2019 Sinopec Corp.
Communication on Progress for Sustainable Development
Report Information

The 2019 Communication on Progress for Sustainable Development (hereinafter referred to as "COP") is the 14th sustainability report of China Petroleum & Chemical Corporation (hereinafter referred to as "Sinopec Corp.", "the Company" or "We"). The COP introduces our efforts in promoting economic growth, social development and environmental protection, and highlights on how we responded to stakeholder expectations and concerns in 2019.

Report Perimeters

This COP covers our business activities from 1 January to 31 December, 2019, while content under "Topic 5: Concerted Efforts to Fight Against the COVID-19 Outbreak is from 2020. The information herein comes from internal data, materials from our subsidiaries, and relevant public information. Unless otherwise specified, all monetary figures shown in this COP are expressed in RMB (yuan).

Unless otherwise specified, the data in this COP covers the data of Sinopec Corp. and its wholly-owned and controlled subsidiaries.

The Company’s Board of Directors approved this COP on March 27, 2020. The COP is available in Chinese and English. If there is any conflict or inconsistency, the Chinese version shall prevail. The COP can be downloaded at the website: http://www.sinopec.com/listco/en

References

This COP is prepared in accordance with Ten Principles of the United Nations Global Compact (UNGC), the criteria of the Global Compact Advanced Communication on Progress, the Guideline on Environmental Information Disclosure issued by Listed Companies of Shanghai Stock Exchange (SSE), and the Environmental, Social and Governance Reporting Guide issued by Hong Kong Stock Exchange (HKEx) and with reference to the GRI Sustainability Reporting Standards (GRI Standards) issued by the GRI Global Sustainability Standards Board (GSSB). Some of the information is also prepared with reference to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Disclaimer

This COP 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 March 27, 2020 and the Company undertakes no obligation to update these forward-looking statements unless required by an appropriate regulatory authority.
Dear Friends,

On behalf of the Board of Sinopec Corp., I would like to extend our heartfelt thanks for your continued attention and support.

Over the past year, we have seen worldwide efforts aiming at realizing the 17 goals, such as no poverty, climate action, and affordable and clean energy, that put forward by the United Nations 2030 Agenda, and striving to achieve the sustainable development of mankind. Adhering to the development concepts of innovation, coordination, greenness, openness, and sharing, China is committed to building a prosperous, strong, democratic, civilised, harmonious and beautiful socialist modernised country by the middle of this century, and actively implementing the 2030 Agenda for Sustainable Development and contributing to realizing the Sustainable Development Goals. As a participant, a contributor, a facilitator and a beneficiary of global economic and social development, as well as a LEAD member within the United Nations Global Compact, Sinopec Corp. implements the new development, as well as a LEAD member within the United Nations Global Compact, Sinopec Corp. implements the new development concepts, adheres to high-quality development, and is firmly committed to low-carbon, green, safe and responsible and sustainable development, and has made progress in all aspects in 2019.

As for the green and low-carbon development, we proactively responded to climate change, rapidly grew our natural gas business, continued to produce bio-jet fuel and bio-diesel, constructed new charging stations, promoted photovoltaic power generation and the utilisation of hydrogen, joint the International Hydrogen Council and cooperated with hydrogen companies, striving to provide clean energy for society; continued to implement the Energy Efficiency Improvement Plan and the Green Enterprise Campaign, continuously reducing the comprehensive energy consumption per RMB10,000 of output; strengthened our greenhouse gas emission management and accelerated the research on carbon capture and storage technology. We improved the protection of atmosphere, water and soil, further lowering the discharge of major pollutants and the volume fresh water withdrawal for industrial use, and making sure 100% of our hazardous wastes were disposed properly. We attached great importance to biodiversity conservation, and made assessment of ecological hazards to reduce the impact on the ecological environment.

As for safety development, adhering to the principle of “development should not come at the cost of safety”, we strengthened safety management, conducted regular safety risk assessments to identify and eliminate safety hazards, improved emergency management, and ensured stable production and operation throughout the year. We enhanced safety training and capacity building for our contractors, and worked together with our carriers to explore the supply models for hazardous chemical materials to ensure logistics safety throughout the process. We improved security management to ensure the safety of employees. We also strengthened information security management, and established a network security risk management platform to ensure the security of our information facilities and data.

As for technological innovation, we implemented the innovation-driven development strategy, formulated mid- and long-term plans and actions, promoted the establishment of joint innovation platforms, organised research on key technologies, and achieved new breakthroughs in a number of key research and development projects. In 2019, we received one second prize of National Technology Invention Award and six second prizes of National Science and Technology Progress Award, and a total of 4,078 patent applications were granted. We accelerated the intelligent upgrade of the industrial chain through building intelligent oil and gas fields, intelligent factories, and intelligent service stations for promoting the digitalised, network-based and intelligent upgrade of our operations. We also participated in industry development, leveraging our expertise and advantages to promote industry innovation and development in terms of scientific research, industry standard formulation, and industry-wide sharing and communication.

As for contribution to the society, adhering to the people-oriented concept, we strengthened the talent troop construction and supported the career development of employees, improved the assessment and management of employees’ physical and mental health, and advocated for decent work. We continued our support for the targeted poverty alleviation efforts and carried out a variety of poverty alleviation projects that customised to local conditions, such as poverty alleviation through industrial development, through education, and through providing better healthcare, etc., with three poverty-stricken counties be lifted out of poverty. We also continued the Sinopec Lifeline Express Programme and the Warm Stations Programme to help people in need, which were highly recognised in society. During the COVID-19 epidemic in early 2020, we worked together with our stakeholders to fulfill our corporate citizen responsibilities during this dire time. We took prompt actions to donate funds and supplies, leverage our capabilities to produce medical supplies and set up production lines with partners to produce face masks, one of the most urgently needed supplies. We also took advantage of our network of service stations and EasyJoy convenience stores, to ensure stable supply of fuel and gas, and provide a safe and convenient way for people to purchase daily necessities without physical contact.

Looking ahead to 2020, we will continue optimising the system and capacity for corporate governance, actively promote adjustment, transformation and upgrading, consolidate the foundation for industrial development, and strive to build a clean, efficient, low-carbon, and circular green enterprises, and provide more clean energy and products to drive social development and satisfy people’s needs. We will make green development as our core competence, aiming at achieving sustainable and healthy development, contributing to countries where we operate as well as our shareholders, customers, employees and value chain partners. We cherish our suggestions for the sustainable development of the Company, and look forward to working together with you to build a sustainable world-class energy and chemical company, and help provide a better life and better future for everyone.

Zhang Yuzhuo
Chairman
March 27, 2020
Sinopec Corp. is a leading energy and chemical company with a diversified portfolio, including energy resources such as crude oil and natural gas, refined oil products such as gasoline, diesel, and kerosene, and petrochemical products with thousands of varieties that contribute to social and economic development and satisfy the people’s ever-growing needs for a better life.

Sinopec Corp. fulfils its responsibilities as a global corporate citizen by conducting business that serves society:

- **Mission**: Powering a better life
- **Vision**: Building a world leading energy and chemical company
- **Core Values**: People, Responsibility, Integrity, Excellence, Innovation, Collaboration

**Our diversified portfolio, including energy resources such as crude oil and natural gas, refined oil products such as gasoline, diesel and kerosene, and petrochemical products with thousands of varieties, contributes to social and economic development and satisfies the people’s ever-growing needs for a better life.**

We operate honestly and pay taxes in accordance with the laws to contribute to national revenue and boost social development and prosperity.

We strive to realise sustainable returns for our shareholders and implement a stable and continuous dividend pay-out policy.

We focus on leading and cooperating with our partners along industrial chain, aiming to enhance sustainability and achieve win-win results together with them.

We protect employees’ rights, provide an encouraging working environment and career development channels, that strive to promote decent work.

We actively engage with local communities, participate in local economic development projects, ensure operation safety, protect the environment, support the disadvantaged groups and people in need, and share the benefit of our corporate development with society.
Performance in 2019

| **Revenue (RMB)** | 2,966.2 billion |
| **Net profits attributable to shareholders (RMB)** | 57.6 billion |
| **R&D investment (RMB)** | 15,539 million |
| **Social contributions (RMB)** | 462.8 billion |
| **Donations (RMB)** | 209 million |

| **Total number of employees** | 402,206 |
| **Ethics training coverage (%)** | 100 % |
| **Occupational health check-up coverage (%)** | 99 % |
| **Health check-up and health file coverage (%)** | 99 % |

| **Number of registered poverty people supported** | 31,003 |
| **Patients cured under Sinopec Lifeline Express Programme** | 2,376 |
| **Environmental compliance rate of new projects (%)** | 100 % |
| **Consumption of comprehensive energy per RMB10,000 of output** | 0.494 tonnes of standard coal-equivalent decreased by year-on-year 0.4 % |
| **Total GHG emission (millions of tonnes CO2-equivalent)** | 170.69 | decreased by year-on-year 0.48 % |
| **CO2 capture** | 1,263 thousands tonnes |
| **Methane recovery** | 397 million cubic metres |

Note:
1. In accordance with the accounting standards for business enterprises of the People’s Republic of China (CASs).
2. The definition of social contribution is calculated in accordance with the SSE’s Guidelines on Listed Companies’ Environmental Information Disclosure.
Recognitions and Awards

Enterprise with Outstanding Contribution in Energy Conservation and Emission Reduction

Outstanding Volunteer Service Project of State Enterprises

Chinese Model of Low Carbon Performance and Responsible Enterprise

Special Contribution Award of the Lifeline Express Programme

Ecological and Environmental Pioneer

Level-A rating in the SSE's 2018-2019 Information Disclosure Assessment of Listed Companies

Best Volunteer Service Project of China

Top 50 Targeted Poverty Alleviation Award of Chinese Enterprises

Best Defence Unit of the 2019 Internet Security Exercise

Materiality Analysis

In 2019, the Company continued to identify, evaluate and screen sustainable development issues and material issues that are important to both the Company and its stakeholder groups are disclosed in the COP report with priority.

Identification

Identified policy trends and development opportunities related to the energy and chemical industry by studying macro-policies, focusing on industry highlights, and benchmarking with the sustainability practice of our industry peers.

Evaluation

Identified 25 issues that are important to the Company and its stakeholder groups with reference to the Company’s development strategy and plans.

Screening

Obtained inputs from key external stakeholders such as investors and sustainability experts, and inputs from employee representatives, on the importance of each issue based on their assessment.

Constructing a two-dimensional materiality matrix based on the assessment results to prioritise the issues based on their perceived importance. The high-importance issues are covered in this COP report with priority.

Governance

- Compliance
- Improve business performance
- Optimise corporate governance
- Scientific research and technological innovation
- Accelerate intelligent transformation
- Ensure energy supply
- Safety management
- Strengthen risk management
- Operation transparency
- Integrity and anti-corruption

Environment

- Tackle climate change
- Develop low-carbon products
- Develop renewable energy
- Improve energy efficiency
- Control emissions
- Reduce resource consumption
- Resource recycling
- Biodiversity conservation

Social

- Support human rights initiatives
- Support targeted poverty alleviation
- Improve service quality
- Occupational health and safety
- Employee training and development
- Responsible supply chain
- Support social welfare

Importance to Sinopec Corp

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Stakeholder Engagement

The trust and support of our stakeholders are of fundamental importance to the sustainable development of Sinopec Corp. The Company has established an open communication mechanism with its stakeholders and continuously optimises it. The Company strives to grow together with its stakeholders to jointly promote the high-quality sustainable development to achieve economic growth, environmental friendliness and social harmony.

Stakeholders

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Key Communication Topics</th>
<th>Communication Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government and Regulators</td>
<td>Operation compliance, Safety management, Guarantee energy supply</td>
<td>Daily communication and reporting, Discussion and seminar, Government supervision and regulation</td>
</tr>
<tr>
<td></td>
<td>Improve business performance, Respond to climate change</td>
<td>Project appraisal</td>
</tr>
<tr>
<td></td>
<td>Support targeted poverty alleviation, Scientific research and technological innovation</td>
<td>Investment hotline</td>
</tr>
<tr>
<td></td>
<td>Integrity and anti-corruption</td>
<td></td>
</tr>
<tr>
<td>Shareholders</td>
<td>Improve business performance, Transformation, upgrading and development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strengthen risk control, Optimize corporate governance, Tackle climate change</td>
<td>Information disclosure required by law, Performance release and meeting, Teleconference and online interaction, Investor hotline, Investor research</td>
</tr>
<tr>
<td></td>
<td>Integrity and anti-corruption</td>
<td></td>
</tr>
<tr>
<td>Customers</td>
<td>Improve-quality of service, Scientific research and technological innovation</td>
<td>Daily service communication, Customer visits, Questionnaire survey, Websites, WeChat and other online media</td>
</tr>
<tr>
<td></td>
<td>Improve energy efficiency, Expand low carbon products</td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>Safety management, Respect human rights, Workplace health and safety</td>
<td>Employees’ representative meeting, Annual commandment, Regular trainings, Corporate cultural activities, Websites, WeChat and other online media</td>
</tr>
<tr>
<td></td>
<td>Employee career development</td>
<td></td>
</tr>
<tr>
<td>Communities</td>
<td>Strengthen risk control, Safety management, Respect human rights, Support targeted poverty alleviation</td>
<td>Corporate philanthropy, On-site research, Community communication activity, Media communication</td>
</tr>
<tr>
<td></td>
<td>Support social welfare</td>
<td></td>
</tr>
</tbody>
</table>

Sinopec Corp.’s Actions to Implement the SDGs

1. Supporting targeted poverty alleviation by providing RMB 160 million in direct financial support, and purchasing RMB 675 million and selling RMB 323 million worth of agricultural products from poverty-stricken areas. As of the end of 2019, three of our designated poverty alleviation counties, Yuzi and Yingjiang of Anhu and Banage of Tibet had been lifted out of poverty.

2. Developing planting, breeding and other industries in rural areas based on local conditions, and improving infrastructure in rural areas to enhance agricultural productivity.

3. Protecting the occupational, physical and mental health of employees; improving the accessibility to medical resources with programmes such as the Sinopec LiNe Express, remote medical care, doctor training, and support for local hospitals.

4. Providing skills training for employees and communities members where we operate, investing RMB 23.48 million to upgrade educational facilities, provide education aid, and improve the education conditions in poverty-stricken areas.

5. Upholding gender equality, establishing the Female Employees Committee, respecting rights female employees, and forbidding gender discrimination in recruiting and promotion; protecting the pregnancy and maternity rights and caring for the physical and mental health of female employees.

6. Setting annual water consumption targets, and lowering the annual industrial fresh water withdrawal by 1.1% year-on-year, strengthening waste water recycling and utilisation and ensuring waste water discharged meet standards; and implementing drinking water safety programme in Dongguan, Gansu.

7. Continuing to increase the percentage of natural gas, new subhar marine fuel oil (LSFO) and new energy businesses. Natural gas accounted 41% of oil and gas production in 2019. Increased LSFO production capacity in ten coastal subsidiaries, generated 6.2 million kWh of photovoltaic power, produced 3 million tonnes of hydrogen, and built 12 battery charge & change stations.

