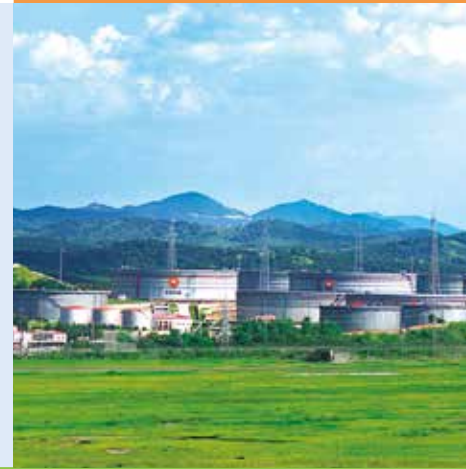




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2019  
Corporate Social Responsibility Report

# About the Report

This is China National Petroleum Corporation's 14<sup>th</sup> annual Corporate Social Responsibility Report since the establishment of the reporting system in 2006. This report reflects our accomplishments in fulfilling our economic, environmental and social responsibilities. Hereby, we make the following statement on relevant information:

**Reporting company:** China National Petroleum Corporation (CNPC)

**Alternative reference:** China National Petroleum Corporation is also referred to in this report as "CNPC", "the Company", "we" and "us".

**Timeframe:** From January 1 to December 31, 2019. Given the continuity and comparability of the disclosed information, part of the information may be taken forward or backward as necessary.

**Reporting period:** This is an annual report. The 2018 Corporate Social Responsibility Report was issued on April 25, 2019.

**Reporting principles:** Objective, standardized, honest, transparent and substantive.

**Report content:** Our accomplishments in fulfilling our economic, environmental and social responsibilities.

**Information sources:** The Company's official documents, statistical reports and statistics related to the Company's subsidiaries. All the information has been reviewed by the Company's management and its subsidiaries.

**Report improvements:** In order to showcase our social responsibility performance in a more objective, comprehensive and prioritized manner, the 2019 report features some important new issues, such as the Sustainable Development Goals (SDGs) of the United Nations. While compiling this report, we carried out on-site investigations on the CSR performance of our affiliated companies, verified the authenticity of case studies, extensively solicited opinions and suggestions and actively responded to the concerns of all stakeholders.

**References:** *Guidelines on Improving Central Enterprises' Social Responsibility Performance* issued by the State-owned Assets Supervision and Administration Commission (SASAC). We also referred to the *Sustainability Reporting Guideline (G2016)* published by the Global Reporting Initiative, *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (2010)* co-published by the International Petroleum Industry Environmental Conservation Association and the American Petroleum Institute, *ISO 26000 Guidance on Social Responsibility* by ISO, *The 2030 Agenda for Sustainable Development*, the *Guidance on Social Responsibility Reporting (GB/T 36001-2015)* by China National Standardization Management Committee, and *China CSR Reporting Guide (CASS-CSR2.0)* by CASS.

**Language:** The report is published in Chinese and English. In case of any discrepancy, the Chinese version shall prevail.

**Access to the report:** You may send an email to [csr@cnpc.com.cn](mailto:csr@cnpc.com.cn) or call 8610-59984395 for a hard copy. It is recommended that you download the PDF version of this report at [www.cnpc.com.cn](http://www.cnpc.com.cn).

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## Chairman's Message

I feel pleased to present the CNPC Corporate Social Responsibility Report 2019. The year 2019 was an extraordinary year. It witnessed a number of significant historic moments including the 70<sup>th</sup> anniversary of the founding of the People's Republic of China, the 60<sup>th</sup> anniversary of the discovery of Daqing Oilfield, the 80<sup>th</sup> anniversary of the development of Yumen Oilfield and the 30<sup>th</sup> anniversary of the Tarim petroleum exploration campaign. The year also saw a slow recovery of the world economy, mounting downward pressure on domestic economy and intensifying competition in oil and gas market. Along with these risks and challenges, CNPC remains committed to its corporate development strategy, pursuing steady development and forging ahead with resource, market, internationalization and innovation strategies while focusing on our core businesses. As a result, we achieved better-than-expected business performance and a solid step toward a world-class integrated international energy company.

CNPC deeply believes that our sustainable development is inseparable from that of society, we stick to our values and belief by which we deliver our results. Guided by development concept of innovation, coordination, green, openness and sharing, we explore development opportunities, create shared value with all our stakeholders and partnerships while meeting the demands of society and addressing common challenges.

### Forging ahead with reform and innovation and strengthening new growth drivers

Innovation is the most critical growth driver. In 2019, we continued innovation-driven development and deepened reform, effectively motivated intrinsic vitality and pushed our high-quality development to a new level. We released the guidelines on accelerating high-quality development driven by technological innovation, with three supporting documents being implemented. Breakthroughs were made in key technologies. The

100-million-tons production capacity carbonate reservoirs in the Middle East, was awarded the First Prize of the National Science and Technology Progress Award for its efficient development. Technical advancements boosted increases in reserves and production. A number of risk exploratory wells including Well Gaotan-1 in the Junggar Basin achieved satisfactory results. Billion-ton Qingcheng Oilfield and two trillion-m<sup>3</sup> gas regions (i.e. shale gas in the Sichuan Basin and Bozi-Dabei in the Tarim Basin) were discovered. Last year, CNPC contributed more than 50% and nearly 70% of the country's oil and gas production respectively, which further strengthened CNPC's market position and the ability to safeguard national energy security.

We steadily push forward major reforms, including further improving corporate governance, decentralized management, and accelerating three systems reform on labor, personnel and salary distribution, and completed the spin off water/power/heating supply and property management to outside professional companies. In 2019, we achieved RMB 2.77 trillion in revenue, generated RMB 120.36 billion in total profit and RMB 59.59 billion in net profit, and paid RMB 348.68 billion in tax to government, representing a year-on-year increase of 1.2%, 8.9%, 39.2% and 3.8%, respectively. In doing so, CNPC ranked fourth in the Fortune Global 500 and third among the world's top 50 oil companies.

### Embracing green development and supplying more clean energy

CNPC believes that sustainable development can only be achieved in an environmentally responsible manner. We adhere to the green development concept of integrate business activities with environmental consciousness, and give priority to environmental protection wherever we work. We actively explore ways for low-carbon development, promote

green production process, supply green energy and develop green technology, in an effort to provide clean and high-quality energy in a more responsible manner.

While maintaining stable crude production and improving our refining capacity and oil product quality, we also vigorously develop natural gas business. In 2019, we produced 118.8 billion cubic meters of natural gas domestically, representing an increase of 8.6% year on year, a record high in the past five years. The marketing volume of natural gas was 181.29 billion cubic meters, up 5.1% year on year. The China-Russia East Natural Gas Pipeline was successfully put into operation, and our gas pipeline network covered 30 provinces, municipalities, autonomous regions and the Hong Kong SAR, bringing gas to more than 500 million people. With an eye on the future, we worked out the Action Plan for Green Development, aiming to foster green oil and gas development, explore new energy development and utilization such as geothermal energy and gas hydrate. We believe that with the joint efforts of government, enterprises and consumers, green energy will create a more beautiful ecological environment with more blue skies, lush mountains and lucid waters.

### Expanding opening-up & cooperation and promoting mutually beneficial and win-win development

At present, the global energy transition requires closer cooperation among governments, counterparts and partners. While maintaining oil and gas cooperation domestically, we are actively extending oil and gas cooperation overseas. So far, we have built up five overseas oil and gas cooperation zones, four oil and gas strategic channels and three international oil and gas operation hubs, contributing to secure the energy supply and drive local economic and social development in the countries where we operate. Following the principle of "consultation and cooperation for shared benefits", we strengthened strategic cooperation with Belt and Road countries, in order to jointly respond to major changes in the energy industry and build a community of shared interests with open, win-win and mutually beneficial oil and gas cooperation.

In 2019, CNPC hosted 2<sup>nd</sup> Belt and Road Roundtable for Oil and Gas Cooperation, the 2<sup>nd</sup> China-Russia Energy Business Forum and the 8<sup>th</sup> International Petroleum Technology Conference, and participated the China International Import Expo. From business side, we acquired the shares of the Arctic LNG-2 project, and won the bidding for the Búzios Oilfield in Brazil. Our overseas oil and gas equity production exceeded 100 million tons of oil and gas equivalent for the first time, representing a historic leap forward. The Belt and Road oil and gas cooperation was expanded and deepened.

### Promoting people's livelihood and sharing development benefits

The 2030 Agenda for Sustainable Development of the United Nations unfolds a blueprint for the human society and opens a new chapter in global cooperation. CNPC remains committed to grow with communities and share development achievements with local governments, partners and employees. We develop skills and careers for our employees and actively promote local employment to support the economic and social development of host countries. In 2019, we recorded 93.72% local employment rate, and paid RMB 73.7 billion of taxes for overseas operations. In Chad, being a valued neighbor, we sponsored the "Sweet Water Community"

project, and other social responsibility programs, helping Gudawa to grow from a small and backward village of 500 people to a new town with more than 10,000 residents.

CNPC believes that poverty alleviation and reduction is an integral part of our corporate social responsibility and also a significant element to support the global sustainable development. We strive to offer CNPC solutions for poverty alleviation and consciously be an integral part of the national efforts in the regard. While fulfilling the designated poverty alleviation tasks arranged by the Chinese government, we support our subsidiaries to engage in the poverty alleviation and reduction activities organized by local governments. Since the 13<sup>th</sup> Five-year Plan, we have invested RMB 1.8 billion totally in the CNPC headquarters-level poverty alleviation projects for 10 designated counties and the subsidiary-level poverty alleviation projects for 1,175 villages across the country, benefiting more than 3.5 million people. We design, organize and deliver our alleviation program in a careful manner, with targeted measures for each village and even each household under a precise funding scheme, and fully completed our work with out-of-poverty results. We assigned management people to serve in poverty alleviation team to stay in target areas to engage extensively with local people and support local economic opportunities with many success stories.

In 2020, there are growing uncertainties around the world. The outbreak of COVID-19 brings increasingly significant challenges to the world economy and energy market. The downward pressure on the domestic economy continues to increase and the international oil price has fallen sharply with fluctuations. All these bring out huge pressure and challenges for CNPC. In response, we firmly uphold the strategy of seeking progress while maintaining steady development, and focus on quality improvement and efficiency enhancement. We will accelerate the development of oil and gas business focusing on quality and efficiency, forge ahead with reform and innovation, and consolidate the fundamental works for safety and environmental protection. We will make unremitting efforts in the building of a world-class integrated international energy company, and make further contributions to the sustained economic development and social harmony and stability.

Looking ahead, CNPC will continue our commitment in social responsibility, and bring values to society, shareholders and employees with excellent performance. We thank you for your confidence and support over the years as we continue to work every day to achieve and to promote communication, a promise we are proud to honor to our stakeholders, for a better future together.

Dai Houliang, Chairman

## About Us

As one of China's largest oil and gas producers and suppliers, CNPC is an integrated international energy corporation covering oil and gas exploration and development, refining and chemicals, marketing and trading, pipeline transmission and stockpiling, technical services, engineering construction, equipment manufacturing, and financial services. We are the leading company in oil and gas exploration and development in China and possess oil and gas assets and interests in 35 countries and regions around the world. In 2019, CNPC ranked third among the world's top 50 oil companies and fourth in the Fortune Global 500 ranking.

### • Our mission

Caring for Energy, Caring for You

### • Our value

Integrity, innovation, safety, excellence

### • Our philosophy

Patriotism, honesty, dedication, entrepreneurship

### • Our strategy

Resources, market, internationalization, innovation

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### Resources Base

In China, our newly added proven oil in place totaled **836.6** million tons,

exceeding **600** million tons for the 14<sup>th</sup> consecutive year;

and newly added proven gas in place reached **1.2399** trillion cubic meters,

exceeding **400** billion cubic meters for the 13<sup>th</sup> consecutive year.



### Assets & Profits

CNPC registered total assets of RMB **4.23574** trillion;

We recorded an operating revenue of RMB **2.77143** trillion

and total profit of RMB **120.36** billion, up **1.2%** and **8.9%**,

respectively, year-on-year. Our tax and fees payments totaled RMB **404.53** billion,

including the domestic amount as **one-sixth** of the total paid by central enterprises.



### Oil & Gas Production

Domestic and overseas oil and gas production amounted to **300.792** million tons of oil and gas equivalent,

representing an increase of **5%** year-on-year.

Domestically, we produced a total of **101.769** million tons of crude and **118.8** billion cubic meters of natural gas, accounting respectively for **53.3%** and **69.9%** of China's total production.



### Technological Progress

CNPC was awarded **a** first-prize of National Science and Technology Progress Award for a project led by our Group, as well as **a** China Patent Gold Award and **a** Silver Award. CNPC took the lead in formulating **7** sets of international standards.



### International Business

Our overseas oil and gas operations in **35** countries and regions yielded an equity production of **104.363** million tons of oil and gas equivalent.

We provided technical services and engineering construction in **78** countries or regions around the world.



### Oil & Gas Supply

Our domestic marketing volume of refined products was **119.594** million tons,

accounting for **36.3%** of the domestic market share;

we increased supply of clean energy, and our domestic marketing volume of natural gas was **181.29** billion cubic meters,

accounting for **61.9%** of the domestic market share.



### Environmental Protection

The proportion of natural gas consumption in our total energy consumption increased by **0.56%** year on year,

while the proportion of raw coal consumption in our total energy consumption decreased by **1.47%** year-on-year.

Our energy savings amounted to **820,000** tons of standard coal, **10.84** million cubic meters of water,

and **1,247** hectares of land; emissions of major pollutants decreased year-on-year.



### Employee Development

We have a total of **1.4195** million employees, and more than **84.92%** of our overseas employees are local hires.

We spent RMB **1.98** billion on employee training and a total of **1.023** million employees were trained, covering all frontline staff.



### Public Welfare

We invested RMB **850** million in public welfare undertakings globally, benefiting hundreds of millions of people.

In China, we spent RMB **152** million launching **70** projects to support **13** counties (districts) in seven provinces (municipalities and autonomous regions).

## Corporate Governance

CNPC is a wholly state-owned enterprise. According to relevant laws and regulations, including the the *Company Law of the PRC*, the *Law of the PRC on the Assets of State-owned of Enterprises*, the *Constitution of the Communist Party of China*, and the *Regulation of Leading Party Members' Groups of CCP (for Trial Implementation)*, in addition to arrangements made by the State-owned Assets Supervision and Administration Commission of the State Council, CNPC has built and continuously perfected the legal person governance structure with clearly defined rights and responsibilities among the board of directors and senior executives, to ensure that each department carries out its own duties with effective balance, rational decision-making and coordinated operations. We established the statutory status of the Party group in the corporate governance structure and gave play to its role in a systematic, institutionalized and specific manner by integrating the leadership of the Party into various links of corporate governance and carrying out research and discussion by the leading Party group before making decisions on major issues. We strengthened our supervision and accountability system and increased auditing supervision with a focus on system building and fulfillment of responsibilities, and realized clear control objectives, effective integration of resources and optimal efficiency and effectiveness. We also enhanced corporate social responsibility performance and achieved sustainable growth.

### Governance Structure



In 2019, guided by the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and following the general requirements of Party building in the new era and the overall leadership of the Party, we continued constructing the policy, accountability and security systems for the Party's management and self-governance and building the research, exchange and information platforms for Party building. With these efforts, we strive for high-quality development through high-quality Party building.

### Board of Directors

The Board of Directors is the business decision-making organ of CNPC. The Board has four affiliated committees, i.e. the Strategic Development Committee, the Nomination Committee, the Evaluation and Remuneration Committee and the Audit and Risk Management Committee, which are designed to provide advice and recommendations for Board decisions.

According to the *Articles of Association of CNPC* and the *Board of Directors Authorization Management of CNPC*, the Board of Directors issues conventional authorization on decision-making regarding corporate operations to the Chairman.

### Key Work of the Board of Directors in 2019

Formulation of development strategies	Deliberation of major issues	Attention to team building	Enhancement of risk prevention and control
<ul style="list-style-type: none"> <li>Review the Company's development strategies and medium-/long-term development plans, and supervise the implementation of the same</li> <li>Formulate the Company's annual business development and investment plans, budget plans, as well as the production and operation plans</li> </ul>	<ul style="list-style-type: none"> <li>Deliberate and approve a series of major issues concerning investment projects, such as the <i>Administrative Measures of CNPC for Overseas Investment</i>, to facilitate the implementation of the Company's overseas strategies</li> <li>Deliberate and approve the proposals on optimizing the equity structure of the listed company and transferring ineffective and inefficient lands to local governments, thereby improving the corporate capacity of sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Pay attention to communication with managers, and offer guidance and advice</li> <li>Organize board meetings, special committee meetings and centralized investigation and survey to communicate on company development and board building</li> </ul>	<ul style="list-style-type: none"> <li>Deliberate on annual audit report, risk management report, and propose improvement opinions and suggestions</li> <li>Exert the role of audit and risk management committee, guide relevant departments to enhance their accountability in risk management, and implement major risk response measures</li> <li>Strengthen the risk analysis and response for decision-making for major projects to ensure that the operation objectives are achieved while risks are minimized</li> </ul>

### Affiliated Board Committees

As specialized organs directly under, and accountable to, the Board of Directors and composed of directors of the Company, the committees appoint their members and fulfill duties in accordance with the provisions of SASAC, and provide advice and recommendations for Board decisions.

In 2019, giving full play to their respective professional advantages, the Board of Directors exercised due care and diligence, playing a positive role in guiding the strategic development of the Company, strengthening the management of appointment of the senior executives, reviewing major issues, and strengthening risk control.

### CNPC Management and Control Systems

	Goals	Measures
Compliance management system	<ul style="list-style-type: none"> <li>Build a scientific, complete and effective management system</li> <li>Continue to regulate and control personnel behavior</li> <li>Guarantee the Company's operational compliance and sustainable and sound development</li> </ul>	<ul style="list-style-type: none"> <li>Formulated and improved the compliance systems/regulations, such as the <i>Anti-commercial Bribery Manual</i>, the <i>Anti-monopoly Administration Regulations</i>, the <i>Opinion on Strengthening the Compliance Management of Overseas Operations</i>, the <i>Opinions on Further Strengthening Compliance Management of Financial Business</i>, and the <i>Guidelines on the Prevention and Control of Legal Compliance Risks Incurred by Enterprises Engaging in the Sales of Refined Oil</i></li> <li>Conducted analysis and assessment on compliance risks to timely respond to major risks, and issued warning letters on matters concerning intellectual property, anti-commercial bribery, trade restrictions and other aspects</li> <li>Implemented compliance management requirements and conducted stringent reviews on major decisions, reforms, major policies and systems, joint-venture/collaboration projects, and other aspects</li> <li>Conducted on a persistent basis compliance publicity and Company-wide compliance training to improve all staff's knowledge and awareness of compliance matters. In 2019, our Company-wide compliance training involved 1.12 million employees</li> </ul>
Internal control and Risk management system	<ul style="list-style-type: none"> <li>Complete system</li> <li>Overall control</li> <li>Effective implementation</li> </ul>	<ul style="list-style-type: none"> <li>Improved the internal control system, aiming to achieve high-quality development</li> <li>Strengthened supervision and assessment, with a focus on key fields</li> <li>Strengthened the rectification of problems through combining immediate rectification upon examination with establishment of rules and regulations, defect examination with performance evaluation, and internal case notification with external defect compilation</li> </ul>
QHSE management system	<ul style="list-style-type: none"> <li>Standardized operations</li> <li>Controlled risks</li> <li>Continuous improvement</li> </ul>	<ul style="list-style-type: none"> <li>Conducted comprehensive audits twice a year and extended the experience of rectification</li> <li>Encouraged subsidiaries to implement internal audits as required and improve their capacity for self-management</li> <li>Intensified efforts in grassroots HSE standardization and put in place advanced ideas and measures of the system at grassroots levels</li> </ul>
Anti-corruption system	<ul style="list-style-type: none"> <li>Consolidate and extend the resounding success in the fight against corruption</li> <li>Improve the supervision system</li> <li>Enhance the control and supervision on exercise of power</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened daily supervision and special inspections</li> <li>Promoted the system/mechanism of coordinated action to prevent and disable all managers and employees from engaging in practices that do not comply with anti-corruption policies and best practices</li> <li>Promoted the reform of discipline inspection and supervision system</li> <li>Maintained strict supervision and examination of top managers at various levels, and improved the systems for assignment avoidance, regular rotation of posts and off-office auditing</li> </ul>

### Compliance Management

The Company regards law abidance as a basic guarantee for high-quality development. Compliance is of overriding importance. Therefore, we put legal compliance above economic interests, established the strategic position of compliance management, and further defined the responsibility of comprehensive compliance management. At the headquarters and in our regional subsidiaries, we continuously intensify compliance demonstration and review in respect of major decisions and major issues, and strengthen the prevention and control of compliance risks, in order to ensure management according to law and legal compliance in our operations. We strictly implement national laws and regulations and government regulatory requirements and keep strengthening compliance management in key areas. We have therefore basically put in place a general compliance management pattern featuring division of work, joint management and coordination. The awareness of compliance among our employees is strengthened, and an increasingly stern atmosphere for compliance is being created.

The Company strictly upholds business ethics, credibility and integrity in its operations. We obey international covenants and laws and regulations of the countries where we operate, respect trade controls and fight against corruption, bribery, monopolistic practices, and unfair competition in any form. We deal with our suppliers, contractors, customers, government departments, partners and competitors and other stakeholders in a fair and honest manner. We are committed to business integrity to win respect.

# Sustainable Development Management

## Concept of Sustainable Development

For a company, fulfilling corporate social responsibility is not only a necessary path to achieve economic, environmental and social sustainability, but also an inevitable choice for its own sustainable development; it is not only an external requirement to adapt to economic and social development trends, but also an internal requirement to enhance its sustainability; it is not only an important way to change its development mode and achieve scientific development, but also a strategic requirement for expanding its internationalized operation.

Upholding our "Caring for Energy, Caring for You" corporate mission, we aim to achieve the organic unity of economic, environmental and social responsibilities, and strive to become an outstanding global corporate citizen with higher profitability, stronger influence, and a greater reputation in society. We have never relented in our efforts to implement our social responsibilities, adhere to legal operation, be honest and trustworthy, conserve resources and protect the environment, insist on the people-oriented principle and build a harmonious enterprise, in order to make return to society and realize value sharing.

## Management Mechanisms

At CNPC, we regard it as a fundamental task to establish and improve the social responsibility management mechanism for advancing responsible management. Focusing on system establishment, organizational structure and capability building, we have established a set of comparatively comprehensive social responsibility management mechanisms.

## System Building

We have developed working rules and regulations on economic, environmental and social responsibilities, laying a solid foundation for the fulfillment of social responsibilities. In 2019, we continued our efforts to build and improve social responsibility management systems and promote social responsibility management according to the *Guideline on Better Fulfilling Corporate Social Responsibility for the SOEs by SASAC* and *Guideline of CNPC on Fulfilling Social Responsibility*.

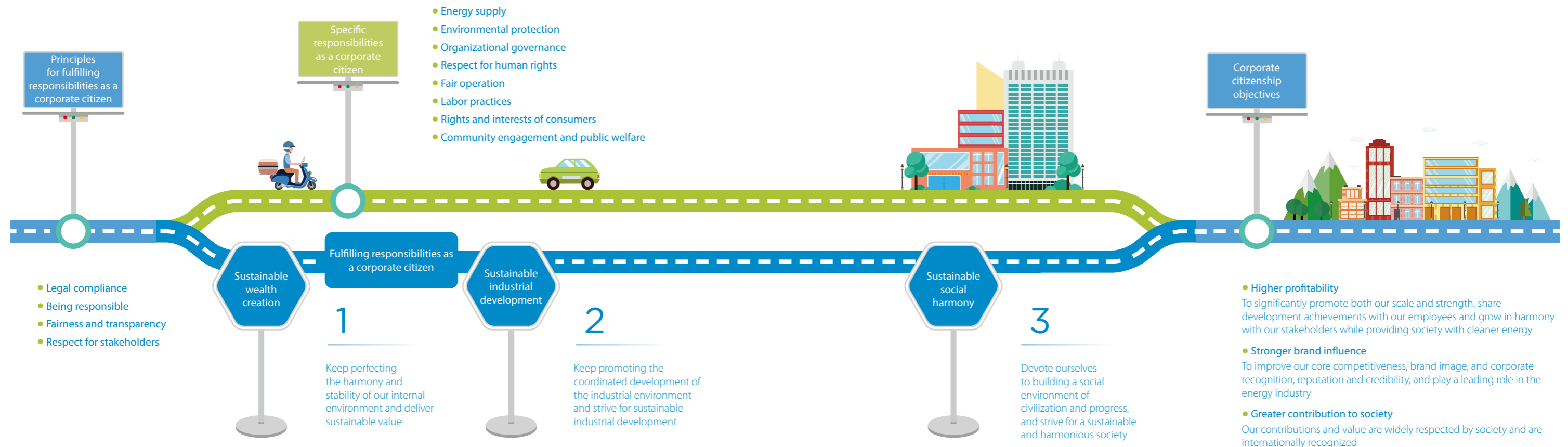
## Organizational Structure

CNPC has established the Social Responsibility Management Committee to make major decisions on social responsibility policies and planning. The Committee is composed of heads of headquarters functional departments. Meanwhile, we have established an External Experts Committee and regularly hold meetings to solicit professional advice on social responsibility management and best practices, and to provide support for our decision-making. Under the General Office of the Company, we have set up the Social Responsibility Office for CSR implementation, which is responsible for organizing and coordinating the planning and implementation of our social responsibility work. A working mechanism has been established, in which the Committee takes the lead, departments in charge organize the work, business sectors take respective responsibilities and affiliates are fully engaged. This has effectively ensured the progress of our social responsibility standards and planning.

## Capability Building

We actively carry out research in the field of social responsibility, promote CSR education and training, as well as CSR communications with relevant organizations at home and abroad, in order to continue enhancing CSR awareness and our capability to fulfill responsibilities among all employees. In particular, special research has been carried out to provide a useful reference and basis for the implementation of independent public welfare projects.

## Corporate Citizenship Governance



### CNPC and the UN SDGs

The UN SDGs explicitly call on all businesses, with their creativity and innovation, to address the challenges on the way to sustainable development. The SDGs also present opportunities for business-led solutions and technologies.

