



2021

Corporate Social Responsibility Report

Green development and energy delivery
Facilitating the growth momentum of customers
Empowering people to enjoy a better life



About the Report

This is China National Petroleum Corporation's 16th 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, 2021. 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 2020 Corporate Social Responsibility Report was issued on May 20, 2021.

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: The Report includes some special reports, such as All-out Efforts to Secure Winter Supply, Power the Winter Olympics for a Shared Future, Biodiversity Conservation, and CNPC's Contributions to Rural Revitalization. In order to showcase our social responsibility performance in a more objective, comprehensive and prioritized manner, we made investigations on the CSR practices, verified the authenticity of cases, extensively solicited opinions and suggestions and actively responded to the concerns of all stakeholders.

References: The Report is prepared according to the *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 (2020)* 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, Guidance on Social Responsibility Reporting (GB/T 36001-2015)* by China National Standardization Management Committee, and *China CSR Reporting Guide (CASS-CSR4.0)* 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 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.

Contents

▼

Chairman's Message	02
About Us	04
Figures in 2021	05
Corporate Governance	06
Sustainable Development Management	10
Communication with Stakeholders	14
Special Report: All-out Efforts to Secure Winter Supply	30
Special Report: Power the Winter Olympics for a Shared Future	32
Special Report: Biodiversity Conservation	48
Special Report: CNPC's Contributions to Rural Revitalization	70
Outlook for 2022	82
Performance Data	83
Glossary	85
Index	87

>

Sustainable Energy Supply	
20	Energy and Future
22	Technology and Innovation
25	Clean Energy
34	Climate Change
37	Energy Cooperation

>	

Responsible Operations	
40	Safe Operation
43	Environmental Protection
52	Products and Services
53	Supply Chain Management

>	

Employee Development	
56	Employees' Rights and Interests
57	Career Development Platform
61	Local Hiring and Diversity
62	Physical and Psychological Health
65	Caring for Employees

>	

Public Welfare	
68	Rural Revitalization
74	Supporting Education
74	Promotion of Local Development
75	Volunteer Activities
75	Contributions to the Development of Overseas Communities



Chairman's Message

I am pleased to present the CNPC Corporate Social Responsibility Report 2021. The past year has been one of exceptional significance. In face of the raging pandemic and profound changes rarely seen in a century, we endeavored to make progress while ensuring stability, committed ourselves to the strategies of innovation, resources, market, internationalization, and green & low-carbon development, and coordinated our efforts in business development, reform, innovation, performance enhancement, safety and environmental protection, and pandemic prevention and control. As a result, we achieved a new milestone in our business performance and got off to a good start in the "14th Five-Year Plan" period.

Promoting innovation-driven development and guaranteeing national energy security

In 2021, we took innovation as our core strategy to drive the increase of oil and gas reserves and production as well as the transformation and upgrading of our refining and chemical businesses, opening up new horizons for high-quality development. We made new breakthroughs in oil and gas exploration, achieved record highs in domestic oil and gas production, and reported continuous production growth in major oil and gas fields. Five major breakthroughs and 15 important discoveries were made in Ordos and other key basins; we added 1,045.27 million tons of proven oil reserves in place and 1,095.1 billion cubic meters of proven gas reserves in place throughout the year, the highest numbers on record; domestic crude oil and natural gas production increased by 0.8% and 5.5% year-on-year; oil and gas production in Daqing Oilfield reached 33.45 million tons of oil equivalent, exceeding 30 million tons for the seventh consecutive year; oil and gas production topped 62 million tons of oil equivalent in Changqing Oilfield and stood at 31.82 million tons of oil equivalent in Tarim Oilfield; and natural gas production exceeded 35 billion cubic meters in Southwest Oil and Gas Field. We made steady progress in overseas exploration and development, laying a more solid foundation of achieving three "100 million tons" production. We made significant achievements in refining and chemical transformation and upgrading, with the two ethane-to-ethylene demonstration projects in Changqing and Tarim being completed and becoming operational. We effectively guaranteed market supply, and maintained the smooth operation of our industrial chain and supply chain.