8. Supporting local economic development through investing, paying taxes, creating jobs and increasing domestic procurement; providing stable job opportunities and income, and good working environment; and helping employees of distressed subsidiaries with new job opportunities.

9. Strengthening R&D, product innovation and structural adjustment, providing green, high-quality energy and chemical products, promoting clean technologies and facilities, and providing industry solutions.

10. Prohibiting child labour and forced labour, and discrimination due to gender, region, religion, nationality, etc.; promoting workplace diversity, and guaranteeing equal opportunities for employees.

11. Improving transportation and other infrastructure in designated poverty alleviation areas; improving emergency response capacity and disasters preparedness; building new energy vehicle charging facilities and hydrogen refilling stations.


13. Joining the Alliance to End Plastic Waste (AEPW) to promote the marine environment and marine life, strictly preventing oil spill accidents at sea, increasing wastewater recycling, and upgrading wastewater treatment facilities to meet compliance criteria.

14. Conducting environmental impact assessment and adopting targeted ecological protection and restoration measures for new and existing projects; adopting engineering technology with less ecologi- cal impact.

15. Improving compliance management and ensuring business integrity; strengthening anti-corruption; and promoting suppliers and contractors to strengthen safety management and environmental protection.

16. Supporting UN Global Compact and other global initiatives, actively participating in international organisations and trade associations, and promot- ing research collaboration; developing e-commerce platforms such as EPEC and Sinopec Chememall to achieve win-win development of the industrial chain.
Sustainability Governance

Board of Directors and the CSR Committee

The Board of Directors is responsible for sustainable development management of the Company. We have established the Social Responsibility Management Committee under the Board of Directors to be in charge of approving social responsibility management strategies, plans and annual social responsibility work plans, and report to the Board of Directors for promoting sustainable development of the Company. The current committee is composed of Chairman of the Board, Mr. Zhang Yuzhuo, and the independent non-executive directors, Mr. Tang Min and Mr. Fan Gang.

HSSE Management System

The Company released the standards of Safety, Environment and Health Management System in 2001, and its subsidiaries formulated their respective management regulations based on it as well as industry characteristics. In 2018, the Company integrated security into the management system and formulated the Sinopec Corp. HSSE (health, safety, security and environment) management system, and subsequently revised relevant management systems regarding safety responsibility, safety behaviour, safety training, risk management and hazards control, operations, and occupational health, etc.

We have paid great attention to risks in the process of sustainable development. The Audit Committee, set up under the Board of Directors, is responsible for reviewing risk management and providing advice to the Board. Moreover, the Comprehensive Risk Management Working Group and relevant departments are established in charge of managing and mitigating risks related to production safety, environmental protection, climate change, finance, legal affairs, anti-corruption and overseas security. The Comprehensive Risk Management Working Group convenes meetings regularly to organise the identification and assessment of major and significant risks, determine control measures and formulate solutions.

Risk Management System

We have a risk list with risks from five categories, namely strategy, finance, legal affairs, anti-corruption and overseas security. The Comprehensive Risk Management Working Group convenes meetings regularly to organise the identification and assessment of major and significant risks, determine control measures and formulate solutions.

In accordance with industry characteristics and our geographic layout, we have set up a risk list with risks from five categories, namely strategy, finance, market, operation and legislation. Safety risks, environmental risks, climate-related risks and corresponding management measures and results are detailed in relevant sections of the COP report.

Human Resources Management System

The Company continues to improve its human resources management system and policies and has formed an integrated management system covering talent development, labour compensation, training development and other management modules.

Anti-corruption Management System

The Company continues to optimise its integrity and compliance management system. With an integrity culture of “keeping promises and operating in compliance”, we focus on anti-corruption and have formulated a number of anti-corruption management systems and policies. We strive to build an enterprise with zero corruption through strictly implementing the punishment and prevention mechanisms for corruption and raising anti-corruption awareness. We have set up the Supervisory Committee, with Chairman of the Board in charge, which is responsible for formulating anti-corruption guidelines and key measures. The Disciplinary Inspection and Supervision Department is responsible for the daily supervision and management of anti-corruption, and reports to the Supervisory Committee regularly.
Establishing Green Enterprises

In 2019, the company further implemented the Green Enterprise Campaign and continued to promote the establishment of green enterprises at its subsidiaries according to the Sinopec Green Enterprise Evaluation Guideline. In 2019, ten subsidiaries awarded as Green Enterprise last year were reviewed, and another 27 were newly awarded as Green Enterprise, together accounting for over 40% of the Green Enterprise Campaign target. The company plans to turn 50% of its subsidiaries into Green Enterprise by 2020, and 100% by 2023.
## Supplying Green Energy

### Targets for 2023

<table>
<thead>
<tr>
<th>Category</th>
<th>Target</th>
<th>Progresses in 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas production capacity</td>
<td>40 billion cubic metres per year</td>
<td>29.67 billion cubic metres</td>
</tr>
<tr>
<td>Accounting for over 50% of oil and gas production</td>
<td>50%</td>
<td>41%</td>
</tr>
<tr>
<td>Natural gas supply capacity</td>
<td>60 billion cubic metres per year</td>
<td>46 billion cubic metres</td>
</tr>
<tr>
<td>Accounting for domestic supply</td>
<td>15–20%</td>
<td>10.1%</td>
</tr>
<tr>
<td>LNG receiving and transportation capacity</td>
<td>26 million tonnes per year</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

### Progresses in 2019

- Natural gas production: Accounting for 41% of oil and gas production, increased by 2% year-on-year.
- Shale gas production: Accounting for oil and gas production, increased by 0.7%.

### Targets for 2023

- By October 2018, all gasoline and diesel products should meet National VI emission standard for vehicles.
- Start supplying LSFO that meets the latest emission standards.
- Built 1,000 CNG stations for vehicles, explore the layout of battery charge & change stations for key cities and road sections, and accelerate the construction of hydrogen stations and hydrogen storage infrastructure.
- CNG stations: 1,284
- Hydrogen production over 60 billion cubic metres per year.
- Gasoline-hydrogen stations built in Guangdong, Shanghai, and Zhejiang.
- To increase the marketing and supply of high-quality oil products, biodiesel, and gasoline cleaners.
- B5 vehicle diesel (National VI) sold: 352 thousand tonnes.

Note: The targets for 2023 was calculated with 2017 as the baseline year.
## Energy Saving and Emission Reduction

### Targets for 2023

<table>
<thead>
<tr>
<th>Energy saving</th>
<th>CO₂ reduction</th>
<th>Planting trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 million tonnes of standard coal</td>
<td>12.6 million tonnes of CO₂e</td>
<td>150 million</td>
</tr>
</tbody>
</table>

### Progresses in 2019

<table>
<thead>
<tr>
<th>Energy saving</th>
<th>Effluents and Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy saving per RMB10,000 of output</td>
<td>Ammonia-nitrogen reduction</td>
</tr>
<tr>
<td>0.494 tonnes of standard coal</td>
<td>COD reduction</td>
</tr>
<tr>
<td>Total GHGs emissions decreased by</td>
<td>SO₂ reduction</td>
</tr>
<tr>
<td>170.69 million tonnes of CO₂e</td>
<td>NOₓ reduction</td>
</tr>
<tr>
<td>0.48%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

The equivalent of planting trees: 1.46 million trees

### Water conservation

<table>
<thead>
<tr>
<th>Annual reduction of fresh water for industrial use</th>
<th>Fresh water for industrial use</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 1%</td>
<td>650.36 million cubic metres</td>
</tr>
</tbody>
</table>

Note: The targets for 2023 were calculated with 2017 as the baseline year.

### Joining the Alliance to End Plastic Waste (AEPW) to end plastic pollution

In July 2019, the Company became the first mainland Chinese company to join the AEPW and served as a member of its board of directors. Founded in January 2019, AEPW is a non-profit initiative made up of various international energy and chemical enterprises. The mission of the AEPW is to end plastic waste in environment and prevent deteriorating marine pollution through joint efforts by chemical and plastics producers, consumer goods retailers and companies in waste management value chain.

The Company had signed the relevant memorandums and commitment letters, participated in network conferences and working group meetings, and prepared action plans. The Company plans to invest USD25 million to reduce plastic waste over the next five years, playing an active role in promoting the development of the plastic circular economy.
Technological Innovation and Intelligent Development

With the emergence of a new round of global technological and industrial revolution, the energy and chemical industry has entered a critical period of transformation and development. Technological innovation and intelligent development not only contribute to improve the efficiency of production and operation and cultivate innovative business, but also drive the high-quality development of the industry. Implementing its innovation-driven development strategy, Sinopec Corp. accelerated the pace of R&D and the commercialization of technology, developed intelligent business unit, such as intelligent factories and intelligent oil and gas fields, promoted intelligent upgrading, and improved the fine management of the whole industrial chain.

In 2019, the Company promoted the reform of its overall technology system and mechanism, further motivated innovation initiative of researchers, organised focused researches on key areas and disruptive technologies, and promoted the application and dissemination of technological achievements.

Compiled the Medium- and Long-term Plan for Science and Technology (2019-2045) and the Action Plan for Science and Technology (2019-2023), specifying the key disruptive technologies to focus its R&D efforts and the targets and plans for core technological breakthroughs.

Increased investment and support for basic research, and improved the performance appraisal system for technological innovation.

Explored new mechanisms and models for technological innovation, accelerated the cultivation of 12 projects in new fields, and established start-up incubators to promote the transfer and application of technological achievements.

Hosted innovation competitions and supported collaborative innovation.

Top-level design for technological innovation

- Compiled the Medium- and Long-term Plan for Science and Technology (2019-2045) and the Action Plan for Science and Technology (2019-2023), specifying the key disruptive technologies to focus its R&D efforts and the targets and plans for core technological breakthroughs.
- Increased investment and support for basic research, and improved the performance appraisal system for technological innovation.

Innovation platforms

- Owns four State Key Laboratories, six National Engineering Research Centres, four National Energy R&D (Experiment) Centres, and six State-Certified Enterprise Technology Centres.
- Joined the National Natural Science Foundation of China and the Enterprise Innovation and Development Joint Fund, and completed the application and approval of the first batch of integration projects.
- Owns the Houston R&D Centre, the Sinopec-UOP Joint R&D Centre and the Middle East R&D Centre, and improved the research conditions at key laboratories and other R&D platforms.

- Established the China Auto Lightweight Non-metal Materials Innovation Centre and the Chemical Process Strengthening Technology Joint R&D Centre, aiming at developing leading and supporting technologies by focusing on the “basic and advanced” development strategy of Sinopec Corp. and adopting the joint research model of “Industry-University-Research-Application”.

Technology incubators

- Explored new mechanisms and models for technological innovation, accelerated the cultivation of 12 projects in new fields, and established start-up incubators to promote the transfer and application of technological achievements.
- Hosted innovation competitions and supported collaborative innovation.

In 2019, the Company invested RMB15,539 million in technological research and development, and a number of its technological achievements were widely recognised within the industry. The Key Technology for the Efficient and Clean Production of Diesel Project contributed to upgrading diesel quality, winning the second prize of National Technology Invention Award and the Refining Exhaust Ultra-Low Sulphur Emission and Utilisation Project advanced the progress of treatment technology for sulphur-containing emissions winning the second prize of National Technology Progress Award. We had also achieved a number of technological breakthroughs, including polymer materials for medical supplies, large crude oil storage safety management, and VOCs emission reduction technology, and applied them in production.

Developing Sulphur Treatment Technology for Refining Exhaust

Sulphur-containing refining exhaust is a major pollutant. The traditional treatment method had poisoning hazards from the catalyst used and could not ensure consistent result to meet the emission standards. The Company developed the complete technology for reducing and utilizing the sulphur in refining exhaust, using new catalysts and device to significantly reduce SO2 emissions and collect and utilize the sulphur. As of the end of 2019, more than 300 devices using this technology had been deployed, saving equipment investment by RMB2.062 million and reducing operating costs by RMB280 million each year.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of National Technology Invention Awards won</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of National Prize for Progress in Science and Technology won</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Number of patent applications filed in the year</td>
<td>5,876</td>
<td>6,074</td>
<td>6,160</td>
</tr>
<tr>
<td>Number of patent applications granted in the year</td>
<td>3,640</td>
<td>4,434</td>
<td>4,076</td>
</tr>
<tr>
<td>Cumulative number of patents granted globally</td>
<td>25,931</td>
<td>30,365</td>
<td>34,441</td>
</tr>
</tbody>
</table>

![Image of a person and a man in a lab coat]
Intelligent Construction

The Company has closely followed the development trend of cutting-edge technology in the industry, and accelerated the pace of digital and intelligent transformation. In 2019, the Company launched a number of projects such as ERP system development, intelligent manufacturing pilot demonstration, and integrated e-commerce platform. Meanwhile, it focused on intelligent manufacturing, fostered the construction of intelligent oil and gas fields, intelligent plants, intelligent service stations and intelligent research institutes, to make its production and operation digital, network-based and intelligent.

In 2019, the Company developed a cyber-physical system (CPS) based manufacturing system and solution, which was recognised as a 2019 Pilot Demonstration Project of Integrated Development of Manufacturing and the Internet by the Ministry of Industry and Information Technology.

- Intelligent factory
  - Researched on the ProMACE Internet platform for petroleum and petrochemical industries, upgraded and promoted the pilot projects of intelligent factories, and realised a number of key applications such as integrated operation, operation alarm, and equipment health management. Sinopec Zhenhai realised the no-blind spot and 24-hour real-time inspection of online analysers, which reduced the number of alarms at key devices by more than 50%.

- Intelligent oil and gas fields
  - Carried out pilot projects of intelligent oil and gas field demonstration zones in Sinopec Northwest Oil Field Company and Sinopec Puguang Gas Field, adopted the “Data-Platform-Application” architecture to deploy the exploration and development database, ProMACE platform and business service components, and launched seven types of applications, such as dynamic management of oil and gas reserves, single well management, and pipeline management, etc.

- Intelligent pipelines
  - Promoted the application of intelligent pipeline management system in 51 subsidiaries, managing nearly 40,000 kilometers of oil and gas pipelines. The system enables the digital, visualised and intelligent management of oil and gas pipelines, so as to significantly reduce the risk factors and improve the emergency response capability of pipelines, and ensure safe, stable and efficient operation.

- Intelligent service stations
  - Formulated and issued the Work Plan for Construction of Intelligent Service stations and Guiding Opinions on Construction of Intelligent Service Stations for Marketing Enterprises, which has clarified the standards and plans for building intelligent service stations that meet the needs of consumers with customised solutions.
Facing the increasing constraints on resources and environment, the energy and chemical industries are increasing investment in green chemistry and technology to accelerate the path to green development. Sinopec Corp. has made great efforts to enhance core competitiveness by developing clean, green and high-quality energy and chemical products, reducing emissions and contributing to establishing and optimising a green and low-carbon circular economic system.

