petrochemical Company has established and continuously improved the reward system for environmental protection reporting to encourage the surrounding communities and all employees to actively participate in environmental protection supervision. The company set up a special hotline for receiving environmental protection supervision reports and encouraged anyone who detects abnormal odour to call and report the situation. Upon receiving a report, Jinling Petrochemical Company immediately conducts tracing, searching, and analysis. If the odour is caused by production, the relevant subsidiaries are promptly urged to rectify the issue; if the odour is caused by an external source, it will also be promptly reported to the informer to jointly supervise and improve the regional atmospheric environmental quality. To incentivise the public to participate in environmental protection supervision, Jinling Petrochemical Company offers telephone card rewards to those who actively participate in environmental protection reporting. This initiative has effectively motivated the public to get involved in environmental protection supervision and jointly build odour-free factories.
Community Participation Programme

The Company firmly upholds its commitment to "repaying the local area and contributing to the prosperity of the local economy", by actively engaging in community development support work and promoting local community construction and economic development. Its overseas subsidiaries strictly implement the tax payment requirements in accordance with local laws, abide by international safety, health, and environmental protection standards, and give priority to the employment of local employees. Moreover, they strive to increase the localisation ratio of employees, provide job opportunities for local talents, improve the well-being of residents in local communities, advance the sustainable development of the community environment, and achieve mutual growth between the Company and the community.

Sinopec Maoming Petrochemical Company has an industrial diversion canal of more than 20 kilometres long that flows through "Two Cities and One District". It is not only a special canal for oil refining production, but also undertakes the task of guaranteeing irrigation water for more than 50,000 mu (about 33.3 km²) of farmland along the canal. In order to meet the local irrigation water demand for spring ploughing, Sinopec Maoming Petrochemical Company gains a thorough understanding of the water demand of villages and towns, calculates the total daily industrial and agricultural water consumption, and makes an overall plan for water supply, giving full play to the advantages of the industrial diversion canal while ensuring the normal water use for oil refining production. It aims to make a scientific allocation of water for guaranteeing the irrigation water for farmland along the canal. During the spring ploughing season, its volunteer service team also goes to the farmland along the industrial diversion canal and helps the villagers who lack labour do farm work and solve their urgent needs.

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Implementing the Cocoa Development Plan

Mansarovar in Colombia under Sinopec International Petroleum Exploration and Production Corporation has developed a social communication and participation plan to create value for the community where the oilfield is located by supporting the development of local education, public infrastructure, health care and so on. Since 2018, it has implemented the Cocoa Development Plan to help develop the cocoa industry in the Magdalena region of Colombia, with a cumulative investment of more than 3.2 billion pesos, bringing benefits to more than 400 families. In 2022, it has successfully fulfilled all the commitments of the Cocoa Development Plan, effectively improved the production efficiency of the local cocoa industry, and strengthened the production base of Colombian agroforestry producers and cocoa cooperatives.

Product and Service Management

Quality Management

Adhering to the tenet of "high quality, sufficient quantity, and customer satisfaction", Sinopec Corp. has always focused on the customer-centred business philosophy and made every efforts to improve product quality and service level. To achieve this, the Company implements quality management measures throughout the entire life cycle of its products. This approach helps to enhance the service management process, improve the customer experience, and safeguard the rights and interests of its customers.

In strict accordance with the laws and regulations such as the Product Metrology Law of the People’s Republic of China, the Metrology Law of the People’s Republic of China, and the Standardisation Law of The People’s Republic of China, the Company has formulated management documents such as the Measures for the Quality Management of Refined Oil and Natural Gas, the Regulations on the Quality Risk Management of Refined Oil and Natural Gas, and the Work Standards for the Quality Inspection Room of Refined Oil and Natural Gas to strictly control quality risks, fulfil the social responsibility of "every drop of oil is a promise", and provide consumers with safe and high-quality products. All forty marketing subsidiaries of the Company have obtained third-party certification for their ISO9000 quality management systems. In 2022, more than 25,000 batches of samples of the Company accepted random external review at the national, provincial, and municipal levels and were all qualified. In 2022, there were no known incidents involving product recalls.
Taking Multiple Measures to Create Safe and Premium Products

**Establishing the internal control indicator system for the oil from external sources**
- The Company proposed the concept of "intrinsic quality safety" of refined oil, and took the lead to conduct research on illegal added components in refined oil and their hazards in China. Moreover, the Company created an innovative internal control indicator system for refined oil that includes 21 indicators and 7 detection methods. This system covers gasoline, diesel and denatured fuel ethanol, addressing loopholes in national standards and filling gaps in China.