Many countries have begun to set forth their plans to achieve these goals and develop and implement the schemes or plans that are consistent with the SDGs. The SDGs call for worldwide action among governments, businesses and civil society.

CNPC is a strong supporter for the SDGs. We believe that we can play a big role in fulfilling them.

SDGs	Action and Results
 <b>No poverty</b>	<p>We carried out poverty alleviation activities to help end all forms of poverty.</p> <ul style="list-style-type: none"> <li>• We invested RMB 850 million in public welfare undertakings globally</li> <li>• We invested RMB 152 million in China for targeted poverty alleviation. All 10 targeted counties have successfully eliminated poverty.</li> </ul>
 <b>Zero hunger</b>	<p>We took actions to restore farm land, boost agricultural production and supply water to rural areas.</p> <ul style="list-style-type: none"> <li>• We provided assistance in spring plowing, summer planting, summer harvesting, summer field management, and autumn harvesting</li> <li>• We assisted in the construction of an agricultural park in Taiqian County, Henan Province</li> </ul>
 <b>Good health and well-being</b>	<p>We communicated to the public a healthy lifestyle, and provided free medical services. We paid great attention to employee health, and implemented the Employee Assistance Program (EAP).</p> <ul style="list-style-type: none"> <li>• The occupational health examination rate reached 99.62%. The psychological hotline provided services for about 1,200 hours</li> <li>• We assigned 63 medical workers to Wuhan for fighting against COVID-19</li> </ul>
 <b>Quality education</b>	<p>We invested RMB 82.69 million in supporting education. In addition to traditional programs, we carried out the Teacher Training Program and the Xuhang Program.</p> <ul style="list-style-type: none"> <li>• We granted CNPC Scholarships of RMB 3.99 million to 635 excellent students</li> <li>• The Xuhang Program provides subsidies and scholarships for 3,000 poor senior high school students every year</li> </ul>
 <b>Gender equality</b>	<p>We upheld gender equality, respected and protected female employees' legal rights and interests, and paid attention to the demands of female in poverty-stricken areas, to help them enjoy a better life.</p> <ul style="list-style-type: none"> <li>• We advocate for an employment policy based on equality. The proportion of female employees within our company is 32.36%</li> <li>• We implemented public welfare projects like "Where is My Mum Going" in Jiangxi, providing skill training and job opportunities for local women</li> </ul>
 <b>Clean water and sanitation</b>	<p>We improved water use efficiency, and strengthened water resources management and water pollution control.</p> <ul style="list-style-type: none"> <li>• We implemented water resources management throughout the industry chain</li> <li>• We implemented the "Sweet Water Community" program in Chad</li> <li>• We saved 10.84 million cubic meters of water</li> </ul>
 <b>Affordable and clean energy</b>	<p>We developed new energy, improved energy efficiency, and enhanced our ability to supply natural gas.</p> <ul style="list-style-type: none"> <li>• We developed and utilized geothermal resources in Huabei Oilfield, and Kenya, and joined hands with our partners to establish hydrogen and gas refueling stations</li> <li>• The sales volume of natural gas accounted for 61.9% of the domestic market share</li> </ul>

SDGs	Action and Results
 <b>Decent work and economic growth</b>	<p>We created job opportunities for local people according to applicable labor standards and gave priority to local contractors in economically underdeveloped areas.</p> <ul style="list-style-type: none"> <li>• We have a total of 1,419,500 employees</li> <li>• We recruited 2,711 college and university graduates</li> </ul>
 <b>Industry, innovation and infrastructure</b>	<p>We attached great importance to technological innovation capability building, and supported infrastructure construction in economically underdeveloped areas.</p> <ul style="list-style-type: none"> <li>• The 100-million-tons production capacity project and the efficient development of carbonate reservoirs in the Middle East were awarded the First Prize of the National Science and Technology Progress Award</li> </ul>
 <b>Reduced inequalities</b>	<p>We had no child employment and forced labor, and no form of discrimination in gender, region, religion, nationality, etc.</p> <ul style="list-style-type: none"> <li>• The proportion of female employees is 32.36%</li> </ul>
 <b>Sustainable cities and communities</b>	<p>We built roads and other infrastructures in economically underdeveloped countries/regions, to help improve the living conditions of local people. We paid attention to air quality.</p> <ul style="list-style-type: none"> <li>• Our subsidiaries achieved "zero coal consumption" in the Beijing-Tianjin-Hebei region and its surrounding areas</li> </ul>
 <b>Responsible consumption and production</b>	<p>We intensified our efforts in clean energy supply, sustainable management of natural resources, hazardous chemicals management, and pollutant discharge reduction.</p> <ul style="list-style-type: none"> <li>• The sales volume of natural gas accounted for 61.9% of the domestic market share</li> <li>• The emissions of major pollutants continued to decline</li> </ul>
 <b>Climate action</b>	<p>We embrace and support the goal of the <i>Paris Agreement</i>. We included combating climate change in our corporate strategy, and actively responded to climate change.</p> <ul style="list-style-type: none"> <li>• We set the goals for low-carbon development</li> <li>• We established a dedicated low-carbon management office</li> <li>• We promoted clean low-carbon technologies</li> </ul>
 <b>Life below water</b>	<p>We activated the environmental feature acquisition program, and carried out environmental control and monitoring projects, to protect local marine ecological environment and biodiversity.</p> <ul style="list-style-type: none"> <li>• We protected marine ecological environment in Brazil</li> </ul>
 <b>Life on land</b>	<p>We complied with local environmental protection policies, and animal and plant trading laws and regulations, and protected local rare species.</p> <ul style="list-style-type: none"> <li>• We protected the Arabian Oryx in the UAE</li> <li>• We protected the Przewalski's Horse in Xinjiang</li> </ul>
 <b>Peace, justice and strong institutions</b>	<p>We promoted economic development, and pursued peace and growth.</p> <ul style="list-style-type: none"> <li>• We strengthened overseas security management. There were no security-related fatalities in our overseas projects</li> </ul>
 <b>Partnerships for the goals</b>	<p>We cooperated with host governments and partners to address challenges in energy sustainable development.</p> <ul style="list-style-type: none"> <li>• We strengthened interconnectivity by putting the China-Russia East Natural Gas Pipeline into operation</li> <li>• We conducted international trading, with a reported trading volume of 540 million tons</li> </ul>



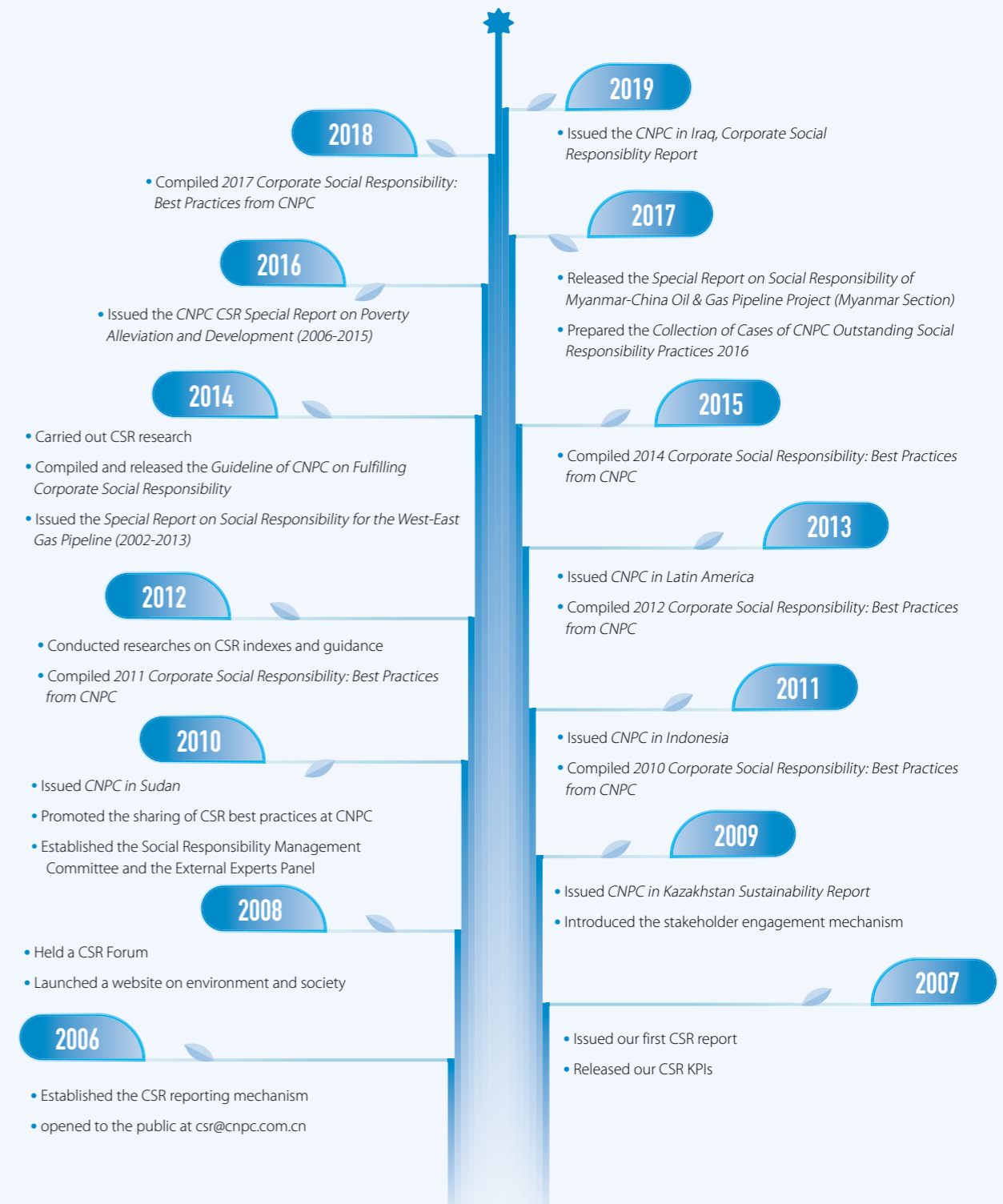
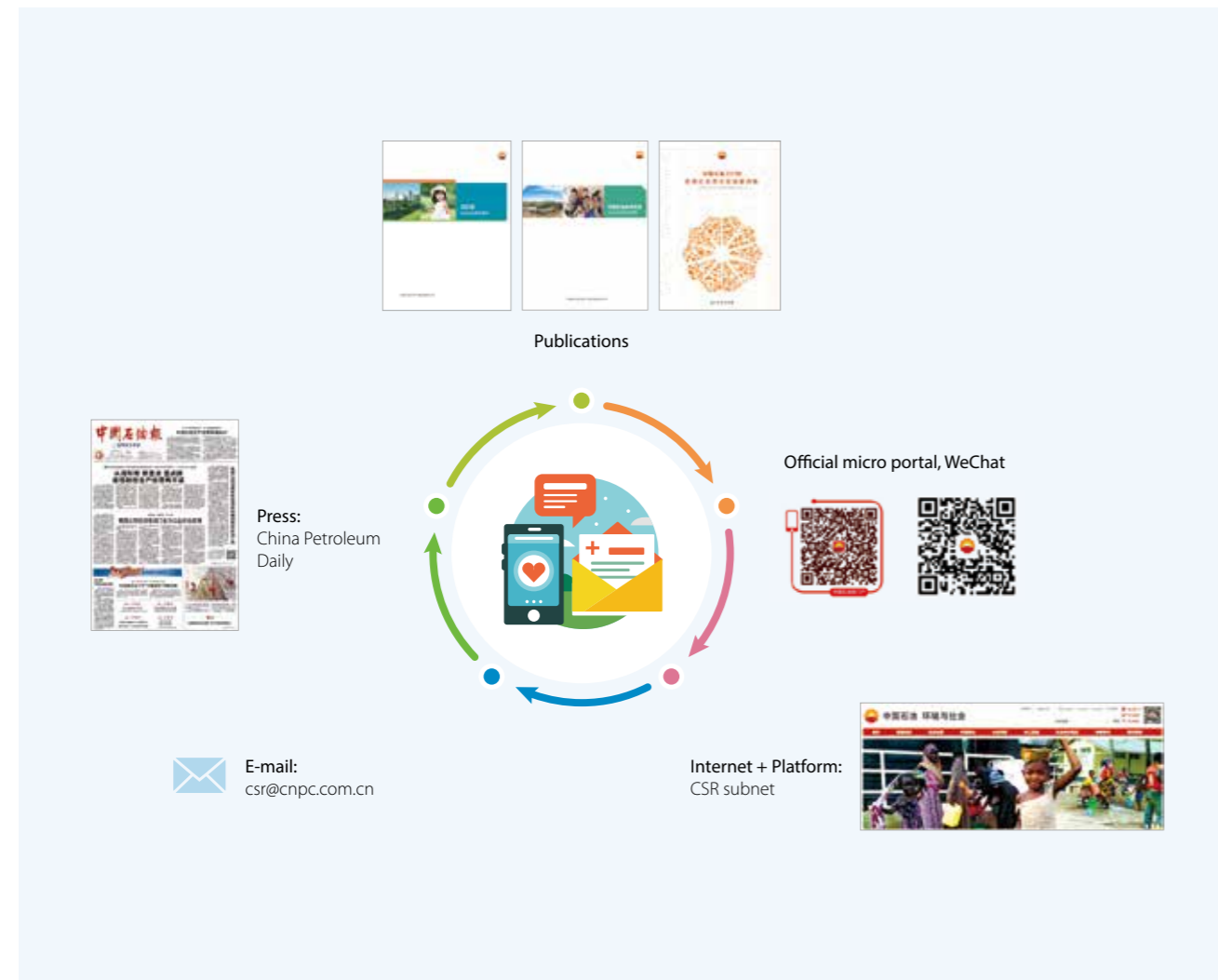
# Communication with Stakeholders

Stakeholders are the groups or individuals who are able to influence corporate decisions and activities or are subject to influence from corporate decisions and activities, including government, employees, customers and consumers, partners, relevant agencies and communities, etc. Stakeholders' participation in CSR work can help deepen mutual communication, understanding, trust and cooperation, and is beneficial to the Company's development.

We adhere to the principles of honesty, interaction and equality, and actively establish and improve the mechanism of stakeholder participation. We introduce a variety of ways to collect and analyze the expectations and concerns of our stakeholders, enhance our communication with stakeholders, and invite them to participate in decision-making and activities related to our sustainable development. In addition, we learn from international standards and advanced experiences home and abroad to continuously improve stakeholder participation.

## Increasing Routine Disclosures

Through the Company's website and its micro-blog, WeChat, micro portals, mobile platforms, public reading and other new media, we enrich information disclosure on social responsibility and enhance the effectiveness of our communications.



## Expanding Public Communication Channels

In 2019, we encouraged stakeholders to participate in the Company's major decision-making and activities, and provided the media and the general public with a better understanding of CNPC. We introduced a variety of ways to enhance communications with our stakeholders including the staff congress, announcements, seminars, and dialogues. We also launched a series of activities including A Better Understanding of CNPC, CNPC Open House Day, mystery customer visits, and other activities allowing visits to CNPC.

Case Study A Better Understanding of CNPC

CNPC actively communicates with the public through various platforms. In June 2019, we held the 2<sup>nd</sup> season of the "Refueling for Dreams" Open Day event, where NPC deputies, CPPCC members, media reporters, primary and middle school students and local residents were invited to get join to learn more about and gain a deeper insight into CNPC and petroleum.

During the event, a total of 112 rounds of activities were organized by over 80 subsidiaries of CNPC, such as Tarim Oilfield in Xinjiang and Dalian Petrochemical in Liaoning, at various points like the sites of major projects at the China-Russia border and the front-line sales stations of refined products in Hainan. This event attracted more than 10,000 on-site visitors, and over 32 million participants via live video streaming.



The dedication of CNPC staff in Tarim well explains that "there is only the bleak and desolate desert, but we are not leading bleak and desolate lives". Thanks to their selfless dedication, a number of people-benefit projects like the West-East Gas Pipeline and Gas Supply in South Xinjiang have been launched to guarantee the safe gas supply for huge numbers of families. They are respectable!

—— Chen Jie, reporter of People's Daily Xinjiang Branch

CNPC staff in Tuha are working hard in the vast Gobi Desert despite the severe cold in winter and intense heat in summer. Their spirit of "producing oil for our motherland" and keeping firmly in mind the mission of guaranteeing national energy security deeply impressed and inspired me.

—— Ma Jianshan, reporter of Turpan News Center

We hope that more and more central enterprises can offer such open house days to tell their stories, spread their voices, popularize science and play their role in government-enterprise communication and social service, striving to make good use of their "IP" as central enterprises.

—— Liu Xiaocheng, assistant professor of School of Journalism and Communication, Lanzhou University

It was the first time for me and my students to visit a petrochemical company. That was impressive. We had a brand new understanding of petrochemical companies. I hope that my students will acquire the development concept of Ningxia Petrochemical in their work in the future to serve the autonomous region, the people and the country.

—— Dong Yingjie, teacher of Ningxia College of Construction

We were attracted by the old photos and articles in the exhibition hall of PetroChina Northwest Marketing Company. They represent a concentrated history reflecting the indomitable struggles through thick and thin of generations of petroleum workers.

—— Luo Feng, director of Office for Cultural and Ethical Progress of Gansu Province

As a regular of customer of CNPC, I was honored to get to know it in detail in another capacity. Its reliable oil products and satisfactory service make me a regular customer.

—— Sun Yue, reporter of Shanxi Channel of people.cn

During my visit to the oil depots and service stations, I truly felt the vigor of CNPC staff for the first time. Even during festivals, many of them remained at their posts to ensure the safe and normal operation of service stations. That's laudable and admirable.

—— Qu Lixia, reporter of Shanxi Branch of China News Service

Through visiting PetroChina Hohhot Petrochemical Company and the Babai Oil Depot and Datai Service Station of PetroChina Inner Mongolia Marketing Company, I had a "zero-distance" contact with and new understanding of oil refining, storage and marketing. I hope that CNPC will refuel for our dreams, for Inner Mongolia and for the beautiful life of people!

—— Li Zebing, deputy director of Inner Mongolia Center, News and Information Center of Xinhua News Agency

Communication and Exchanges with Stakeholders



We attended the 2019 Abu Dhabi CEO Roundtable and the 2019 ADIPEC, proposing that CNPC would join hands with companies inside and outside of the petroleum industry to actively promote innovation and transformation and grasp the opportunity of "power transition" to usher in a better future for the global oil and gas industry.

Employees

A total of 67 young employees from CNPC offices in Hong Kong and 26 China-invested enterprises in Hong Kong gathered in Beijing to attend the "I SEE · I KNOW" Meet-and-Greet at the CNPC Headquarters. Through this activity, the employees appreciated the great achievements of the 70-years of New China, and understood the history of CNPC.



Customers and consumers

We initiated the "uSmile · Quality Action for Good Life" program in the convenience stores, which was designed to upgrade the quality of CNPC's products and services, supporting consumers' desire for a good life. In the meantime, we granted the "Golden Experienter" certificates to 10 consumer representatives, and invited them to enjoy the in-store experience and make an evaluation at any time.









Communities and the public

A delegation of 32 teachers and students from Chinese University of Hong Kong and Lanzhou University paid a visit to Lanzhou Petrochemical.



Stakeholders

	 Government	 Employees	 Customers and consumers	 Business partners	 NGOs and relevant organizations	 Communities and the public
<b>Goals and Concerns</b>	<ul style="list-style-type: none"> <li>• Guarantee energy security</li> <li>• Stabilize market supply</li> <li>• Fulfill social responsibility</li> <li>• Energy conservation and emission reduction</li> <li>• Strengthen operation in compliance with all legal requirements</li> <li>• Deepen enterprise reform</li> <li>• Guarantee investors' interests</li> </ul>	<ul style="list-style-type: none"> <li>• Guarantee employees' rights and interests</li> <li>• Employee career development</li> <li>• Employee value realization</li> <li>• Employee health and safety</li> </ul>	<ul style="list-style-type: none"> <li>• Provide safe, environmentally friendly, and high-quality products</li> <li>• Provide quality services</li> <li>• Improve customer satisfaction</li> <li>• Establish communication mechanisms</li> <li>• Advocate sustainable consumption patterns</li> <li>• Protect consumer privacy</li> <li>• Improve consumer complaints mechanism</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with national laws, regulations and business ethics</li> <li>• Standardize HSE management</li> <li>• Fair competition, mutual benefits</li> <li>• Promote social responsibility in the value chain</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in discussion on public policy and industry standards</li> <li>• Pay attention to industry trends and policy moves</li> <li>• Advance the sustainable development of enterprises and industries</li> <li>• Carry out cooperation in social development and environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>• Promote community development</li> <li>• Protect community environment</li> <li>• Increase local employment</li> <li>• Support education, public health and other public welfare activities</li> <li>• Perform social investment</li> <li>• Enhance sustainable development capacity</li> </ul>
<b>Means of Communication and Participation</b>	<ul style="list-style-type: none"> <li>• Legal operation, integrity and trustworthiness</li> <li>• Respond to the government's call, and accept supervision</li> <li>• Contribute to the formulation of energy policies, laws and regulations and industry standards</li> <li>• Enhance the quality of products, engineering and services</li> <li>• Improve environmental performance</li> </ul>	<ul style="list-style-type: none"> <li>• Support trade unions at different levels</li> <li>• Hold staff congresses</li> <li>• Reinforce staff training</li> <li>• Improve salary distribution system</li> <li>• Hold contests and evaluations</li> </ul>	<ul style="list-style-type: none"> <li>• Safeguard consumers' interests</li> <li>• Supervise product quality</li> <li>• Solicit the opinions of customers and consumers</li> </ul>	<ul style="list-style-type: none"> <li>• Promote e-procurement through e-commerce platform</li> <li>• Share management experience and technical standards</li> <li>• Strengthen communication with suppliers and contractors</li> </ul>	<ul style="list-style-type: none"> <li>• Share corporate experience</li> <li>• Attend related meetings and forums</li> <li>• Facilitate international exchanges and cooperation</li> </ul>	<ul style="list-style-type: none"> <li>• Provide education, training and employment opportunities</li> <li>• Promote cultural exchange</li> <li>• Pay community visits</li> </ul>
<b>Our Actions</b>	<ul style="list-style-type: none"> <li>• Change the mode of development, increase resource potential, promote technological innovation, maintain sound operations and increase the value of state-owned assets</li> <li>• Safeguard energy supply and optimize energy mix, in coordination with national energy strategy</li> <li>• Promote the building of national key laboratories and major scientific and technological innovation projects</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the staff development mechanism</li> <li>• Enhance employee training by hosting professional skills competitions</li> <li>• Protect the legitimate rights and interests of employees, including remuneration, education and training, rest and vacations, and labor protection</li> <li>• Continue to organize occupational health examination and poverty alleviation activities</li> </ul>	<ul style="list-style-type: none"> <li>• Increase clean oil supply and realize supply of National V standard gasoline and diesel nationwide</li> <li>• Further promote the CNPC Quality Month Campaign</li> <li>• Provide natural gas and other clean energy products</li> <li>• Establish a unified service station management system and launch overall inspections on service stations</li> <li>• Implement customer satisfaction investigation and conduct mystery customer visits</li> </ul>	<ul style="list-style-type: none"> <li>• Advocate fair competition, standardized operations, and promote the use of e-procurement and management platform</li> <li>• Strengthen control over key processes including design, procurement, construction and supervision, and strengthen HSE management for suppliers and contractors</li> </ul>	<ul style="list-style-type: none"> <li>• Exchanges with the public on their concerns</li> <li>• Participate in high-level strategic cooperation forums to discuss how to build an efficient, safe and competitive supply chain</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out disaster relief, poverty alleviation and donations to education, and support the reconstruction of disaster-stricken areas</li> <li>• Carry out fixed-point poverty alleviation and aid programs</li> <li>• Support and drive the development of local economies through major project construction, and make steady progress in joint venture cooperation in refining, pipelines, shale gas, and marketing network</li> <li>• Implement oil and gas recovery projects to minimize evaporation</li> <li>• Support the development of SMEs and promote local procurement</li> </ul>

# Special Report

## CNPC is Devoted to Meeting the Energy Demands of Humanity

Humans have never stopped their exploration and pursuit of a better life. Equal access to modern energy and continuous improvement of domestic installation and environment are the common aspirations of all people. CNPC emerged for this mission. Almost starting from scratch, CNPC has been devoted to China's oil industry construction and self-sufficient energy supply. In this process, we have formed the CNPC spirit and cultural values featured with progress, innovation and dedication. We have retained a wealth of professionals, technologies and practices. Also, we have built an integrated industry chain covering the upstream, midstream and downstream sectors. With these strengths, we can provide customers with energy solution packages more efficiently.

Since 1993, we have extended our experience in serving China's petroleum industry to tens of countries around the world. We are deemed as a preferred and reliable energy partner by international peers. Today, over 1.2 billion of the global population still do not have access to affordable modern energy and therefore miss the opportunity for equal development. Thus, the global energy transition is extremely urgent. As a major player in the world energy market, CNPC is, and will be, devoted to meeting the demands of humanity for cleaner, low-carbon and more efficient energy and building a sustainable world.



### Maintaining steady operations to achieve sustainable growth

**7.36** times

Total assets increased from RMB 506.39 billion in 1998 to RMB 4.23574 trillion, rising more than sevenfolds

**9.28** times

Annual operating revenue increased from RMB 269.51 billion in 1998 to RMB 2.77 trillion, rising by an order of magnitude

**10.58** times

So did annual taxes we paid as they increased from RMB 30.11 billion to RMB 348.68 billion

**17.57** times

Annual profit increased from RMB 6.48 billion in 1998 to an average of RMB 120.36 billion in recent years, rising by 17.57 times



### Providing energy security to meet people's living needs

Chemical processing provides synthetic fiber that makes today's colorful clothes, which adorn the people, instead of the monotonous khaki of many years ago.

Oil is an inseparable material for producing domestic appliances, daily items, home accessories, and even food, medicine and cosmetics. Natural gas reaches more and more households, replacing coal briquettes and LPG cylinders.

Clothing

Food

Domestically, CNPC produced more than **4** billion tons of crude oil and nearly **1.5** trillion cubic meters of natural gas, accounting for **60%** and **70%** of the national total, respectively.

Chemical fertilizers nourish the land to produce more crops including grains, vegetables and fruits for us.

Oil fuels high-speed rail, planes or cars which can take people to any destination.