In recent years, the Chinese government is setting increasingly higher fuel emission standards for vehicles and vessels. The Company took this opportunity to upgrade the quality of oil products and complete the upgrade of refined oil quality to meet the National VI emission standards ahead of schedule, and introduced a number of clean and high-quality products with better fuel economy and lower emissions to society.

Green and High-quality Energy

In recent years, the Chinese government is setting increasingly higher fuel emission standards for vehicles and vessels. The Company took this opportunity to upgrade the quality of oil products and complete the upgrade of refined oil quality to meet the National VI emission standards ahead of schedule, and introduced a number of clean and high-quality products with better fuel economy and lower emissions to society.

"X Power" 98# gasoline
Optimised the existing 98# gasoline product, which could significantly reduce the amount of sulphur, manganese and lead in emissions and remove and inhibit more than 90% of carbon deposition in the engine, reducing hydrocarbon emissions by 3.1% and carbon monoxide emissions by 1.35%. As of the end of 2019, the product had been pilot launched in ten provinces.

B5 vehicle diesel (National VI emission standards)
Established a blending and marketing network for biodiesel, blending biodiesel made from kitchen grease in the catering industry with vehicle diesel. The B5 biodiesel was sold to the municipal transport system of Shanghai. As of the end of 2019, the output of such products reached 100,000 tonnes.

Low-sulphur maritime fuel oil (LSFO)
The Company attaches great importance to upgrading the quality of bunker fuel as the new International Maritime Organization (IMO) Low Sulphur Regulation will be effective from 1 January 2020. The Company so far has laid out productivity construction in 10 coastal enterprises. The LSFO capacity of the Company is predicted to reach 10 million tonnes by the end of 2020.

Green and High-performance Chemical Products

The Company has paid close attention to industrial transformation and consumption upgrading, adjusted product structure based on market demand, and expanded the production of functional and high value-added chemical products. Meanwhile, it has been upgrading chemical business with more environmental-friendly, low-carbon and high-end products by strengthening the layout in high-performance carbon fibre and composite materials etc.

Synthetic resins
- Launched ten new products with various safety and environmental characteristics in 2019, with an annual output of 40,000 tonnes.
- Special materials for auto parts: Focused on the production of low-volatility, low-odour products to improve the comfort and safety for drivers and passengers, with an annual output of 50,000 tonnes.
- Household and pharmaceutical products: Introduced high-performance thermforming polypropylene material suitable for fast food packaging and refrigerated packaging, allowing food to be kept longer; and launched low-odour polyethylene material suitable for beverage packaging, extending the shelf life of food products and reducing the loss of nutrients.

Medical fibre products and daily necessities: Developed plasticiser-free specialty polypropylene fibre products that widely used in personal care and infant care products, as well as surgical gowns, etc. Developed antibacterial fibre products used in medical supplies. In 2019, the output of such products reached 100,000 tonnes.

Lubricants
- Developed a variety of environmentally-friendly lubricants and tail gas treatment fluids in the fields of railways, ships, etc., and developed diesel engine oil products that meet the National VI emission standards.
- Independently developed food-grade lubricants that used to only available through imports.

Synthetic rubber
- Completed the industrial trial production of the new polyethylene butadiene rubber, and the trial-produced tyres meet the EU label A/B standard, with better fuel economy, lower rolling friction and better riding comfort.
- Developed a new generation of thermoplastic elastomer BIS, which can meet the demand of the express delivery industry. With an annual sales of more than 3,700 tonnes, it could replace the imported products.
- Developed the ES specialty elastomer product that is light, comfortable and wear-resistant, which can be used to make high-end foam soles and non-pneumatic tyres to improve the safety of bicycles. And the material can be recycled and reused.

Developed a variety of environmentally-friendly lubricants and tail gas treatment fluids in the fields of railways, ships, etc., and developed diesel engine oil products that meet the National VI emission standards.

Independently developed food-grade lubricants that used to only available through imports.

Synthetic fibres
- Realised the industrial production of high-tech synthetic fibres widely used in textiles, ropes and engineering materials because of its super strength, high temperature resistance, light weight, non-conductive, and aging resistance.
Poverty alleviation achievements in 2019

<table>
<thead>
<tr>
<th>Low-income population benefited</th>
<th>35,377</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassroots volunteers trained</td>
<td>1,521</td>
</tr>
<tr>
<td>Technician volunteers trained</td>
<td>1,353</td>
</tr>
<tr>
<td>Worth of agricultural products from poverty-stricken areas purchased (RMB)</td>
<td>57 million</td>
</tr>
<tr>
<td>Worth of agricultural products from poverty-stricken areas sold (RMB)</td>
<td>283 million</td>
</tr>
</tbody>
</table>

Poverty alleviation through industrial development

In 2019, the Company has implemented 274 poverty alleviation projects focusing on industrial development:
- Relying on the local mulberry planting and silkworm raising in Yushu County, Qinghai Province, the Company has developed the circular economy of mulberry branch fungus and biomass pellet fuel by using waste mulberry branches as raw materials, lifting more than 500 households out of poverty.
- Built irrigation facilities for the 1,500-mu (equivalent to 659 acres) red kiwi fruit base in Luxi County, Hunan Province.
- Cooperated with agricultural research institutes in Gansu Province to promote the cultivation of quinoa of more than 4,000 mu (equivalent to 659 acres) and create “Dongxiang Quinoa” poverty alleviation brand, increasing the per household income of 337 low-income households by RMB55,200 in the whole year.

Poverty alleviation through product marketing

The Company has encouraged its employees and partners to involve in poverty alleviation through consumption, purchasing agricultural products of RMB57 million from poverty-stricken areas and helping sell agricultural products of RMB243 million.
- Introduced products from poverty-stricken areas through channels such as EasyJoy convenience stores with dedicated shelves.
- Organised a trade fair for products from poverty-stricken areas that participated by 108 enterprises from poverty-stricken counties, which sold a total of RMB2.971 million worth of products.

Poverty alleviation through education support

The Company has contributed to local education to improve the capability of the poverty-stricken areas:
- Completed 130 schools. In 2019, the Company has contributed to local education to improve the capability of the poverty-stricken areas.
- Sponsored 500 students to participate in Sinopec’s Summer/Winter Camp, Aerospace Experience Camp, Winter Olympics Experience Camp, and other activities.
- Improved school facilities, invested RMB820 million to build the Sinopec Middle School in the relocation areas of Dongping County, Gansu Province; built new dormitory buildings in Zeku County, Qinghai Province and Bange County, Tibet; invested more than RMB2 million in Luxi County, Hunan Province, to build school facilities for the Sinopec Middle School.
- Improved school facilities of special education schools to create better living and rehabilitation conditions for children with special needs.
- Participated in the public welfare curriculum project for primary and secondary schools, introducing online education resources to poverty-stricken areas to support capacity building of rural teachers and help the students to see a greater world.
- Donated 600 “Charity Parcels” for primary school students in Luxi County, Hunan Province, and materials worth more than RMB830,000 for the 20 orphans in Sinopec Middle School in cooperation with charitable organizations and other companies.

Poverty alleviation through providing better healthcare

The Company has contributed to local healthcare to improve the well-being of the poverty-stricken areas:
- Sinopec Lifeline Express Programme has provided free cataract surgery to 2,376 patients from low-income households.
- Promoted mobile health in Gansu, Xinjiang and other regions in cooperation with partners. In 2019, the Company conducted 534 mobile health consultations and trained more than 5,000 local medical workers.
- Distributed medical loans from the headquarters to provide free medical services in poverty-stricken counties, donated drugs and medical devices and instruments, and conducted physical examinations for villagers.
- Purchased 143 mobile disinfection machines for village clinics in Yingjiang County, Yunnan, and donated urgently needed medical equipment to hospitals in Bangxi County, Tibet.

Poverty alleviation through promoting employment

The Company focused on creating employment opportunities and carried out various “job placement” projects for poverty alleviation:
- Created more than 200 jobs for Dongping County in Gansu Province, Yingjiang County in Yunnan Province and Zeku County in Qinghai Province.
- Developed a detailed training plan to help the newly hired employees from low-income households improve their skills and learn about career development, helping them obtain stable and long-term employment.
At the beginning of the Spring Festival in 2020, an outbreak of the COVID-19 started in Wuhan, Hubei Province, and quickly spread countrywide. The lives and health of the people were threatened, while medical and epidemic prevention supplies were in short supply. Sinopec Corp. promptly set up a leading group to coordinate epidemic prevention and control. Besides taking appropriate epidemic prevention and control measures, the Company leveraged its resources to ensure the production and supply of epidemic prevention and control supplies, donated funds and supplies, to help people overcome the difficulties.

### Timely donation and assistance
- Donated RMB 50 million to the Hubei Red Cross Society for epidemic prevention and control.
- A total of RMB 47 million was donated by CPC members in Sinopec Corp. and its subsidiaries to suppress epidemic prevention and control.
- Donated and delivered two batches of medical supplies to Wuhan: delivered 200 tonnes of disinfectant to Wuhan Hospital on January 24; delivered 8,000 bottles of alcohol disinfectant and 6,780 boxes of antibacterial wipes to Wuhan on February 22.
- Recruited doctors and nurses internally as medical volunteers to support Wuhan, and allocated and delivered protective masks to Wuhan.

### Support for the construction of Huoshenshan Hospital and Leishenshan Hospital
- Provided fuel and supplies for the construction team from the service stations nearby.
- Donated 16,500 litres of diesel and 1,000 drums of construction machinery lubricants.
- Provided free refuel for ambulances and free quick meals for the crew onboard.

### Ensuring supplies of emergency medical supplies
- As the largest supplier of medical and healthcare materials in China, Sinopec Corp. organised its subsidiaries to adjust their production schedule to focus on producing materials for medical supplies, such as synthetic resin and organic chemicals, and promised to keep their prices unchanged.
- Leveraging its capacity in production of materials, the Company set up 16 production lines to produce materials for mask, and worked together with its partners to set up mask production lines with a 2 million daily capacity.
- Sourced medical supplies such as mask, protective suit, disinfectant, detergent and thermometers globally through the EPEC e-commerce platform.

### Ensuring energy supplies
- Kept 176 service stations in Wuhan and over 1,800 service stations in Hubei Province remain open for business.
- Ensured the stable supply of natural gas in Hubei Province.

### Ensuring supply of daily necessities
- Promised no price increase at EasyJoy convenience stores during the epidemic.
- EasyJoy convenience stores in Wuhan provided living suppliers such as staple goods, grocer, and other protective materials like sanitisers which was urgently needed by local residents.
- Launched the touch-free service at nearly 6,000 EasyJoy convenient stores in 126 cities to address people’s need to shop for groceries during the epidemic.

### Ensuring energy supplies
- Kept 176 service stations in Wuhan and over 1,800 service stations in Hubei Province remain open for business.
- Ensured the stable supply of natural gas in Hubei Province.

To ensure the supply of energy and materials for society and maintain stable production and operation during the epidemic, some of our employees ended their holidays to return to work. In order to ensure the health and safety of employees, the Company launched the emergency plan, implemented strict prevention and control measures, and distributed protective equipment such as masks and disinfectants to employees, and ensured timely and regular disinfection of workplaces. To reduce unnecessary contact, the Company launched video-conferencing and other communication tools to protect employees’ physical and mental health, the Company provided psychological intervention for employees.
Driven by climate change and technological transformation, the global energy structure is accelerating the pace of transformation to a low-carbon, clean and diversified economy. Sinopec Corp. actively implements the green and low-carbon development strategy, promotes energy transformation, and tackles climate change by developing clean energy, improving energy efficiency, and developing green emerging industries.
Climate Change

Climate change is a serious challenge facing mankind in the 21st century. It is a major global issue that has profound impacts on economic and social development and the ecological environment of all countries. The Company has proactively identified the risks and opportunities related to climate change, developed the low-carbon development strategy, strengthened the management of carbon assets, and promoted energy efficiency and greenhouse gas emissions reduction.

Background and risk analysis

Policy and legal risks

More rigorous international, national and regional laws and regulations to limit greenhouse gas emissions may suppress the demand for fossil fuels and future profit growth. Meanwhile, China is promoting national carbon emission trading markets, and most enterprises of the Company are expected to be included for emission control, which may impact production and operation. Some exports may also be subject to carbon tax.

Market and technology risks

In the transition to a low-carbon and energy-saving economy, technological innovations will increase the Company’s R&D costs and investment expenditures. Meanwhile, social attention to climate change and sustainable consumption may encourage consumers to buy low-carbon products, thus reducing demand for traditional petrochemical products.

Reputation risks

Stakeholders pay more attention to the Company’s ESG (environmental, social and corporate governance) performance. So, if the Company fails to make expected progress in addressing climate change or energy transformation, its image and value may be negatively affected.

Operations and disaster risks

Extreme weather conditions such as hurricanes and floods caused by climate change may bring in direct damage in production and operation activities. Security risks and supply chain disruptions caused by climate change may also bring indirect negative impacts.

For Sinopec Corp., climate change means more than risks and challenges. The Company will seize the opportunities related to climate change and expand its business and product lines in the fields of clean energy (such as natural gas and hydrogen), renewable energy (such as biofuels, solar power and wind power), new materials (such as eco-friendly staple fibres and nanofiltration/inverse osmosis membranes), and new energy vehicle facilities (such as charging stations and hydrogen stations).

Low-carbon management system

Emission reduction targets (displayed in charts)

The Company has set carbon emission reduction targets in the Green Enterprise Campaign by 2033, which include:

- Reduce CO₂ emission by 12.6 million tones
- Capture CO₂ per year: 500 thousand tonnes
- Store CO₂ per year: 300 thousand tonnes
- Capture and use methane per year: 200 million cubic metres

Policy documents

- Management Measures on Carbon Emissions of Sinopec Corp.
- Management Measures on Carbon Emission Trading of Sinopec Corp. (Trial)
- Management Measures on the Disclosure of Carbon Emission Information of Sinopec Corp. (Trial)
- Detailed Rules for the Implementation of Energy and Environmental Performance Assessment of Sinopec Corp.

Actions and measures

- Requiring our subsidiaries to sign the Pledge of Energy Efficiency & Environmental Protection to set emission reduction targets, and the performance of the subsidiaries and their management personnel will be assessed annually.
- Conducting system-wide carbon inventory audits. Greenhouse gas audit is conducted in accordance with the ISO14064 standard, covering more than 100 oil field joint stations, more than 2,000 refining units and more than 30,000 sales station warehouses of subsidiaries. All the data are subject to internal verification.
- Conducting carbon footprint research. Prepared the “Carbon Footprint Accounting and Evaluation Method for Petrochemical Products” for aviation coal, asphalt, lubricating oil and other products, and incorporated carbon footprint evaluation and improvement into the Green Enterprise standards.
- Optimising the carbon asset management information system, improving the efficiency of enterprise data filing, and developing information solutions for carbon emission management.