**Establishing the supplier management system**
- The Company established two catalogues of suppliers and purchasable production enterprises for unified management by the headquarters, and also set up the red line principle of "Three Non-procurement".
- The Company implemented a centralised procurement strategy.
- The Company established a sound supplier evaluation system, a supplier interview mechanism, and a red and yellow card system, and built a closed-loop supplier management model for evaluation, shortlisting, assessment, and adjustment.

**Improving the quality inspection system**
- The Company set up full-time quality management departments in headquarters, provincial and municipal subsidiaries, and established a complete laboratory network.
- By opening up the channel of talents growth and improving the training mechanism for professionals, and strengthening the training for professional competence, the Company built a professional management and inspection team.
- The Company carried out quality spot checks by sales companies, provincial and municipal management departments, taking immediate action to stop unqualified oil products identified in the internal spot check from entering the market.

**Building the process quality control system**
- Through the construction of "system + technology + standard", the Company built a standardised process quality control system covering the whole process of refined oil circulation to ensure that the warehousing-in, storage, transportation and sales are under control.
  - Warehousing-in: Strictly implement the full-indicator inspection requirements of "national standard + internal control", resolutely recall the unqualified products, and share the return information online to ensure that all warehousing-in oil products meet the required standards.
  - Storage: Implement special line transfer, special tank storage, special pump, special pipe and special tank for unloading, transfer and refitting of oil products; strictly control the outbound inspection, to ensure that no unqualified products are released from the warehouse.
  - Transportation: Implement a "special vehicle for special use and separated transportation of diesel and gasoline" to prevent oil pollution; assign special personnel to track the route of oil tankers through GPS positioning systems to prevent oil quality accidents caused by human factors during transportation.
  - Sales: Strictly manage the oil unloading process, unify and standardise the sampling and testing of oil products before unloading, and refuse to unload any unqualified products; implement the system of keeping oil product samples at the station until sales are completed, to ensure that they are 100% qualified.

**Promoting the construction of quality informatisation**
- The Company built a laboratory information management system covering more than 340 quality inspection rooms, set up a quality control platform for refined oil products, and established the largest quality database for refined oil and gas products in China.
- By using big data analysis technologies, the Company set up a new management mode of intelligent analysis, management, and control of the quality of refined oil products.

**Continuously engaging in quality culture construction**
- The Company carried out activities to enhance the quality awareness of all employees and fostered a culture where all employees actively participate in quality management.
- The Company assisted government departments in engaging in quality supervision, and cooperated with the media to publicise quality knowledge for jointly purifying the market environment, and building a quality culture with its own characteristics.
Service Management

Adhering to the "customer-centred" service concept, the Company strictly follows the applicable service and product labelling regulations, continuously optimises service measures, fully strengthens customer communication, listens to customer demands and provides a positive service experience while complying with laws and regulations such as the Law of the People’s Republic of China on Protection of Consumer Rights and Interests and the Law of the People’s Republic of China against Anti-Unfair Competition. The Company has established a closed-loop management process of "handling, settlement, and return visit" to ensure timely and proper resolution of the complaints submitted by customers. In 2022, no customer complaints occurred in the sales and service of chemical products of the Company.

The Company strictly complies with laws and regulations in the process of marketing and product promotion to prevent false or exaggerated descriptions, and has produced advertisements in accordance with relevant local laws and regulations, including but not limited to the Advertising Law of the People’s Republic of China.

Oil Products Sales

Implementing the cleaning and upgrading plan

• The Company formulated the Operation Manual for Cleaning and Maintenance of Refuelling (Gas) Stations to create a clean and tidy consumption environment.

Strengthening the customer service management

• Thirty-one provincial and municipal sales companies have completed the centralisation and unification of customer services so that all hotline and online customer services have been transferred to the national unified customer service centre for handling.

About 4.2 million customer service calls were received throughout the year of 2022, of which about 3.02 million were manual customer service calls. All the problems reflected by customers were verified and answered.

Improving service efficiency

• The Company focused on service problems and carried out "the 100-day Competition". It issued the Operation Manual for Integrated Energy Stations to streamline and optimise business processes, significantly improving the service efficiency of employees. The average time of vehicles entering the station was 287 seconds, which was 13 seconds shorter than that at the beginning of the competition.