Housing

Transportation



### Building partnerships to jointly deal with energy challenges

We have put in place three international oil and gas operation centers and four strategic oil and gas channels. Our overseas oil and gas operations in **35** countries yielded an equity production of more than **100** million tons of oil and gas equivalent. We provided technical engineering construction services in **78** countries/regions around the world.



We have created over **100,000** jobs in host countries. More than **90%** of our overseas employees in oil and gas investment projects are local hires. Particularly, the employee localization rate in Central Asia projects is almost **98%**; the employee localization rate in Indonesia project is up to **99.6%**; the employee and management staff localization rates in the Andes project, Ecuador, are both up to **95%**; and the employee localization rate in Iraq project reaches **88%**.



### Pursuing innovation for greater achievements

Patents

Since the initiation of the 11<sup>th</sup> Five-year Plan, we have applied for **50,501** patents in total, of which **42,266** were granted.

Awards

In the past 70 years, we have won **617** national science and technology awards, including **4** National Special Prizes on Science & Technology Progress Award, **34** First Prizes of the National Science and Technology Progress Award, **32** national technical invention awards, **1** International Cooperation Award, and **537** other national awards.

# 1

## Sustainable Energy Supply

It is CNPC's responsibility and mission to meet energy challenges and satisfy the ever increasing demand for low-carbon clean energy. To this end, we have enhanced technological innovation, laid a solid resource basis, continued to increase our efficiency in hydrocarbon development and utilization, and raised the proportion of clean energy such as natural gas in our energy supply, in order to make contributions to the construction of a stable, safe, clean and economical energy supply system and the prosperity of human society.

### SDGs



## Energy and Future

### Opportunities and Challenges

**Continuous growth in energy demand.** The world population is projected to reach more than 9 billion by 2050 according to the United Nations' *World Population Prospects*. Population growth, together with urbanization in developing countries and industrialization, will continue to drive the growth of global energy demand and consumption.

**Equal access to energy.** Over 1.2 billion people in the world still do not have access to affordable modern energy, losing the opportunity for equal development. Helping this group of people have equal access to energy is an important part of achieving the Sustainable Development Goals (SDGs) of the United Nations.

**Low-carbon transition below 2°C.** Climate change has become a major issue affecting the destiny of the world and all mankind. The Paris Climate Conference has set the goal of limiting global warming below 2 °C by the end of the century, and that the future lies in low carbon and low energy intensity development. Nevertheless, fossil fuels will remain the major source of energy for decades to come, and will continue to dominate the energy market for a long time in the future.

**Construction of a high-quality energy system.** China's economy has entered a stage of high-quality development. Guided by the new energy security strategy centered on "four revolutions and one cooperation", the Chinese government is actively promoting energy revolution and accelerating the construction of a modern energy system that is clean, low-carbon, safe and efficient, in order to realize high-quality development of the energy system.

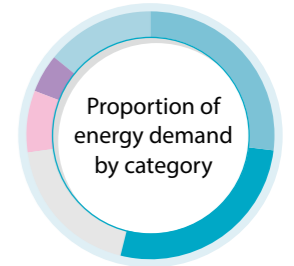
### Strategic Response

The world is undergoing a profound and rapid energy transition towards a cleaner, more efficient and diversified energy structure. The oil and gas industry shoulders an important responsibility in meeting global energy challenges. As a major player in the industry, CNPC has been actively cooperating with the government and companies along the value chain, and strives to provide clean, low-carbon and affordable energy while meeting future energy demand, in an effort to jointly build a sustainable energy future.

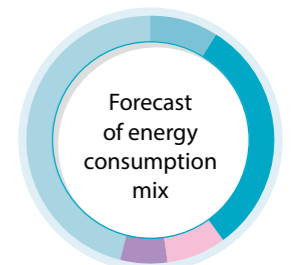
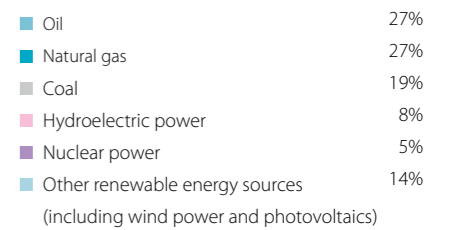
**We will vigorously develop natural gas to enhance the supply capacity of clean energy.** With natural gas as the strategic core for green development, we will devote great efforts to the innovation, application and promotion of the clean and efficient utilization technology of natural gas. We will increase imports of pipeline natural gas (PNG) and LNG overseas while improving our production capacity to secure the natural gas supplies needed by society, thereby providing a strong support to the optimization of China's energy structure and the construction of a beautiful China. The share of natural gas in domestic oil and gas equivalent production is expected to reach approximately 50% by 2020 and will continue to rise thereafter.

**We will develop new energy and promote low-carbon transition.** We take the development of new energy as a new driver for promoting low-carbon transition and have already put it into practice in fields like geothermal energy and biofuels. We initiated the development and utilization of geothermal resources in North China, Liaohe and Xinjiang domestically and in Kenya internationally. We built gasoline-hydrogen refueling stations in cooperation with Haipoer Hydrogen Technology Company, and used solar power at service stations in Beijing. We also continue to explore biofuel technologies.

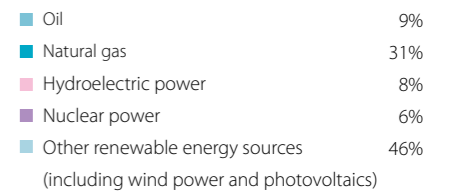
In the future, we will intensify our efforts in the field of new energy. First, we will continue to support large-scale development of geothermal resources and promote the utilization of waste heat from produced water in oil producing areas. Second, we will strengthen support for the research and application of biomass energy. Third, we will study and deploy the whole industry chain of hydrogen energy. Fourth, we will promote clean energy development and utilization by fully leveraging on local conditions.



Forecast of global primary energy demand by category by 2050 \*



Forecast of global energy consumption mix by 2050 \*



\* Data source: *World and China Energy Outlook 2050* by CNPC Economics & Technology Research Institute



## Technology and Innovation

Advanced and applicable energy technology enables us to provide more and cleaner energy, and address global issues such as equal access to energy, climate change and enhancement of energy utilization efficiency. In 2019, we speeded up technological innovation to promote high-quality development.

### Innovation Platforms

CNPC relies on 82 research institutions and departments, including 75 at subsidiary-level. The Company also has 20 national R&D centers and 55 Group-level key laboratories and experimental bases, covering the upstream, midstream and downstream sectors and supporting and leading the Company's sustainable development efforts.

CNPC maintains a two-level (national-level and provincial/industry-level) skills cultivation platform and has a powerful group of 22 academicians, 23 scholars from the national "Hundred, Thousand and Ten Thousand Talents Program", 4,231 two-level technical and skilled experts, and 31,000 researchers.

### Technological Achievements

Guided by national science and technology major projects in oil and gas, and centered on the Company's science and technology major projects, CNPC intensified efforts in technological innovation and formed a batch of innovative theories and new technologies/new products with proprietary intellectual property rights.

#### 2019 National science and technology awards

CNPC was awarded **one** first prize of National Science and Technology Progress for a project led by CNPC, and also, **one** China Patent Gold Award and **one** China Patent Silver Award. CNPC took the lead in formulating **7** sets of international standards

#### Major and core supporting technologies with international competitiveness

CNPC has formed **20** core supporting technologies and made breakthroughs in more than **20** key technologies including major equipment and software

**600** million tons

CNPC's newly-added proven oil in place exceeded 600 million tons for the 14<sup>th</sup> consecutive year

**400** billion cubic meters

Newly-added proven gas in place exceeded 400 billion cubic meters for the 13<sup>th</sup> consecutive year

## Information Technology

CNPC integrates information technology into production and operations by promoting the formation of digital oilfields, smart refineries, smart pipelines and smart service stations. Also, CNPC has introduced information systems into professional fields. Typically, CNPC has built-in IoT systems within oil and gas production, engineering technology, refining and chemicals, and equipment manufacturing, to improve the integration of automatic data collection, remote monitoring, and production & operations decision-making.

Objective	Measures	Progress
<p><b>Increase both reserves and production under complex geological conditions</b></p>	<ul style="list-style-type: none"> <li>Continue to deepen knowledge of ancient carbonate rock reservoir formation and deep zone exploration</li> <li>Continue to improve technologies such as development of unconventional, deep and ultra-deep and complex-structure reservoirs</li> </ul>	<ul style="list-style-type: none"> <li>Discovered the billion-ton Qingcheng Oilfield in the Ordos Basin</li> <li>Proved additional original shale gas in-place of 740.971 billion cubic meters in the Changning-Weiyuan and Taiyang blocks, adding up to a total of 1.06 trillion cubic meters across the Sichuan Basin, and forming a giant TCM-level shale gas region in the southern Sichuan Basin</li> <li>Obtained high-yield commercial oil flow in the southern margin of the Junggar Basin, showing the probability to discover large-scale blocks for reserves and production growth</li> <li>Discovered new gas-containing structure in Kuqa of the Tarim Basin, which is expected to form a new billion-ton-level gas region</li> </ul>
<p><b>Promote green production and low-carbon development</b></p>	<ul style="list-style-type: none"> <li>Promote national Science and Technology Major Project: key technology for environmental detection and protection for the development of unconventional hydrocarbons including shale gas;</li> <li>Implement CNPC-level R&amp;D Projects: CNPC research and application of key technology for low-carbon and clean production; refining energy system optimization, upgrading and application;</li> <li>Carry out CNPC's major field tests: demonstration project of harmless treatment and recycling of drilling waste;</li> <li>Strengthen research on basic, forward-looking and generic technologies to sustain development momentum: research and promotion of key HSE technologies</li> </ul>	<ul style="list-style-type: none"> <li>Heavy crude oily sludge processing and comprehensive utilization technique: helping treat 103,000 tons of heavy crude oily sludge at the Liaohe Oilfield</li> <li>Waste gas processing technique for refining and chemical enterprises: applied in Qingyang Petrochemical and Dushanzi Petrochemical to reduce emissions and improve efficiency</li> <li>VOCs emissions control and utilization technique: widely applied at Jilin Petrochemical and other companies as pilot projects, helping reduce 4,000 tons/year of VOCs emission, recycle 1,154 tons/year of resources and achieve RMB 11 million/year of economic benefits</li> </ul>
<p><b>Improve energy efficiency, reduce costs and ensure energy security</b></p>	<ul style="list-style-type: none"> <li>Integrate information technology into the oil and gas industry</li> <li>Integrate technologies such as "cloud computing, big data, and internet of things" into the whole process of the company's production and operation</li> </ul>	<ul style="list-style-type: none"> <li>Digital oilfield: It was configured with the Dream Cloud platform covering exploration and development, collaborative research, operation management and other businesses.</li> <li>Intelligent refinery: Its operational management control and analysis decision-making capabilities were consistently improved.</li> <li>Intelligent pipeline: It is characterized by comprehensive and unified data, perceptual interaction and visualization, system integration and interconnection, precise matching of supply and demand, intelligent and efficient operation, and predictive analytics for early warnings.</li> <li>Smart sales: It facilitated the cross-border integration of "service + commodity + Internet + finance".</li> <li>Engineering technology: A service platform with real-time data sharing, multispecialty cooperation and overall coordination was built.</li> <li>Engineering construction: Life-cycle integrated management and control was promoted for project management.</li> <li>International trade: The Pioneer Trade Management System covered the whole trading process.</li> </ul>

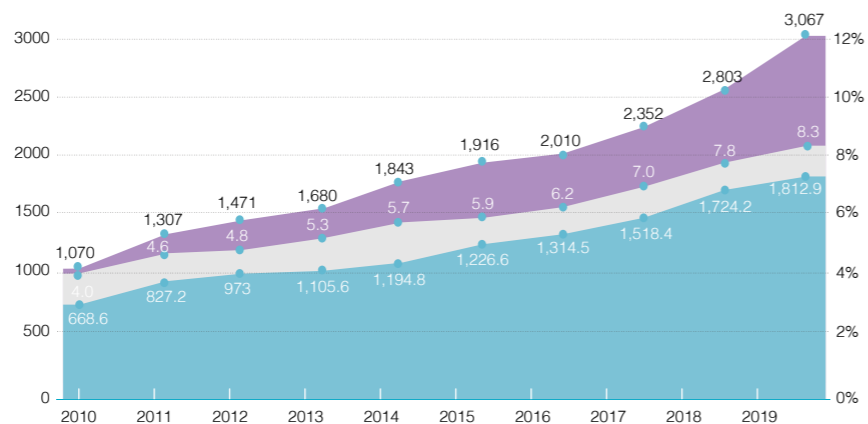
## Clean Energy

In order to secure sustainable supply of clean energy in the future, we have been vigorously developing our natural gas business, continuously enhancing the quality of our oil products and exploring new energy development opportunities to meet market demand for clean and high-quality energy.

### Natural Gas

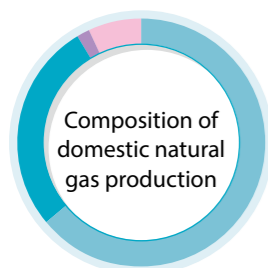
Taking natural gas as a strategic and growing business, CNPC keeps strengthening natural gas exploration and development, developing conventional natural gas and unconventional gas such as tight gas, shale gas and coalbed methane, and importing overseas natural gas to build a diversified energy supply system. By the end of 2019, CNPC's natural gas production capacity was 122.34 billion cubic meters.

### "Green Power" Optimizing Energy Structure



- Proportion of natural gas in China's primary energy consumption mix (%)
- CNPC's domestic natural gas supply (x10<sup>8</sup> m<sup>3</sup>)
- China's natural gas consumption (x10<sup>8</sup> m<sup>3</sup>)

(Data source: Energy Statistics by CNPC's Economics & Technology Research Institute)



### Composition of domestic natural gas production in 2019

conventional gas	63.7%
tight gas	27.8%
CBM	1.7%
shale gas	6.8%

In 2019, CNPC produced 150.3 billion cubic meters of natural gas, including 118.8 billion cubic meters domestically, a 8.6% year-on-year increase, and accounting for 69.9% of the China's total production. CNPC increased PNG and LNG imports while working to increase its production capacity. CNPC supplied 181.29 billion cubic meters of natural gas, a 5.1% increase over the previous year, providing strong support to the optimization of China's energy mix and the construction of a beautiful China.

61.9%

CNPC's domestic natural gas market share

69.9%

CNPC's share of domestic natural gas production

48.2%

Gas mix in CNPC's domestic production of oil and gas equivalent



### Unconventional natural gas



#### Shale gas

- The Changning-Weiyuan and Zhaotong national shale gas demonstration zones produced 7.771 billion cubic meters of gas in 2019.
- The southern Sichuan Basin produced 8.03 billion cubic meters of shale gas in 2019, an year-on-year increase of 88.4%.



#### Coalbed methane

- The Qinnan and Edong coalbed methane industrial bases contributed an annual production capacity of 2.2 billion cubic meters.
- CBM production was 2.07 billion cubic meters, in 2019.

### Case Study

#### High-quality Construction of China-Russia East Natural Gas Pipeline

The China-Russia East Natural Gas Pipeline was invested and constructed by PetroChina Pipeline Co., Ltd. It crosses 9 provinces from Heihe City in Heilongjiang Province in the north to Shanghai in the south. This 3,371 km pipeline consists of three sections: Heihe-Changling, Changling-Yongqing and Yongqing-Shanghai. The Heihe-Changling section was completed on October 16, 2019 and was came online on December 2<sup>nd</sup> of the same year.

#### Clean energy supply

Once it is fully operational, the China-Russia East Natural Gas Pipeline is expected to deliver 38 billion cubic meters annually by 2025. The pipeline will transport gas from Russia, through nine provinces (municipalities and autonomous regions) within China, to Northeast China, the Beijing-Tianjin-Hebei region and the Yangtze River Delta, thereby contributing clean and high-quality energy to building a "Beautiful China".

#### Optimize regional gas consumption structure

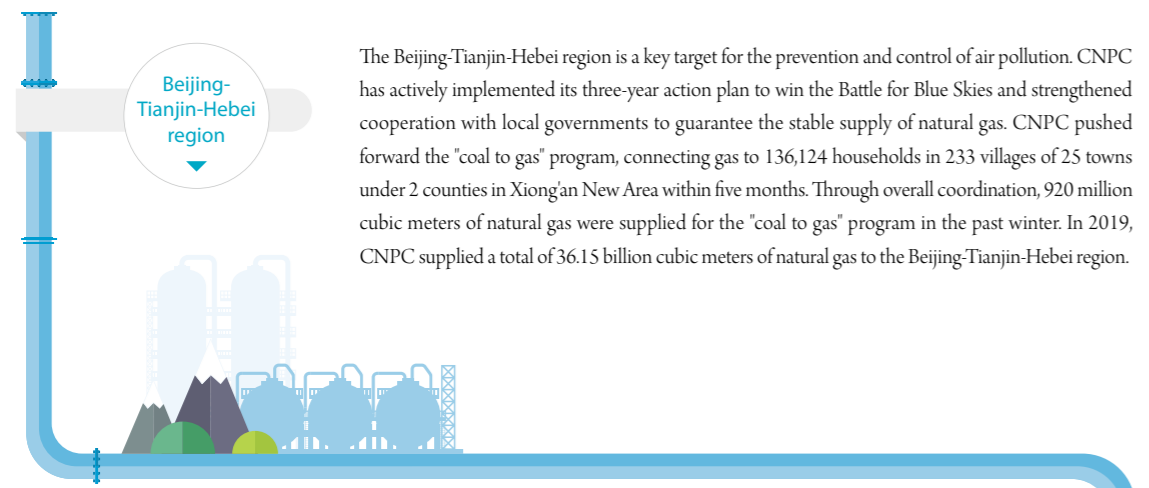
The northern section connects with existing gas pipelines network such as the Harbin-Shenyang Gas Pipeline and the Qinhuangdao-Shenyang Gas Pipeline. As a result, the regional gas consumption structure can be further optimized to form multiple supply channels, which is of great significance to ensure clean energy supply.

### Utilization of Natural Gas and Alternative Fuels

We actively promote the comprehensive utilization of natural gas in city gas, industrial fuels, natural gas power generation, chemical feedstock and vehicle fuels. In 2019, we vigorously promoted coal-to-gas projects and supported related projects in the Beijing-Tianjin-Hebei region, the Yangtze River Delta and the Pearl River Delta.

Case Study Promoting Natural Gas Utilization

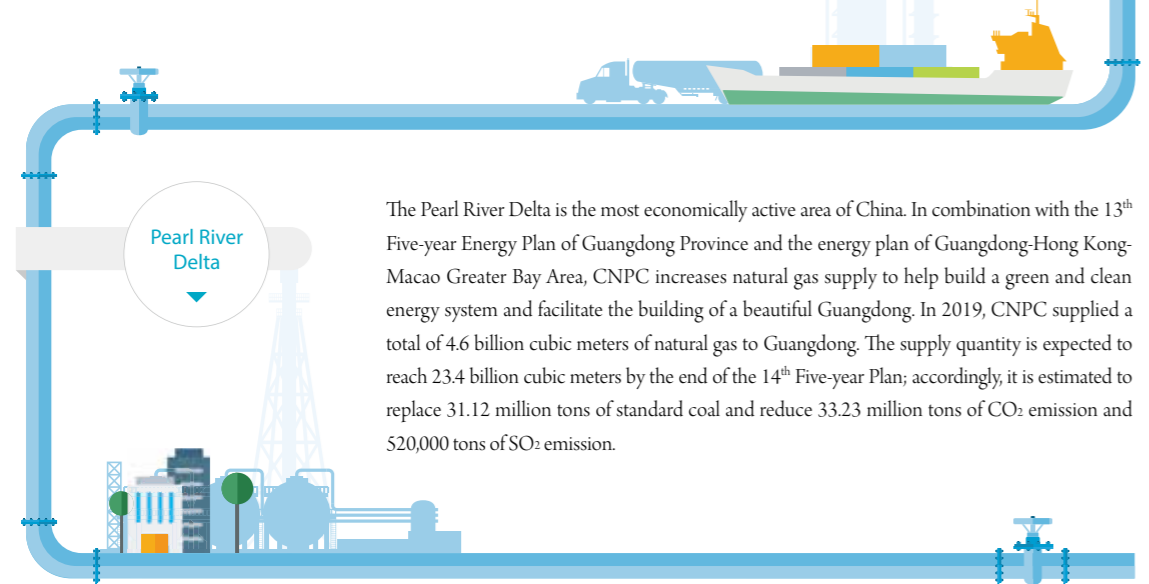
Accelerating the development and utilization of natural gas is a realistic choice to win the Battle for Blue Skies and the battle against pollution. CNPC actively promotes the healthy development of the natural gas industry and effectively guarantees the stable supply of natural gas to contribute clean and efficient energy to social and economic development and ecological civilization construction.




**Beijing-Tianjin-Hebei region**

The Beijing-Tianjin-Hebei region is a key target for the prevention and control of air pollution. CNPC has actively implemented its three-year action plan to win the Battle for Blue Skies and strengthened cooperation with local governments to guarantee the stable supply of natural gas. CNPC pushed forward the "coal to gas" program, connecting gas to 136,124 households in 233 villages of 25 towns under 2 counties in Xiong'an New Area within five months. Through overall coordination, 920 million cubic meters of natural gas were supplied for the "coal to gas" program in the past winter. In 2019, CNPC supplied a total of 36.15 billion cubic meters of natural gas to the Beijing-Tianjin-Hebei region.

The Yangtze River Delta is economically developed with great energy demand. CNPC made full use of its strengths to support the natural gas power generation, coal-to-gas project, vehicles and ships and other sectors. CNPC supplied a total of 33.9 billion cubic meters of natural gas to the Yangtze River Delta in 2019. The supply quantity is expected to reach 54.2 billion cubic meters by the end of the 14<sup>th</sup> Five-year Plan; accordingly, it is estimated to replace 72.09 million tons of standard coal and reduce 76.98 million tons of CO<sub>2</sub> emissions and 1.38 million tons of SO<sub>2</sub> emission.



**Yangtze River Delta**



**Pearl River Delta**

The Pearl River Delta is the most economically active area of China. In combination with the 13<sup>th</sup> Five-year Energy Plan of Guangdong Province and the energy plan of Guangdong-Hong Kong-Macao Greater Bay Area, CNPC increases natural gas supply to help build a green and clean energy system and facilitate the building of a beautiful Guangdong. In 2019, CNPC supplied a total of 4.6 billion cubic meters of natural gas to Guangdong. The supply quantity is expected to reach 23.4 billion cubic meters by the end of the 14<sup>th</sup> Five-year Plan; accordingly, it is estimated to replace 31.12 million tons of standard coal and reduce 33.23 million tons of CO<sub>2</sub> emission and 520,000 tons of SO<sub>2</sub> emission.

Case Study Promoting "Coal-to-gas" in Xiong'an New Area

In 2019, the rural clean heating renovation project was promoted in Xiong'an New Area. CNPC undertook the "coal-to-gas" project benefiting about 590,000 residents in the area, accounting for 88% of the total workload under the renovation project. By the end of 2019, Xiong'an New Area entered the "gas era".

"Gas is much better! We can use it for heating, cooking and bathing. The heating can be set automatically at a constant temperature, liberating us from adding coal at midnight. Gas is more convenient, cleaner, and greener! After deducting the subsidies, the cost is more or less the same as that for using coal. Thank you!"

— A villager in Xuzhuang Village in Xiongxian County of Xiong'an New Area



CNPC's Measures to Secure Market Supply During Special Periods in 2019

Agricultural production	Spring plowing, summer planting, summer harvest, summer field management and autumn harvest	<ul style="list-style-type: none"> <li>Surveyed oil demand, developed plans to secure supply, and opened green channels</li> <li>Scheduled resources availability, and coordinated distribution of fuel in advance</li> </ul>
	2019 Changning "6.17" Earthquake in Sichuan	<ul style="list-style-type: none"> <li>Started an emergency plan</li> <li>Speeded up resource raising. The first batch of 15 emergency tank trucks fully loaded with 400 tons of oil products arrived all through the night</li> <li>Opened green channels for emergency rescue</li> </ul>
Natural disasters	Extraordinary rainstorm geological disaster in Wenchuan	<ul style="list-style-type: none"> <li>Opened special channels for disaster relief</li> <li>Spared no effort to ensure adequate oil supply for disaster relief</li> </ul>
	Droughts in provinces and regions at the middle and lower reaches of Yangtze River	<ul style="list-style-type: none"> <li>In the same month, supplied 1.05 million tons of gasoline and diesel oil for provinces severely affected by the disaster including Hubei, Hunan, Jiangxi, Anhui, Fujian and Henan</li> </ul>
Major national events	NPC and CPPCC (March 1-20)	<ul style="list-style-type: none"> <li>Distributed resources in advance. Total resource quantity distributed by railways to Beijing direction in March was 119,300 tons</li> <li>Arranged inventory properly to ensure more than 140,000 tons of oil product resources available</li> <li>Guaranteed secondary distribution. Totally 64,000 tons of gasoline and diesel were delivered during the Two Sessions</li> <li>Built the emergency guarantee mechanism based on North China Petrochemical and Dagang Petrochemical and supplemented by Liaoyang Petrochemical</li> </ul>
	Bo'ao Forum for Asia Annual Conference (March 26-29)	<ul style="list-style-type: none"> <li>Planned in advance to guarantee dedicated resource supply</li> <li>Transferred in 146,500 tons of refined oil products in the first quarter, a year-on-year increase of 28,100 tons</li> </ul>
	Conference on Dialogue of Asian Civilizations (May 15)	<ul style="list-style-type: none"> <li>Allocated and transported resources to the directions of Northeast and North China in advance, with 38,000 tons of resources supplied for Beijing and 46,000 tons of gasoline and diesel stored in Beijing area</li> <li>Made a resource supply guarantee plan and activated an emergency supply guarantee mechanism for major events</li> </ul>
	Annual Meeting of the New Champions in Dalian (July 1-3)	<ul style="list-style-type: none"> <li>Conducted survey on oil demand and made a supply guarantee plan</li> <li>Gave priority to the supply of aviation fuel</li> </ul>
	70 <sup>th</sup> Anniversary of the Founding of the People's Republic of China	<ul style="list-style-type: none"> <li>Strengthened the arrangement of production, transportation and marketing. From September 18-30, 4.126 million tons of oil products were delivered, corresponding to a daily average 30,000 tons more than that from September 1-17</li> <li>Guaranteed the supply to key areas. From September 12, CNPC's oil depots have kept full load, including 23,200 tons of gasoline and 27,500 tons of diesel</li> <li>Guaranteed resource transportation, with the monthly volume by railway not less than 3.7 million tons</li> </ul>



### Upgrading of Refined Products

We promote the optimization of the energy consumption mix through upgrading quality of energy products. In 2019, we invested RMB 1.76 billion in equipment replacement and technical transformation and fully supplied National VI gasoline and diesel. In 2019, we supplied 119.594 million tons of National VI gasoline and diesel to the domestic market, accounting for 36.3% of the domestic market share.