For Sinopec Corp., climate change means more than risks and challenges. The Company will seize the opportunities related to climate change and expand its business and product lines in the fields of clean energy (such as natural gas and hydrogen), renewable energy (such as biofuels, solar power and wind power), new materials (such as eco-friendly staple fibres and nanofiltration/inverse osmosis membranes), and new energy vehicle facilities (such as charging stations and hydrogen stations).
Our action—Improving energy efficiency

The Company further implemented the ‘Energy Efficiency Improvement Plan’ to reduce resources consumption and control greenhouse gas emissions. In 2019, 438 projects were implemented to save energy by 370 thousand tonnes of standard coal per year. The comprehensive energy consumption of RMB 10,000 of output was 0.494 tonnes of standard coal, decreased by 0.4% year-on-year.

Implemented six major energy-saving projects

Conducted six key energy-saving projects, including energy efficiency improvement through integration of injection, production and transportation, energy system optimisation, comprehensive utilisation of low-temperature heat, energy efficiency improvement in coal-fired power plants, energy conservation monitoring and diagnosis, and energy conservation and consumption reduction in water circulation systems.

Established the energy management system for refinery enterprises

Completed the construction of the energy management system (Phase II) project and putting the energy management information system into operation in nine refinery enterprises. Applied energy management systems with the thermoelectric production of 18 refinery enterprises optimised online through dynamic optimisation models.

Adjusted the structure of self-use energy

Implemented electrical transformation. Sinopec Northwest Oilfield and other enterprises promoted the work of replacing oil with electricity. Sinopec Yangzi Petrochemical introduced steam and hydrogen from surrounding enterprises and industrial parks for energy supply. Actively promoting clean energy such as solar energy and geothermal energy. Among them, Sinopec Zhenhai’s fishery-solar hybrid photovoltaics project has an annual power output of 210 million KWHs, saving 59,000 tonnes of standard coal. Solar photovoltaics is realised in 140 service stations, generating 2.12 million KWHs/year.

Our action—Greenhouse gas reduction management

In 2019, the Company continued to conduct greenhouse gas auditing, strengthen special investigation, monitoring and emission source sorting on methane; promoted methane recovery and utilisation, reduced flare burning, and conducted carbon capture and storage; participated in the construction of carbon emissions trading market, and offset some of carbon footprint by purchasing carbon quotas.

Implemented projects

438

Save energy

370 thousand tonnes of standard coal

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Comprehensive energy consumption of RMB10,000 of output (tonnes of standard coal)</td>
<td>0.496</td>
<td>0.496</td>
<td>0.494</td>
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</tbody>
</table>

Methane recovery and emission

- Recover 200 million cubic metres of methane per year during 2018-2023.
- Conducted a special study on methane venting and escape, sorting out the main methane emission sources in oil and gas production, and developed monitoring techniques, methods and work plans.
- Launched a special initiative to recycle methane and the annual recovery of methane reached about 367 million cubic metres, among which 200 million cubic metres were from oil fields, equivalent to a reduction of greenhouse gas emissions by approximately 3 million tonnes of carbon dioxide equivalent.
- Completed the research project on “Voluntary Emission Reduction Methodology Development and Project Forecast and Implementation Techniques”, developed four methane recovery methods, and created prediction methods and implementing specifications for waste-heat utilisation and methane recovery voluntary emission reduction projects.
- Worked with other domestic oil and gas companies on methane emission control research, including data accounting, target setting, emission reduction technology and measure formulation.

Emission reduction and recovery of flare gas

Flare system is an important safety guarantee to the production process, but it also causes energy waste and environmental pollution. The Company actively adopted modern production technology to reduce and recycle flare gas.

- In the oil and gas exploration segment, technologies and measures, such as the flare gas throttle mouth, prior gas test for production, remote scattered wells and casing gas recovery, were fully promoted with a total of 124 million cubic metres of flare gas recycled throughout the year.
- In the refining segment, continuously strengthening flare system management: balanced the fuel gas pipeline network to prevent fuel gas from venting to the flare system; ensured smooth operation of oil refining units and reduce flare emissions under abnormalities from the source; checked the operation of the flare system in production units, reduced the flare gas emission and recycled the gasometer.
- In the chemicals segment, the goal of eliminating conventional flares was basically achieved. Flare gas in existing facilities was basically recycled. New-built units were constructed according to the scheme of maximum recovery of flare gas. Flare is only used as an incineration unit that cannot recover exhaust gas and as a safety guarantee system in case of emergency.

Carbon capture and storage

- Capture 500,000 tonnes of CO2 and store 300,000 tonnes of CO2 each year during 2018-2023.
- In 2018, CO2 capture and recycling continued in oil fields and refinery enterprises. Among them, refinery enterprises captured 1.26 million tonnes of CO2 and accumulated 3.71 million tonnes of CO2. Oil field enterprises injected 230,000 tonnes of CO2 for oil displacement, with a cumulative total of 3.67 million tonnes injected underground for oil displacement.
Carbon trading

The Company participated in the domestic carbon emission trading market pilot project. By the end of 2019, a total of 14 subsidiaries had been included in the pilot project and fulfilled their carbon quota compliance tasks according to the requirements.

- Encouraged carbon trading pilot-project-involved enterprises to formulate reasonable compliance schemes and trading plans. In 2019, the Company’s carbon trading volume reached 2.02 million tonnes and the turnover reached RMB43.97 million, accounting for 3% of the national market.
- In the self-owned power plant enterprises, national carbon emission right registration, account application for the trading system and quota trial calculation were conducted to prepare for carbon trading.
- Cooperated with Beijing Environmental Exchange and Shanghai Environmental Energy Exchange to promote the development of China’s carbon market.

Greening carbon sinks

The Company urged its subsidiaries to improve their greening system, and to take environmental protection actions such as afforestation so as to neutralise greenhouse gas emitted in the form of carbon sinks.

- The greening rate of administrative offices, research institutes and other courtyards should be no less than 20%, that of petrochemical plants be no less than 12% and of other industrial plants (stations) be no less than 20%.
- Continued afforestation and the voluntary tree planting campaign, growing an equivalent of 1.46 million trees throughout the year.

The annual recovery of methane reached 397 million cubic metres, of which 124 million cubic metres from oil enterprises cumulative injected CO₂ for oil displacement.

The oil and gas exploration segment promoted flared gas recovery

The greening rate of administrative offices, research institutes and other courtyards

≥20%  

The oil and gas exploration segment promoted flared gas recovery

The greening rate of petrochemical plants

≥12%  

Oil field enterprises cumulative injected CO₂ for oil displacement

3.67 million cubic metres

Carbon trading volume reached

2.02 million tonnes

Proportion of carbon trading turnover in the national market

3%

Social Demand and Strategy Analysis

Global Energy Trends

According to the World Energy Outlook 2019 released by the International Energy Agency (IEA), under established policy scenarios:

- After 2025, global oil demand growth will slow down significantly before levelling off after 2030.
- Before 2040, global energy demand will grow at an annual rate of 1%, up by 4.7 billion tonnes, up by 1.1% per year-on-year.
- Natural gas and non-fossil energy will become the main drivers of the increase in consumption, accounting for a rising share of 22%, up by 0.8% per year-on-year.
- Natural gas consumption is about 302.5 BCM, up by 9% per year-on-year.
- Non-fossil energy consumption is about 710 million tonnes of standard coal, up 5.0% per year-on-year.
- The growth rate of coal consumption has stabilised, with the share of consumption falling further to 57.9%, oil consumption is about 650 million tonnes, up by 5.1% per year-on-year.
- Energy consumption intensity would further reduce, with energy consumption per unit of GDP reaching 0.62 tons of standard coal per 10,000 yuan, down by 2.8% year-on-year.

Social Demand and Strategy Analysis

Energy Development in China

According to the 2030 China Energy and Chemical Industry Development Report of Economics & Development Research Institute of Sinopec Corp., China’s total primary energy consumption in 2019 is estimated about 4.78 trillion tonnes, up by 1.1% year-on-year. Among them:

- Natural gas and non-fossil energy business.
- Natural gas business will be cultivated into a strategic, sustainable and valuable part for the Company’s transformative growth.
- Low-carbon transformation

Energy Transformation Strategy of Sinopec Corp.

Sinopec Corp. has included natural gas development and low-carbon transformation in the Company’s strategic planning and action plan, and focuses on continuously raising the percentage of natural gas and new energy.

Solar energy and wind energy are used in Zhongyuan Oilfield.

Energy Transition

Under the pressure of climate change and the increasing energy demand, the global energy landscape as well as supply-demand relationship are undergoing far-reaching changes. China is driving ahead reforms in energy production and energy consumption to build an energy system featuring cleanliness, low carbon emission, safety and high efficiency. To seize opportunities soared in the crucial period of energy transformation, by sticking to the development approach of ensuring steady oil supply, Sinopec Corp. seeks to stabilise crude oil development, explore more natural gas resources, reduce costs, and develop renewable energy resources, to optimise its energy portfolio.
Natural Gas

For the overall benefits of gas-related industries, Sinopec Corp. has been ramping up efforts in conventional gas and shale gas exploration, optimizing the mechanism on imported LNG procurement, and building a production, supply, storage and marketing system with optimal resource allocation, strong gas supply and great anti-risk ability, so as to ensure the quality and sustainability of its gas business. The Company is striving to forge the gas business into a pillar in the upstream segment by 2035.

Development Targets of Natural Gas

Naturally Gas Development Outcomes in 2019

Sinopec Corp. pays equal attention to conventional gas and unconventional gas. Whilst enhancing the recovery ratio of conventional gas, the Company has regarded shale gas as an important part in gas development, and made efforts to properly explore and utilise the resources.

Implemented intensive gas field management, conducted elaborate prospecting of gas reserves, extended the stable production cycle of gas fields, and enhanced gas recovery ratio.

Stepped up shale gas exploration; conducted important research on unconventional resources including shale gas and coal-bed methane focusing on efficiency and scale. In 2019, the Company produced 7.343 BCM of shale gas and sold 7.06 BCM of it.

New Energy

Embracing the “green revolution” and “electric revolution”, Sinopec Corp. seeks breakthrough of energy transformation and business transformation with new energy. In 2019, the Company focused on the development of renewable energy such as solar energy and hydrogen, and facilitated the establishment of supporting facilities such as charging and changing stations, in response to the policy of developing new energy vehicles.

Solar energy

Built distributed photovoltaic power stations in marketing subsidiar- ies, and constructed photovoltaic power generation projects in the Sinopec Zhenhai Refinery. In 2019, solar contributed 6.92 million KWHs of power.

Hydrogen

Built infrastructure for hydrogen production, purification, storage and transportation, and demonstration stations for hydrogen processing. In 2019, four oil-hydrogen refuel construction stations were built in Guangdong, Zhejiang and Shanghai, realizing the comprehensive supply of fuel, hydrogen and electric energy, and mainly serving public transit vehicles and logistic vehicles that use hydrogen fuel.

Produced over 3 million tonnes of hydrogen.

Bioenergy

Promoted the use of 66 biodiesel processed from kitchen waste grease, with an annual sale of 352,000 tonnes; supplying self-devel- oped bio-jet fuel for commercial passenger jets, becoming the first Chinese enterprise with such technology.

Supporting facilities for new energy vehicles

Built charging and changing stations in support of the national strate- gy for developing new energy vehicles; carried out R&D and produc- tion of materials related to new energy vehicles.

Built 12 battery charging and changing stations, providing over 6.2 million KWHs of power for new energy vehicles.
Expanding international cooperation to jointly develop hydrogen energy

In November 2019, Sinopec Corp. signed a memorandum of cooperation with French-based Air Liquide. Under the memorandum, Sinopec Corp. will set up a company committed to the R&D on hydrogen energy technology and infrastructure networking construction. Concerted efforts will be made to promote and apply hydrogen energy and fuel cell vehicle overall solutions in China, and build an industrial chain and community of hydrogen energy.

In the future, Sinopec Corp. will advance the development of solar PV and hydrogen energy industries. Pilot projects concerning hydrogen refueling stations will be carried out in Guangdong, Jiangsu, Hubei, Sichuan and Chongqing, and wind power utilization will be tried. A diverse system that supplies solar energy, wind energy and hydrogen energy is under construction.

Fostering a New Impetus to Growth

With Sinopec Capital, the joint venture in which Sinopec Corp. holds a stake of 49%, Sinopec Corp. will operate in a range of emerging green industries through strategic and financial investments.

New energy fields

- Solar PV
- Hydrogen refueling stations

Taking tentative measures to engage in all hydrogen-related industries, covering hydrogen production, storage and transportation in the upstream segment, the fuel cell system area in the midstream segment as well as different application areas in the downstream segment. In 2019, Sinopec Capital made an investment in a hydrogen fuel cell system supplier in Shanghai.

New material fields

Entering the area of lubricant additives that exert a synergistic effect on the Company’s business and concluded a strategic investment in 2019. While supporting the domestic additive industry, Sinopec Corp. is upgrading its product lines and further strengthening its technology and research capacity in lubricant additive area.

Sinopec Capital integrates ESG issues into investment decision-making and portfolio management. In implementing investments and international cooperation projects, Sinopec Capital has oriented itself to both the “Economic and Social Green Sustainable Development” and the “Sustainable Growth of the Company”. Positive and negative screenings of investee enterprises, especially ESG factors such as corporate governance, social impact and environmental impact, are carried out to ensure good economic, environmental and social impact.
With the increasing global attention to environmental protection, it has become a consensus among energy and chemical industries to accelerate industrial transformation and upgrading and become a clean and green enterprise. Sinopec Corp. adheres to the idea of green development, attaches great importance to environmental protection, and strictly abides by the environmental law, regulations and protocols on the prevention and control of air, water and soil pollution. The Company continuously strengthens the application of environmental management system and technological applications, reduces pollution and the impact on the environment across the industrial chain, so as to achieve harmonious coexistence and coordinated development of society and the environment.
Environmental Management

While implementing environmental laws and regulations, Sinopec Corp. also pushes forward the process to become a green enterprise. The Company continues to optimise its environmental management system and capability, screens and rectify environmental risks and hazards, and strengthens the supervision, governance and incentive for its subsidiaries to contribute to the green and sustainable development.

Background and Risk Analysis

Production activities and operations of the Company generate waste water, exhaust gas and solid waste. The Company has established and continuously improves a dynamic management mechanism and relevant processes to deal with environmental hazards. Production subsidiaries of the Company own facilities as well as municipal resources to effectively treat waste water, exhaust gas and waste residues to prevent and reduce pollution. It is expected that the government and the subsidiaries will formulate and implement stricter environmental laws and regulations and adopt stricter environmental standards.

Under these circumstances, the Company’s environmental expenditure may increase in the short term. But in the long run, upgrading and transformation of facilities will help us reduce resources consumption, save environmental management cost, and improve the comprehensive environmental performance, all of which are conducive to the long-term growth of the Company.

Environmental Management System

By fully implementing a green and low-carbon development strategy, the Company has formulated the Environmental Protection Management System, which includes environment-related management indicators and division of responsibilities, and its subsidiaries compiled and issued their own HSSE management manuals to improve their management capability.