Accelerating green transition to build a modern energy system

In 2021, we accelerated our green transition, and relentlessly delivered clean energy to conserve lucid waters and lush mountains. Keeping up with the trend of the times in low-carbon development, we took a three-step approach of "Clean Alternative, Strategic Replacement and

Green Development", in a bid to accelerate the construction of a new pattern of multi-energy complementarity. We remained committed to the strategy of "stabilizing oil production while increasing gas production". Our oil and gas production mix was further optimized, with natural gas accounting for 51.6%; domestically, we sold 205.55 billion cubic meters of natural gas throughout the year, equivalent to replacing 273 million tons of coal equivalent in terms of equivalent calorific value and reducing carbon dioxide emissions by about 274 million tons. Through natural gas supply, we contributed to the optimization of China's energy mix and the building of a beautiful China. We implemented a number of new energies projects to develop wind energy, solar energy, geothermal energy, electricity and hydrogen. A total of 39 new energies projects were completed and became operational, adding 3.5 million tons of coal equivalent of new energies development and utilization capacity; we focused on new energies, new materials and new operations, and established research institutes in Dubai, Shenzhen and Shanghai. In response to waves of cold weather, we raced against time to supply geothermal energy for heating in locations including Xiong'an New Area; a number of hydrogen refueling stations were put into operation for the Beijing 2022 Winter Olympics. We initiated and established the China Oil and Gas Methane Alliance, in order to control methane emissions across the industry chain. No major incidents involving environmental pollution or ecological damage occurred during the year, and our greenhouse gas emissions and methane emission intensity decreased by 4.38% and 8.9% year-on-year respectively. As a result, we won the titles of "Low-carbon Model in China" and "Model Enterprise for Carbon Neutrality 2021".

Committed to openness and cooperation in building a community of shared interests in energy cooperation

In a spirit of openness, mutual benefit and common development, we actively promoted international oil and gas cooperation and participated in global energy governance. The global business layout of five overseas oil and gas cooperation zones, four oil and gas channels, and three international oil and gas operation hubs was further improved, and our international competitiveness and influence were further enhanced. In 2021, a number of major oil and gas cooperation projects became operational, which was a new highlight of our international operations. In oil and gas exploration, two significant discoveries with reserves of 1 billion tons were made, and three major discoveries with reserves of 100 million tons were made. Newly added proven recoverable oil and gas reserves exceeded 100 million tons, and overseas oil and gas equity production exceeded 100 million tons of oil equivalent for the third consecutive year.

Creating shared value and promoting harmonious social development

Upholding the people-centered philosophy, we attached great importance to the safety and physical and mental health of our employees. We made relentless efforts in regular epidemic prevention and control, and took swift action to win the battle against the pandemic. Throughout the year, we reported no deaths from COVID-19 among our overseas employees or confirmed overseas cases among Chinese employees. We pressed ahead with the program of building CNPC with a quality workforce, and deepened the reform of our talent development system and mechanisms, in order to provide a broader space for employees to realize their value. Fu Xisheng, the chief oil scientist of CNPC's Lube Oil Company, was named the "Model of Central State-owned Enterprises". We built on past progress to make further

advances in poverty alleviation, implemented 600 rural revitalization assistance projects, and achieved the integration of poverty alleviation and rural revitalization; we took multiple measures to serve the Beijing 2022 Winter Olympics and Winter Paralympics. To guarantee the success of the Games, we made every effort to supply clean energy and support the preparation and operation of the Olympic athletes' villages, and actively fulfilled our responsibility as the rotating chair of the Beijing 2022 Winter Olympics Partner Club to contribute to the success of the Games. Changqing Oilfield sent a rescue team to flood-hit areas in Henan Province immediately after rainstorms to support local flood control and emergency rescue efforts, and was actively involved in drought relief in Longdong and northern Shaanxi. Its rescue team was commended by the National Work Safety Emergency Rescue Center. In Indonesia, we were granted the Gold Award of Indonesia Sustainable Development Goals Award (ISDA) by the Indonesian government for our outstanding contributions to the development of local communities.

In 2022, new changes took place in the macro economy at home and abroad, featuring instability, uncertainty and imbalance; amid profound changes in the global energy supply and demand landscape, countries will accelerate the transition of their energy mix to green and low-carbon energy. In the face of the new situation and new challenges, we will, following the guiding principle of "high-quality development, deeper reform and opening up, as well as law-based and rule-based governance" and the corporate governance principle of "specialized development, market-oriented operation, lean management and integrated planning", implement four strategic measures, focus on the development of our main business, step up enterprise management, reform and innovation, green transition and risk prevention and control, and work to open up new prospects for high-quality development to fuel our customers' growth and power people's happy life.