### New Energy

With an eye on the future, we continued to promote the development and utilization of renewable energy including geothermal energy and biofuels. In 2019, CNPC continued to expand its new energy business, such as geothermal energy, solar energy, biofuels, and charging and battery swap stations.



CNPC built a large-scale distributed photovoltaic power station at the Jilin Oilfield, with a maximum daily generating capacity of 100,000 KWh and annual generating capacity of 22.5 million KWh.

Compared with coal-fired power plants with the same capacity, the PV power station can reduce 18,700 tons of CO<sub>2</sub> emissions, 1.425 million tons of SO<sub>2</sub> emissions and 48 tons of NO<sub>2</sub> emissions.



CNPC developed geothermal energy at the Jidong Oilfield, enabling a heat supply immediately after the geothermal project was put into practice. The project supports the heating demand of 2.3 million square meters in Caofeidian New Town.

Compared to coal-fired heating, geothermal energy is cleaner and can be reused without causing water pollution.

## Energy Cooperation

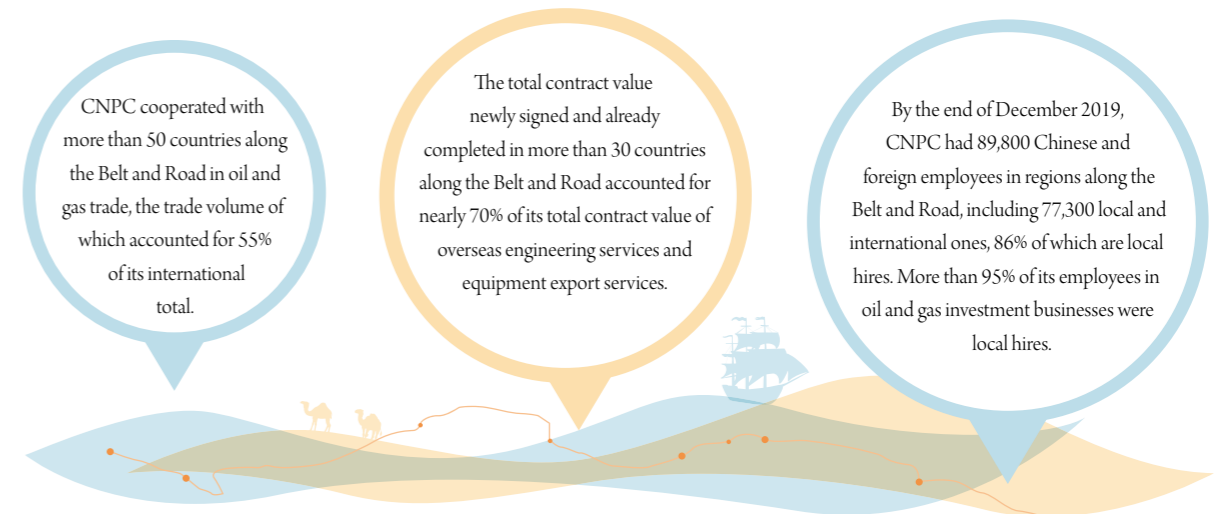
International energy problems can't be solved without cooperation. Upholding the principle of "mutually beneficial cooperation for common development", we give play to our advantages in integrated businesses, capital, technology and managerial expertise, and cooperate with host governments and partners to address local energy challenges, in order to meet local energy demand and maintain regional energy security.

### International Energy Cooperation

In response to the complex and volatile world situation, we worked hand in hand with the government of the host countries and our partners to guarantee the stable operation of cooperation projects. Leveraging our advantages in integrated businesses, we carried out all-round cooperation in such areas as upstream, downstream, trade and marketing, and technical support. Therefore, we have achieved cooperation throughout our industry chain and value chain. In 2019, CNPC produced 182.21 million tons of oil and gas equivalent overseas, with CNPC equity production of 104.363 million tons, up 6.3% year on year. CNPC made contributions to meeting energy demand in host countries and supporting local economic development.

### Case Study CNPC and the Belt and Road

CNPC is involved in the operation and management of 53 oil and gas cooperation projects in 20 countries along the Belt and Road, and 7 of the 9 overseas large-scale oil and gas projects with production capacity of 10 million tons are along the Belt and Road. In 2019, CNPC's overseas oil and gas equity production was 87.06 million tons, up 11% year on year and accounting for 83% of total overseas oil and gas equity production.



### E&P Joint Ventures in China

We continue to make steady progress in cooperation with international partners in developing oil and gas resources in China. While deepening cooperation in conventional areas, we reinforced cooperation with IOCs in shale gas and other unconventional resources. Projects including the South Sulige Project and Chuazhong Project were making steady progress. Our domestic oil and gas production equivalent in cooperation with international partners amounted to 10.71 million tons in 2019.

### International Trade

Supported by our overseas operation hubs and trade networks, we conduct international trading in over 80 countries/regions around the world, constantly improving our resource deployment capability. In 2019, we reported 540 million tons of international trading volume, and witnessed further improvements in both scale and operational quality.



# 2

## Responsible Operations

We are always committed to the principle of "people-centered, quality foremost, safety first, environment prioritized" to achieve "zero defects, zero injuries and zero pollution". We regard providing clean energy, minimizing environmental impact and reducing emissions as the strategic foundation for the Company's sustainable development. The Company continues to improve the quality management of products and services, and promote safe, environmentally-friendly and resource-saving operations, in order to promote the construction of an ecological civilization and develop a resource-saving and environmentally-friendly enterprise.

### SDGs



## Safe Operation

We actively promote the building of a long-acting safety system and comprehensively enhance our work safety management. In 2019, the Company maintained a stable improvement in safety performance.

### Management System and Performance Assessment

In 2019, we enacted some regulations including the *Measures for the Implementation of Reporting on Safety in Production by Enterprise Leaders*, and the *Measures for the Safety Supervision and Management of Leasing Business*, and revised the *Overall Response Plan for Emergencies* and 23 special emergency plans, thereby enhancing the top-level design. We enhanced the auditing quality of our HSE management system, and concentrated our efforts in rectifying problems found during the auditing process. We assessed the safety and environmental protection performance of critical personnel who was just appointed or transferred to relevant positions. We revised the detailed rules and relevant regulations regarding the assessment of safety performance, and strengthened our evaluation and accountability system for process management performance and accidents/incidents.



### Hazard Control

We attach equal importance to both prevention and control of hazards, and build a long-acting mechanism for hazard control, so as to ensure all hazards are timely and effectively treated and enhance the overall safety performance of the Company. In 2019, we carried out targeted inspections of the safety hazards in the control projects of external floating roof storage tanks, oil/gas transportation pipelines and refined volatile organic compounds (VOCs). We upgraded safety controls of oil and gas pipelines, implemented comprehensive hazard control for the high consequence areas of oil/gas long-distance pipelines and the corrosion and leakage of gathering and transportation pipelines, and improved the intrinsically safe operation level of oil and gas pipelines.

### Safety Risk Management

We fully implemented a dual-prevention mechanism covering risk prevention and control and hazard identification and treatment for production safety, and established a sound classified risk prevention and control system, so as to eliminate safety risks and potential hazards to prevent accidents.

In 2019, we carried out classified supervision and targeted responses to risks in our subsidiaries. We strengthened risk early warning, prevention and control in key areas, and took special actions for risk prevention, hazard removal and accident control. We formulated the risk prevention and control guide for main specialties including oil and gas fields, and refining and chemical, and instructed our subsidiaries in making 354 risk prevention and control plans. We continuously promoted the standardization of grass-roots groups/teams, of which 96% were qualified for the HSE standardization.



### Supplier Safety

We included suppliers and contractors into our safety management, and had a systematic management on their access, selection, training, use, evaluation and assessment, so as to prevent and reduce accidents caused by suppliers and contractors.

In 2019, we strengthened the supervision and management of contractors, highlighted the control over contractor access at the source, and enhanced the safety training for critical personnel of the contractors, in order to reduce safety risks relating to contractors.

**In 2019, we**

- Strictly reviewed our contractors. We removed 2,500 unqualified contractors, accounting for about 13% of our total contractors.
- Established a compulsory training system for the contractor's key personnel. A total of 70 sessions of training were provided for contractors' key personnel, involving over 7,000 personnel.

### CNPC Supply Chain Safety Management Process



### Hazardous Chemicals Management

We conduct full cycle management of hazardous chemicals covering production, storage and transportation. In 2019, taking the major accidents at some local hazardous chemicals enterprises as a warning, we took special actions such as hazard control and centralized treatment concerning hazardous chemicals, and carefully implemented the *Guidelines for Identification and Treatment of Safety Risks and Hazards of Hazardous Chemicals Enterprises*. We promoted relocation and transformation of hazardous chemicals subsidiaries in populated regions and established a safety risk monitoring and early warning platform of hazardous chemicals, thereby improving the capability of supervision on hazardous chemicals.

### Offshore Oil Safety Management

We make unremitting efforts to improve offshore oil safety management. In 2019, we carried out special inspections of the safety risk prevention and control in offshore oil reserves and productivity expansion projects, and put more efforts in risk prevention and control in key operations such as onboard hoisting. We maintained offshore emergency measures for typhoons and storm surges, by which we responded successfully to Typhoon Lekima. As a result, we kept a stable status of offshore oil safety.

### Overseas Security Management

Personnel safety has always been an overriding priority in our operations. We constantly reinforced the operation of social security management system, fully strengthened social security risk prevention and control, and continuously enhanced emergency response capabilities. In 2019, we strengthened prevention and early warning, enhanced process control, improved emergency capabilities, and braced ourselves for political and social unrest in Venezuela, Sudan, Iraq, Ecuador, and other high-risk areas. There were no fatalities in our overseas projects.

### Overseas Security Risk Management

Risk level	Management measures
Extremely high risk	CNPC sets out clear and unified security management requirements and implements intensified security management policies
High risk	Any project is implemented only after security risk assessment is made and a security program is prepared and approved by the Company. Depending on changes in local security situations during project implementation, the security program is improved, the emergency response plan is revised, and emergency drills are arranged, to ensure personnel safety
Medium risk	Before a project is implemented, risk assessment is made, an emergency response plan is prepared, and security measures are kept in place
Low risk	Necessary security measures are taken

### Environmental Protection

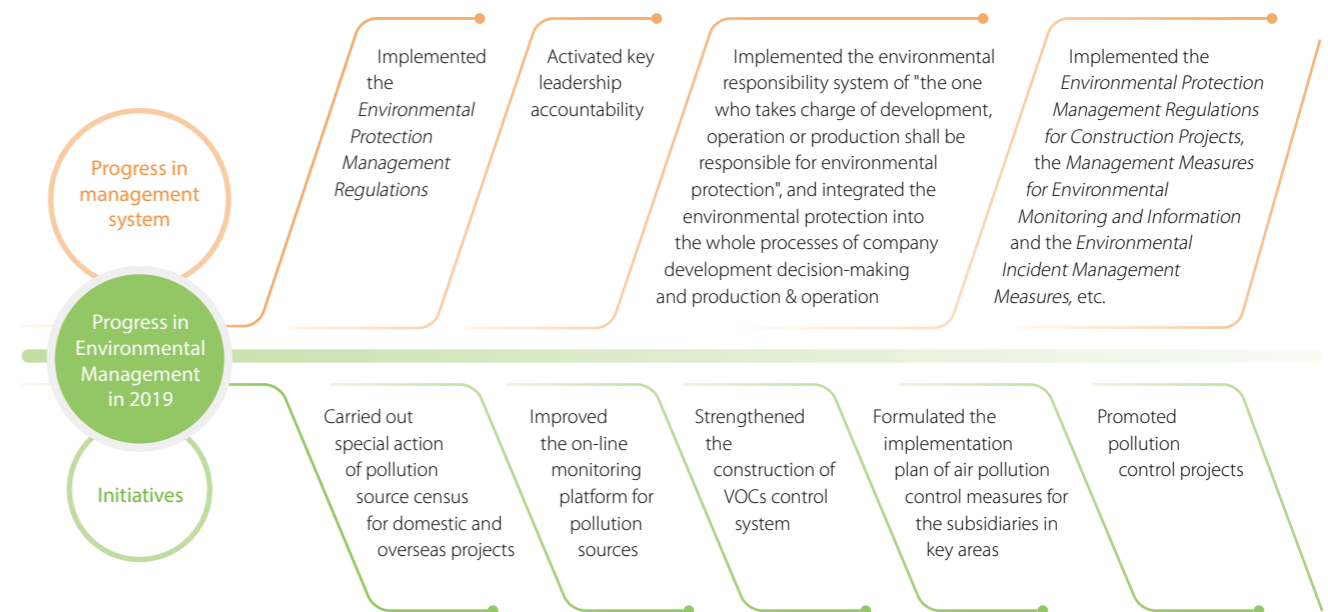
We take the initiative to evaluate the environmental impact of our management and activities, and make efforts to reduce adverse effects on the environment and climate. By improving the resource utilization efficiency, implementing the Clean Air Act, and promoting energy conservation and emission reduction, we strive to achieve environmentally friendly and resource-efficient operations and vigorously advocate ecological civilization, in order to achieve harmonious development with the environment. In July 2019, CNPC was rated by SASAC as one of the "Enterprises with Outstanding Contributions in Energy Conservation and Emissions Reduction" (2016-2018).

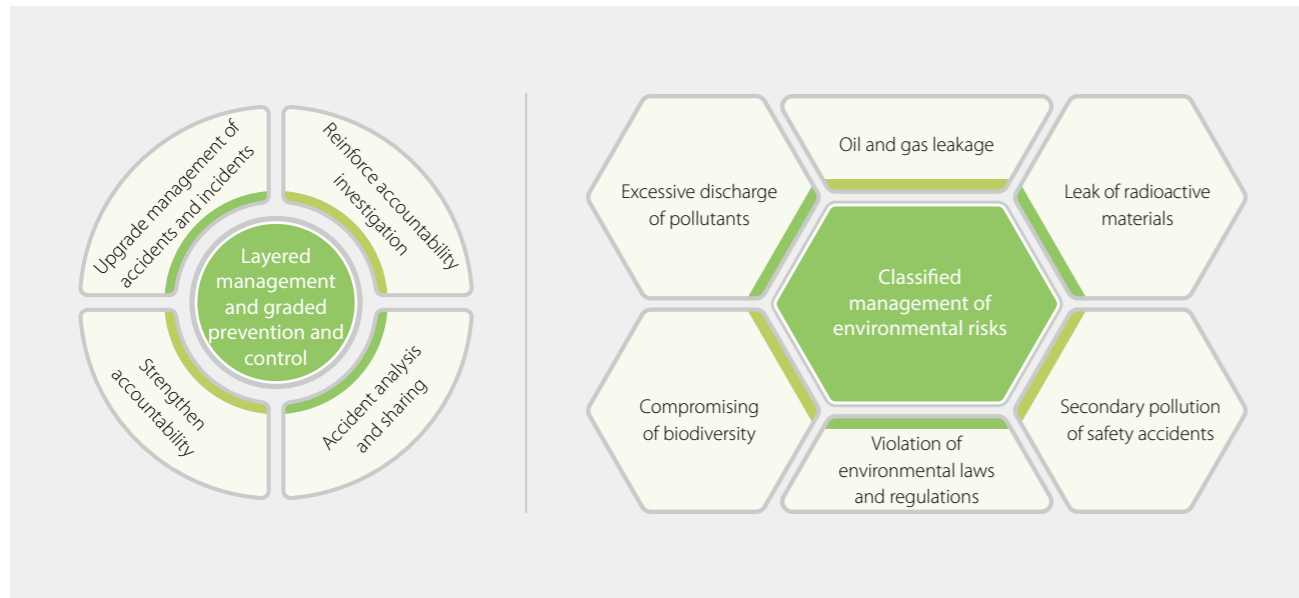
**In 2019, CNPC continuously improved its environmental risk prevention and control capabilities by**

- Releasing the opinions on further strengthening the management and control of ecological environment risk
- Making safety and environmental risk diagnosis and assessment, and strengthening the control of event sources
- Regularly making comprehensive investigations of ecological environmental risks and treatment of potential hazards

### Strengthening Risk Prevention and Control

We carried out environmental risk identification and assessment and implemented a risk prevention and control management model focusing on environmental forecasting, pre-warning and monitoring. We began the environmental risk management at an earlier stage and established a sound risk management mechanism featuring "management in tiers, prevention and control by levels", in order to ensure overall control over environmental risks. In 2019, no major environmental accidents were reported.





**Case Study On-line Monitoring of Pollution Sources**

In 2019, 463 monitoring points of 38 subsidiaries were accessed to CNPC's pollution source on-line monitoring system. Particularly, key pollution sources given in the National Directory of Key Pollutants were all controlled.

**Case Study Strengthening Environmental Governance**

In 2019, we invested about RMB 9.9 billion in environmental governance, typically covering anti-seepage reconstruction of underground oil storage at service stations, comprehensive treatment of VOCs in refineries, upgrading of wastewater treatment plants, treatment of oily sludge, and eco-environmental risks/hazards control.

**Case Study Holding the First Competition in Environmental Monitoring**

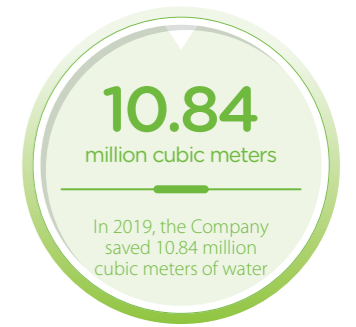
In 2019, we held the first competition in environmental monitoring at the Dagang Oilfield, with participants from 35 oil and gas fields and refineries. This competition is of great significance to creating an excellent learning and research atmosphere and improving the quality of ecological environment monitoring talents.

**Sustainable Use of Resources**

We attach great importance to the protection and rational utilization of resources. We strengthen the protection of water, conservation of freshwater and rational use of land, and strive to improve energy and material utilization efficiency to minimize resource consumption.

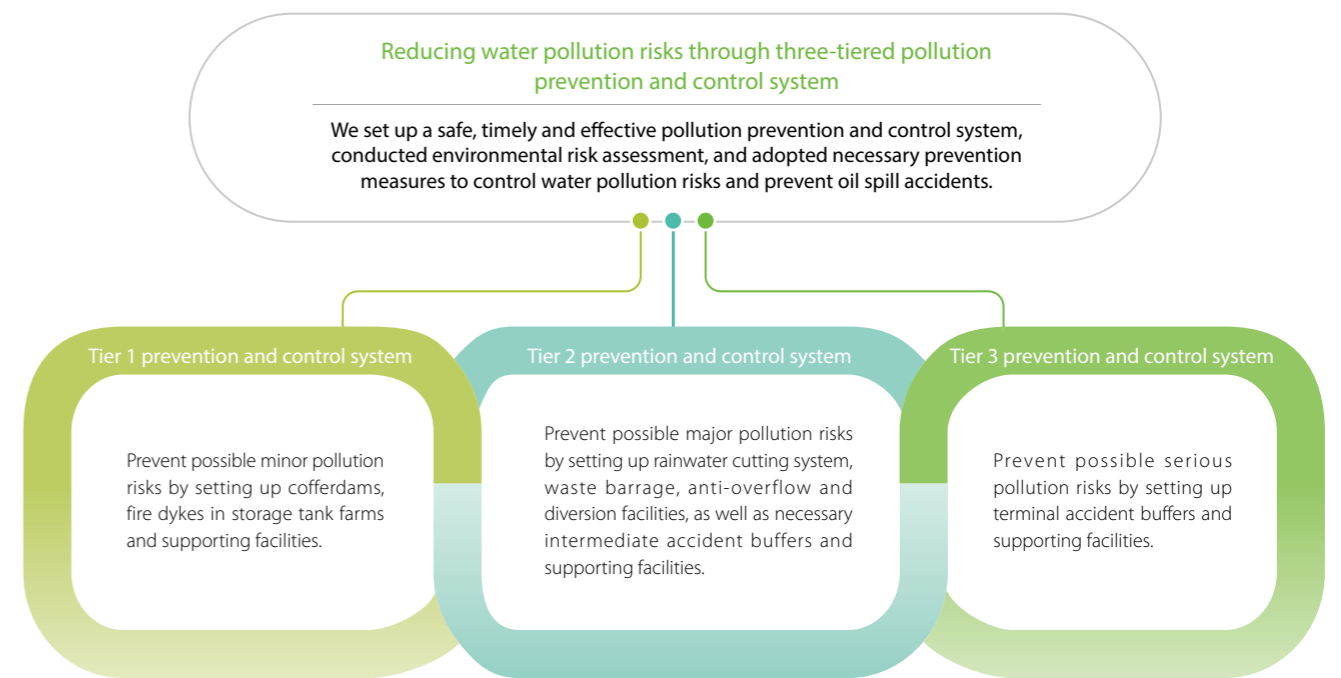
**Water Resources**

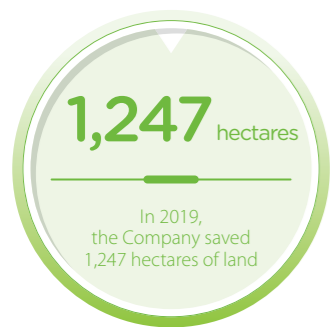
We endeavor to improve water utilization efficiency and realize sustainable use of water throughout various links in our production and operation activities. Through strengthening water utilization process management, adopting technologies for water-saving and wastewater treatment and recycling, and integrating water-saving indicators into performance evaluation and other measures, we worked to reduce the use of fresh water. In 2019, we saved 10.84 million cubic meters of water.



**Water Resources Management throughout the Industry Chain**

Exploration and Development	Pipeline Operations	Refining and Chemicals
<ul style="list-style-type: none"> <li>In oil and gas development, equal importance was given to both water pollution prevention &amp; control and water recycling. After the oil-water separation and filtration treatment of the recycled wastewater, oil recovery and water reinjection were both realized, preventing groundwater and surface water contamination. By the end of 2019, 100% of oil extraction wastewater in our oil and gas fields was treated, with a reinjection rate of 95.3%.</li> <li>We carried out water system maintenance and revamping, improved the water qualification rate, optimized operation programs, upgraded wastewater discharge and treatment processes to reduce water discharge, and promoted the application of new technologies for water treatment to maximize water conservation. In 2019, the comprehensive qualification rate of the Company's oilfield wastewater reached 100%, and water discharges increased by 3.3 % year on year.</li> </ul>	<ul style="list-style-type: none"> <li>We focused on managing the impact on water resources by construction projects and the risk of leakage accidents during pipeline operations. Environmental impact assessments (involving water environment) were conducted, and water conservation and protection concepts and awareness were integrated into construction and operation activities.</li> </ul>	<ul style="list-style-type: none"> <li>We improved water consumption efficiency by promoting clean production processes, saving water at the source, and optimizing water consumption systems. We increased the concentration time of circulating water to reduce water use, and strengthened steam condensate water recovery to achieve water saving. In addition, we emphasized wastewater treatment and reuse to reduce wastewater discharge and improve the industrial water recycling rate; and enhanced underground pipelines to reduce groundwater leakage rate.</li> </ul>





### Land Resources

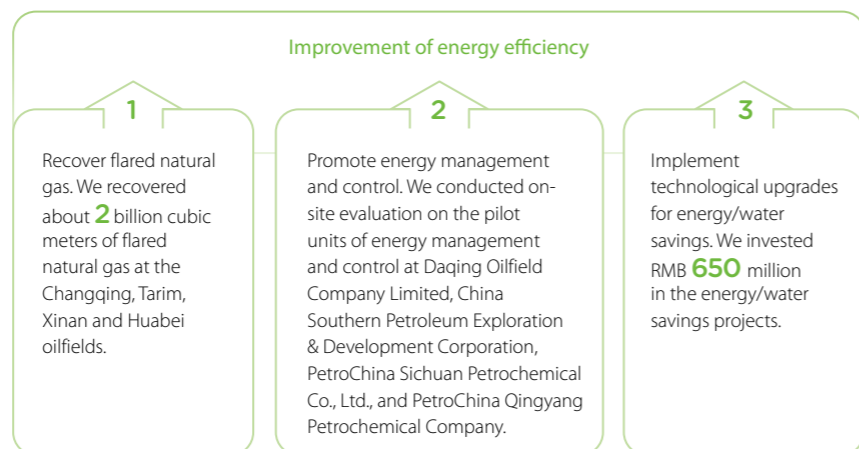
Based on the principle of scientific siting, efficient use, proper protection, and timely restoration and through innovation in land-saving technologies and management models, we made careful and intensive use of land during production, strictly controlled land use growth, made good use of land in various ways, proactively reclaimed land, carried out environmental treatment and recovery in mining areas, and enhanced land use efficiency. In 2019, we saved 1,247 hectares of land.

In 2019, the Company continued to promote new intensive drilling modes (e.g. large well cluster and platform type), applied the technologies of "no mud on ground" collection and recycling and clean drilling and workover operations, and replaced small to medium-sized stations with integrated units.

- Reduced land use by more than 30,000 *mu*
- Reduced drilling waste by more than 4.80 million tons
- Reduced oily sludge and oil-staining plastic cloth by 274,000 tons

### Energy

We have been striving to reduce the consumption of fossil fuels and increase energy efficiency by reducing energy intensity. We paid high attention to energy conservation at the source, and carried out energy-saving assessments of newly-built, revamped and expanded projects. We promoted the application of energy-saving technology and equipment to boost the efficiency of heating furnaces in oil and gas fields and optimize refining and chemical energy systems. We reinforced energy use management in the production process, and conducted monitoring and evaluation of more than 6,000 sets of energy and water-intensive devices and equipment.