System and Guidelines

Based on the characteristics of the petrochemical industry and the current laws and regulations, the Company has formulated the HSSE Management System containing a section on environmental management, which includes environment-related management indicators and division of responsibilities, and its subsidiaries compiled and issued their own HSSE management manuals to improve their management capability.

Implementation

Every year, indicators such as comprehensive energy consumption per RMB10,000 of output, industrial fresh water withdrawals, pollutants and total greenhouse gas emissions are passed on to functional departments and the subsidiaries with attached accountability statement. In 2019, 99.8% and 99.5% of the regulated pollutants in the atmosphere and water were met. Also, 100% of hazardous waste was properly disposed.

Evaluation

All the above-mentioned indicators are included in the green enterprise assessment system and the energy and environmental performance system. In addition, energy conservation and environmental protection indicators have been incorporated into the senior management assessment system of the subsidiaries and linked with the annual performance of employees.

Our Action – Managing the Environmental Impact of Projects

With a whole life-cycle perspective, Sinopec Corp. implements closed-loop environmental management to effectively evaluate the relevant environmental risks and potential impacts of new and existing projects, and taking measures to mitigate the impact on eco-environment and the surrounding communities.

1. Environmental impact assessment

For new projects, the Company conducts environmental impact assessment in accordance with relevant national requirements, solicits public opinions in various ways, such as announcement, newspaper and the Internet, and publishes feedback information on the website of national environmental protection authorities. In 2019, all newly-built projects of the Company were subject to environmental impact assessment according to regulatory requirements and got approved accordingly.

2. Green construction

During project construction, the project owner is required to formulate an HSE (health, safety and environmental protection) management approach, and provide contracts with environmental protection training. Suppliers are encouraged to give priority to environmentally-friendly construction processes. Professional institutions and experts are hired to conduct environmental inspection upon the completion of construction, including on-site inspections of the construction site and the pollution prevention and control facilities.

3. Environmental risk monitoring

For projects already in operation, the Company formulates environmental risk assessment guidelines, and its subsidiaries regularly evaluate environmental risks and prepare their environmental risk list. Meanwhile, the Company continues to strengthen its capability to tackle environmental hazards and emergencies, and take regular actions to identify and mitigate environmental hazards.

Our Action – Prevention and Control of Key Pollutants

In line with the government’s requirements for pollution prevention and control, Sinopec Corp. formulated the Three-Year Plan for the Prevention and Control of Pollution under the Green Enterprise Action Plan, specifying 23 key tasks regarding overall targets on controlling key pollutants in the atmosphere, water and soil. In 2019, the Company effectively managed environmental risks and disposed of different pollutants in a steady way with the standards met.

1. Atmosphere

Completed Phase VII of the national oil quality upgrading task, managed the total coal consumption and energy intensity, shut down and eliminated small coal-fired boilers, and continued to ensure compliance with atmospheric pollutant emission standards.

2. Water

Reduced the total discharge of waste water, strive to meet the discharge standards for production sewage consistently, and carried out groundwater risk assessment and treatment.

3. Soil

Carried out eco-environment surveys, built regional hazardous waste disposal centres, and promoted the national disposal and utilisation of wastes.

4. Soil

Major pollutant discharging subsidiaries of the Company have obtained pollution permits in accordance with regulatory requirement, and submitted quarterly implementation reports to the national pollution permit management information platform, which are examined and supervised by the local environmental authority and made public. Meanwhile, as required by law, all discharge points are equipped with online monitoring device that transmit environmental monitoring data in real time to national and local monitoring platforms, and are subject to regular or spot inspections of the environmental authorities.
Emission Management

Sinopec Corp. has conducted comprehensive examination on its emission of atmospheric pollutants and rectified relevant problems. Meanwhile, the Company continued to strengthen the research and development of emission treatment technology and applications to improve its capability to control pollution and meet the atmospheric emission standards.

- Improving pollution prevention and control
  - Specified the emission and pollution control targets for the subsidiaries with the Pledge of Energy Efficiency & Environmental Protection, which are included in the annual performance assessment.
  - Organised environment performance audit, on-site Green Enterprise audit, enterprise environmental examinations of key areas, etc., and provided guidance to key enterprises on meeting emission standards.
- Carrying out environmental protection campaigns
  - Organised the enterprises in key areas to prevent and control atmospheric pollution and guarantee good air quality in the heating season of autumn and winter.
- Implementing environmental protection management
  - Upgraded environmental protection facilities, conducted the ultra-low emissions upgrading of coal-fired boilers and the low-nitrogen combustion upgrading of industrial furnaces, and implemented VOCs treatment projects related to oil storage areas, the loading and unloading processes, and sewage treatment plants.

Sinopec Yangzi Petrochemical innovates on VOC treatment technology

Aiming at treating the pollution of volatile organic compounds (VOCs), Sinopec Yangzi Petrochemical developed the adsorption-catalytic oxidation (xCo) and the catalytic oxidation (CO) treatment technologies using precious metal catalyst. These technologies have been successfully applied to 14 industrial projects and achieved good results. In 2019, Sinopec Yangzi Petrochemical developed the innovative VOCs treatment technology for laboratories. This world-leading technology has realised customised selection of adsorbents and catalysts according to the components and concentration of VOCs, providing a new solution to treatment VOCs from chemical devices.

Solid Waste Management

Sinopec Corp. adheres to the concept of circular economy and follows the principle of “Reduce, Reuse, and Harmeless” to treat its solid waste. The Company has established a sound solid waste management system, and continues to pursue the comprehensive utilisation of solid waste. In 2019, the Company reduced the amount of solid waste by 5.1% year-on-year and increased the comprehensive utilisation rate of solid waste by 5.7% year-on-year. Hazardous waste was 100% disposed properly.

- Improving systems and standards
  - Built regional hazardous waste disposal centres and waste catalyst disposal bases.
- Carrying out waste reduction from the source
  - Promoted waste reduction from the source. In refining and chemical enterprises, green packaging for catalysts, solvents and additives was used, reducing packaging waste by approximately 36%, nearly 600,000 drums; reduced the packing need for waste lubricants, and promoted the use of environmentally friendly packaging.
- Promoted the use of bags and other eco-friendly packages of lubricants, and innovated on service models to help customers dispose of waste oil to reduce environmental risks.

Joint Development of microbial disposal technology for hazardous waste

In 2019, Sinopec Shanxi Petroleum reached a strategic cooperation agreement with a university to jointly develop the microbial disposal technology for hazardous waste. Hazardous waste produced in the oil tank cleaning process treated with the microorganism technology were able to meet recycle and reuse standards. The two sides also jointly explored and researched on the microbial treatment technology of oily sludge and domestic sewage in the petrochemical and petrochemical industry to provide environmental protection and production related technological services.

Sinopec Lubricant promotes green packaging and waste oil recycling

Sinopec Lubricant attaches great importance to reducing hazardous waste and recycling waste oil. It set up a benchmarking mechanism for hazardous waste and sales volume, and analysed the benchmarking results quarterly, increased the use to bags, which were more environmentally friendly and reused in less oily waste for the customers to dispose of. In 2019, Sinopec Lubricant helped the refining and chemical subsidiaries of the Company reduce the use of 19,000 steel drums and realise an 85.6% replacement rate of eco-friendly packaging. Sinopec Lubricant also actively communicated with the MEE Solid Waste and Toxic Chemicals Division and signed a cooperation framework agreement on waste oil recycling and cooperated with the local environmental protection authorities to promote the cleaning of used drums and recycle of waste oil.

| Joint Development of microbial disposal technology for hazardous waste                  | | |
|----------------------------------------------------------------------------------------|---|
| Year  | Intensity of Drum Usage (amount of packaging materials used per tonne of product) |
|       | 2017 | 2018 | 2019 | 2019 Target | 2020 Target |
| 0.0649 | 0.0620 | 0.0800 | 0.0771 | 0.0750 |
Water Resource Management

Water Consumption

Sinopec Corp. implements strict water use plan and target management, and adopts technically and economically feasible, safe and eco-friendly water-saving measures and alternative solutions to reduce water consumption in production. Meanwhile, the Company constantly improves the reuse rate of industrial water and reduces the comprehensive loss rate in water use to realise efficient and scientific utilisation of water resources.

- **Used alternatives to fresh water**: Used rainwater, river water and municipal reclaimed water at six subsidiaries, and encouraged the comprehensive utilisation of seawater, brackish water and other unconventional water resources to reduce fresh water consumption.
- **Strengthened reuse of waste water (or sewage water)**: Oil fields subsidiaries implemented the “sewage for clean water” project and used treated sewage water that meets discharge standards to replace clean water in water injection.
- **Promoted water-saving technologies**: Applied advanced technologies, processes, equipment and information technology to increase the efficiency of industrial water system, and implemented steam condensate recycling and utilisation projects at three subsidiaries.
- **Prevented leakage**: Carried out water balance examination and inspected water supply pipelines for leakage, upgrade old pipelines, and control water leakage.

**Water-saving Target**

<table>
<thead>
<tr>
<th>Water-saving Achievement</th>
<th>Fresh water for industrial use lowered by</th>
<th>decreased by</th>
</tr>
</thead>
<tbody>
<tr>
<td>650.36 million cubic meters</td>
<td>7.1 million cubic meters</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

**Water-saving Measures**

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- Prevented leakage: Carried out water balance examination and inspected water supply pipelines for leakage, upgrade old pipelines, and control water leakage.

Sewage Discharge Management

In 2019, Sinopec Corp. carried out risk assessment for various water bodies in accordance with national and local discharge standards, conducted comprehensive investigation on the discharge of pollutants to control potential risks and make timely rectification, upgraded sewage treatment plants with denitrification and phosphorus removal facilities to improve the effectiveness of pre-treatment, and upgraded the online monitoring devices for sewage discharge to allow the real-time monitoring of nitrogen, phosphorus and other pollutants to ensure compliance with discharge standards.

As for ground water protection, the Company has established the Implementation Plan for Preliminary Investigation of Soil and Groundwater in the Lands Used by Sinopec Enterprises and organised the subsidiaries to conduct a survey to the groundwater in the place of operation. It is planned to have a preliminary understanding of the status of soil and groundwater in the lands used by the subsidiaries by the end of 2020, providing a reference for subsequent groundwater protection and remediation measures.

In 2019, the total amount of the Company’s COD and ammonia nitrogen in discharged waste water were 19,000 tonnes and 1,960 tonnes respectively.
Land Resource Management

Sinopec Corp. strengthens the management of land resources in accordance with the principle of intensive, efficient and green land use, requires the minimisation of the use of arable lands, restores damaged lands in a timely manner, and promotes the sustainable use of land resources.

In 2019, the Company focused on the following measures in exploration and production:

- Prioritised the use of “cluster well” design. In Fuling shale gas fields, all wells used the “cluster well” design, reducing the average land acquisition area per well by 30%.
- Innovated the “parent-child drilling site” layout, which utilises existing platforms efficiently to maximise well layout, reduce land use, and reduce construction cost. In 2019, more than ten existing platforms were used to expand production capacity, reusing more than 53 thousand square metres of land.
- The Company actively carried out withdrawal and reclamation of idle land from industrial uses. The safety and environmental risks of the industrial and mining land were evaluated. For those land without safety and environmental risks, the Company carried out a comprehensive assessment of which, the land located near farmland and eligible for reclamation was returned to the local-government after reclamation.

Oil Spill Management

The Company carried out spillage risk analysis and evaluation, strengthened emergency drills and training, improved oil spillage emergency plans, and built a professional response team. In 2019, there was no major oil spills occurred concerning Sinopec Corp.

Supporting the research on biodiversity conservation of Chongming Island

Chongming Island wetland, located in the Yangtze River Estuary, is the largest sandy wetland in the world. In 2019, Sinopec Shanghai Oil Marketing Company signed a strategic cooperation agreement with local universities to use company-owned land in west Chongming Island for field observation activities of the wetland ecosystem in the Yangtze River Estuary. The two parties jointly established an ecological monitoring & research station to provide support for the observation of water quality and wildlife in the Yangtze River Estuary and nearby areas, and the study on the impact of production and operation activities on local water environment and wildlife.
Sinopec Corp. takes safety as its top priority in production and operation, strictly complies with the requirements of the Production Safety Law and other laws and regulations, strictly implements HSSE management system, and effectively manages safety risks in key areas and key links. Meanwhile, The Company regularly carries out safety risk assessment and management, strengthens the emergency management command system, raises the safety awareness of employees and contractors to prevent all kinds of accidents in an all-round way, which provides security guarantee for the sustainable development of the Company.
Sinopec Corp. has formulated rules such as Regulations on Management of Dual Preventive Mechanisms of Production Safety Risk Hierarchical Control and Hidden Danger Screening and Management and Guiding Opinions on Safety Risk Assessment to clarify the norms and detailed implementation rules for safety risk and hidden danger screening. At the same time, relying on the unified management platform for risk assessment (PHAMS), the Company tracks the risk management and control process, realizing dynamic risk management.

### Risk Identification and Management

- Established a safety risk list and conducted regular comprehensive risk identification and assessment, and updated the list in real time. In 2019, 816 production safety risks were identified, 113 of which were labelled as major risks. All safety risk matters were assigned to respective senior management and functional managers based on risk level, who would be responsible for the management of the risk matter and held accountable.
- Conducted hazard and operability analysis (HAZOP) for in-service equipment and evaluated their safety integrity, and improved safety risk control measures for key equipment.
- Released real-time disaster forecasts and early warnings during flood season to alert people about possible safety risks. In 2019, there was no safety accidents or secondary or derivative disasters caused by natural disasters.
- Implemented hazard and operability analysis (HAZOP) for in-service equipment and evaluated their safety integrity, and improved safety risk control measures for key equipment.

### Safety Risk Management

- Formulated the Senior Management Personnel Post Safety Production Responsibility System, and revised and improved the responsibility system for safety production of departments (units) of the headquarters.
- Implemented the safety score management for all employees and its subsidiaries have formulated implementation rules and strengthen the safety responsibility consciousness of all employees.
- Clarified the “criteria for serious violations” and standardised safety management.
- Formulated the Ten Measures to Strengthen Safety Management of Direct Operation, and strengthened the safety control over contractors and direct operation by strengthening the owner’s main responsibility, improving safety technical measures, special operation monitoring and video monitoring, etc.

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Contractor Safety

In 2019, Sinopec Corp. listed contractor safety as a major risk and optimised contractor safety by improving contractor safety skills, enhancing safety awareness, strengthening business subcontracting management, so as to encourage contractors to improve safety management and prevent safety accidents.

- Implemented the contractor safety commitment mechanism and the special supplier safety system audit mechanism, and implemented the enterprise audit publicity system.
- Provided on-site training for contractors of major construction and maintenance projects, and examined and evaluated the effectiveness of the training.
- Selected high-performing enterprises in the contractor safety management system as demonstration models, and standardised the procedures and processes for contractor safety management and operation safety management.
- Continuously monitored the safety management of suppliers, ensured all major issues identified got rectified, and held repeated visiting enterprises or individuals accountable.