We are grateful for your attention and support to CNPC over the years. As a global corporate citizen, CNPC will devote our strengths to seek opportunities while meeting social needs and addressing common challenges, create shared value with stakeholders, achieve sustainable development of energy, the environment, and society, and work together to build a community with a shared future for mankind.

Dai Houliang
Chairman

戴厚良

About Us

As one of China's key state-owned enterprises and a major global oil and gas producer and supplier, CNPC is an integrated international energy corporation with businesses covering oil and gas exploration and operations, new energies, refining, new materials, technical support and services, and financial services. We possess oil and gas assets and interests in 32 countries/regions around the world. In 2021, CNPC ranked third among the world's top 50 oil companies and fourth in the *Fortune* Global 500 ranking.

We are committed to providing CNPC solutions to the world's energy transition, China's efforts to peak CO₂ emissions before 2030 and achieve carbon neutrality before 2060, and other climate and temperature control goals, in response to the United Nations sustainable development goals (SDGs). In 2021, we continued to improve our strategic system, put more emphasis on innovation-driven, green and low-carbon development, and enabled our strategy to better play a leading role in sustainable development.

Our vision
Becoming a world-class integrated international energy company built to last

Our Values
Green development and reliable energy supply to fuel our customers' growth and power people's happy life

Our guiding principle to prosperity
High-quality development, deeper reform and opening up, as well as law-based and rule-based governance

Our corporate governance principle
Specialized development, market-oriented operation, lean management, and integrated planning

Our strategies
Innovation, resources, market, internationalization, green & low-carbon

Figures in 2021

Assets & profits

4,192.43 billion Total assets of RMB 4,192.43 billion	2,807.28 billion Total sales revenue of RMB 2,807.28 billion
166.48 billion Total profit of RMB 166.48 billion	397.98 billion Total taxes and fees payments of RMB 397.98 billion
1/7 The domestic tax and fees payments amount as 1/7 of the total paid by central enterprises	

Resources base

1,045.27 million tons Our domestic newly added proven oil in place totaled 1,045.27 million tons	600 million tons Our domestic newly added proven oil in place exceeded 600 million tons for the 16th consecutive year
1,095.1 billion cubic meters Our domestic newly added proven gas in place reached 1,095.1 billion cubic meters	400 billion cubic meters Our domestic newly added proven gas in place exceeded 400 billion cubic meters for the 15th consecutive year

Oil & gas supply

111.256 million tons Our domestic marketing volume of refined products was 111.256 million tons	32.6% Our domestic marketing volume of refined products accounted for 32.6% of the domestic market share
205.55 billion cubic meters Our domestic marketing volume of natural gas was 205.55 billion cubic meters	56.2% Our domestic marketing volume of natural gas accounted for 56.2% of the domestic market share

Oil & gas production

314.29 million tons We achieved total domestic and overseas production of 314.29 million tons of oil equivalent	2.6% Our domestic and overseas production increased by 2.6% year-on-year
103.106 million tons Our domestic crude oil output reached 103.106 million tons	137.8 billion cubic meters Our domestic natural gas output reached 137.8 billion cubic meters
51.8% Our domestic crude oil output accounted for 51.8% of the country's total	66.4% Our domestic natural gas output accounted for 66.4% of the country's total

Environmental protection

1,120 hectares 1,120 hectares of land were saved	8.9% The methane emission intensity decreased by 8.9% year-on-year
4.38% The company's greenhouse gas emissions decreased by 4.38% compared with 2020	

Public welfare

808 million We earmarked RMB 808 million in public welfare undertakings globally (we earmarked about RMB 300 million in rural revitalization), benefiting tens of thousands of people	222 villages In China, we spent about RMB 300 million on poverty alleviation, supporting nearly 222 villages
600 We implemented nearly 600 assistance projects	984 employees We assigned 984 employees to serve as managers in temporary positions in villages

International business

32 countries/regions We operated overseas oil and gas business in 32 countries/regions	101.39 million tons We achieved equity oil and gas production of 101.39 million tons of oil equivalent
80 countries/regions We provided petroleum technical services and engineering construction services in 80 countries/regions around the world	