**82×10<sup>4</sup>** tons

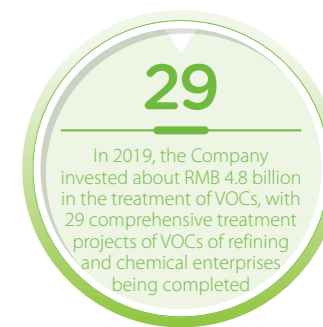
In 2019, we saved 82×10<sup>4</sup> tons of standard coal.

**7.77** %

Compared to 2010, the proportion of natural gas consumption in our total energy consumption increased by 7.77%.

**7.87** %

Compared to 2010, the proportion of raw coal consumption in our total energy consumption decreased by 7.87%.



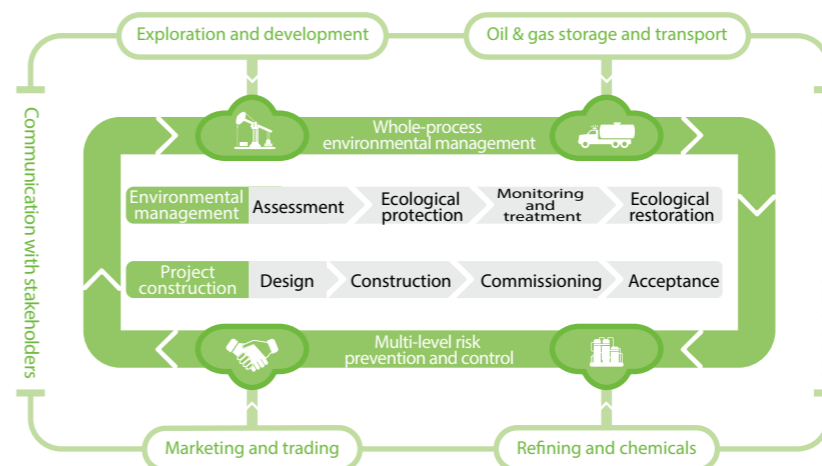
### Waste and Pollutants

We strictly monitored and controlled discharges of waste and pollutants in the production process, strengthened waste management, and reduced discharges of pollutants in the air, land and water. We actively promoted collection measures and recycling technologies for drilling waste, and clean operation technologies at our oil and gas fields, significantly reducing waste and pollutants.

### Conservation of Biodiversity and Natural Habitats

We are devoted to reducing the potential influence on the environment and biodiversity during production and operations, and take comprehensive precautions to avoid environmental impacts and work hard to restore the environment to its original state in case of any adverse impact. We make an all-out effort to identify and address environmental pollution and ecological damage, and reduce the impact on the environment by various means, including reducing noise and emissions. We do our utmost to reduce the occupation of cultivated land, protect water and land, and restore vegetation. Various measures are taken to restore the environment in the working areas and protect biodiversity.

### Eco-environment Management in Full Life Circle Through the Industry Chain



### Case Study Returning "Home" to Przewalski's Horse

Przewalski's horse is the only extant wild horse in the world. It is classified as an EW (extinct in the wild) species in the IUCN Red List of Threatened Species and regarded as a "living fossil".



Przewalski's horse habits in the Mt. Kalamaili Ungulate Natural Reserve, where there are also rare animals like Mongolian Khulan and Gazella subgutturosa. The Reserve is adjacent to the operation area of Xinjiang Oilfield. In order to protect wildlife, Xinjiang Oilfield invested nearly RMB 200 million to restore the 352,000 km<sup>2</sup> landform of the Reserve by shutting down 284 water injection and oil production wells. Thus, Xinjiang Oilfield "completely withdrew from the Mt. Kalamaili Ungulate Natural Reserve and returned it to Przewalski's horse".

"The practice of Xinjiang Oilfield fully embodies its social responsibility as a central enterprise. It is a very good example in the history of Mt. Kalamaili Ungulate Natural Reserve, and also in the history of domestic reserves!" said Chu Hongjun, the Director of the Management Center of Mt. Kalamaili Ungulate Natural Reserve.

## Climate Change

We respond to the *Paris Agreement* adopted by the 2015 United Nations Climate Change Conference, and we embrace the goal of limiting global warming to less than 2 degrees Celsius by the end of this century. To this end, we actively responded to climate change, devoted ourselves to low-carbon development, and shared the practice of greenhouse gas control with industry peers and all sectors of society.

### CNPC Low Carbon Development Progress Chart

#### Safeguard measures ▶



#### 1. Integrate low-carbon development concept into corporate strategy

- Based on the carrying capacity of resources and environment, rationally arrange industrial planning and project construction, improve policies for low-carbon development by fields and phases, introduce a carbon cost assessment mechanism, carry out carbon assessment of construction projects, and reduce arrangements for and investment in high-carbon emission businesses;
- Conduct stress tests on related assets of the enterprises and strengthen management measures in the affected assets;
- Improve the phasing-out mechanism, and gradually phase out oilfields/blocks with high energy consumption and high water cut and the refining and chemical plants with high carbon emissions per unit of product and low market demand.

#### 2. Integrate low-carbon concept development into corporate management

- Improve green and low-carbon development systems and mechanisms, and conduct special supervision (especially on carbon emission intensity, implementation of tasks and measures, and progress of pilot/demonstration projects) to ensure the realization of targets and tasks;
- Improve the measurement and inspection system for greenhouse gas emissions, check greenhouse gas emissions, regularly update the list of greenhouse gas emissions, and engage third parties in verification and evaluation;
- Establish a greenhouse gas control system, improve the carbon emission quota control and carbon asset centralized management and control modes, plan and implement emission control projects/measures to effectively reduce emissions intensity and ensure that risks are brought under control.

#### 3. Infuse low-carbon development into technological innovation

- Reinforce the synergy of enterprises, colleges/universities, research institutes and users to accelerate the translation and popularization of cutting-edge technology and research findings;
- Build a low-carbon technology support platform and enhance the independent technological innovation capacity in terms of energy conservation, emission reduction and environmental protection. By 2030, the proportion of technology research input in low-carbon field will reach 10%;
- Apply the green manufacturing technology to provide low-carbon products, and promote the lifecycle ecological environmental protection and resources/energy saving;
- Communicate and cooperate with international organizations such as OGCI in respect of reducing methane emissions, promoting CCUS, improving energy efficiency, and reducing the carbon emissions intensity in the transportation sector.

#### 4. Integrate low-carbon development concept into social responsibility

- Promote the concept of low-carbon development, take measures for ecological civilization, support low-carbon activities, and commence the construction of low-carbon demonstration zones;
- Establish a low-carbon development & climate investment fund, innovate business models and operating methods, and strengthen cooperation with social capital, local governments/enterprises and community, in order to build a low-carbon society;
- Implement low-carbon demonstration projects in line with the Belt and Road Initiative, participate in South-South cooperation on climate change, and create the image of a responsible energy company.

Strategic goals

By

2030

- By 2030, further increase the supply of natural gas and other clean energy, enable natural gas, new energy and renewable energy to take higher proportions of the Company's domestic primary energy output.

By

2050

- By 2050, raise the proportion of natural gas, new energy and renewable energy in the Company's domestic primary energy output to a new high.

#### Progress in 2019

- In 2019, natural gas accounted for 45% of the Company's domestic production equivalent output.

#### Enhanced carbon trading performance and carbon asset management

- In 2019, all PetroChina enterprises on the list of the national carbon emissions trading market fulfilled their contracts.

#### Strengthened management on carbon emissions

- Upgraded the *Green Action Plan*
- Established a special low-carbon management division



#### Reduced emissions by the use of technological means, lowered greenhouse gas emissions in production processes, and developed the CCUS system

- The existing CCUS system was improved both theoretically and technically.
- Over 1.5 million tons of carbon dioxide was stored in the CO<sub>2</sub>-flooding demonstration project in Jilin Oilfield.
- New demonstration projects are in construction in Xinjiang Oilfield and Changqing Oilfield.

#### Participated in activities under the OGCI framework

- Established the OGCI Climate Investment Kunlun.
- Set up the Xinjiang CCUS Industrial hub.
- The Company's executives attended the CEO Summit of OGCI.
- Hosted the OGCI 2019 conferences in Hangzhou, China.

#### Built carbon sink forests

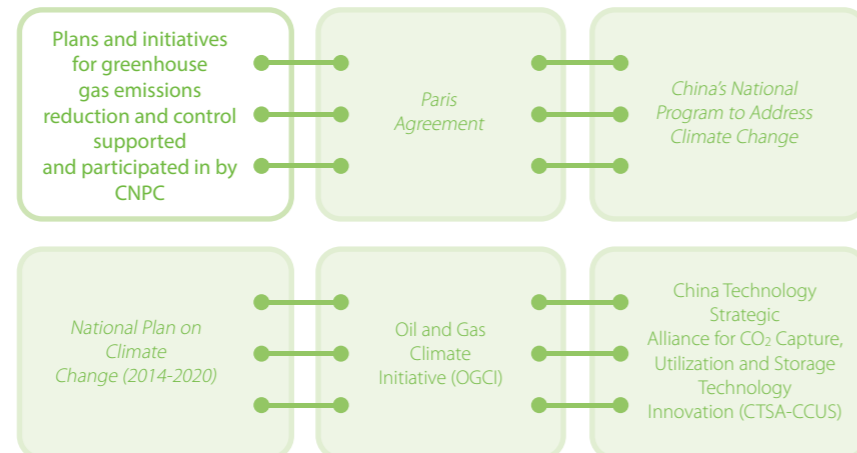
- The total green area reached 286 million square meters.
- A total of 2,197,400 trees were planted in 2019.
- Provided support to local landscaping, with a green area of 7,438,000 square meters.
- Changqing Oilfield constructed ecological forests (more than 600,000 *mu*), such as "PetroChina Changqing Forest", "Jiaozichuan River Basin Changqing Carbon Sink Forest" and "Changqing Maling Carbon Sink Forest".



### Carbon Emission Management

We paid close attention to greenhouse gas emissions and included combating climate change in our development plan. In 2019, CNPC formulated the *Green Action Plan*, established a special low-carbon management division, enhanced the carbon emission management, improved the carbon emission control system, and took an active part in the cooperation with global oil and gas industry to cope with climate change.

At the 10<sup>th</sup> Charity Exhibition entitled "Low-carbon Development · Green Life" and the "2019 China Low-carbon Models" press conference, CNPC was designated "Low Carbon Model in China" for the ninth consecutive year.



### Case Study CNPC Actively Participated in OGCI Activities to Promote Carbon Emissions Reduction in the Industry

As the sole member of OGCI in China, CNPC is deeply involved in international cooperation with other OGCI members to address issues on climate change and low-carbon transition in the oil and gas industry.

#### • Establishment of the OGCI Climate Investment Kunlun

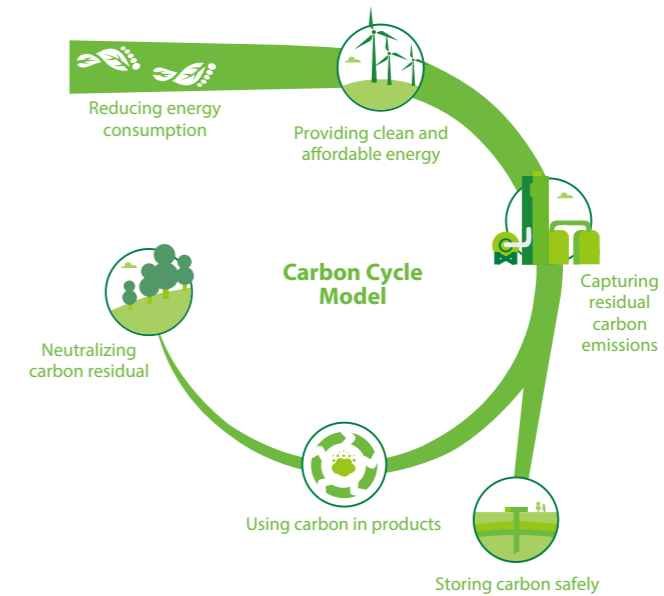
In 2019, CNPC Assets Management Co., Ltd. and OGCI Climate Investments signed the *Framework Agreement of Climate Investment China* to set up the OGCI Climate Investment Kunlun through a branch of OGCI Climate Investments in China in the form of limited partnership.

#### • Establishment of Xinjiang CCUS Hub

The Xinjiang CCUS Hub, led by CNPC, was incorporated by OGCI into the world's first CCUS hub under the CCUS KickStarter. CNPC actively participated in the discussions of OGCI about CCUS, invited the OGCI working group to visit Xinjiang Oilfield and Karamay Petrochemical, and conducted a feasibility study on the construction of the Xinjiang CCUS Hub. The Xinjiang CCUS Hub will be constructed through joint venture cooperation by fully relying on the OGCI think tank and learning from international mature technology and management experience of the million-ton CCUS projects.

#### • Industry Exchange

- CNPC executives attended the CEO Summit of OGCI.
- CNPC hosted the OGCI 2019 conferences in Hangzhou, China.



**Case Study** Implementing Green Credit Projects to Drive Green Development

CNPC focuses on clean energy, energy saving and environmental protection industries, involving mineral resources comprehensive utilization, the construction of clean energy facilities construction and clean energy production. Through the combination of industry and finance, and green finance, CNPC has contributed to the environmental protection in the country. In 2019, CNPC issued US\$ 4.09×10<sup>8</sup> of green credit in foreign exchanges.

Key green credit projects in 2019

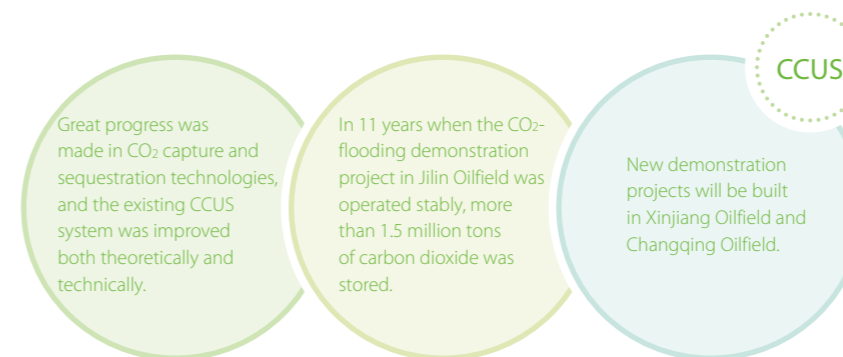
- Changning shale gas development
- Provision of clean energy to the Central Asia-China Gas Pipeline
- Clean energy development of Kunlun Energy
- Yamal LNG development in Russia
- Gas field development project in Karakul, Uzbekistan

**Development of Low-carbon Energy**

As an advocate and participant of the low-carbon economy, we actively develop natural gas, coal-bed methane, shale gas, biomass energy and other low-carbon energies, attach great importance to producing and supplying clean products, and work hard to achieve clean production and consumption processes (see Chapter 1: Sustainable Energy Supply for details).

**Development and Application of Low-carbon Technologies**

With science and technology playing a significant role in controlling greenhouse gas emissions and addressing climate change, we carried out research on carbon emission reduction technologies such as CO<sub>2</sub> flooding and storage, assessment of carbon sequestration potential in salt water layers and oil reservoirs, and CO<sub>2</sub> capture for flue gas from the Company's power plants.



**Carbon Emission Reduction during Production**

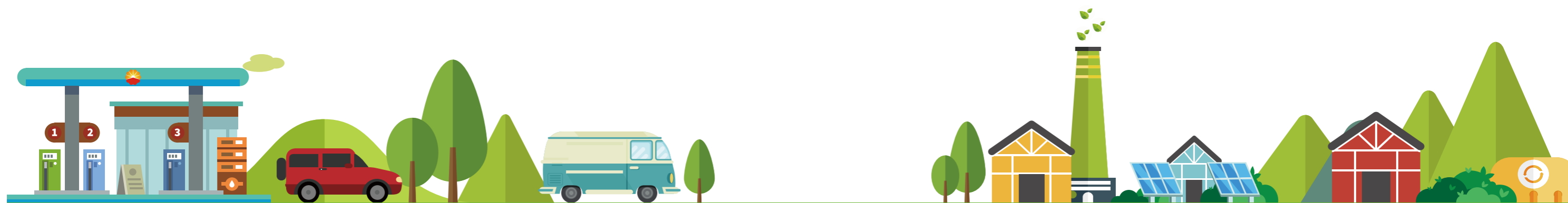
While supplying society with clean oil products, we also pay high attention to optimizing our own energy consumption mix. We also address carbon emissions and carbon footprint during production and operation. In Huabei Oilfield, Tarim Oilfield and other areas, we used renewable energies such as geothermal energy and solar energy to reduce carbon emissions during production.

**Market-based Mechanism for Carbon Saving**

We actively participated in carbon trading activities to achieve carbon emissions reduction through market-based mechanisms. We are co-founders of the Tianjin Climate Exchange (TCE), the first comprehensive emissions trading institution in China. The energy saving and emissions reduction projects developed by TCE could save more than 200,000 tons of standard coal annually, equivalent to over 500,000 tons of CO<sub>2</sub> emissions reduction. In 2019, all CNPC enterprises on the list of the national carbon emissions trading market fulfilled their contracts.

**Forestry Carbon Sequestration**

We actively support carbon sink forest construction and forestation activities in China. We established the China Green Carbon Foundation together with the State Forestry Administration, continuously building carbon sink forests. Meanwhile, we set up the Forestation Committee to ensure continuous forestation in our working areas and living quarters. As of the end of 2019, our green coverage reached 286 million square meters, representing an increase of 5.595 million square meters in the year. A total of 499,000 employees voluntarily planted 2.027 million trees in 2019.





## Products and Service

Following the quality principle of "Integrity and Excellence", we strengthen the quality management system and improve process quality control to create brand products. In addition, we continue to promote high-quality development for the Company by consistently improving product, project and service quality.

### Quality Control

In 2019, CNPC continued to enhance quality management, focusing on quality system audit, quality supervision and inspection, and quality culture building.

#### Major Progress of Quality Management in 2019

Key work	Content
Quality system audit	<ul style="list-style-type: none"> <li>Full coverage of quality system audit</li> </ul>
Quality supervision and inspection	<ul style="list-style-type: none"> <li>Enhanced supervision of self-manufactured products</li> <li>Conducted quality supervision of products procured, with 1,565 batches checked</li> <li>Strengthened the engineering quality monitoring and management, and carried out wellbore quality diagnosis and evaluation and the QHSE integrated auditing</li> </ul>
Quality culture building	<ul style="list-style-type: none"> <li>223,000 employees participated in the quality activities</li> <li>Over 250,000 employees attended the quality management contest organized by the State-owned Assets Supervision and Administration Commission (SASAC).</li> <li>Carried out a consumer satisfaction survey</li> <li>27 teams won the title of "National Quality Trustworthy Team", 15 QC activities were awarded the title of "National Excellent Quality Management Team", the first prize and second prize at the 2<sup>nd</sup> Central Enterprises' QC Team Result Presentation Competition</li> <li>Our 8 projects were granted with the National Quality Project Award</li> </ul>

#### In 2019

- High-quality chemical products: Ethylene production increased by 295,000 tons;
- Synthetic resin production increased by 415,000 tons, synthetic rubber production increased by 42,000 tons, and urea production increased by 380,000 tons, on a year-on-year basis;
- New chemical products: 72 trademarked new chemical products were produced, with an output of 705,000 tons;
- Promotion of new products: 27 new products were promoted, including special-purpose polypropylene resin for hygienic materials produced by Dalian Petrochemical, ternary foamed polypropylene produced by Dushanzi Petrochemical;
- Quality upgrading of oil products: The National VIA-phase quality upgrading of gasoline and diesel was completed on schedule.

### Product Management

We provide consumers with products in compliance with legal requirements and industrial standards in a responsible way. While providing products, we put emphasis on the influence on consumers and guarantee product safety. Meanwhile, we actively communicate with consumers, publish product safety risk evaluation results and make great efforts to protect consumers' legal interests.

### Quality Products and Services

#### Providing Quality Products

By strengthening technological innovation and promoting product quality upgrading, we provided applicable solutions for our industry as well as safe, reliable, high-quality and environmentally friendly products for our customers. All equipment for gasoline and diesel production in our refining and chemical companies were able to meet National VI Standard.



#### Refined products such as gasoline, diesel and lube oil produced, and trademarked chemical products

Product	Type	Purpose
Gasoline	Vehicle gasoline, vehicle ethanol gasoline, local standard gasoline, export gasoline and aviation gasoline	Traffic
Diesel	Light diesel, urban automotive diesel, military diesel, local standard diesel and exported diesel, etc.	Traffic
Kerosene	Kerosene for lamps and 3# jet fuel oil for aviation	Aviation
Lube oil	Vehicle lube oil, industrial lube oil, synthetic lube oil, metal processing oil, etc.	Aviation, aerospace, nuclear industry, ships, etc.
Petroleum liquefied gas	Chemical basic raw materials and new fuels	Synthetic resins, rubber, fiber and medical dyes, etc.
Fertilizer	Urea and some compound fertilizer	Agricultural
Natural gas	--	Power generation, chemical industry, city gas, transportation, etc.



#### Six kinds of refined products such as commercial fuel oil and six kinds of refined and chemical products such as synthetic resin

Product	Type	Purpose
Refined products	Chemical light oil	There are various distillation ranges for different purposes. It can be used as reforming and chemical raw materials, and for producing high-octane gasoline and solvents.
	Commercial fuel oil	Fuel oil is widely used in power generation at power plants, and as fuel for marine boilers, heating furnaces, metallurgy furnaces and other industrial furnaces.
	Solvent oil	--
	Bitumen	It is divided into heavy traffic pavement petroleum bitumen, modified bitumen, bitumen for pipeline coating, cable bitumen, etc.
	Paraffin wax	Semi-refined paraffin, fully refined paraffin, crude paraffin, medicinal Vaseline, paraffin for food and Vaseline for electrical appliances, etc.
	Petroleum coke	It is mainly used in the production of carburant, graphite electrode, smelting of industrial silicon and fuel in the carbon industry.
Chemical products	Synthetic resin	Manufacture of plastics
	Synthetic rubber	Tire raw materials
	Synthetic fiber	Polyester (textiles), Acrylic (wool, clothing, etc.) and Polypropylene (mosquito nets, carpets, gauze, etc.)
	Organic raw materials	--
	Fine chemicals	Catalysts and surfactants
Equipment products	Inorganic chemicals	Sulphur and concentrated nitric acid
	Drilling equipment, Oil recovery equipment, Power equipment, Petroleum pipe, Refining equipment, Marine equipment, Geophysical equipment, Logging equipment	--



#### Others

Other high-quality products, and environmental-friendly, diversified products.  
eg: Washer fluids, Bactericides, Fireproof coating

### Promoting Service Level

We constantly improve consumer experience and provide consumers with satisfactory and efficient services. In 2019, we continued to strengthen online and offline integration. Specifically, the first batch of refueling card mobile payment services was successfully launched, and the first "people, vehicle and life" one-stop service station, i.e. a warehouse-type convenience store, was constructed in Nanning, offering more convenient services for consumers.

Service network	<ul style="list-style-type: none"> <li>• Our services covered 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR</li> <li>• We could sell more than 110 million tons per year</li> <li>• We provided services to 11 million customers every day</li> </ul>
Service category	<ul style="list-style-type: none"> <li>• We have 22,365 domestic gas stations</li> <li>• We have 19,000 uSmile convenience stores</li> <li>• We have issued more than 100 million Kunlun refueling cards</li> </ul>
Consumer satisfaction	<ul style="list-style-type: none"> <li>• We carried out the "Golden Experience" campaign, in which the consumers were invited to enjoy the in-store experience</li> <li>• We issued the <i>CNPC's Quality Management Manual for Non-oil Commodities</i> and the <i>CNPC's Quality Integrity Code for Non-oil Commodities</i></li> <li>• We initiated the "uSmile · Quality Action for Good Life" program</li> <li>• Customer satisfaction rate for follow-up calls of CNPC service hotline 95504 reached 97.1%</li> </ul>

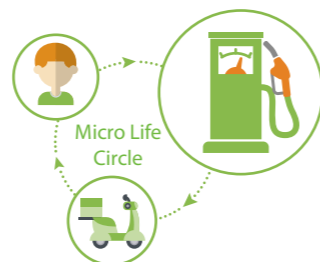


According to the brand ranking and analysis report of the 2019 China Customer Satisfaction Index (C-CSI) released by brand rating and consulting institute Chnbrand, CNPC ranked the first, in terms of comprehensive score, for the third consecutive year since 2017, based on customer loyalty, overall satisfaction, and factor satisfaction.



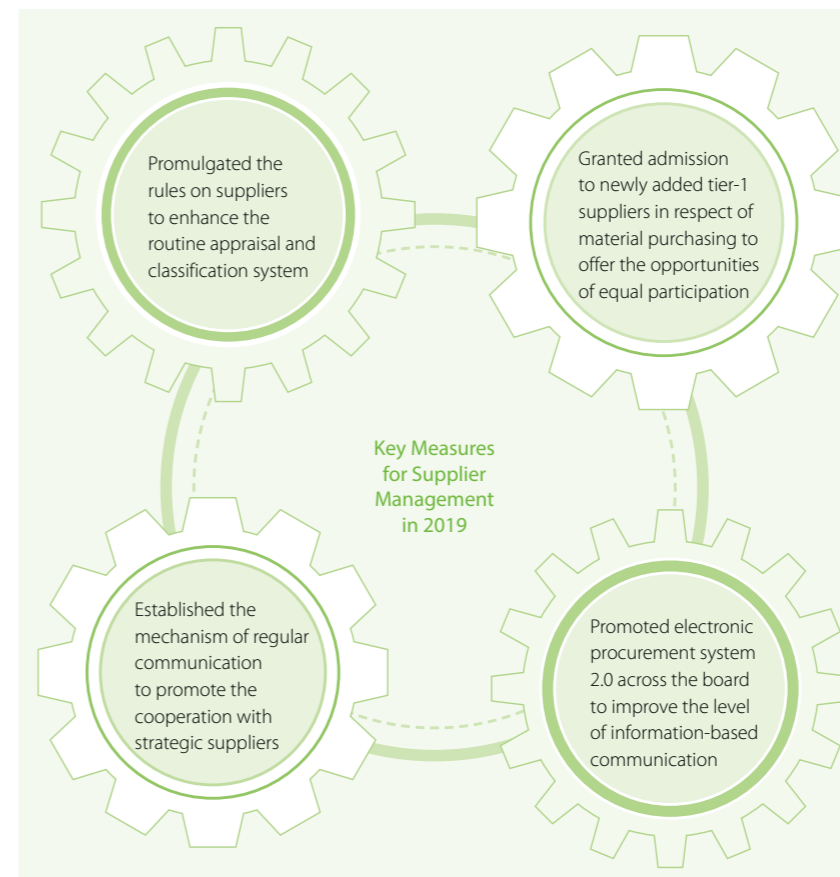
Kunlun Lubricant became an official supplier for the Beijing 2022 Winter Olympics. The "Kunlun Lubricant Guarding Plan" was released synchronously, that is, Kunlun Lubricant will serve as a comprehensive support platform for the Beijing 2022 Winter Olympics, through guarding the Winter Olympics, the consumers, the green mountains and clear waters, and the future.