Innovating service evaluation methods

• The Company established a unified information-based and standardised customer service evaluation system. After customers use the e-wallet for refuelling, the system immediately sends the service evaluation information to the customer’s mobile phone. Customers can evaluate the service quality from six aspects: service experience, venue environment, commodity recommendation, queuing time, equipment and facilities, and payment and invoicing.

• The Company enhanced the problem-solving services in the form of video conference, bulletin, briefing, evaluation and promotion of advanced experience, constantly enhancing the satisfaction and participation of customer evaluation.

In 2022, a total of 13 million customers participated in the evaluation, amounting to 367 million customer evaluations, with a satisfaction rate of 99.9%, up by 0.3 percentage points year-on-year; the negative comment rate from customers was 0.07%, with a year-on-year decrease of more than 60%.

Chemicals Sales

The Company is committed to continuously providing customers with efficient and premium services. In 2022, the Company extended the usage of the "Internet + Packaging QR Code" for chemical products, launching the QR code inquiry function of Sinopec’s chemical products’ electronic quality inspection sheets on Sinopec Chememall online platform, and integrating the chemicals quality inspection sheets of 37 enterprises on the website. Customers can scan the QR code on the packaging bag through a mobile app to obtain the electronic quality inspection form of the corresponding batch of products. This initiative has been widely praised by customers for its convenience and fast processing speed.

Under the guidance of the Standardisation Administration of the P.R.C., the Company has collaborated with co-construction subsidiaries to promote the construction of the national technical standard innovation base for leading industrial upgrading through standard innovations. As of 2022, it has formulated 2 international standards such as the Code for Foam Glass Products for Building-related Thermal Insulation Materials, 3 national standards including the Evaluation on Service Quality of Cross-border E-commerce Platform, 64 group standards like General Rules on Quality Grading and Evaluation of Industrial Products, and more than 5,800 corporate standards including the Detailed Rules for Quality Evaluation of EPEC Products - Plate Welded Pressure Vessels. The Company has continued to strengthen the deep integration of "production, education, research, and application", and worked with key domestic manufacturers to vigorously promote the localisation of major equipment and cooperate in 26 key localised projects, including oil and gas field exploration and development, LNG handling, storage, and transportation, special industrial pumps, national production control system, and other special equipment. They focused on inventing new technologies and optimising existing ones, and promoted domestic equipment manufacturing enterprises to transform scientific and technological achievements into industrial competitive advantages and to enhance the level of industrialisation.

The Company has been a member of the Alliance to End Plastic Wastes for three years. Throughout this period, the Company has actively fulfilled its obligations as a member and actively participated in relevant work. Additionally, the Company has taken an active role in building a global governance system under the mechanism of the World Business Council for Sustainable Development to demonstrate Chinese enterprises’ actions and results in addressing climate change, and to promote best practices among Chinese enterprises.

Promoting Win-win Development of the Industry

Case

Actively Fulfilling the Obligations as a Member of the Alliance to End Plastic Wastes

Sinopec Corp. joined the Alliance to End Plastic Wastes (AEPW) in 2019, being the first mainland Chinese enterprise to join the Alliance. In 2022, nine new projects promoted by the Company in the field of publicity and education and the application of waste plastics were approved in principle by the Alliance. By cooperating with Tonghua University and Tongji University, the Company released three research reports in plastic recycling, providing solutions to plastic pollution control from different perspectives. In addition to participating in the daily representative meetings of the Alliance and maintaining communication, the Company also appointed senior experts to serve as members of the Alliance’s Advanced Recycling Theme Expert Group (TEG), to participate in the work and meetings of the AEPW TEG, to attend the discussions related to chemical recycling led by the Alliance, and to review the start-up incubator projects carried out by the Alliance in China.
Key Performance

Environmental Performance

GHGs emissions and management

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHGs emissions (million tonnes CO₂-equivalent)</td>
<td>170.94</td>
<td>172.56</td>
<td>161.79</td>
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<tr>
<td>Direct GHGs emissions</td>
<td>128.58</td>
<td>148.38</td>
<td>137.72</td>
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<tr>
<td>Indirect GHGs emissions</td>
<td>42.36</td>
<td>24.18</td>
<td>24.07</td>
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<tr>
<td>Oil &amp; gas exploration and production segment</td>
<td>24.42</td>
<td>22.47</td>
<td>20.36</td>
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<tr>
<td>Refining and chemicals segment</td>
<td>144.32</td>
<td>148.34</td>
<td>139.82</td>
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<tr>
<td>Marketing segment</td>
<td>2.19</td>
<td>1.75</td>
<td>1.61</td>
</tr>
<tr>
<td>GHGs emissions intensity (tonnes CO₂-equivalent/MT)</td>
<td>81.22</td>
<td>62.96</td>
<td>48.76</td>
</tr>
<tr>
<td>CO₂ capture (thousand tonnes)</td>
<td>1,290</td>
<td>1,520</td>
<td>1,534</td>
</tr>
<tr>
<td>Methane recovery (million cubic metres)</td>
<td>600</td>
<td>717</td>
<td>834</td>
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Energy and resources