Meanwhile, the Company has formulated Management Measures for Scoring and Quantitative Assessment of Construction Project Contractors, and built the contractor management information platform for whole-process assessment of contractors’ behaviours in the form of event records, with safety and quality included. In 2019, 16 contractors who violated the safety management system were punished, of which seven were restricted from bidding, and nine were criticised in a circulated notice or given a warning.

Logistics Safety

The Company’s logistics safety risks mainly come from hazardous chemicals transportation and carrier traffic accidents. Sinopec Corp. has formulated a safety management system for hazardous chemicals transportation carriers to them help improve their HSSE management, and carried out on-site inspections and carrier inspection to encourage carriers to improve safety management. Besides, the Company continued to explore the supply mode of hazardous chemicals and worked with carriers and partners to ensure the logistics safety across the whole process. In 2019, no serious chemical transportation accident that has to be reported occurred.

- Strengthened the eligibility management of logistics service providers, re-examined and improved the quality, safety and environmental protection management system, and signed safety agreements with logistics service providers to specify the safety accountability.
- Provided on-site training of hazardous chemicals vehicles and vessels, verified their eligibility together with the eligibility of personnel, urging logistics service providers to fulfill their safety responsibility.
- Set up a database of self-pick-up logistics service providers of hazardous chemicals, and conducted third-party on-site assessment of them to reduce operation risks.
- Strengthened the in-transit monitoring device to strengthen in-transit monitoring and management.
- Strengthened the construction of the network security system, perfected and formulated the Rules for Management and Implementation of Information Security Management, and required high-risk problems.
- Carried out screening of network security vulnerabilities and hidden hazards, and rectified high-risk problems.
- Built the Sinopec Safety Emergency Response Centre (SSERC) and set up a network security technical team to track the network security situation and improve the ability to handle early warnings of network security threats.
- Carried out network security evaluation and assessment for its subsidiaries, which is directly linked to the performance evaluation of the persons in charge of subsidiaries.

Security

Sinopec Corp. carries out security management strictly in accordance with the principle that “risk assessment before operation”. The Company has established an overseas public security management system focusing on risk assessment and control, risk prevention and guarantee, emergency response and disposal as well as supervision and inspection, and has selected sites for overseas institutions and provided security training according to different risk levels and local social and natural conditions. The Company has strengthened its ability to collect and analyse security information to improve the timeliness, relevance and effectiveness of security alert. By 2019, the Company had achieved “zero death” from overseas security incidents for 12 consecutive years.

- Revised and issued Standards for Risk Assessment of Overseas Security, and carried out 319 risk assessments.
- Conducted overseas security training to help employees understand overseas security challenges and learn the basic safety skills such as CPR, covering 5,073 employees.
- Evaluated the security capability of overseas institutions and projects, and made timely rectification of identified cases of “insufficient security”.
- Established health records for employees and took proper precautions against infectious diseases overseas.
- Prepared the 2018 Country Risk Report and Country Risk Reminders for overseas staff, providing security suggestions based on relevant country risk information.

Actions in 2019:

<table>
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<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Overseas security investment (RMB10,000)</td>
<td>568</td>
<td>470</td>
<td>534</td>
</tr>
<tr>
<td>Overseas security training participation (person-times)</td>
<td>5,129</td>
<td>3,720</td>
<td>5,073</td>
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</table>

Information Safety

As information technology has deeply penetrated into the Company’s production and operation in various fields and business links, network and information risks may have a significant adverse impact on the Company. In 2019, the Company identified major risks such as cyber-attacks, computer viruses and data security. To protect its information infrastructures and data from cyber-attacks, the Company has constructed an information platform for network security risk management by establishing network security protocols, network security protection system, and the maintenance mechanism for information infrastructure and application system. In 2019, there was no incident of cyber-attacks or major network security incident occurring at the Company.

- Strengthened the construction of the network security system, perfected and formulated the Rules for Management of Internet Application Security Management, and required high-risk problems.
- Carried out screening of network security vulnerabilities and hidden hazards, and rectified high-risk problems.
- Established the network security information disclosure mechanism, regularly released the developments on network security work and various safety certification notifications, and tracked and released the rectification progress of potential safety.
- Built the Sinopec Safety Emergency Response Centre (SSERC) and set up a network security technical team to track the network security situation and improve the ability to handle early warnings of network security threats.

Indicators | 2017 | 2018 | 2019 |
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Compliance is the bottom line for an enterprise and the cornerstone of its sustainable development. To build an enterprise with integrity, Sinopec Corp. abides by government regulations on integrity and anti-corruption and the laws and regulations of the countries and regions where it operates, continuously improves the integrity and compliance management system, builds the integrity culture of “keeping promises and operating in compliance”, makes every effort to promote anti-corruption and ensure the implementation of the relevant regulations and the enforcement of the disciplinary mechanism.
**Transparency and Compliance**

In 2019, the Company formulated and issued the Integrity and Compliance Management Handbook, which stipulates 80 basic codes of conduct applicable in ten key fields. Employees could access the handbook through the mobile platforms and the Sinopec Online Academy. Approximately 150,000 employees participated in the "Compliance Commitment" campaign.

The Company discloses information required by law and voluntary information in accordance with its information disclosure system to ensure transparency. Sinopec Corp. is continuously rated Class A by the Shanghai Stock Exchange for the highest reward by the Shanghai Stock Exchange. The Company discloses information in accordance with its information disclosure system to ensure transparency. Sinopec Corp. is continuously rated Class A by the Shanghai Stock Exchange for the highest reward by the Shanghai Stock Exchange.

Taking the initiative to communicate with stakeholders based on local conditions and cultural background, discloses the environmental and social impact assessment information of projects, which is highly recognised by local government, people and employees.

In 2019, the Company upgraded the Business Information Disclosure System to add 16 new types of data for disclosure and strengthen the interconnection between the system to data from different business systems, such as the Contract System, the Procurement System, and the Tendering System, realizing higher transparency of its various business operations. More than 6,420,800 pieces of information were disclosed at the Business Information Disclosure System in 2019.

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**Anti-corruption System**

The Company established Supervisory Committees, which is responsible for formulating the guidelines and key measures for anti-corruption, identifying and studying compliance risks that may affect the sustainable development of the Company, holding regular meetings of the Supervisory Committee, researching and deploying key supervision tasks, and supervising and ensuring the timely improvement of issues identified. Chairman of the Board acts as the Chair of the Supervisory Committees. The Company implements a two-level Supervisory Committees system at the headquarters and subsidiaries level respectively, fully covering the supervision of the Board, senior management, and all organizations and personnel with management and operation authorities to oversee. The Company also established the Discipline Inspection and Supervision Department, which reports to the Supervisory Committee, and is responsible for the daily integrity and anti-corruption management of the Company and its subsidiaries, as well as managing the evaluation and accountability of the integrity and anti-corruption management at the subsidiaries of the Company.

The Company formulated the Code of Conduct for Employees to regulate employees’ daily behaviors. Every year, employees at key positions are required to sign the Business Ethics Agreement to commit themselves to abiding by business ethics.

In addition, management staff and employees who are also CPC members are also required to abide by certain rules of the Party, including the CPC Code of Integrity and CPC Self-Discipline, CPC Regulations on Disciplinary Actions and CPC Accountability Regulations, and are subject to supervision.

The Company established smooth complaint handling mechanism consisting of mail box, whistle-blowing hotline and email, etc. The Company formulated procedures for recording and handling the reported complaints, verifying evidence, and giving feedback to who submits the complaint. The identity of the whistle-blower will be strictly kept confidential to protect their legitimate rights.

The Company signs the Letters of Responsibility for Business Ethics with its contractors and suppliers, which specifies that in case of corruption, they will be disqualified and their transactions with the Company will be discontinued, and they will be banned from any business cooperation with Sinopec Corp. for the next three years. Violators with severe cases will be blacklisted by the Company. The Company strictly implements the above regulations. In 2019, a total of 14 suppliers were disciplined for violating the Letters of Responsibility for Business Ethics.

**Enhancing Anti-corruption Awareness**

The Company organizes training on anti-corruption every year, and raises anti-corruption awareness by issuing documents, holding warning education conferences and watching warning education films, with 100% of employees covered and awareness raised in anti-corruption. The Company regards senior and middle-level managers as the key objects of anti-corruption supervision and management. Violators will be dealt with according to their severity by regulations, and will be notified at semi-annual and annual work meetings to strengthen warning education and promote the construction of incorruptible culture.

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Sinopec Corp. strictly complies with laws and regulations on human rights protection, the National Human Rights Action Plan of China and international human rights conventions, and prohibits any act of disregard or abuse of human rights. We strictly abide by China’s Regulation on Prohibiting the Use of Child Labour and relevant laws and regulations in overseas markets and prohibit the use of child labour. We respect the employees’ right of personal freedom and the right to take leave, and prohibit the use of forced labour. We respect the rights and interests of female employees and ethnic minority employees, and strictly prohibit any form of discrimination, such as due to gender, ethnicity, religion and nationality. Meanwhile, we abide by the requirements of laws and regulations such as the Labour Law of China and the relevant regulations in where we operate, fully protect employee rights and ensure occupational health and safety, optimise the career development channels for employees, promote the comprehensive management of occupational, physical and mental health of employees, and strive to grow together with our employees.
Employee Protection

Sinopec Corp., adheres to principles of equal consultation, and mutual benefit and win-win results, protects the rights and interests of employees in accordance with relevant laws and regulations, and strives to build a harmonious and stable employment relationship with employees.

- **Employment**
  - The Company signs written labour contracts with employees in accordance with the principle of “equality, willingness and consensus” and all terms of the contract are complete and in compliance with laws. The Company has also formulated relevant management policies to ensure the labour contracts are strictly implemented.

- **Diversity and equal opportunity**
  - The Company treats female employees equally and adheres to the principle of equal pay for equal work. The Company treats minority employees equally and is committed to creating a diverse workplace.

- **Protection of female employees**
  - The Company has established the Female Employee Committee under the labour union, and includes specific articles in labour contract to protect the rights of female employees and their rights to maternity leave, nursing leave and regular health examination.

- **Salary system**
  - The Company takes salary as an important incentive for employees, and has established a multi-dimensional salary system based on position, capability and performance, which consists of basic salary, performance bonus, mid-term and long-term incentive, welfare, honour recognition, and career development supports.

- **Social insurance**
  - The Company provides employees with proper social insurance, such as pension, medical, work-related injury, maternity and unemployment insurances, in accordance with state and local regulations. We set up an enterprise annuity system covers all employees. Some of the subsidiaries also provide employees with supplementary medical insurance.

- **Leave and vacation system**
  - The Company ensures the employee’s right to maintain regular working hours and take proper leave and vacation, and makes sure that employees with irregular work shifts or hired on an aggregate working hours system have appropriate work shift and rest to ensure work-life balance.

As of the end of 2019

<table>
<thead>
<tr>
<th>Total number of employees</th>
<th>402,206</th>
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</thead>
<tbody>
<tr>
<td>Percentage of female employees (%)</td>
<td>33.8%</td>
</tr>
<tr>
<td>Percentage of employees with labour union membership (%)</td>
<td>100%</td>
</tr>
<tr>
<td>Percentage of ethnic minority employees (%)</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Employee Health

Sinopec Corp. takes employee health as a top management priority. The Company integrates its health management resources to continuously improve the prevention and control of occupational disease and protect the health of our employees.

- **Strictly control occupational hazards**
  - Carried out noise distribution and impact assessment of typical devices, and shared the experience of noise control among subsidiaries; implemented the inspection of centralised air conditioning units in densely populated areas to ensure air quality meet standards.

- **Standardise management of protective equipment**
  - Equipped flame retardant and anti-static labour protection outfit to positions with high fire and explosion risks in refining and chemical subsidiaries; carried out a company-wide inspection of air respirators to ensure its proper management.

- **Promote physical and mental health of employees**
  - Maintained employee health records, organized annual physical examination for all employees, assessed employee health status, and formulated and implemented the “specific measures for specific person” intervention approach for high health risk employees; Strengthened the employee assistance programme (EAP) to promote employee psychological health and crisis prevention.

In 2019, the Company carried out assessment of occupational disease hazards and occupational health and safety risks, and prevented occupational hazards from occurring from the source by providing protective equipment and gears and conducting occupational health examinations.
Career Development

Sinopec Corp. regards talents as a core capital of an enterprise, firmly adhere to the new concept of talent development and pursues talent-driven growth of the Company. We encourage our employees to improve their capabilities and support employees’ career development, which in return will contribute to provide the talent pool for the Company to achieve high-quality development.

Optimising Career Platform

- **Improving the talent development ecology**
  Formulated the Measures for Talent Growth Channels of Sinopec Corp., and established a talent development mechanism with “vertical mobility and horizontal connectivity.” The Company also researched and promoted the development of the talent standard system, optimised the evaluation mechanism for career promotions, and carried out pilot projects of assessment of professional skill levels.

- **Increasing the cultivation of key talents**
  Implemented the Talent Attraction Programme to attract leading technologists or higher titles, employees with senior (professor-level) titles, and assigned more talents to new projects and overseas projects.

- **Cultivating Talents with Jointly Efforts**
  In 2019, Sinopec Corp. cooperated with Imperial College London in the UK and jointly founded the Sinopec-Imperial College London Resource Geophysics Academy, to conduct joint training and research in the geophysics field with GBP11 million from Sinopec Corp. and the research and teaching resources of the Imperial College London. The programme not only supports the cultivation of PhD students in the petrochemical field, but also provides training and joint research opportunities for its employees.

Employee training

In 2019, the Company completed the compilation of the Employee Training Plan (2019-2023) of Sinopec Corp., establishing a systematic training system and vocational skill improvement plan. We strengthened quality training and professional technical talents training for management talents and technical talents in a systematic way. Meanwhile, we coordinated our efforts to improve the coverage and effectiveness of training by implementing key training programmes and online training.

- **Training of Key Talents**
  Optimised the training system for management personnel, explored the establishment of a training system for professional and technical personnel, skilled personnel, and international personnel, and carried out a number of targeted training programmes for key talents, such as management personnel training, high-level expert training, and country expert training. Provided trainings to 3,150 key talents, 765 senior professional and technical talents, and 237 skilled talents within the year.

  In 2019, the Company invested over RMB650 million in vocational training, covering 78.2% of employees with a total participation of 985,600 person-times; while its annual online training participation reached 5.01 million person-times, with a total of 10.19 million hours of online learning.

- **Online Training**
  Promoted the application and coverage of the Sinopec Online Academy platform, promoting the digital and intelligent transformation of training with data, AI, 5G and other technologies to realise customised and targeted training.

Caring for Employees

Sinopec Corp. strives to forge a community of shared future with its employees, and cares for employees and provides them with all-around support, aiming to further improve the cohesion and sense of belonging of its employees.

Increased employees’ sense of belonging and create a harmonious and encouraging workplace by promoting the Company Culture with internal newspapers, bulletin boards, WeChat, etc.

Promoted employee growth and development by creating development platforms such as skill competitions, benchmarking and learning competition, and employee innovation studios, and encouraged our employees to participate in corporate decision-making, supervision, management, and innovation and efficiency improvement activities, and provide suggestions on the Company’s reform and development.