We built the first warehouse-type convenience store in Nanning, Guangxi Province. The convenience store can: (1) provide storage and distribution of non-oil products for 15 service stations nearby; (2) meet the customer needs to the greatest extent by virtue of the business mode with integration of warehouse and storage; and (3) provide customers with quality, convenient services via the "Micro Life Circle" consisting of automotive service center, "Supermarket" and refueling station.



### Supply Chain Management

We actively promote the sustainable development of the industrial chain. Accordingly, we work in a respectful, communicative, honest and cooperative manner to encourage our partners to jointly fulfill our social responsibilities, and provide society with high-quality products and services, through compliance, standardized operation, openness and transparency, effective supervision, process control, and performance assessment methods.



#### Management principles

Open and voluntary, small quantity but high quality, dynamic management, resource sharing, global sourcing, mutual benefits and win-win

#### Management philosophy

Unified management system, unified operation flow, unified management standards, and unified supplier database



# 3

## People-oriented Employee Development

Employees are our most valuable resource and asset, and the Company's development and success are attributed to the joint efforts of all our employees. Upholding the people-oriented concept, we attach great importance to protecting employees' legal rights and interests, build an effective platform for employees to develop, and promote employee localization and diversification. We care about the physical and psychological health and life of our staff, to make all employees benefit from our achievements and realize the common development of both our Company and employees.

### SDGs

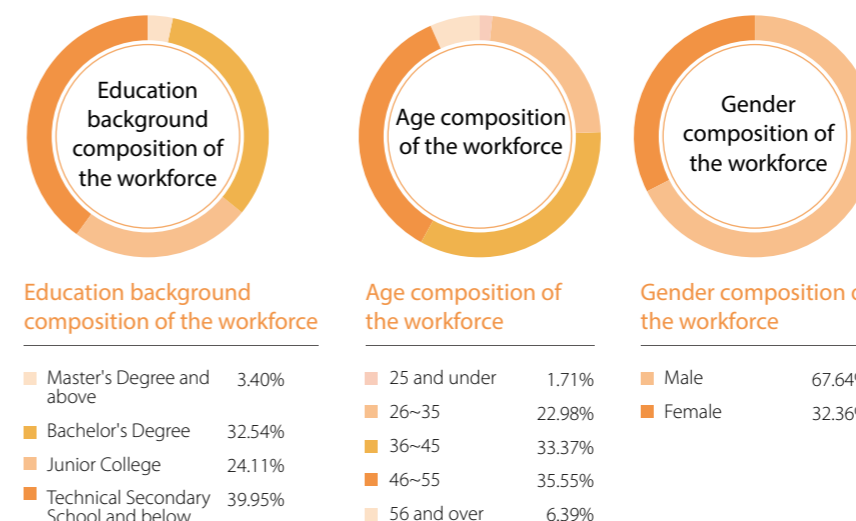


## Employees' Rights and Interests

Strictly complying with international conventions on labor and human rights, we respect and protect employees' legal rights and interests, and advocate an employment policy based on equality and non-discrimination. We continue to perfect the compensation and benefits system, and improve democratic mechanisms, in order to create a fair and harmonious working environment for employees.

### Employment Policies

CNPC always puts people first and values and safeguards the lawful rights and interests of the employees. We strictly comply with the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China* and the *Trade Union Law of the People's Republic of China*, relevant international conventions approved by the Chinese Government, and relevant laws and regulations of the host countries. We promote the employment policies of equality and non-discrimination, and provide equal opportunities and fair treatment to all employees regardless of nationality, race, gender, religion or cultural background; resolutely prohibit child labor and forced labor; and always aim to promote the employment of women and ethnic minorities. Specifically, we strictly implement the regulations on pregnancy, maternity and parental leave for female employees, and guarantee that the female employees enjoy equal compensation and benefits and career development opportunities. By the end of 2019, the Company had got 53 female senior executives and 1,791 female middle-level managers.



## Compensation and Incentives

We intensified our efforts to reform the remuneration system, improve policies on enterprise annuity and supplementary medical insurance, and further improve the salary distribution system by linking it closely with performance appraisal results. The remuneration system, highlighting on-the-post contribution of employees, was put in place. Besides, we pay special attention, in terms of income, to employees engaged in technological innovation and those working at grass-roots level and in key positions or in harsh environments in an effort to build motivation and trigger vigor, effectively arouse the enthusiasm, pro-activity and creativeness, and fulfill the value of each employee.

### In 2019, we

- Improved the *Measures for Performance Appraisal of Business Leaders* and its detailed implementing rules
- Entered into interim performance contracts for 2019, ensuring full coverage of business leaders in performance appraisal



### Democratic Participation

We ensure that our employees play an important role through democratic management, participation and supervision. We have established trade unions, put in place a democratic management system through workers' congress and adopted a transparent approach to factory affairs. Specifically, we have further standardized the content, procedures and model of our open system for factory affairs by clarifying rights and obligations, organizational system, and working processes for the workers' congress. By doing so, the Company has improved our enterprise democratic management.

We have established multiple channels to communicate with employees, continued to implement democratic procedures, and solicited the employees' opinions by holding workers' congress, democratic discussion meetings, and employee representative symposiums. Besides, we guarantee the employees' rights to know, participate, manage, vote and supervise, and encourage them to offer advice and suggestions for the enterprise development.

### Career Development Platform

CNPC provides a broad arena for employees to realize their self-value by making innovations in talent growth environment, system and mechanism, addressing the employees' need for professional development at different stages, respecting employees' career planning, and cultivating innovative employees, in accordance with modern enterprise concepts.

### Education and Training

Guided by our corporate policy and the principle of high-quality development, we continue to deepen the reform in education/training and tailor the training programs depending on the strategy, problems and needs, for improving all staff's ideological and political quality, professional competence, and duty performance, so as to create a learning culture for the growth of both the Company and individuals.



**1.98** billion

Training expenditure: RMB 1.98 billion

**100%**

Training rate of frontline employees: 100%

**1.023** million

Employees trained: 1.023 million

**1.12** million

Remote training: 1.12 million, 2.16 million hours, 110 programs

We enhance the training for: (1) managerial personnel, to improve their political quality and operational leadership; (2) technical personnel, in respect of technological theory and innovation capability; (3) skilled personnel, to improve the comprehensive quality and work skills of front-line personnel; and (4) key personnel at critical positions in core international businesses, to cultivate high-level international personnel.

**326,000**

Managerial personnel trained: 326,000

**169,000**

Technical personnel trained: 169,000

**528,000**

Skilled personnel trained: 528,000

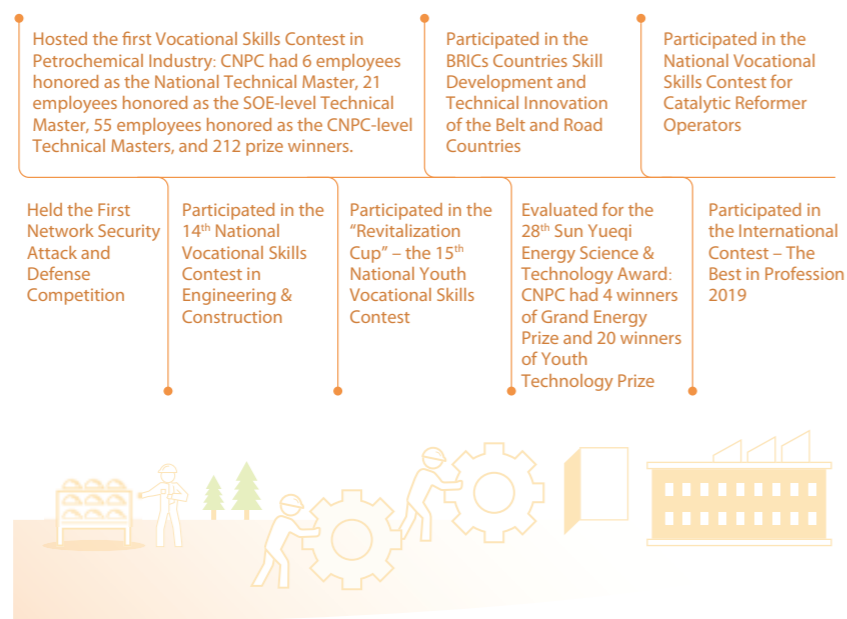
**1,000**

International personnel trained: more than 1,000

### Major Training Programs of "Four Types of Personnel" in 2019

Managerial Personnel	Technical Personnel	International Personnel	Skilled Personnel
Party School training classes of the Company	Petroleum scientists and young technical talents visited domestic and overseas universities and research institutions to attend refresher courses	Training programs for young business backbone in Baker Hughes Oil and Gas University	Held company-wide vocational skills competitions, organized and participated in national and international vocational skills competitions
Training courses for young and middle-aged managers of the Company	Demonstration training courses for principal professional senior technical talents	International taxation management training program in the U.S.	Academic seminars for technical experts of the Company
Training programs for person in charge of Party building, Secretary of disciplinary committee and chief accountant	Technical training program for exploration and development of unconventional oil and gas and drilling in Canada	The Australia-China Natural Gas Technology Partnership Fund training program of National Energy Administration	Carried out the Petroleum Craftsman Development Program
Training sessions for business managers to level up their leadership	Experts training courses in Gazprom and Rosneft	"Thousand People Training Project" for international talents	Various demonstration training programs for advance-skilled talents
Visiting scholar programs for Stanford University			
International training programs for heads of enterprises to communicate with overseas petroleum companies			

We improve employees' vocational skills and professional abilities through the combination of training and competition such as vocational skills competitions. Through these measures, we promote the development of front-line employees and test the results of grassroots training.



### Career Development

We attach great importance to the career planning of employees and support their career development to realize their value. In 2019, we continued to promote professional-rank personnel management and improve the mechanisms of dynamic job transfer and incentive mechanism to fully unleash the potential of employees and provide technical professionals with independent, unimpeded and stable career development paths. We implement the Oil Scientists and "Petroleum Craftsman" training programs and Outstanding Young Technician Training Project, so as to open channels for the growth of innovative talented people.

By the end of 2019, CNPC had 22 academicians at the Chinese Academy of Sciences and the Chinese Academy of Engineering, 569 on-the-job experts entitled to the Government Special Allowance, and 113 senior technical experts. We had set up 93 Skilled Expert Studios, including 18 National Skilled Expert Studios with 385 skilled experts.

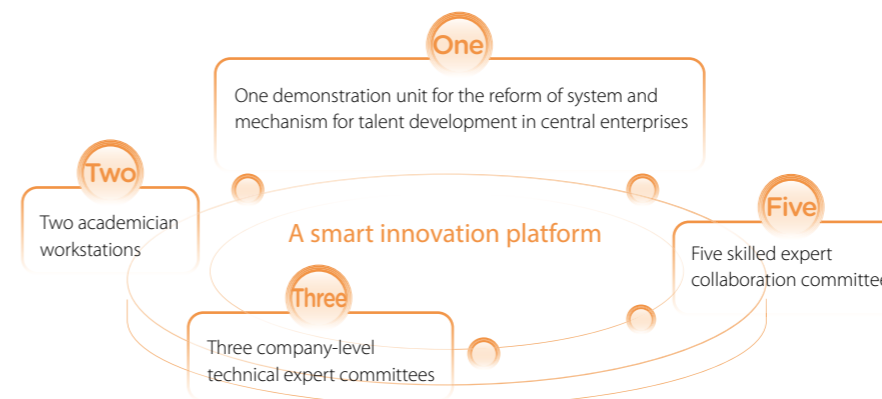
#### Case Study

#### "China Skills Carnival 2019 — Approaching CNPC"

CNPC carried out, in conjunction with the Ministry of Human Resources and Social Security and the State-owned Assets Supervision and Administration Commission of the State Council, the "China Skills Carnival 2019 — Approaching CNPC", or the Year for Promoting the Skilled Personnel Training and Development Project.

Since the initiation of the project, over 30 subsidiaries of CNPC have organized 263 symposiums, 26 technical sessions among skilled expert studios, and 46 rounds of on-site technical services; fixed 325 field operation related problems, applied for 23 patents, and promoted 465 front-line innovations; held 56 skill contests/competitions and 453 sessions of skill-enhancing training; trained more than 23,000 senior skilled personnel, and nearly 300,000 operational personnel.

### Form a smart innovation platform



In 2019, we had **one** newly-elected academician of Chinese Academy of Engineering and **two** employees qualified for the Hundred, Thousand and Ten Thousand Talents Program

Selected **304** candidates for young technological talents training and **100** candidates for the "Petroleum Craftsman" training program

Skilled Personnel		Innovation Talented People
<b>Career development system for skilled personnel</b>	<b>"Petroleum Craftsman" training program</b>	<b>Innovation and efficiency improvement</b>
Create an institutional environment in which skilled personnel develop rapidly and give full play to their role	Foster top-level talents to play the leading role as skilled experts	Innovation and efficiency improvement
<ul style="list-style-type: none"> <li>Organized the "China Skills Carnival 2019 – Approaching CNPC"</li> <li>Promoted the skills ranking in enterprises</li> <li>Established a nine-level promotion system for key skilled personnel at key positions</li> <li>Developed bonus criteria for selecting senior skilled personnel</li> <li>Revised administrative measures for vocational skills competitions</li> <li>Conducted selection, evaluation, use and assessment of senior skilled personnel</li> <li>Set up platforms to exchange skills development, enhance the capabilities of operators, and support front-line production technology</li> </ul>	<ul style="list-style-type: none"> <li>Organized high-end skills seminar and vocational training</li> <li>Hosted skill exchange activities for skill experts and organized cross-enterprise, cross-region and cross-profession skill exchanges for key training subjects</li> <li>Assigned key "Petroleum Craftsmen" to famous universities at home and abroad for advanced academic study</li> </ul>	<ul style="list-style-type: none"> <li>Organized the activity of "Patriotism and Contribution in the New Era"</li> <li>Performed the Oil Scientists Training Program</li> <li>Implemented the Outstanding Young Technicians Training Project</li> <li>Organized strategic consultation among academicians</li> <li>Organized technical consultation among senior technical professionals</li> <li>Organized petroleum forums</li> </ul>

#### Case Study

#### Wang Qimin, the "People's Model" and "Superb Striver"

Wang Qimin started his work in Daqing Oilfield in 1961 and has been engaged in geological development and research, contributing greatly to the high and stable production in the oilfield. He has led and participated in 8 major development pilot projects, over 40 scientific research projects and preparation of the Seventh, Eighth and Ninth Five-Year Development Plans for Daqing Oilfield. He won 19 awards including the National Science and Technology Progress Award – Special Award and the National Science and Technology Achievement Award – Special Award.

On September 17, 2019, Wang Qimin was honored as the "People's Model" by the Standing Committee of National People's Congress. On September 25, 2019, Wang Qimin was awarded the "Superb Striver" by the Publicity Department of the CPC Central Committee.

**"I've done but one thing all my life, that is how to best develop the Daqing Oilfield", says Wang Qimin.**

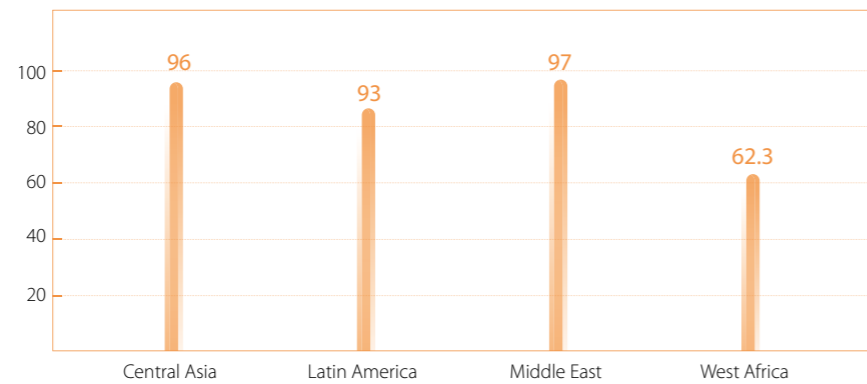
## Local Hiring and Diversity

We embrace a respectful, open and inclusive culture, and are committed to the localization, professionalization and marketization of overseas employees. We abide by all laws and regulations of the host countries. We establish an optimal system for hiring, deployment, performance appraisal, incentives and penalties. We strive to attract and train top local talents and to provide them with a working environment conducive to their employee development.

### Local Employment

We actively recruit and train local employees and do not discriminate against local candidates for managerial positions, providing local people with job opportunities. Professionals employed in our overseas projects involve multiple disciplines, such as exploration and development, engineering construction, international trade, finance, accounting and human resources management, covering over 70 countries/regions. In 2019, international and local employees accounted for 84.92% of our overseas workforce.

Proportion of local employees in CNPC's overseas business in 2019 (%)



### Case Study

#### I'd like to Keep Working in PetroChina

Michel Amod, a Chadian aged 35, was an undergraduate of electrical engineering. He joined the Chad Project of PetroChina Daqing Oilfield in 2012.

Under the guidance and training of Chinese technical experts, Michel has progressed to become an expert in the electrical engineering. He also trained six apprentices. Michel was distinguished twice as Excellent Staff in the Chad Project. In 2018, he was invited for an on-site visit to Daqing Oilfield as Outstanding International Employee.

"The Company provides me with access to advanced electric engineering technology in addition to good welfare. My Chinese colleagues are very kind to me, as good friends. I'm very satisfied with PetroChina and would like to keep working here".

## Respect for Cultural Diversity

We respect our employees' individuality, ability and varied experiences, and cherish their diversified talent. We make all efforts to eliminate the employment and occupational discrimination, create a relaxing and tolerant working environment, and promote the mutual respect and understanding among employees of different nations, areas and cultural backgrounds.

### Case Study

#### Cultural Exchanges of PetroChina International (America) Inc.

At the activity organized by PetroChina International (America) Inc. to celebrate China's Mid-Autumn Festival, some Chinese employees explained the origin of the festival and introduced how to make mooncakes. Local employees were very interested in the activity and vigorously interacted with the Chinese employees.

In addition, PetroChina International (America) Inc. organized various cultural exchanges, team building, mutual assistance and community service activities to promote cross-culture communication and integration among employees.

## Physical and Psychological Health

We cherish employees' life and attach great importance to their health. We strive to provide a favorable working environment for the physical and psychological health of our employees and have established a mental health platform and introduced a series of policies and measures to guarantee their physical and psychological health.

### Occupational Health

We attach great importance to staff occupational health protection. In 2019, we drafted the detailed rules on Quantitative Audit on Occupational Health, which are based upon the characteristics of functions. We carried out special occupational health inspections and organized the event of the 2019 Publicity Week of the *Law on Prevention and Control of Occupational Diseases* to improve the occupational health status of employees. We prepared a *Plan for Implementing the "Healthy China 2030" Outline* to thoroughly fulfill the requirements of the Healthy China Initiative and further strengthen employee health management.



### Key Actions for Occupational Health in 2019

Occupational health management	<ul style="list-style-type: none"> <li>Drafted the detailed rules on Quantitative Audit on Occupational Health and the on-site checklists, which are based upon the characteristics of functions</li> </ul>
Response to "Healthy China 2030"	<ul style="list-style-type: none"> <li>Prepared the <i>Plan for Implementing the "Healthy China 2030" Outline</i>.</li> <li>Acted as per the <i>Healthy China 2030</i> to enhance employee health management</li> </ul>
Occupational health awareness	<ul style="list-style-type: none"> <li>Organized the event of the 2019 Publicity Week of the <i>"Law on Prevention and Control of Occupational Diseases"</i>, involving more than 270,000 employees of 109 subsidiaries</li> </ul>
Occupational health inspection	<ul style="list-style-type: none"> <li>Conducted special inspections on occupational health archives and jobs/workplaces susceptible to occupational hazards, and urged to rectify the excessive hazards at workplaces</li> </ul>

### Dust Hazard Treatment



### Mental Health

We took measures to continuously improve the employee vacation system. We implemented the Employee Assistance Program (EAP), set up hotlines and website for psychological counseling, and carried out various forms of training on mental health improvement, in order to build a positive and healthy mindset for employees. In 2019, we continued to implement the Employee Assistance Program (EAP) overseas by providing training sessions on mental health management, and assigned psychologists to Niger, Chad, Myanmar and other countries to provide mental health consultation services.

1,200 hours

The psychological hotline provided services to nearly 400 persons for about 1,200 hours

15,300

A total of 232 overseas anti-terrorism safety training sessions were organized all over the year for 15,300



#### EAP Online Platform

Improve counseling service efficiency  
Mental health counseling services provided to about 400 employees, for a total of about 1,200 hours

#### On-site Counseling by Experts

Help employees improve stress management capability and better maintain family bonds

Assigned psychologists to Kazakhstan, Brazil, Peru, Venezuela and some other countries to provide mental health consultation services, which shows our care for their mental health

#### EAP Training

Improve EAP talents training  
A total of 10 sessions of psychological crisis response training, 3 sessions of EAP ambassador training, and 7 sessions of Family Happiness Camp

### Caring for Employees

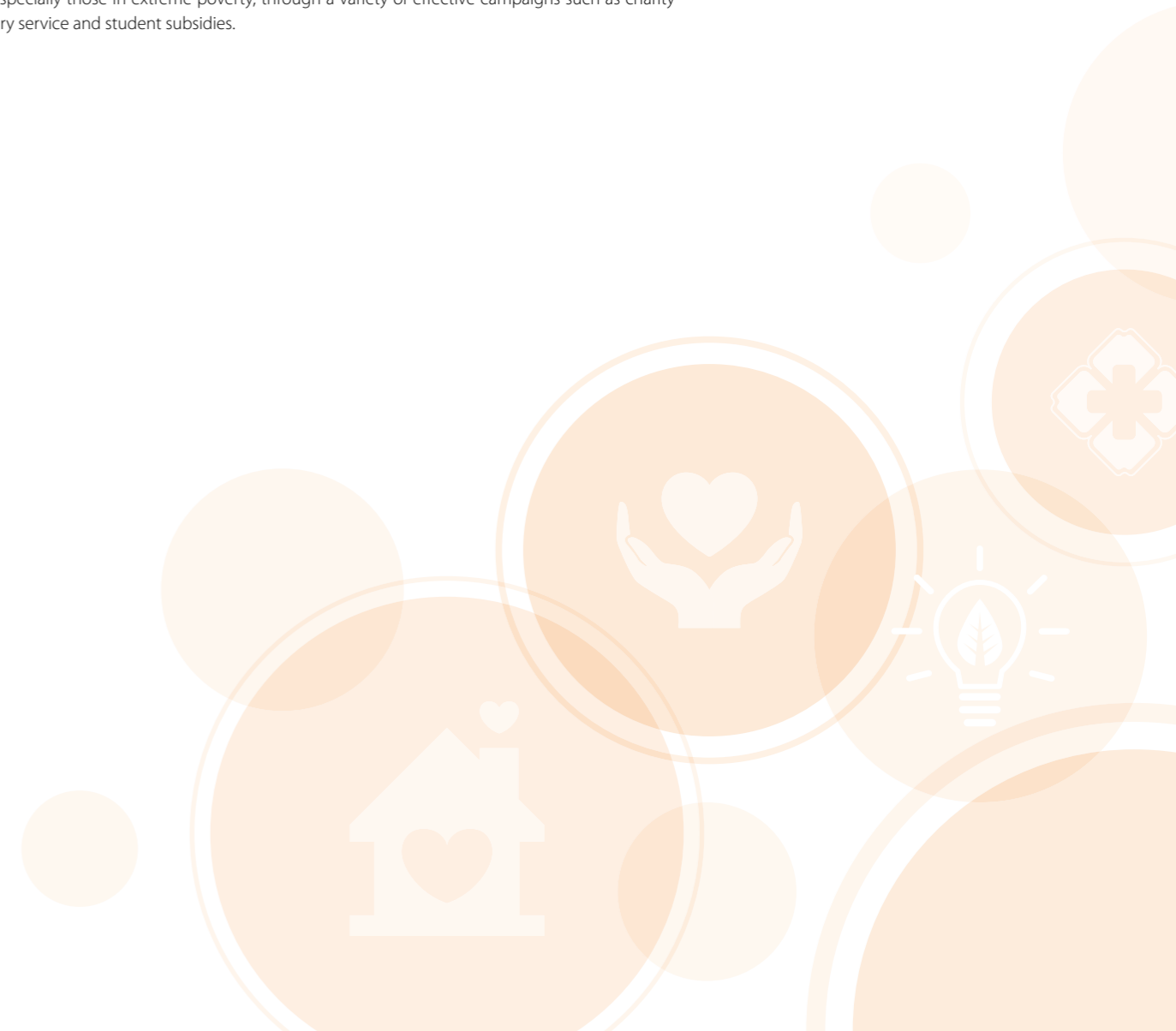
We advocate a good work-life balance and make great efforts to create a healthy and comfortable living environment for our employees. We continuously push forward the market-oriented reforms on service of staff communities and improve the poverty alleviation and aid mechanism, in order to improve the employees' quality of life.

#### Employee Community Service

Our staff communities are located in more than a dozen provinces (municipalities and autonomous regions), with 4 million residents in 1.3 million households. We actively transferred the water/power/heating supply and property management, municipal facilities, medical services and other public service functions to local governments or professional private companies and activated the financial subsidy funds granted by the state for renovating infrastructures to improve the environment of communities where our employees live.

#### Employees Assistance

We continuously carried out employee help and support activities, focusing on the settlement of life difficulties of the employees, including retirees, employees' family members and family dependents of the deceased. In 2019, we got to fully understand the difficulties confronting employees in daily life, health status, children education, etc., and took targeted measures to help the employees in need, especially those in extreme poverty, through a variety of effective campaigns such as charity voluntary service and student subsidies.