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of crude oil (million tonnes)</td>
<td>1.07</td>
<td>1.07</td>
<td>1.06</td>
</tr>
<tr>
<td>Consumption of natural gas (billion cubic metres)</td>
<td>3.78</td>
<td>4.06</td>
<td>4.40</td>
</tr>
<tr>
<td>Consumption of purchased electricity (billion kWh)</td>
<td>30.83</td>
<td>33.80</td>
<td>33.88</td>
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<tr>
<td>Consumption of coal (million tonnes)</td>
<td>15.00</td>
<td>35.00</td>
<td>38.19</td>
</tr>
<tr>
<td>Fresh water withdrawal for industrial use (million cubic metres)</td>
<td>643.20</td>
<td>636.16</td>
<td>629.10</td>
</tr>
<tr>
<td>Fresh water withdrawal for industrial use intensity (m³/MT)</td>
<td>305.60</td>
<td>232.10</td>
<td>189.59</td>
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</tbody>
</table>

Emissions, effluents, and wastes

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD (tonnes)</td>
<td>5,743</td>
<td>5,185</td>
<td>4,755</td>
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<td>Ammonia and nitrogen (tonnes)</td>
<td>142</td>
<td>107</td>
<td>75</td>
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<tr>
<td>Sulphur dioxide (tonnes)</td>
<td>5,922</td>
<td>5,117</td>
<td>4,910</td>
</tr>
<tr>
<td>Nitrogen oxides (tonnes)</td>
<td>21,762</td>
<td>20,774</td>
<td>19,247</td>
</tr>
<tr>
<td>Solid waste (thousand tonnes)</td>
<td>1,710.8</td>
<td>1,931.6</td>
<td>2,036.9</td>
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<tr>
<td>Solid waste intensity (tonnes/MT)</td>
<td>0.81</td>
<td>0.70</td>
<td>0.61</td>
</tr>
<tr>
<td>Weight of disposed hazardous waste (thousand tonnes)</td>
<td>731.1</td>
<td>461.0</td>
<td>515.0</td>
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<tr>
<td>Hazardous waste intensity (tonnes/MT)</td>
<td>0.35</td>
<td>0.17</td>
<td>0.16</td>
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</tbody>
</table>

Note 1: The Company conducts GHGs emission (direct and indirect) accounting and verification according to ISO14064-1:2018 standards, covering six gases including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluoro carbons (HFCs), per fluorinated compounds (PFCs) and sulphur hexafluoride (SF₆).

Note 2: GHGs emissions intensity (tonnes CO₂-equivalent/MT) = Greenhouse gas emissions / revenue (RMB million)
### Social Performance