The Company continues to implement EAP programmes and provide employees with caring and psychological counselling. In 2019, we carried out pre-job training on mental health and sent out relevant alerts, promoted the EAP Classroom programme, organised themed training, and provided 10,739 psychological counseling sessions through Heart Happiness Counseling EAP platform.

We organised health assessment for employees to be posted overseas, and maintained health records of them to track their health status and provide timely assistance if needed. In 2019, the Company carried out special alerts, disease prevention training and travel alerts against Ebola, measles, malaria and other major infectious disease risks identified for overseas travels, and provided traffic safety training and alerts regarding overseas locations with high traffic accident rate. The Company has also purchased commercial insurance for all employees posted overseas, to ensure that they could get timely assistance if they have accident.
Sinopec Corp. is fully aware that to become a respected everlasting enterprise, an enterprise needs to realise mutual benefit and win-win cooperation with its partners, and coexist with society harmoniously. Adhering to the principle of “mutual benefit and win-win cooperation” and strictly abiding by laws and regulations such as the Product Quality Law of China, Sinopec Corp. strives to meet its quality target of “quality first and quantity sufficient, customer satisfaction”, sticks to responsible production and operation, and constantly improves its value contribution to suppliers, customers and the industry. Meanwhile, the Company actively fulfils its social responsibility, creates job opportunities for local communities, and support public welfare assistance actions, and strive to become a first-class corporate citizen, aiming at becoming a world-class corporate citizen.
Value Chain Management

As of the end of 2019, Sinopec Corp. had 18,646 supplies from 66 industries in China. The Company has established a sound supplier integrity system and ensured the suppliers meet quality requirement. We also vigorously advocate the concept of responsible procurement and have integrated HSSE Management System, pollutant discharge, and tax compliance into our supplier management policies, providing important reference for supplier evaluation and on-site assessment of suppliers and encouraging them to continuously improve the quality of their products and services, as well as their environmental protection awareness and capabilities. Meanwhile, we developed an industrial ecological network focusing on e-commerce platforms such as EPEC and Sinopec Chememall, which have promoted the comprehensive service capability of the value chain, allowing upstream and downstream value chain partners to achieve better coordination and mutual benefits.

- **Building a responsible supply chain**
  - Added eligibility requirements related to environmental protection, such as pollution discharge permits, energy management system certifications, green product and low-carbon product certifications, evaluating suppliers on environmental protection, resource conserva-
  - Revised the supplier on-site inspection and assessment stan-
  - Added environmental management system certification, safety management system certification, workplace safety emergency management system, labour protection measures, and discharge and waste disposal into the evaluation standards, and increased the weights of occupational health, safety, and environmental management in on-site assessment.
- **Organised supplier training regularly, issued higher requirements for suppliers on anti-corruption, environmental protection and safety management, and provided a total of over 4,700 person-times of supplier sales training in 2019.**

- **Growing together with value chain partners**
  - Focusing on its e-commerce platform for the petrochemical industry, Sinopec Chememall, Sinopec Corp. integrated the upstream and downstream industrial chain and the supply chain between enterprises and promoted the contract procurement mode, to ensure efficient and stable supply-demand relationship with suppliers. As of the end of 2019, the platform had 9,092 customers, and 630,000 tonnes of online spot and auction transactions and 36.4 million tonnes of contract transactions conducted over the platform within the year.
  - Aiming at becoming a global comprehensive promotion, service and trade platform for industrial mode, EPEC makes possible the complete connectivity of the industrial chain, supply chain, service chain, and capital chain. As of the end of 2019, EPEC had 12,021 online suppliers offering about 13,000 products, and about 12,000 buyer companies, with businesses covering 104 countries and regions.

- **Organised supplier training regularly, issued higher requirements for suppliers on anti-corruption, environmental protection and safety management, and provided a total of over 4,700 person-times of supplier sales training in 2019.**

### Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of suppliers qualified by OHSSE management system (%)</td>
<td>26.7</td>
<td>26.0</td>
<td>31.1</td>
</tr>
<tr>
<td>Number of suppliers qualified by the quality management system (ISO 9000)</td>
<td>9,265</td>
<td>9,614</td>
<td>9,312</td>
</tr>
<tr>
<td>Percentage of suppliers qualified by the quality management system (ISO 9000) (%)</td>
<td>52.9</td>
<td>47.3</td>
<td>49.9</td>
</tr>
<tr>
<td>Number of suppliers qualified by the environmental management system (ISO 14000)</td>
<td>5,442</td>
<td>6,071</td>
<td>6,463</td>
</tr>
<tr>
<td>Percentage of suppliers qualified by the environmental management system (ISO 14000) (%)</td>
<td>31.1</td>
<td>29.9</td>
<td>34.7</td>
</tr>
<tr>
<td>Number of suppliers qualified by the occupational health and safety management system (ISO 18000)</td>
<td>4,839</td>
<td>5,621</td>
<td>6,108</td>
</tr>
<tr>
<td>Percentage of suppliers qualified by the occupational health and safety management system (ISO 18000) (%)</td>
<td>27.7</td>
<td>27.7</td>
<td>32.8</td>
</tr>
<tr>
<td>Percentage of the procurement of top five equipment and materials suppliers in total procurement (%)</td>
<td>7.2</td>
<td>4.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Percentage of the procurement of top five crude oil suppliers in total crude oil procurement (%)</td>
<td>48.8</td>
<td>46.6</td>
<td>49.1</td>
</tr>
</tbody>
</table>

### With Customers

- **Sinopec Corp.** continuously strengthens its quality management system and improves service standards, aiming at providing customers with better products and services. Meanwhile, the Company closely follows customer needs, explores new businesses, properly handles customer complaints and protects customer privacy, and protects the fundamental rights and interests of customers.

#### Quality Management

The Company has formulated the Sinopec Quality Management System in accordance with our quality standard of "quality first and quantity sufficient, customer satisfaction", and have established and implement a quality management system aligned with multiple quality standards to ensure the quality of products remain stable and reliable. In order to ensure the supply of quality oil products to consumers, we strictly manage the quality of purchased oil products, ensure reliable sourcing with standardised procurement processes, and terminate cooperation with suppliers failing to meet quality standards repeatedly.

- **In 2019, the Company’s oil products received over 31,000 spot inspections from external parties, and all of them met relevant quality standards. There has been no quality inci-
  - **dent with reportable significance for five consecutive years.**

- **Produced a total of 39,374 batches of lubricants during the year, and 100% of the batches passed passing internal inspections; 70 batches were sampled to receive third-party inspection and also passed with a 100% passing rate.**

#### Service Improvement

Sinopec Corp. is committed to creating value for customers with high-quality service, and continuously enhancing its service awareness and improving service quality. In 2019, the Company officially established the Sinopec Corp. Customer Service Centre at the headquarters, providing human customer service hotline (95388) and realising the coordinated handling of company-wide customer service requests and the communication and coordination across business units.

The Company conducts customer satisfaction surveys regularly to continuously optimise its service.

- **Conducted customer satisfaction survey to collect feedback and suggestions from refuel card customers nationwide for 12 consecutive years. In 2019, the survey received 42,576 valid responses and resulted in a comprehensive score of 86.15, a steeply increase from the previous year.**

- **Distributed 3,536 satisfaction survey questionnaires over the year, and received 3,494 responses with a 98.8% response rate. The average customer satisfaction score is 89.2, with 80.8% of customers surveyed thought our service had improved.**
The Company has formulated and regularly improves the process to handle customer complaints, to ensure questions and complaints from customers are responded to and addressed timely. Once received, a typical complaint will be handled within 24 hours; a major complaint shall be investigated and solved within 48 hours, and reported to superiors right away; a complex complaint shall be solved within 72 hours; and a complaint requiring technical appraisal or certification shall be handled, and the customer shall be replied to within 48 hours after the appraisal result is received.

### Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fuel card holders (million)</td>
<td>132</td>
<td>146</td>
<td>168</td>
</tr>
<tr>
<td>Customer satisfaction for refined oil products (%)</td>
<td>84.09</td>
<td>85.08</td>
<td>86.15</td>
</tr>
<tr>
<td>Customer complaint settlement rate for refined oil products (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of EasyJoy convenience stores</td>
<td>25,775</td>
<td>27,259</td>
<td>27,606</td>
</tr>
<tr>
<td>Customer satisfaction for chemical products (%)</td>
<td>91.5</td>
<td>93.1</td>
<td>89.2</td>
</tr>
<tr>
<td>Customer complaint settlement rate for chemical products (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

The Company pays close attention to meet the needs of customers, and applies Internet technology to create innovative businesses and provide customers with greater choices as well as better service experience.

**Integrated services**
- Developed the e-wallet function for individual customers, giving customers a more convenient payment channel;
- Implemented the “Internet + Service Station + Convenience Store + Third-Party” business model, building a nationwide online shopping mall on mobile network offering both online and offline interactive shopping experience; and
- Set up the Ejoy365HK.com cross-border e-commerce platform, providing consumers with reliable goods they want.

**Online service**
- Vigorously developed automobile service projects to meet the demand for car wash service, adding 2,216 automobile service stations in 2019, with a total of 6,273 service stations completed cumulatively;
- Innovated on the franchise model with established fast food brand to speed up the development of the fast food business;
- Piloted the EasyJoy Coffee at eight service stations in Jiangsu Province; and
- Launched purified water distribution business in 145 key cities.

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The Company attaches great importance to the protection of customer privacy. For the online business half of fuel card, refined oil e-commerce website, WeChat marketing platform and other Internet applications, we have applied multiple measures to enhance their security, including physical security, network security, data security and application security, and hired a third-party, the Information Security Rating Centre, to carry out security evaluations and rectified the identified issues timely. We carried out special network security exercise to identify and eliminate risks and prevent the occurrence of breaching of customer information and privacy. Regarding chemical products customers, we strengthened the governance of the access to customer information of our employees, standardise the authorisation process to protect customer information from leaking.
Cooperated with upstream and downstream partners in the lubricant industry chain to found the China Lubricant Industry Innovation Alliance, promoting the research on core technologies and the application of research achievements in the lubricant industry chain.

The Company actively leverages its expertise and influence and participates in promoting industry development, supporting industry innovation and development in various ways, such as scientific research, industry standard formulation, and experience sharing, etc.

Sinopec Corp. adheres to the concept of “serving communities and making contributions to local economy”, and promotes the coordinated economic, environmental and social development of where it operates with tax payment, job creation and project investment. For overseas projects, the Company only retains the necessary number of expatriates and hires as many local talents as possible based on the implementation stage of the projects.

Promoting Industry Development

The Company actively leverages its expertise and influence and participates in promoting industry development, supporting industry innovation and development in various ways, such as scientific research, industry standard formulation, and experience sharing, etc.

Establishing industry association
Cooperated with upstream and downstream partners in the lubricant industry chain to found the China Lubricant Industry Innovation Alliance, promoting the research on core technologies and the application of research achievements in the lubricant industry chain.

Participating in standard setting
Participated in the standard setting work of the Hazardous and Chemical Logistics Society under China Federation of Logistics and Procurement and jointly developed the Management Specification for Shared Synthetic Resin Pallet.

Supporting technological research
Collaborated with universities and research institutions in China and established six joint R&D centres in the fields of molecular chemical engineering, chemical process strengthening, automobile lightweight, fine chemicals, photovoltaic materials and artificial intelligence.

Community Engagement

Sinopec Corp. adheres to the concept of “serving communities and making contributions to local economy”, and promotes the coordinated economic, environmental and social development of where it operates with tax payment, job creation and project investment. For overseas projects, the Company only retains the necessary number of expatriates and hires as many local talents as possible based on the implementation stage of the projects.

Implemented local hiring and procurement to create employment opportunities and promote the development of local enterprises. The Company’s employee localisation rates in Colombia, Angola and at the joint venture in Russia were 98%, 58% and 31% respectively, and

Promoting Industry Development

Saudi Arabia Yanbu Refinery: Supporting Local Economic and Social Development

Saudi Arabia Yanbu Refinery is first overseas refining and chemical joint venture project of Sinopec Corp. The Company strictly abides by local laws and regulations on labour, financial management and taxation, and safety and environmental protection, and strives to promote local employment and development. In 2019, the employee localisation rate of Yanbu Refinery reached 86%. The project has provided about 6,000 job opportunities directly and indirectly, and helped promote local talent development with employee training and internship opportunities for college students. We combine the local resources endowment and our expertise in technology and production to provide high-quality gasoline and diesel products to the local community.

Respecting the cultural heritage of local employees, and organised communication, cultural and sports activities for employees to promote cross-cultural integration.

Sinopec Corp. participated the 3rd Western China International Fair Import and Export Expo & Western China (Sichuan) International
Philanthropy

Sinopec Corp. attaches great importance to caring for disadvantaged groups and promoting the standardisation and development of public welfare undertakings. The Company has launched a number of brand public welfare projects, and continuously innovates on public welfare practice based on the conditions and needs of local communities.

Sinopec Lifeline Express Programme

Since 2004, we have been participating in the Lifeline Express Programme. During the 16 years, we have donated over RMB180 million to the programme, provided free surgery for more than 46,000 low-income cataract patients from 38 regions of 18 provinces and municipalities, and donated 21 Sinopec Cataract Treatment Centres. In 2019, we donated RMB24.46 million to support the technical upgrade and maintenance of the Sinopec Lifeline Express vehicles, and provided free cataract surgery to 2,376 patients.

Warm Stations Programme

Since 2013, we have been launching the Warm Station, Going Home with Love programme at our service stations to help home bound migrant workers before the Chinese New Year, providing free refuels and various service to make the travellers feel welcome and comfortable, such as hot porridge, ginger drink, lounge and nursing room, making the way home a warm journey. In 2019, we designated 248 service stations in Guangdong, Guangxi, Jiangxi and Guizhou provinces as Warm Stations, and organised more than 5,000 youth volunteers in cooperation with the Guangdong Provincial Committee of the Youth League. In the last seven years, more than 35,000 volunteers have worked for this programme and assisted a total of over 40 million travellers accumulatively.

Sanitation Workers’ Stations Programme

We open the service stations up to sanitation workers, giving them a place sheltered from the weathers where they could take a rest and have some water. As of the end of 2019, we had set up 2,348 service stations as designated Sanitation Workers’ Stations nationwide for sanitation workers.

Beach Cleaning in Hong Kong

Our subsidiaries in Hong Kong have been carrying out beach cleaning activities for eight consecutive years. Our employees and their formed a “Hong Kong Beach and Park Group”, and organised volunteer beach and park cleaning activities in holidays to protect the local marine environment. As of the end of 2019, 53 cleaning activities had been organised, participated by more than 1,400 employees volunteers.