# 4

## Public Welfare

We always adhere to combining our business growth with sustainable development of the host countries in which we operate. We aim to become an outstanding business enterprise in the host country by attaching importance to people's livelihood and social progress, sharing development opportunities and resources with the local community, participating actively in the development of local communities and promoting harmonious economic and social development.

### SDGs



## Targeted Poverty Alleviation

Poverty alleviation is an important topic in sustainable development around the world and also one of our key concerns. We have responded positively to the initiatives of the United Nation's 2030 Agenda for Sustainable Development and to the Chinese government's policies on poverty alleviation targeted at the improvement of people's livelihood, industrial development, intellectual development and medical care. By combining our business strengths with local resources and market advantages in areas receiving assistance, we have taken targeted measures to help them develop the local economy on their own.

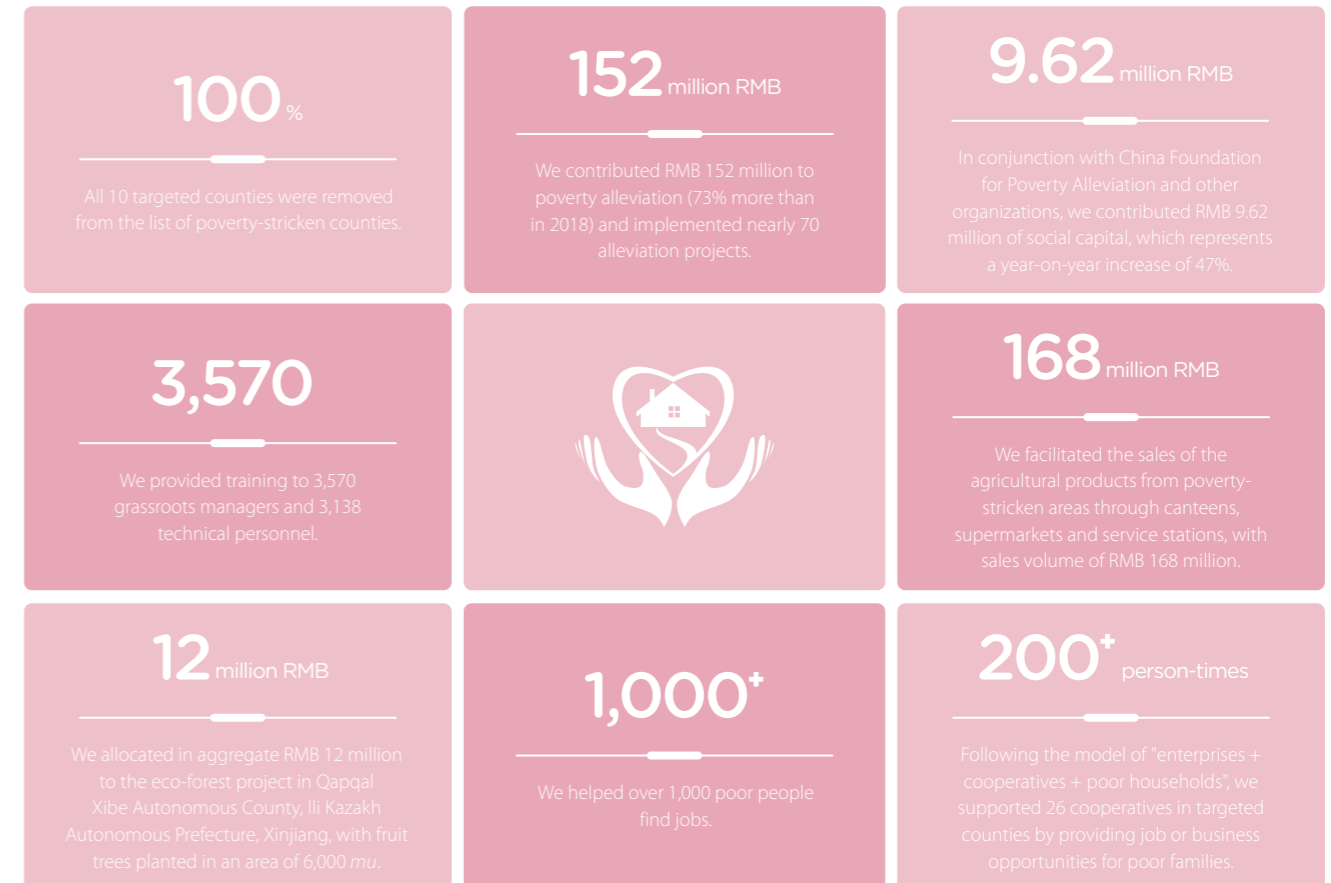
In 2019, we invested RMB 152 million and continued to carry out fixed-point poverty alleviation and aid programs, and implemented 70 projects, including infrastructure reconstruction, education and training, healthcare, and industrial collaboration in 13 counties and districts in 7 provinces (municipalities and autonomous regions) of China - Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou.

CNPC was honored as 2019 Responsible Corporate of the Year

At the 15<sup>th</sup> China International Corporate Social Responsibility Forum hosted by China News Service and News China, CNPC was honored as 2019 Responsible Corporate of the Year.

All **10** targeted counties have successfully eliminated poverty.

Since the initiation of the 13th Five-year Plan, we have invested RMB **1.8** billion aid, benefiting more than **3.5** million people.





## Case Study Women's Empowerment & Value Fulfillment

Women serve as the most important potential driving force of poverty alleviation and rural development in poor areas. CNPC provides them with proper skill training and job opportunities and helps them and their families achieve a better life.

### • Migrant female workers returned to work in their hometowns to better care for their families

Since 2016, CNPC has implemented the "Where is My Mum Going" project in Guanshan Village, Yaojia Township, Hengfeng County, Jiangxi Province. Under this project, CNPC invests in building a seedling cultivation cooperative, creating intensive light-labor job opportunities for women locally. Female employees are allowed to come to work one hour later and leave work one hour earlier for the convenience of taking care of the children and seniors of their families.

So far, more and more women working outside have returned to the village for work under the project. By the end of 2019, the cooperative provided employment to over 80 women, who had an average annual income of RMB 5,000 to RMB 10,000.

### • Helped housewives join the workforce

In some rural areas, conservative family values mean that they would rather suffer poverty than allow women to go out to work. Our investigation indicated that Talanchi Food Factory in Qapqal Xibe Autonomous County, Ili Kazak Autonomous Prefecture, Xinjiang, was suitable for women's employment, and therefore we donated food processing equipment to this factory from 2014 and expanded its production.

CNPC helped local women to work happily, easily and confidently by helping them change their traditional values. As the factory expands, a growing number of local women are working independently and confidently.

### • Women trained with skills for a better life

Many women from poor families are less educated and less skilled when it comes to securing employment. Considering that maternity matrons are in huge demand, with low entry threshold, ideal payment and opportunities, CNPC initiated the "Angelical Maternity Matrons" project from 2016 to help local women improve their nursery skills and gain more employment opportunities.

By the end of 2019, 118 women in four counties, including Xishui County of Guizhou Province, Hengfeng County of Jiangxi Province, Fan County and Taiqian County of Henan Province, were trained for housekeeping and taking care of babies.



"I can earn more than RMB 10,000 every year by working at my hometown now. My husband can work in other places easily. Our family income is growing, and our family life is getting better and better. We are really grateful to the government and CNPC for the great policy support. We are happy and confident about our livelihood now and in the future."

— Fan Julan, from Yaojia Township, Hengfeng County, Jiangxi Province



## Highlights of CNPC's Targeted Poverty Alleviation Projects in 2019

Project	Description	Venue	Effects
PV power station	Construction of the 1.05 MW centralized PV power station in Longmenfan Township	Hengfeng County, Jiangxi	Increased the income of local villages and many poor families
Construction of agricultural park	Construction of the Huanghe Ecological Wetland High-efficiency Agricultural Park in Sunkou Town	Taiqian County, Henan	Expected to obtain an annual output of more than 1.5 million kg of pollution-free vegetables and fruits and achieve an annual operating revenue of RMB 7 million
Model tourism project	Built featured homestays depending on local tourism resources	Fanxian County, Henan Province	Developed the tertiary industry led by rural tourism through villagers' cooperatives, and formed an industrial system integrating multiple sectors such as tourism
Combate natural disasters	Provided living and livestock-raising materials to the herdsmen affected by severe snows	Yushu, Qinghai	Assisted the herdsmen affected by severe snows to minimize the property damage
Products sales event	Sold the agricultural and handicraft products of the targeted counties at CNPC service stations and convenience stores	Urumqi, Xinjiang	Exhibited 682 kinds of agricultural and handicraft products, and entered into purchase agreements worth a total of RMB 150 million
Support local enterprises	Helped Talanchi Food Factory purchase new equipment and expand production capacity	Qapqal County, Xinjiang	Provided more jobs for local women

# Special Report

## Developing Featured Industry to Support Poverty Alleviation

Poverty alleviation is the greatest global challenge today, and also the common mission of mankind. Since 1994, CNPC has responded actively to the initiatives of the Chinese government's policies on poverty alleviation targeted at the improvement of people's livelihoods, industrial development, intellectual development and medical care. By leveraging our strengths, we have contributed greatly to the fight against poverty.

### We support

- the UN Millennium Development Goals (MDGs)
- the UN Sustainable Development Goals (SDGs) 2030
- *Seven-Year Program for Lifting 80 Million People Out of Poverty (1993-2000)*
- *Outline for Development-Oriented Poverty Alleviation for China's Rural Areas (2001-2010)*
- *Outline for Development-Oriented Poverty Alleviation for China's Rural Areas (2011-2020)*



### Poverty Alleviation through Industrial Development

For targeted poverty alleviation through industrial development, we endeavor to create job opportunities to help the poor earn more money and get rid of poverty. A total of ten counties (including Xishui County in Guizhou, Hengfeng County in Jiangxi and six counties in Xinjiang) under CNPC's fixed-point poverty alleviation program all passed the national special assessment and inspection, marking that they successfully got rid of poverty.



### Jiangxi | Hengfeng County

We invested RMB 42.3869 million from 2011 to 2019.

In 2019, we invested RMB 7.88 million in a centralized PV power generation project, which is expected to create an annual income of RMB 962,100 for poverty-stricken families every year in the 20-year operation period. We also invested RMB 1 million in building a 70-mu fig planting base, which is expected to fruit in 2020 and can be in season for up to 20 years; the project can bring a collective income of more than RMB 100,000 for the village every year, with more than RMB 1,000 increase for each of the 96 poverty-stricken families.

In 2020, we will focus on the projects like poverty alleviation through education and the Tongzhou Project.

Mei Shili, a CNPC employee at the temporary position of Deputy Mayor of Hengfeng County:

We will try to make an exemplar practice of poverty alleviation, following the dedicated orientation and concept, with our carefulness, patience, enthusiasm, sincerity and concentration, as well as our prudence, diligence and thoughtfulness.

Huang Qiunan, a poor resident:

CNPC built the asphalt road in our village. A bus route has also covered the village. Now, we can easily go outside the village, and children can go to school by taking this safe and convenient mode of transport rather than by bike.

### Changes

- The per-capita disposable income of rural residents was RMB **11,542**, in 2019.



### PV power station for poverty alleviation in China

- Electricity production was **1.1528** million kilowatt hours in 2019.
- An income of RMB **477,600** was generated, excluding subsidies.



### Xinjiang | Qapqal County, Ili

CNPC began to perform fixed-point poverty alleviation in Qapqal County in 2003. So far, CNPC has invested more than RMB 28 million in over 20 poverty alleviation projects, involving donations of money and supplies, construction of primary schools and medical stations, as well as the current poverty alleviation activities through industrial development and consumption aid.

Since 2016, CNPC has invested more than RMB 10 million to build the Safflower Industrial Park. In 2018, 2,500 tons of safflower seeds were purchased to produce 500 tons of safflower oil, which benefited 800 households, with RMB 2,000 increased for each household.

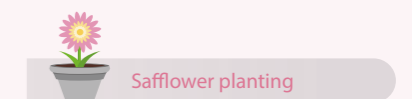
Zhao Taifeng, Deputy Secretary of the Qapqal County and Director of the Organization Department:

The poverty alleviation through industrial development is a good choice to help the poor completely get rid of poverty. The poor residents can have the chance of employment and their ideals have also changed.

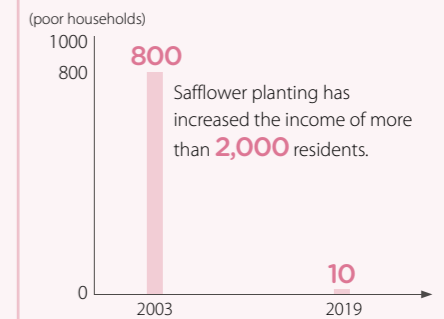
Refuk Yusuf, a poor resident:

I make naan bread (a kind of crusty pancake) in the Safflower Industrial Park. By doing so, I have earned sufficient money to support my two children's college expenses. I praise the CPC's policies, and I appreciate CNPC.

### Changes



### Safflower planting





### Poverty Alleviation through Improvement of People's Livelihoods

We focus on improvement of the living standards and the overall quality of life. To solve the prominent problems such as poor public facilities and less profitability of residents, we have assisted in the projects of herders' housing, municipal facilities, infrastructure, drinking water and irrigation.

**Golmud, Qinghai**

- Changjiangyuan Village Services Centre at Tanggulashan Town
- Tanggulashan Township Cultural Tourism

Provide various services for the residents, such as cultural and sports activities, community construction and home care

projects

**Nilek County and Qinghe County, Xinjiang**

- Several safe drinking water and irrigation projects
- Supporting facilities such as drip irrigation sub systems and power supply
- Ensuring safe drinking water and agricultural irrigation for local residents
- Guaranteeing the cultivated area of 19,500 mu

**Kaizhou District, Chongqing**

- Supporting facilities for the poverty alleviation sightseeing orchards in Dongyang Village, Nanmen Town
- Improving the production and living conditions for local residents
- Driving featured economic development
- Getting through the "last mile" to the way to wealth



### Poverty Alleviation through Education and Training

We carry out the projects of poverty alleviation through intellectual development, such as the Xuhang Program (Page 69), the Teacher Training Program (Page 68), and the E-commerce Training, to educate/train the elementary and middle school students, teachers and managers in the selected poverty-stricken counties.

E-commerce Training

The "Special Training Course for Poverty Alleviation through E-commerce Business and Management" is an industrial poverty alleviation project co-sponsored by CNPC and China Foundation for Poverty Alleviation. This project enables the government officials and rural leaders of the project location to comprehend the advanced development concept and innovative industrial model and help them develop to a qualified working team for rural matters, thereby facilitating the poverty alleviation through industrial development.

**Cooperation with e-commerce platforms and professional institutions such as Jingdong Mall and Sichuan University**

- Held 3 training courses on e-commerce and cooperatives
- Trained more than 150 grassroots cadres, practitioners and business leaders

**Support by the China Association of Poverty Alleviation & Development (CAPAD)**

- Jointly provided training programs such as training for managerial personnel of farmers' professional cooperatives in fix-point poverty-alleviation counties, highland tourism development training in Shuanghu County (Tibet), rural complex training, Party building and poverty alleviation training, investigation of cooperatives, courses on agricultural and animal husbandry technologies in the countryside, and vocational skills (automobile service) training.



### Poverty Alleviation through Medical Care

We strive to improve the medical conditions in poor areas through multiple measures, such as assisting developing counties in building/renovating township medical centers, making regular clinic visits, and training rural medical workers.

Free and regular clinic visits

CNPC medical teams have provided free and regular clinic visits for 11 consecutive years from 2009 to 2019, covering 35 towns in 10 counties, such as Shuanghu County in Tibet, Bijie County in Guizhou, Hengfeng County in Jiangxi, and Qinghe County in Xinjiang.

Training for rural doctors

We have provided training for 8 consecutive years from 2010 to 2019 for 209 rural doctors in 11 counties, such as Shuanghu County in Tibet, Lenghu County in Qinghai, Toli County in Xinjiang, Xishui County in Guizhou and Taiqian County in Henan.

Medical support/assistance

We sent four doctors to Hengfeng Hospital in Jiangxi from 2016 to 2017 for joint diagnosis of difficult cases.



## Supporting Education

Access to high-quality education is fundamental for improving the quality of life and achieving sustainable development. It is clear that education is one of the biggest drivers of sustainable development. CNPC strives to carry out various activities and gives young people equal opportunities for education to help them pursue their goals and boost their personal growth. Specifically, we set up scholarships, offer grant loans and subsidies to students from underprivileged families, improve teaching conditions in poor areas, and support scientific and cultural activities as well as relevant competitive activities. In 2019, we granted CNPC Scholarships of RMB 3.99 million to 635 excellent students.

In addition, we explore new models to support education, and call on the public to focus on and work together to achieve education equality. In cooperation with China Foundation for Poverty Alleviation (CFPA), Beijing Normal University Group and Tencent Foundation, we sponsored the Xuhang Program and the Teacher Training Program to help students from poor families complete their studies.

### Case Study Teacher Training Program

We launched the Teacher Training Program in Nilek County. On one hand, some outstanding teachers from Beijing went to Xinjiang for teaching exchanges. On the other hand, some front-line teachers in Nilek were selected for advanced training at the prestigious schools such as Beijing Shijia Education Group. In this way, the teachers in poor areas improved their teaching level, and local education development was driven. Up to June 30, 2019, the Teacher Training Program has been provided for 24 teachers of Nilek County in four sessions.

A teacher from Beijing No. 171 High School is teaching physical experiments to the students in Wuzan Middle School in Nilek County ▶



"How can we instill the teaching essence of Beijing No. 171 High School into our teaching activities? How can we deliver the most cutting-edge ideas of the metropolis to our teachers and students? I have been thinking about the solutions, so that I can efficiently incorporate what we have learned into my teaching practices."

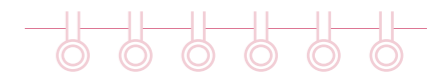
— Ma Aiju  
(Teacher from Fan County No. 1 Junior Middle School in Henan Province)

"The Teacher Training Program of CNPC assists the education in remote areas. It allows us to have close contact and communication with the teachers from Beijing No. 171 High School. I hope that such charity activity can be passed on."

— Ma Tianlan  
(Teacher from Wuzan Middle School in Nilek County)

### Case Study CNPC Xuhang Program

The Xuhang Program is a public welfare project launched by CNPC, aiming to help impoverished senior high school students. It has been implemented in 20 schools in 20 counties of 8 provinces (Sichuan, Henan, Guizhou, Jiangxi, Hebei, Qinghai, Gansu and Yunnan). In total, more than 7,600 senior high school students in extreme poverty received assistance from this Program with subsidies and scholarships, and 781 senior high school graduates received rewards for entrance to universities/colleges. More and more students have been aided by the Program in their course of education.



I had thought that my dream of education was ended due to the poor financial situation. Fortunately, it can continue to fly with the wings given by the Xuhang Program. I will, and I am willing to, give back to the ones who have helped or may help me, with my efforts and enthusiasm.

— Wu Caiyang  
(A student aided by the Program and now studying for Materials Science and Engineering in Tsinghua University)

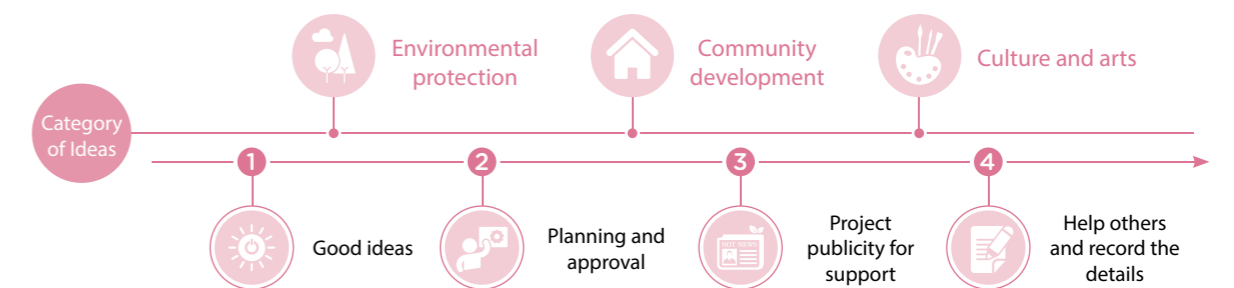
### Case Study Achieving Every Tiny Dream

The "CNPC Walking together on the Charity Road" public welfare platform was established in 2016 to convey the public welfare concept of all the people and help the public realize the initiatives on public welfare. By the end of 2019, a total of 3,400 philanthropic ideas were collected, of which 740 were funded. We believe that every initiative on public welfare will bring changes to the world.

In 2019, we collected 480 philanthropic ideas, of which 196 went online and 188 were funds. The platform won the 2019 Top Ten Public Welfare Creativity Awards assessed by ifeng.com, for its innovation, professionalism and social influence.

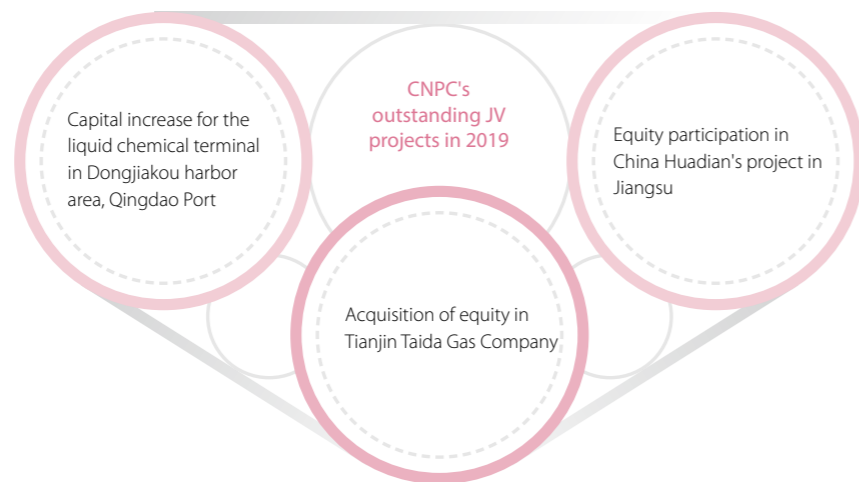


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## Promoting Local Development

CNPC's development is inseparable from the support and help of the governments, communities and the general public. While providing a continuous and stable energy supply for economic development, we insist on the principle of open cooperation for mutual benefit, expanding our joint-venture cooperation with state-owned capital, social capital and foreign capital in the upstream, mid-stream and downstream sectors. During the process of developing and running our projects, we help to nurture local suppliers and contractors, thereby creating jobs, driving the growth of related businesses, and giving back to local people.



## Cultural Civilization

We encourage employees to participate in volunteer activities to help out people with difficulties so as to advocate new trends in social civilization and contribute to the development of cultural civilization.

### Volunteer Activities of Employees

We encourage our employees to serve communities and participate in other volunteer activities. In 2019, we had 3,322 youth volunteer teams with 113,000 members. They provided 1.35 million hours of volunteer services, carrying out activities that directly benefit 2.88 million people.

#### Case Study

#### Offshore Youth Volunteer Activities

Established in July 2001, the Offshore Youth Volunteer Service Team of PetroChina Dalian Petrochemical Company has carried out a total of more than 100 youth volunteer activities over the past 18 years, including the Coastal Cleanup, the Green Coast and the Energy Conservation and Environmental Protection with Zero Emission. It has also provided more than 7,500 youth volunteer services for the cumulative duration of more than 18,700 hours, removing more than 300 tons of garbage on the coast and at sea.

## Volunteer Services for Migrant Workers on Their Way Home

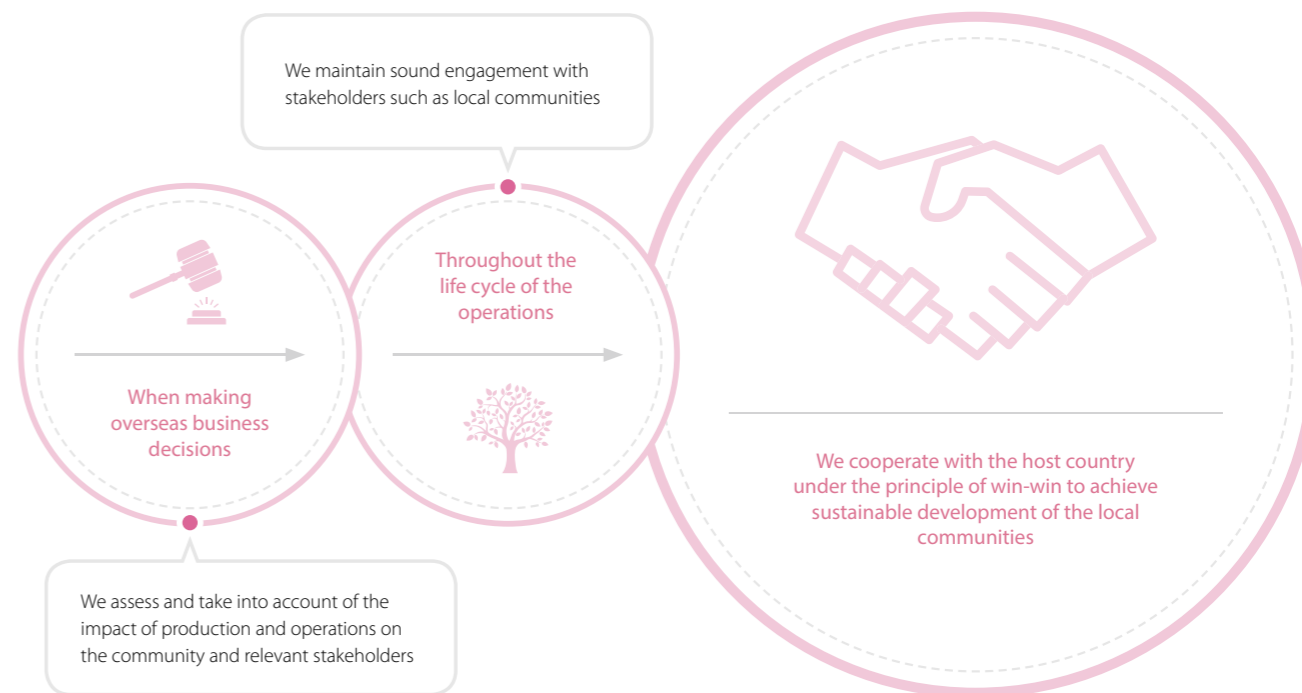
The Spring Festival of 2020 marked the ninth consecutive year we provided free gasoline, food and insurance at the Company's nearly 121 courtesy services stations at major national and inter-provincial highways in seven provinces including Fujian, Guangxi, Jiangxi, Hunan and Hubei for migrant workers who need to travel home on motorcycles. Up to the end of 2019, we have cumulatively provided assistance to 170,000 migrant workers who need to travel home on motorcycles.