#### Employment and training

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees</td>
<td>384,065</td>
<td>385,751</td>
<td>374,791</td>
</tr>
<tr>
<td>Employees below 30 years of age</td>
<td>40,076</td>
<td>41,029</td>
<td>43,826</td>
</tr>
<tr>
<td>Employees between 31 and 50 years of age</td>
<td>254,948</td>
<td>243,706</td>
<td>224,069</td>
</tr>
<tr>
<td>Employees over 51 years of age</td>
<td>89,041</td>
<td>101,016</td>
<td>106,979</td>
</tr>
<tr>
<td>Male employees</td>
<td>257,053</td>
<td>262,108</td>
<td>258,762</td>
</tr>
<tr>
<td>Female employees</td>
<td>127,012</td>
<td>123,643</td>
<td>116,029</td>
</tr>
<tr>
<td>Percentage of female employees (%)</td>
<td>33.1</td>
<td>32.1</td>
<td>31.0</td>
</tr>
<tr>
<td>Percentage of female employees in management (%)</td>
<td>12.59</td>
<td>12.91</td>
<td>13.45</td>
</tr>
<tr>
<td>Percentage of ethnic minority employees (%)</td>
<td>3.8</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Number of employees newly hired during reporting period</td>
<td>16,011</td>
<td>21,062</td>
<td>20,891</td>
</tr>
<tr>
<td>Number of employees turnover during reporting period</td>
<td>13,963</td>
<td>11,797</td>
<td>15,046</td>
</tr>
<tr>
<td>Turnover rate (%)</td>
<td>6.69</td>
<td>5.64</td>
<td>6.29</td>
</tr>
<tr>
<td>Turnover rate of male employees (%)</td>
<td>—</td>
<td>0.56</td>
<td>0.69</td>
</tr>
<tr>
<td>Turnover rate of female employees (%)</td>
<td>—</td>
<td>0.87</td>
<td>0.97</td>
</tr>
<tr>
<td>Turnover rate of employees below 30 years of age (%)</td>
<td>1.5</td>
<td>3.10</td>
<td>2.65</td>
</tr>
<tr>
<td>Turnover rate of employees between 31 and 50 years of age (%)</td>
<td>0.5</td>
<td>0.56</td>
<td>0.59</td>
</tr>
<tr>
<td>Turnover rate of employees over 51 years of age (%)</td>
<td>0.3</td>
<td>0.16</td>
<td>0.30</td>
</tr>
<tr>
<td>Turnover rate of senior management staff (%)</td>
<td>—</td>
<td>—</td>
<td>0.60</td>
</tr>
<tr>
<td>Turnover rate of mid-level management staff (%)</td>
<td>—</td>
<td>—</td>
<td>0.23</td>
</tr>
<tr>
<td>Turnover rate of grassroots employees (%)</td>
<td>—</td>
<td>—</td>
<td>0.71</td>
</tr>
<tr>
<td>Collective contract coverage (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Social insurance coverage (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Enterprise annuity coverage (%)</td>
<td>80.59</td>
<td>81.48</td>
<td>80</td>
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<tr>
<td>Percentage of employees with labour union membership (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Vocational training coverage (%)</td>
<td>85.7</td>
<td>87.3</td>
<td>99.3</td>
</tr>
<tr>
<td>Total amount of vocational training (hours)</td>
<td>12,683,165</td>
<td>14,637,601</td>
<td>14,615,486</td>
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<tr>
<td>Average training hours of employees (hours)</td>
<td>33.47</td>
<td>35.71</td>
<td>39.33</td>
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<tr>
<td>Average training hours of male employees (hours)</td>
<td>52.61</td>
<td>55.28</td>
<td>58.31</td>
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<tr>
<td>Average training hours of female employees (hours)</td>
<td>53.53</td>
<td>55.64</td>
<td>58.68</td>
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<tr>
<td>Average training hours of senior management staff (hours)</td>
<td>52.21</td>
<td>59.15</td>
<td>61.35</td>
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<tr>
<td>Average training hours of mid-level management staff (hours)</td>
<td>48.65</td>
<td>55.37</td>
<td>58.56</td>
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<tr>
<td>Average training hours of grassroots employees (hours)</td>
<td>45.62</td>
<td>52.81</td>
<td>54.21</td>
</tr>
<tr>
<td>Vocational training participation (person-time)</td>
<td>1,536,501</td>
<td>1,725,129</td>
<td>1,422,848</td>
</tr>
<tr>
<td>Online training participation (person-time)</td>
<td>1,259,800</td>
<td>1,652,170</td>
<td>1,575,520</td>
</tr>
<tr>
<td>Total amount of online training (hours)</td>
<td>27,712,300</td>
<td>51,432,900</td>
<td>60,847,600</td>
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<tr>
<td>Training participation rate of male employees (%)</td>
<td>36.85</td>
<td>39.26</td>
<td>42.74</td>
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<tr>
<td>Training participation rate of female employees (%)</td>
<td>35.62</td>
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<td>41.63</td>
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<tr>
<td>Training participation rate of senior management staff (%)</td>
<td>95.6</td>
<td>95.77</td>
<td>96.28</td>
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<tr>
<td>Training participation rate of mid-level management staff (%)</td>
<td>92.5</td>
<td>93.63</td>
<td>94.75</td>
</tr>
<tr>
<td>Training participation rate of grassroots employees (%)</td>
<td>85.6</td>
<td>87.38</td>
<td>89.63</td>
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</table>