Key Performance

Economic Performance

Operational and financial performance

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets (RMB billion)</td>
<td>1,595.5</td>
<td>1,592.3</td>
<td>1,755.1</td>
</tr>
<tr>
<td>Total liabilities (RMB billion)</td>
<td>741.4</td>
<td>734.6</td>
<td>879.2</td>
</tr>
<tr>
<td>Revenue (RMB billion)</td>
<td>2,360.2</td>
<td>2,891.2</td>
<td>2,966.2</td>
</tr>
<tr>
<td>Net profits attributable to shareholders of the Company (RMB billion)</td>
<td>51.12</td>
<td>63.09</td>
<td>57.6</td>
</tr>
<tr>
<td>Dividends declared (RMB billion)</td>
<td>60.54</td>
<td>50.65</td>
<td>37.53</td>
</tr>
<tr>
<td>Dividends pay-out ratio (%)</td>
<td>118.4</td>
<td>80.6</td>
<td>65.2</td>
</tr>
<tr>
<td>Taxes and fees paid (RMB billion)</td>
<td>329.3</td>
<td>324.6</td>
<td>317.7</td>
</tr>
</tbody>
</table>

Energy production and supply

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and gas production (mmboe)</td>
<td>448.79</td>
<td>451.46</td>
<td>456.92</td>
</tr>
<tr>
<td>Crude oil production (mmbbls)</td>
<td>293.66</td>
<td>288.51</td>
<td>284.22</td>
</tr>
<tr>
<td>Natural gas production (bcf)</td>
<td>912.50</td>
<td>977.32</td>
<td>1,047.78</td>
</tr>
<tr>
<td>Refinery throughput (million tonnes)</td>
<td>238.50</td>
<td>244.01</td>
<td>248.52</td>
</tr>
<tr>
<td>Ethylene output (thousand tonnes)</td>
<td>11,610</td>
<td>11,512</td>
<td>12,493</td>
</tr>
<tr>
<td>Total sales volume of refined oil products (million tonnes)</td>
<td>231.21</td>
<td>237.69</td>
<td>254.95</td>
</tr>
<tr>
<td>Total sales volume of chemical products (million tonnes)</td>
<td>78.50</td>
<td>86.60</td>
<td>99.50</td>
</tr>
</tbody>
</table>

Note: 1. In 2019, total sales volume of refined oil products changed was changed to include worldwide sales of the Company.
Environmental Performance

Energy

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of comprehensive energy per RMB10,000 of production value (tonne of standard coal)</td>
<td>0.496</td>
<td>0.496</td>
<td>0.494</td>
</tr>
<tr>
<td>Crude oil consumption (million tonnes)</td>
<td>1.41</td>
<td>1.33</td>
<td>1.21</td>
</tr>
<tr>
<td>Natural gas consumption (billion cubic metres)</td>
<td>3.35</td>
<td>3.83</td>
<td>4.14</td>
</tr>
<tr>
<td>Consumption of purchased electricity (billion kWh)</td>
<td>28.86</td>
<td>30.57</td>
<td>32.26</td>
</tr>
<tr>
<td>Coal consumption (million tonnes)</td>
<td>15.08</td>
<td>15.18</td>
<td>14.77</td>
</tr>
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</table>

Water

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water for industrial use (million cubic metres)</td>
<td>664.56</td>
<td>657.46</td>
<td>650.36</td>
</tr>
<tr>
<td>Oil &amp; gas exploration and production segment</td>
<td>-</td>
<td>115.2</td>
<td>112.5</td>
</tr>
<tr>
<td>Water intensity (cubic metre / barrel)</td>
<td>-</td>
<td>1.99</td>
<td>1.88</td>
</tr>
<tr>
<td>Refining segment</td>
<td>-</td>
<td>192.4</td>
<td>181.3</td>
</tr>
<tr>
<td>Water intensity (cubic metre / tonne)</td>
<td>-</td>
<td>0.79</td>
<td>0.73</td>
</tr>
<tr>
<td>Chemical segment</td>
<td>-</td>
<td>304.2</td>
<td>317.3</td>
</tr>
<tr>
<td>Water intensity (cubic metre / tonne)</td>
<td>-</td>
<td>3.51</td>
<td>3.55</td>
</tr>
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</table>

Emissions, effluents and wastes

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur dioxide (1,000 tonnes)</td>
<td>-</td>
<td>67.2</td>
<td>64.6</td>
</tr>
<tr>
<td>Nitrogen oxides (1,000 tonnes)</td>
<td>-</td>
<td>99.8</td>
<td>95.9</td>
</tr>
<tr>
<td>COD (1,000 tonnes)</td>
<td>-</td>
<td>19.4</td>
<td>19.0</td>
</tr>
<tr>
<td>Ammonia and nitrogen (1,000 tonnes)</td>
<td>-</td>
<td>2.0</td>
<td>1.96</td>
</tr>
<tr>
<td>Non-hazardous waste (1,000 tonnes)</td>
<td>-</td>
<td>2,229.0</td>
<td>2,115.32</td>
</tr>
<tr>
<td>Hazardous waste (1,000 tonnes)</td>
<td>-</td>
<td>505.3</td>
<td>842.3</td>
</tr>
<tr>
<td>Reduction of solid waste year-on-year (%)</td>
<td>-</td>
<td>-</td>
<td>5.1</td>
</tr>
<tr>
<td>Increase of the comprehensive utilisation rate of solid waste year-on-year (%)</td>
<td>-</td>
<td>-</td>
<td>5.7</td>
</tr>
</tbody>
</table>

GHGs emissions and management

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHGs emission (million tonnes CO2-equivalent)</td>
<td>162.66</td>
<td>171.52</td>
<td>170.69</td>
</tr>
<tr>
<td>Direct</td>
<td>123.05</td>
<td>128.57</td>
<td>125.68</td>
</tr>
<tr>
<td>Indirect</td>
<td>39.61</td>
<td>42.95</td>
<td>45.01</td>
</tr>
<tr>
<td>Oil &amp; gas exploration and production segment</td>
<td>30.55</td>
<td>31.26</td>
<td>23.18</td>
</tr>
<tr>
<td>Refining and chemicals segment</td>
<td>129.49</td>
<td>137.65</td>
<td>144.93</td>
</tr>
<tr>
<td>Marketing segment</td>
<td>2.62</td>
<td>2.61</td>
<td>2.58</td>
</tr>
<tr>
<td>GHGs emission intensity (tonnes CO2-equivalent / RMB1 million)</td>
<td>68.92</td>
<td>59.32</td>
<td>57.55</td>
</tr>
<tr>
<td>CO2 capture (thousand tonnes)</td>
<td>270</td>
<td>1,010</td>
<td>1,263</td>
</tr>
<tr>
<td>Methane recovery (million cubic metres)</td>
<td>220</td>
<td>226</td>
<td>397</td>
</tr>
</tbody>
</table>

Note:
1. Fresh water withdrawal for industrial use refers to the amount of water utilised for the first time in the process of industrial production of the Company.
2. Water intensity in oil and gas exploration segment = Fresh water consumption/domestic oil and gas equivalent production.
3. Water intensity in oil & gas production segment = Fresh water consumption/refinery throughput.
4. Water intensity in oil refining segment = Fresh water consumption/refinery throughput.
5. Water intensity in chemicals segment = Fresh water consumption/chemical sales volume.
6. Water intensity in oil refining segment = Fresh water consumption/domestic oil and gas equivalent production.
7. The Company conducts GHGs emission (direct and indirect) accounting and verification according to ISO14064-1:2006 standards, covering six gases including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluoro carbons (HFCs), perfluorinated compounds (PFCs) and sulphur hexafluoride (SF₆).
8. Others: According to the requirements of Environmental Social and Governance Reporting Guide of HKEx, listed companies should disclose the data of water consumption intensity and total packaging material used for finished products. Regarding water consumption intensity, since Sinopec Corp. has a wide range of businesses in upstream and downstream industry chains, including oil & gas exploration, development, refining, chemicals, marketing and international trade, etc., we cannot calculate water consumption density. Regarding the total packaging material used for finished products, since Sinopec Corp. has dozens of subsidiaries and covers a wide range of businesses, which use various packaging materials such as iron, steel, wood, plastics and woven bags, and various packaging types such as barrels, boxes and bags in various sizes; some of the packages can be recycled; we cannot calculate total packaging material used for finished products.
## Social Performance

### Employment

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<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees</td>
<td>446,130</td>
<td>423,543</td>
<td>402,206</td>
</tr>
<tr>
<td>Employee turnover rate (%)</td>
<td>0.50</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Percentage of female employees (%)</td>
<td>35.9</td>
<td>35</td>
<td>33.8</td>
</tr>
<tr>
<td>Percentage of female employees in management (%)</td>
<td>12.76</td>
<td>12.67</td>
<td>12.38</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>
</tr>
<tr>
<td>Enterprise annuity coverage (%)</td>
<td>73.90</td>
<td>79.19</td>
<td>80.57</td>
</tr>
<tr>
<td>Percentage of ethnic minority employees (%)</td>
<td>3.8</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Percentage of employees with labour union membership (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</tbody>
</table>

### Workplace Health and Safety

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<th>2019</th>
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<tbody>
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<td>Employee occupational health examination coverage (%)</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Health examination and health record coverage (%)</td>
<td>99</td>
<td>99</td>
<td>99</td>
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<tr>
<td>Number of newly diagnosed cases of occupational diseases</td>
<td>21</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Safety training coverage (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of accidents reported</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Work-related deaths</td>
<td>3</td>
<td>3</td>
<td>1</td>
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</table>

### Employee Training

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<th>2019</th>
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</thead>
<tbody>
<tr>
<td>Investment in vocational training (RMB million)</td>
<td>739.56</td>
<td>748.08</td>
<td>850.21</td>
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<tr>
<td>Vocational training coverage (%)</td>
<td>72.4</td>
<td>75</td>
<td>78.2</td>
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<tr>
<td>Vocational training participation (person-time)</td>
<td>985,930</td>
<td>936,143</td>
<td>985,612</td>
</tr>
<tr>
<td>Online training participation (person-time)</td>
<td>—</td>
<td>—</td>
<td>5,014,143</td>
</tr>
<tr>
<td>Total amount of online training (10,000 hours)</td>
<td>—</td>
<td>—</td>
<td>1,019.03</td>
</tr>
<tr>
<td>Average training hours of male employees</td>
<td>—</td>
<td>—</td>
<td>49.48</td>
</tr>
<tr>
<td>Average training hours of female employees</td>
<td>—</td>
<td>—</td>
<td>49.83</td>
</tr>
<tr>
<td>Average training hours of senior management staff</td>
<td>—</td>
<td>—</td>
<td>40.57</td>
</tr>
<tr>
<td>Average training hours of mid-level management staff</td>
<td>—</td>
<td>—</td>
<td>41.62</td>
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<tr>
<td>Average training hours of grassroots employees</td>
<td>—</td>
<td>—</td>
<td>50.26</td>
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</table>

### Public Welfare Contributions

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<th>Indicators</th>
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<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients cured under the Lifeline Express Programme</td>
<td>3,126</td>
<td>3,456</td>
<td>2,376</td>
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### Social Contribution

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<th>2019</th>
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<tbody>
<tr>
<td>Social contribution per share (RMB/share)</td>
<td>3.778</td>
<td>3.986</td>
<td>3.822</td>
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<tr>
<td>Social contributions (RMB billion)</td>
<td>457.4</td>
<td>480.2</td>
<td>462.8</td>
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The Environmental, Social and Governance Reporting Guide of Hong Kong Stock Exchange Index

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<td>General disclosure - Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.</td>
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<td>A1.1 The types of emissions and respective emissions data.</td>
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<td>A1.2 Greenhouse gas emissions in total (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).</td>
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<td>A1.3 Total hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).</td>
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<td>A1.4 Total non-hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).</td>
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<td>A2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in ‘000s) and intensity (e.g. per unit of production volume, per facility).</td>
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<td>A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).</td>
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<td>A2.3 Description of energy use efficiency initiatives and results achieved.</td>
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<td>A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.</td>
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<td>A2.5 Total packaging material used for finished products (in tons) and, if applicable, with reference to per unit produced.</td>
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<td>B1.2 Employee turnover rate by gender, age group and geographical region.</td>
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<td>B2 Health and Safety</td>
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<td>B3.2 The average training hours completed per employee by gender and employee category.</td>
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<td>B4.1 Description of measures to review employment practices to avoid child and forced labor.</td>
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<tr>
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<td>B4.2 Description of steps taken to eliminate such practices when discovered.</td>
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<tr>
<td>B5 Supply Chain Management</td>
<td>General disclosure - Policies on managing environmental and social risks of the supply chain.</td>
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<td></td>
<td>B5.1 Number of suppliers by geographical region.</td>
<td>—</td>
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<tr>
<td></td>
<td>B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.</td>
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<td>B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.</td>
<td>P72</td>
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<td>B6.2 Number of products and service related complaints received and how they are dealt with.</td>
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<td>B6.3 Description of practices relating to observing and protecting intellectual property rights.</td>
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<td></td>
<td>B6.4 Description of quality assurance process and recall procedures.</td>
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<td></td>
<td>B6.5 Description of consumer data protection and privacy policies, how they are implemented and monitored.</td>
<td>P73</td>
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<tr>
<td>B7 Anti-corruption</td>
<td>General disclosure - Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.</td>
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<tr>
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<td>B7.1 Number of concluded legal cases against the issuer or its employees during the reporting period and the outcomes of the cases.</td>
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<td></td>
<td>B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.</td>
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<td>B8 Community Investment</td>
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<td>B8.1 Focus areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport).</td>
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<td>Businesses should support and respect the protection of internationally proclaimed human rights; make sure that they are not complicit in human rights abuses.</td>
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<tr>
<td>Labour</td>
<td>Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced and compulsory Labour; the effective abolition of child Labour; and the elimination of discrimination in respect of employment and occupation.</td>
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- **306-4**: P47
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### GRI 307: Environmental compliance

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### GRI 308: Supplier environmental assessment

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## TCFD Index

### TCFD recommended disclosures

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<th>Governance</th>
<th>Disclose the organisation's governance around climate-related issues and opportunities.</th>
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<tr>
<td>a) Describe the board’s oversight of climate-related risks and opportunities.</td>
<td>P12, P13</td>
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<td>b) Describe the management's role in assessing and managing climate-related risks and opportunities.</td>
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### Strategy

| Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation’s business, strategy and financial planning where such information is material. | Pages |
| a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term | P32 |
| b) Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning | P32—41 |
| c) Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. | — |

### Risk Management

| Disclose how the organisation identifies, assesses and manages climate-related risks. | Pages |
| a) Describe the organisation’s processes for identifying and assessing climate-related risks. | P12 |
| b) Describe the organisation’s processes for managing climate-related risks. | P12 |
| c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation’s overall risk management. | P12 |

### Metrics and Targets

| Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material. | Pages |
| a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process | P32—41 |
| b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions, and the related costs. | P33—36 |
| c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets. | P16—19, P32—41 |
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:

Mailing address: Secretariat of the Board, China Petroleum & Chemical Corporation
No.22 Chaoyangmen North Street, Chaoyang District, Beijing 100728, PRC

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1. What do you like the most of this report?
2. What other information do you think 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?

Content Evaluation

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<tr>
<th>Content</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
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