## Contributions to the Development of Overseas Communities

We respect the cultures and conventions of the host countries in which we operate, and we are committed to establishing long-term and stable cooperative relations with the host countries, along with striving to become an excellent corporate citizen in local communities. We incorporate our development into local socio-economic growth and create socio-economic value to jointly promote the development and prosperity of local communities. With outstanding social contributions, we have won the "Best Organization Award of the Year" at the Third Charity and Art Sponsorship Forum in Qyzylorda in Kazakhstan.

### Enhancing Communication with Local Communities

We have set up environmental protection and community relations coordination departments in many overseas areas to promote cooperation with local governments, NGOs and community representatives. By holding conferences, issuing reports and paying visits, we strengthen communication and coordination and achieve a win-win situation in cooperation.



### Manage Our Impact on Local Communities

We strive to make a positive impact on community development through carrying out responsible operations, which is not only translating into more employment opportunities, more tax contributions, and more business opportunities to local suppliers, but also reducing the environmental and social impact of production and operations on local communities as well as safeguarding the human rights of community residents.



## Community Welfare

We take an active role to help improve the living conditions of local people, and make donations to education, healthcare and other public welfare programs to achieve harmonious and mutual development.

- Sponsored education on protection of pandas and endangered animals at Calgary Zoo;
- Sponsored fire protection of local communities;
- Sponsored local research institutions.

In Canada

- Offered free clean energy to local residents benefiting 280,000 families;
- Established the Coffee Foundation to offer help to communities;
- Set up the Community Contribution Committee, contributing US\$ 5 million annually for public welfare undertakings;
- Built community hospitals and school camps or dorm buildings;
- Improved the teaching equipment, community roads and lighting facilities;
- Built roads/bridges and drilled water wells for villages in the oil zone, and donated armored vehicles to them.

In Iraq

- Donated desks and chairs to community schools and provided shuttle services for students of senior grades;
- Provided breakfast for community children from Monday to Saturday, built children's playground and hosted football championships;
- Provided skills training for community residents;
- Provided free health checks and on-site medical counseling for local residents, and donated medical devices and instruments;
- Provided parenting training to 1,200 illiterate mothers;
- Assisted 1,200 families to reclaim land and built 1,200 bio-toilets.

In Peru

- Supplied clean and high-quality natural gas to local communities;
- Sponsored the construction of Astana National Dance Academy and Aktobe Youth Palace;
- Supported public welfare programs organized by local state social foundation, orphanage, association for the disabled, and association for the blind;
- Donated to poor and lonely WWII soldiers and their family members;
- Sponsored more than 300 outstanding local high school graduates to study in Chinese universities.

In Kazakhstan

- Built community hospitals in local areas to provide free diagnosis and treatment as well as dedicated ambulance services;
- Regularly provided medical services in remote areas, including clinic visits, child vaccination, infectious disease prevention and dental health care;
- Provided necessary medical funds to 350 children with leukemia from low-income families and 90 children with physical impairments;
- Donated school buses, repaired teaching facilities, and set up scholarships;
- Invested in agricultural projects with long-term benefits.

In Ecuador

In Chad

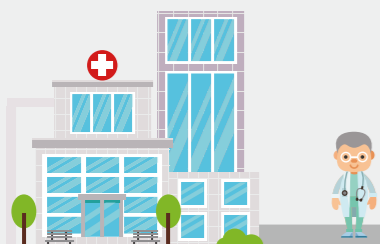
- Built/repared roads, drilled water wells, and donated tents to local communities;
- Built schools and donated study materials;
- Donated a total of US\$ 950,000 to the Majestic Heart Foundation from 2018 to 2019, assisting local areas in education, culture, health care and childcare;
- Sponsored the "Peace" Half Marathon.

In Singapore

- Established the SPC Book Prize jointly with National Institute of Education of Nanyang Technological University for students who are academically and ethically outstanding;
- Participated in the event "The Boys' Brigade Share-A-Gift" for the 10<sup>th</sup> consecutive year, claiming and fulfilling 100 Christmas wishes from seven social welfare institutions;
- Sponsored and held, in conjunction with the Singapore Council of Women's Organizations, the New Year Banquet for Elderly People for the 14<sup>th</sup> consecutive year, inviting 300 senior citizens from 8 nursing homes to celebrate the New Year;
- Sponsored the Singapore Children's Society for the 5<sup>th</sup> consecutive year, and donated to several local social welfare and relief organizations such as Movement for the Intellectually Disabled of Singapore, Mendaki, and Sinda;
- Donated to Singapore Chinese Orchestra and Garden City Fund to support local culture and environment.

In Japan

- Sponsored the Go Game for local residents;
- Kept the company's football court open to the public, and organized teenager football games for the community;
- Guided local primary school students to visit the refinery, enabling them to understand more about the petroleum industry;
- Carried out forest protection activities.





- ▶ The Ecuadorian rainforest area, rich in petroleum resources, is covered with unique tropical rainforest vegetation and inhabited by primitive indigenous tribes, but it is the poorest area in Ecuador. The oil region where the Andean Project is located is remote from cities, with no hospitals or basic medical facilities.

We have built community clinics for local indigenous people, of whom more than 8,000 people have access to basic medical services.



- ◀ We donated books to the Confucius Institute at the University of Khartoum in Sudan. We have donated teaching materials and books worth US\$ 100,000 to the Institute since 2015, benefiting more than 40,000 students.

- ▶ In Niger, we, in cooperation with Zinder University, selected 35 local students to participate in the first vocational skills training, thereby reserving technical talents for local oilfield development.



- ◀ In Mozambique, we organized the "Coastal Cleanup" volunteer activities at Maputo Beach. Our employees picked up 225 kg of solid waste in 15 bags, supporting local environmental protection.

#### Case Study Collaborative Development with the Community to Drive the Urbanization

Gudawa, which is close to the Ronier Oilfield in Chad, was a small village with a population of less than 500, and without satisfactory and sufficient living infrastructure such as roads, school and water supply. In the dry season, villagers had to relocate to places close to the water source, which made them suffer an unstable life, lacking a decent education or better livelihood.

We visited local communities to understand their needs. For clean drinking water, we implemented the "Sweet Water Community" program. We successively drilled 49 water wells in Gudawa, benefiting 25,000 residents in 39 villages nearby. We also constructed the main road in Gudawa and a public primary school accommodating 300 students in 6 grade. Oilfield development also created job opportunities for local people-up to 969 people in total by the end of 2019.

The prosperity of Gudawa, typically the water wells and school, have attracted numerous people from other villages. Now, Gudawa has developed into a village-level town with more than 10,000 residents. The residents highly praise CNPC's contribution, and the head of Gudawa sent a letter of thanks for CNPC's support.

## Local Environmental Protection

We strongly believe in the importance of striking a balance between business development and environmental protection. Therefore, we strictly comply with the laws and international standards on environmental protection in the countries in which we operate, and pay attention to protection of local ecological environments during the production operation.

#### Case Study Efficient Recovery and Purification of Associated Gas for Protecting Local Environment

The Andean Project produces 240,000 cubic meters of associated gas per day, which could only be flared or vented directly, apart from the part for heating the oil and gas processing system. That is really a kind of waste.

For the purposes of environmental protection and efficient utilization of energy, as of the end of 2019, we equipped the associated gas recovery and purification units in MPF, Old Mariann and CDP and built the gas power station, with a total installed capacity of 53 MW and a comprehensive utilization rate of associated gas of 98%. Thus, the volume of associated gas flared could be minimized to protect the ecological integrity of the tropical rainforest.

#### Case Study Careful Protection of the Oryx Leucoryx

The Oryx leucoryx is native to the Middle East and the Arabian Peninsula. The wild Oryx leucoryx became extinct in 1962 due to human factors such as habitat destruction and excessive hunting. Artificial breeding has been carried out since the 1950s. Saudi Arabia, the UAE and other countries have established relevant protection zones.

While operating in the UAE, we comply with local environmental protection policies and applicable laws and regulations governing animals and plants trading in the country. We carefully protect local rare species, including Oryx leucoryx, flamingo, dugong, green turtle and mangrove forest.

To protect the Oryx leucoryx around the area of our operations, we made a detailed survey and evaluation of the surroundings in advance and understood the travel routes, timing and location of the Oryx leucoryx. Accordingly, our crews designed plans for avoidance, mitigation and transfer.

#### Case Study Protection of Marine Ecology in the Libra Project, Brazil

When developing deep-water oil and gas in Brazil, we comply with the Brazilian and international environmental laws, regulations and standards to conduct all-round environmental impact assessment and management for protecting the marine ecology.

The marine environment is very special, requiring more stringent protective measures. Before initiating the Libra project, we initiated the environmental feature acquisition program. We adopted technologies such as the Autonomous Underwater Vehicle (AUV) to monitor the seafloor plankton, flora and fauna, and optimized the design of an underwater recovery system to protect marine flora and fauna as much as we can. Moreover, we kept environmental control and monitoring of the birds around the platform and beach conditions, in order to minimize the environmental impact.



## Promotion of Localization

We proactively promote localization and take the procurement of local products and local services as a priority in order to offer local contractors and service providers a chance to participate in the projects, promoting the development of local small and medium-sized enterprises and creating employment opportunities for local communities. In Iraq, CNPC has provided business opportunities worth more than US\$ 400 million and more than 20,000 jobs, recording a localization rate of 85%.

### Case Study

#### Local Personnel Training Program in Chad

Considering the development needs of Chad, through multi-level short-/long-term programs, CNPC has cultivated a number of local technical and administrative talents for the Chad project.

Every year, 10 outstanding high school graduates are selected to study petroleum skills in China. Some local employees of the project are assigned, if necessary, to attend senior expert training programs overseas. Moreover, CNPC established training centers at N'Djamena and the Roiner Oilfield, where the local employees can be trained by international experts.

### Case Study

#### Cultivation of Local Petroleum Talent in the UAE

CNPC is actively cultivating petroleum talents for the UAE. In the offshore and onshore projects, we invest US\$ 1.5 million each year in the Petroleum Institute at Abu Dhabi to train local students, and select 5 local students each year to study for the master's and doctoral degrees in famous Chinese petroleum colleges. The proportion of local technicians in these projects has risen to 57% from zero in May 2013. Following the traditional personnel training mode, CNPC has cultivated a number of good local technicians, facilitating the sustainable development of local society.

## Tax Payments According to the Law

CNPC strictly complies with the laws and regulations in the countries where it operates, pays taxes to local governments according to the law, and contributes to the development of local economies. In countries where the Extractive Industries Transparency Initiative (EITI) standard is implemented, such as in Iraq and Mongolia, our local companies actively participate in multi-stakeholder groups and publish information on our projects and tax payments to provide details that far exceed the minimum disclosure requirements prescribed by the EITI. We support and follow the Base Erosion and Profit Shifting (BEPS) initiative and the *CNPC Tax Policy* and pledge to pay tax according to the law in areas where we operate and create value, in order to strive to achieve sustainable development and to contribute to socioeconomic development. In 2019, we paid a total of RMB 73.7 billion in taxes overseas.

## Protecting Indigenous Rights

Before the construction of a project, we conduct assessments of the social and economic impact, such as the requirements of the indigenous people, human rights, cultural heritage and involuntary resettlement. We try our best to protect all the rights and interests of the indigenous people. We uphold standard practices in land compensation, and make compensation plans by referring to the opinions of the local governments, our partners, and the local villagers. Specifically, compensation is paid before land use, and the compensation information is released timely to ensure operational transparency.

### Case Study

#### Protection of Indigenous Rights in Block 4 Project, Mozambique

While implementing the Block 4 project in Mozambique, CNPC respects the interests of indigenous residents. We identified the potential impacts of the project on the life of indigenous residents within the onshore LNG industrial park, and planned and designed resettlement villages for 556 indigenous households. The resettlement villages are equipped with mosques, schools and other public facilities as well as agricultural irrigation, chicken farms and other supporting production facilities. Moreover, we carried out social welfare activities including education/training. Up to the end of 2019, CNPC had invested over US\$ 10 million in public welfare activities for indigenous residents.

### Case Study

#### Respecting and Improving the Quality of Life of Indigenous People in Suku Anak Dalam, Indonesia



The Suku Anak Dalam is one of Indonesia's indigenous nomadic peoples, and lives from hunting and fruit in the jungles of Jambi. They have been long secluded from the modern world. CNPC fully respects this indigenous community and their way of life, and hopes that they can have better education and healthcare services.

In conjunction with Indonesia's Social Ministry and KKI Warsi (a foundation of Jambi), CNPC provides the Suku Anak Dalam indigenous community with infrastructures, health care and education services. CNPC built clean water facilities for GurunTuo and Sungai Surian, two villages where over 80 Suku Anak Dalam families reside. CNPC provides medical care and education services. CNPC also provides regular health checks, necessary medicines and education for these indigenous people.

CNPC will continue to provide alternative livelihood training for local indigenous residents and find suitable projects to help them improve their living standards in the future.

## Outlook for 2020

In 2020, the global economic growth will slow down, and international oil prices have dropped dramatically owing to the outbreak of COVID-19, and the operating environment will be more challenging for CNPC. Therefore, we must plan for, and deal with, the grim situation calmly.

We will keep focusing on our main business by driving them to a new level of high-quality development. Following the orientations of "priority, effectiveness, acceleration and coordination" and taking into account the market and profitability, we will strengthen the synergy among production, refining and marketing, between oil and gas operations and services, and between domestic and overseas operations, and optimize resource allocation, product structure and production operation. Through these efforts, we expect to enhance the value creation ability and market competitiveness of both oil and gas business chains.

We will resolutely prevent and control key QHSE risks. We will continue to promote the QHSE system audit, implement the program of "Safe Production Capacity Evaluation Year", strengthen the dual-effect prevention mechanism, and establish a long-term mechanism for comprehensive investigation and control of ecological and environmental risks, thereby contributing to the national battle for pollution prevention and for the protection of blue skies, clear waters and pure land.

We will safeguard the legitimate rights and interests of employees according to the law, pay close attention to the occupational health of employees, improve the mechanism which synchronizes employees' salary growth with the increase of labor productivity, and soundly advance the basic projects to improve the quality of employees. By doing so, the gains of reforms and development will benefit all our employees in a fair way, who will in turn enjoy a stronger sense of fulfillment, happiness, and security.

We will actively devote ourselves to social welfare undertakings, carry out fixed-point poverty alleviation and aid programs, and contribute to China's fight against poverty. More efforts will be made to strengthen communication and coordination with local governments, implement relevant strategic partnership agreements and projects, and support and promote local economic and social development.

The year of 2020 indicates that a well-off society is fully established and the 13<sup>th</sup> Five-Year Plan ends. It is also a crucial year for CNPC to become a world-class integrated international energy company at a new level and a world-class demonstration enterprise. Guided by President *Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era*, we will carefully implement the spirit of the 19<sup>th</sup> National Congress of the Communist Party of China (CPC), the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Plenary Sessions of the 19<sup>th</sup> CPC Central Committee and the Central Economic Work Conference, closely follow the goals and tasks for a world-class integrated international energy company at a new level, adhere to the overall leadership of the CPC, strengthen the building of the CPC, adhere to the overall keynote of steady progress to implement new development concepts, and adhere to the principle of stable development to promote high-quality development. We will also maintain the stable growth of our main business, promote the key breakthroughs in reform, opening up and innovation, lay a solid foundation of safety, environmental protection and stability, earnestly enhance our control, influence and anti-risk capabilities, and fully fulfill the goals of the 13<sup>th</sup> Five-Year Plan, making new contributions to a well-off society.

## Performance Data

Performance indicators	2015	2016	2017	2018	2019
<b>Finances and operations</b>					
Total assets (RMB 100 million)	40,341	40,698	40,987	41,325	42,357
Owner's equity attributable to parent company (RMB 100 million)	20,794	20,980	20,426	19,993	19,696
Operating revenues (RMB 100 million)	20,168	18,719	23,403	27,390	27,714
Taxes and fees payable (including overseas) (RMB 100 million)	3,757	3,497	3,774	4,212	4,045
Newly-added proved oil reserves (10,000 tons)	7,573.9	7,881	6,007	7,076	7,720
Newly-added proved gas reserves (100 million cubic meters)	2,764.9	1,351	949	1,293	1,258
Crude oil production (including overseas equity output) (10,000 tons)	16,657	16,298	17,133.8	17,636.6	18,102.7
Natural gas production (including overseas equity output) (100 million cubic meters)	1,167	1,213	1,287.3	1,380.2	1,503.0
Crude oils processed (including overseas crude oil processed) (10,000 tons)	19,524	19,167	19,917	20,736	20,796.7
Output of refined oil products (including overseas output) (10,000 tons)	13,580	13,132	13,672	14,482	14,943.7
Ethylene output (10,000 tons)	503	559	576	557	586.3
Lubricant output (10,000 tons)	121	116	164	160	163.0
Sales of refined oil products (domestic sales) (10,000 tons)	11,625	11,303	11,416.3	11,735.8	11,959.4
Number of service stations (domestic)	20,714	20,895	21,399	21,776	22,365
<b>Safety</b>					
Total number of accidents	237	270	283	214	249
Fatality rate (person/million working hours)	0.003	0.0025	0.0048	0.0032	0.0024
Fatality rate (person/million working hours)-employee	0.0029	0.0024	0.0025	0.0025	0.0012
Fatality rate (person/million working hours)-contractor	0.0033	0.0026	0.0119	0.0045	0.0048
Fatality rate per thousand vehicles in traffic accidents (‰)	0.046	0.085	0.069	0.050	0.0783
<b>Environment</b>					
COD emissions (10,000 tons)	2.88	2.87	2.85	2.63	*
NH <sub>3</sub> -N emissions (10,000 tons)	1.17	1.15	1.08	1.01	*
SO <sub>2</sub> emissions (10,000 tons)	14.24	12.75	12.36	11.42	*
NO <sub>x</sub> emissions (10,000 tons)	14.87	13.21	11.94	11.09	*
Energy saved (10,000 tons of TCE)	116	95	88	86	82
Water conserved (10,000 cubic meters)	2,061	1,339	1,241	1,213	1,084
Land saved (hectares)	1,200	1,135	1,180	1,253	1,247
<b>Staff</b>					
Number of employees in service (10,000 employees)	163.89	157.70	152.26	144.84	141.95
Employee localization rate (%)	85	82	83	84.4	84.92
Occupational health examination ratio (%)	98	98	98.5	99.97	99.62
<b>Public welfare</b>					
Total contribution (RMB 10,000)	136,603.62	62,140.6	108,572	72,092.6	85,432
-Poverty alleviation (RMB 10,000)	34,109.93	19,767.4	21,817	23,291	24,388
-Disaster relief (RMB 10,000)	588.45	191.9	7,975	1,154	4,421
-Education (RMB 10,000)	23,803.41	8,955.9	10,091.9	4,937	8,269
-Charity donation (RMB 10,000)	63,202.74	23,984.5	46,611.8	37,806.6	42,933
-Environmental charity (RMB 10,000)	14,899.09	9,240.9	22,076.3	4,904	4,421

\*As of the date when the report is released, the statistics of COD, SO<sub>2</sub> and NO<sub>x</sub> emissions of CNPC in 2019 are under review of the Ministry of Environmental Protection of PRC (MEP), which will be published once verified. According to the verified statistics, CNPC will disclose the relevant indicators in this report next year.

## Glossary

<b>Proven reserves</b>	According to China National Standards, proven reserves are estimated quantities of hydrocarbon deposits possibly to be recovered from reservoirs proved by appraisal drilling during the period of reservoir evaluation, with a reasonable certainty or a relative difference of no more than $\pm 20\%$ .
<b>Proved reserves</b>	According to the guidelines of the US Securities and Exchange Commission, proved reserves refer to, against current economic and operating circumstances, the quantity of oil, natural gas or liquid natural gas which can be reasonably identified and recovered from known oil & gas layer in the future according to geological and engineering documents. Their price and cost are based on the reality in evaluation. Price changes will only consider the changes of current price specified by contract agreement rather than escalations. Proved reserves include proved reserves developed and undeveloped.
<b>Reserve replacement ratio</b>	The reserve replacement ratio refers to the value of the amount of oil and gas reserves added in a year divided by the amount of oil and gas produced during that same year.
<b>Recovery ratio</b>	The percentage of oil/gas in place that is recoverable from underground.
<b>Horizontal well</b>	A class of nonvertical wells where the wellbore axis is near horizontal (within approximately 10 degrees of the horizontal), or fluctuating above and below 90 degrees deviation. A horizontal well may produce at rates several times greater than a vertical well, enhance recovery efficiency and prolong the production cycle, due to the increased wellbore surface area within the producing interval. Meanwhile, the environmental costs or land use problems that may pertain in some situations, such as the aggregate surface "footprint" of an oil or gas recovery operation, can be reduced by the use of horizontal wells.
<b>Liquefied natural gas (LNG)</b>	Liquefied natural gas is produced by dewatering, deacidifying, dehydrating and fractionating the natural gas produced from a gas field and then turning it into liquid under low temperatures and high pressure.
<b>New energy</b>	New energy refers to unconventional energy and renewable energies, mainly including CBM, shale gas, oil sands, oil shale, fuel ethanol, biodiesel, geothermal energy, wind energy, solar energy, hydrogen energy, water-soluble gas and NGH.
<b>Low-carbon economy</b>	A low-carbon economy is an economic development model characterized by low energy consumption, low pollution and low emissions. Its essence is efficient energy consumption, development of clean energy and pursuit of green GDP. The core of this model is the optimization of the industrial structure, low-carbon technology and institutional innovation. A low-carbon economy is developed by means of energy conservation, emissions reduction and the development of clean energy.
<b>Greenhouse gas (GHG)</b>	Greenhouse gases are gases in an atmosphere that absorb solar radiation from the surface and then emit radiation, such as water vapor, CO <sub>2</sub> , and most refrigerants. Their effect is making the Earth's surface warmer, as the "greenhouse effect" sequesters solar radiation and increases the temperature of the air. Greenhouse gases in the Earth's atmosphere mainly include CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs and SF <sub>6</sub> .

<b>Carbon sequestration</b>	Also refers to carbon sinks. It is the process, activity and mechanism to remove carbon dioxide from the air. Generally, it indicates the capability of forests to absorb and store carbon dioxide. Carbon dioxide in the atmosphere is artificially sequestered in biological forms in plants and the soil through forestation, forest management, and other forest carbon sequestration measures.
<b>HSE management system</b>	HSE is the acronym of the health, safety and environment management system. The HSE management system is an integration of various elements such as organizational structures, mandates, practices, procedures, processes and resources used for health, safety and environment management. The advanced, scientific and systematic integration and operation of these elements create the mutually reinforcing, supportive and interactive and dynamic management system.
<b>Oils (mineral oil)</b>	Compounds of hydrocarbons in wastewater. These include all substances collected by certain solvents, as well as all substances extracted by solvents from acidified samples, which remained fixed during the extracting process.
<b>Chemical oxygen demand (COD)</b>	Chemical oxygen demand is the quantity of strong oxidant consumed to process water samples. It serves as a comprehensive index of pollutants in wastewater and their impact on the environment. A higher COD represents the heavier pollution of reductive substances in the water body.
<b>Major accident</b>	Major accidents refer to accidents that cause deaths above 10 but below 30, or grievous harm to people numbering above 50 but below 100, or economic losses worth above RMB 50 million but below RMB 100 million.
<b>Emergency accidents</b>	Emergency accidents refer to sudden emergent accidents which result in or may result in serious casualties, and/or damage to property, the environment, society and public safety. Emergency accidents faced by CNPC include four types, namely natural disasters, accidents, public health and social security.
<b>Occupational disease</b>	Diseases caused by exposure to dust, radioactive substances and other toxic and hazardous substances to employees working for enterprises, institutions and private organizations.
<b>Stakeholders</b>	Stakeholders are groups and individuals that are able to impact the accomplishment of corporate goals, or groups and individuals that are impacted by corporate goals, including the natural environment, future generations, and non-human species that are directly or indirectly affected by corporate business activities.
<b>Production base</b>	Generally, this refers to mining zones recovered, being recovered or to be recovered. It includes several regions covering mines and open mines equipped with utilities like production processes, ground transportation, power supply, telecommunication scheduling, production management and living services.
<b>Community</b>	A community is an administrative jurisdiction within which a group of people live in a fixed geographical area, fulfilling their social functions and creating social norms. It is at the same administrative level as an administrative village.

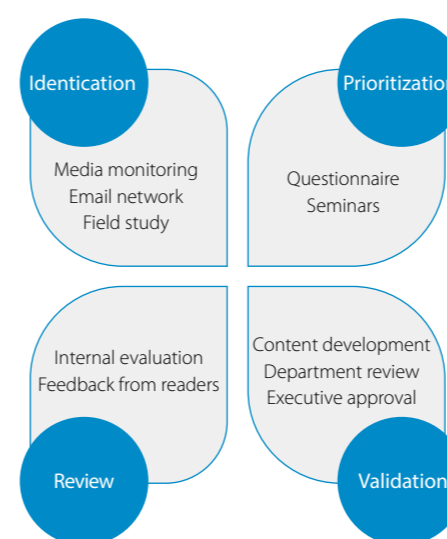
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## Approach to Reporting

The contents in this report were selected and disclosed based on their substantiality, integrity and balance principle, and taking into account the concerns of stakeholders and the Company's great influence on the society. They exert substantial impact on the Company's sustainable development.



1. The Company pays close attention to the views of its stakeholders, and collects their comments through community visits, periodical reports, field study and online communication. It makes suggestions on the topics of the report by taking into account stakeholders' major concerns.
2. We assess the Company's sustainable development strategy and cover major social, economic and environmental events related to our strategies, risks and opportunities.
3. We refer to UN SDGs and the social responsibility initiatives and standards proposed by NGOs for topic selection. These include ISO 26000 (Guidance on Social Responsibility).
4. Topics are selected based on the comprehensive assessment of stakeholders' concerns and their impact on the Company's strategies. The time span and the scope of impact for each specific topic are clearly defined to ensure the accuracy of the information disclosed.

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