#### Workplace health and safety

<table>
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<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<tbody>
<tr>
<td>Employee occupational health examination coverage (%)</td>
<td>99.9</td>
<td>99.9</td>
<td>99.9</td>
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<tr>
<td>Health examination and health record coverage (%)</td>
<td>99.9</td>
<td>99.9</td>
<td>99.9</td>
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<tr>
<td>Number of newly diagnosed cases of occupational diseases</td>
<td>12</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Number of accidents reported</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of deaths due to production safety accidents</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Total recorded accident (Incident) rate (per 200,000 working-hours)</td>
<td>0.1062</td>
<td>0.1147</td>
<td>0.07046</td>
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<tr>
<td>Fatal accident rate (per 200,000 working-hours)</td>
<td>0.00072</td>
<td>0.00071</td>
<td>0.00045</td>
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<tr>
<td>Number of production safety emergency drills (10,000)</td>
<td>58</td>
<td>58</td>
<td>59</td>
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<tr>
<td>Number of participants in production safety emergency drills (10,000 person-times)</td>
<td>329</td>
<td>331</td>
<td>332</td>
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#### Supply Chain

<table>
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<th>Indicators</th>
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<th>2022</th>
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<tbody>
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<td>Number of suppliers passed qualification assessment</td>
<td>21,446</td>
<td>25,072</td>
<td>26,768</td>
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<tr>
<td>Number of suppliers from mainland China</td>
<td>—</td>
<td>23,294</td>
<td>24,917</td>
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<tr>
<td>Number of oversea suppliers</td>
<td>—</td>
<td>1,778</td>
<td>1,851</td>
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<tr>
<td>Percentage of suppliers qualified by QHSE management system (%)</td>
<td>31.3</td>
<td>30.6</td>
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<tr>
<td>Number of suppliers qualified by the quality management system (ISO9000)</td>
<td>10,327</td>
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<td>Percentage of suppliers qualified by the quality management system (ISO9000) (%)</td>
<td>48.2</td>
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<tr>
<td>Number of suppliers qualified by the environmental management system (ISO14000)</td>
<td>7,412</td>
<td>8,511</td>
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<tr>
<td>Percentage of suppliers qualified by the environmental management system (ISO14000) (%)</td>
<td>34.6</td>
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<td>Number of suppliers qualified by the occupational health and safety management system (ISO18000)</td>
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<td>7,999</td>
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<td>Percentage of suppliers qualified by the occupational health and safety management system (ISO18000) (%)</td>
<td>32.8</td>
<td>31.9</td>
<td>30.9</td>
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<tr>
<td>Percentage of procurement from the top 5 suppliers</td>
<td>5.7</td>
<td>5.1</td>
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<tr>
<td>Percentage of procurement through tender (%)</td>
<td>85.2</td>
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<tr>
<td>Percentage of procurement by open tender (%)</td>
<td>97.1</td>
<td>96.7</td>
<td>96.9</td>
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</table>
Independent Assurance Report

Independent Limited Assurance Report

To the Board of Directors of China Petroleum and Chemical Corporation:

We were engaged by the Board of Directors of China Petroleum and Chemical Corporation (the "Company") to provide limited assurance on selected 2022 key data in the Company's 2022 Sustainability Report for the year ended 31 December 2022.

I. Key Data

In this report, limited assurance procedures were performed on the following selected key data of the Company's 2022 Sustainability Report:

- GHGs emission (million tonnes CO2-equivalent)
- Direct GHGs emission (million tonnes CO2-equivalent)
- Indirect GHGs emission (million tonnes CO2-equivalent)
- CO2 capture (thousand tonnes)
- Consumption of purchased electricity (billion kWh)
- Weight of disposed hazardous waste (thousand tonnes)
- Number of accidents reported
- Number of deaths due to production safety accidents
- Total recorded accident (incident) rate (per 200,000 working-hours)
- Fatal accident rate (per 200,000 working-hours)
- Total number of employees
- Employee turnover rate (%)
- Percentage of female employees (%)
- Percentage of female employees in management (%)
- Percentage of minority employees (%)
- Number of patients cured under the Lifeline Express Programme
- Number of patents applied for this year
- Number of authorised patents this year

Independent Limited Assurance (Continue)

Within the scope of our work, we only performed procedures in selected 2022 key data in the Head Office, Sinopec Beijing Oil Products Company and Sinopec Zhenhai Refining & Chemical Branch we have not conducted work in other subsidiaries. We have not performed any procedures with respect to 2021 and other earlier periods or any other information included in the 2022 Sustainability Report.

II. Responsibilities of the Board of Directors

The Company's Board of Directors is solely responsible for the preparation of the key data of the 2022 Sustainability Report in accordance with basis of reporting of the key data ("basis of reporting") after this assurance report.

The Board of Directors is also responsible for designing, implementing and maintaining the internal controls that enable the preparation and presentation of 2022 Sustainability report that is free from material misstatement, whether due to fraud or error.

III. Responsibilities of KPMG

Our responsibility is to carry out a limited assurance engagement and to express a conclusion based on the work performed. We conducted our work in accordance with the International Standard on Assurance Engagements 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information.

We have complied with our independence requirement and other relevant ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, and we have complied with the applicable requirements of the International Standard on Quality Control 1 with respect to maintaining a comprehensive quality control system.

Our independent limited assurance report has been prepared solely to the Company in accordance with the terms of our engagement. Our work has been undertaken so that we might report to the Board of Directors those matters we have been engaged to report in this independent limited assurance report and for no other purpose. We do not accept or assume responsibility to any party other than the Company for our work, for this independent limited assurance report, or for the conclusion we have reached.
IV. Summary of work performed
A limited assurance engagement on the 2022 Sustainability Report consists of making inquiries, primarily of persons responsible for the preparation of information presented in the Sustainability Report, and applying analytical and other procedures, as appropriate. Our procedures include:

- Assess the risk of material misstatement of selected 2022 key data relating to Sustainability Report, whether through fraud or error;
- Conduct interviews with relevant staff at the Company who are responsible for providing the information in the Sustainability Report;
- Performing analytical review procedures on the selected 2022 key data relating to Sustainability Report;
- Sampling of selected key data relating to Sustainability Report;
- Recalculating of 2022 selected key data relating to Sustainability Report;
- Reading the information presented in the Sustainability Report to determine whether it is in line with our overall knowledge of, and experience with, the sustainability performance of the Company; and
- Perform other procedures deem necessary.

The extent of the evidence gathering procedures performed in a limited assurance engagement is less than that for a reasonable assurance engagement, and therefore, a lower level of assurance is provided. In addition, our work was not undertaken for the purpose of expressing an opinion on the effectiveness of the Company's systems and procedures.

V. Inherent Limitation
The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

VI. Conclusion
Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the selected 2022 key data contained in the Sustainability Report, and applying analytical and other procedures, as appropriate. Our procedures include:

- Direct assessment of the risk of material misstatement of selected 2022 key data relating to Sustainability Report, whether through fraud or error;
- Conduct interviews with relevant staff at the Company who are responsible for providing the information in the Sustainability Report;
- Performing analytical review procedures on the selected 2022 key data relating to Sustainability Report;
- Sampling of selected key data relating to Sustainability Report;
- Recalculating of 2022 selected key data relating to Sustainability Report;
- Reading the information presented in the Sustainability Report to determine whether it is in line with our overall knowledge of, and experience with, the sustainability performance of the Company; and
- Perform other procedures deem necessary.

The extent of the evidence gathering procedures performed in a limited assurance engagement is less than that for a reasonable assurance engagement, and therefore, a lower level of assurance is provided. In addition, our work was not undertaken for the purpose of expressing an opinion on the effectiveness of the Company's systems and procedures.

Independent Limited Assurance (Continue)

Compilation and Reporting Basis of Key Data

GHG emission (million tonnes CO₂-equivalent):
GHG emission disclosed herein refers to the sum of direct GHG emission and indirect GHG emission produced by the production operation subsidiaries of China Petroleum & Chemical Corporation.

Direct GHG emission (million tonnes CO₂-equivalent):
Direct GHG emission disclosed herein refers to direct GHG emission from fixed emission source, mobile emission source, process emission source and escape emission source produced by the production operation subsidiaries of China Petroleum & Chemical Corporation.

Indirect GHG emission (million tonnes CO₂-equivalent):
Indirect GHG emission disclosed herein refers to indirect greenhouse gas emissions resulting from the consumption of purchased electricity, purchased heat (steam), etc by the production operation subsidiaries of China Petroleum & Chemical Corporation.

CO₂ capture (thousand tonnes):
CO₂ capture herein refers to the total amount of carbon dioxide captured by refinery enterprises of China Petroleum & Chemical Corporation in carbon dioxide recovery work.

Consumption of purchased electricity (billion kWh):
Consumption of purchased electricity herein refers to the differences between total consumption of electricity of industrial subsidiaries of China Petroleum & Chemical Corporation and their self-generated electricity.

Weight of disposed hazardous waste (thousand tonnes):
Weight of disposed hazardous waste herein refers to the total weight of hazardous waste entrusted for process and disposal, which is collected in the Environmental Protection Information System of China Petrochemical Corporation.

Number of accidents reported:
Number of accidents reported herein refers to the number of General Grade A and higher accidents that occurred of China Petroleum & Chemical Corporation. A General Grade A accident means an accident in which some person died.

Number of deaths due to production safety accidents:
Number of deaths due to production safety accidents herein refers to the number of permanent employees that are eventually confirmed dead in General Grade A accidents of China Petroleum & Chemical Corporation.

Total recorded accident (incident) rate (per 200,000 working-hours):
Total recorded accident (incident) rate (per 200,000 working-hours) herein refers to the number of accidents (incident) that occurred of China Petroleum & Chemical Corporation, per 200,000 working-hours.

Employee turnover rate (%):
Employee turnover rate herein refers to the proportion of the number of employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees.

Total number of employees:
Total number of employees herein refers to the total number of employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees.

Number of patients cured under the Lifeline Express Programme:
Number of patients cured under the Lifeline Express Programme herein refers to the number of patients who have undergone rehabilitation surgery in the Lifeline Express Programme, which was launched by China Healthy Express Foundation in reporting year and supported by China Petroleum & Chemical Corporation.

Number of authorised patents this year:
Number of authorised patents this year refers to the number of patent authorisation certificates issued by China Intellectual Property Office and overseas national or regional intellectual property institutions in this year.

Total number of employees:
Total number of employees herein refers to the total number of employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees.

Employee turnover rate (%):
Employee turnover rate herein refers to the proportion of the number of female employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees, to total number of the employees.

Percentage of female employees (%):
Percentage of female employees in operational management herein refers to the proportion of the number of female employees in the operational management function who have signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees, to total number of the employees in the operational management function who have signed full-time employment contracts.

Number of authorised patents this year:
Number of authorised patents this year refers to the number of patent authorisation certificates issued by China Intellectual Property Office and overseas national or regional intellectual property institutions in this year.

Total number of employees:
Total number of employees herein refers to the total number of employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees.

Employee turnover rate (%):
Employee turnover rate herein refers to the proportion of the number of female employees who has signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees, to total number of the employees.

Percentage of female employees (%):
Percentage of female employees in operational management herein refers to the proportion of the number of female employees in the operational management function who have signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees, to total number of the employees in the operational management function who have signed full-time employment contracts.

Percentage of minority employees (%):
Percentage of minority employees herein refers to the proportion of the number of ethnic minority employees who have signed full-time employment contracts with China Petroleum & Chemical Corporation, excluding dispatched employees, to total number of the employees who have signed full-time employment contracts.
Note 1: The indicator is not applicable since the main products sold by the Company are energy and chemical products.

Note 2: The indicator is not applicable, because the Company has calculated and disclosed the total recorded accident (incident) rate instead.

Note 3: The indicator is not applicable.
### Subject Areas, Aspects, General Disclosures and KPIs

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### Feedback

Dear Readers,

Thank you for reading this report. Your opinions and suggestions are important to us and can help us improve the preparation of future reports. Please help us by completing the following Feedback Form and sending it to the following address:

**Office of the Board**
China Petroleum & Chemical Corporation
No.22 Chaoyangmen North Street, Chaoyang District, Beijing 100728, PRC

**Your Information**

Name: __________________________
Organisation: __________________________
Tel: __________________________
Fax: __________________________
E-mail: __________________________

**Multiple choice questions (please place a check mark √ in the answer box)**

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<th>Content</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
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<td>This report provides a complete and accurate description of the significant economic, social and environmental impacts of Sinopec Corp.</td>
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<tr>
<td>This report responds to and discloses information about the concerns of stakeholders.</td>
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</tr>
<tr>
<td>The information, indicators and data disclosed in this report are clear, accurate and complete.</td>
<td>□ □ □ □ □</td>
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</tr>
<tr>
<td>This report is easy to read, i.e., its structure, content, wording and layout are well designed.</td>
<td>□ □ □ □ □</td>
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**Open-ended questions**

1. What do you like the most of this report?

2. What other information do you think that should be included in this report?

3. What are your suggestions that how we can better prepare our sustainable development progress report in the future?

Thank you for your support and cooperation. We welcome your feedback and suggestions.