Employee development

1.1772 million employees We have a total of 1.1772 million employees	86.67% More than 86.67% of our overseas employees are local hires
1.52 billion We spent RMB 1.52 billion on employee training covering all front-line staff	318,000 person-times 318,000 person-times of face-to-face training
14.36 million person-times 14.36 million person-times of online training	100% 100% frontline personnel were trained

Technological progress

33.52 billion CNPC invested RMB 33.52 billion in science and technology in 2021, with spending of RMB 20.84 billion on research and development
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Corporate Governance

CNPC is a wholly state-owned enterprise. According to relevant laws and regulations, including the *Company Law of the PRC*, the *Law of the PRC on State-owned Assets of Enterprises*, the *Constitution of the Communist Party of China*, and the *Regulation of Leading Party Members' Groups of the CPC*, as well as arrangements made by the State-owned Assets Supervision and Administration Commission of the State Council, CNPC has established and improved the modern corporate system, continuously perfected the corporate governance structure with statutory and transparent rights and responsibilities of the board of directors and top management, and for them to function in a coordinated and balanced way. We worked to modernize the governance system and governance capacity. We focused on system building and fulfillment of responsibilities, and realized clear control objectives, effective integration of resources and optimal efficiency and effectiveness. We also enhanced the full performance of our economic, political and social responsibilities, and achieved sustainable, efficient and high-quality development.

Board of Directors

The Board of Directors is the 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 general mandate on decision-making regarding key corporate operational and management matters.

In 2021, the board of directors thoroughly implemented the decisions and arrangements of the CPC Central Committee and the State Council, strengthened efforts in analyzing and judging the macroeconomic environment, industry development trends, and corporate operating conditions, urged and directed the implementation of business investment and production and operation plans, remained cautious on major investment decisions, reinforced monitoring of major risk assessment and the management process, continuously improved the standardization and efficacy of the operations of the board of directors, and well played its role in strategy making and risk prevention.

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 the Articles of Association of CNPC, and provide advice and recommendations for Board decisions. In 2021, giving full play to their respective professional advantages, the directors of the Company exercised due care and diligence, playing a positive role in guiding the strategic development of the Company, strengthening the review of major decision-making issues and strengthening risk control.

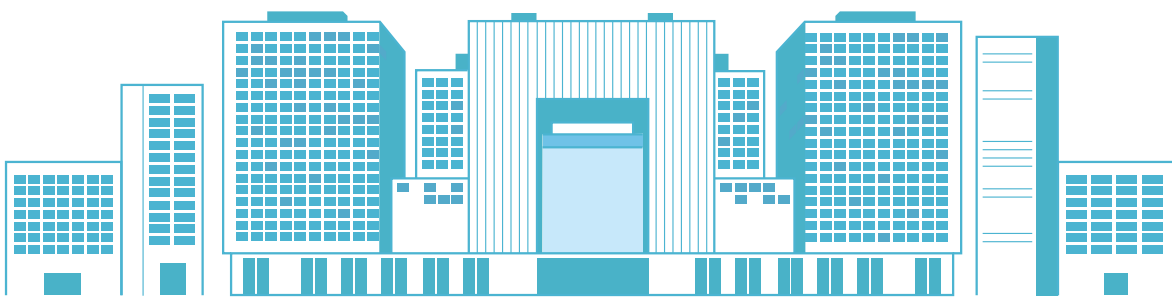
Key Work of the Board of Directors in 2021

 Formulation of development strategies	• Establish the strategic goal of becoming a world-class integrated international energy company built to last; implement the five development strategies of innovation, resources, market, internationalization, and green & low-carbon; analyze the opportunities and challenges; optimize annual business plans and objectives, and promote the high-quality development of the Company. • Establish the corporate governance guidelines of "specialized development, market-oriented operation, lean management, and integrated planning". • Formulate the "14th Five-Year Plan". • Make decisions and arrangements on major issues, such as the establishment of a modern enterprise system, and technology and informatization innovation.
 Deliberation of major issues	• Conduct strict inspection of major issues; Guarantee quality and efficiency-centered major decisions are made. • Effectively strengthen risk management and control; review and approve financial derivative businesses of subsidiaries. • Deliberate and approve proposals such as sponsoring the 14th National Games and making donations to support flood control and disaster relief; actively fulfill corporate social responsibilities. • Instruct the management to coordinate and advance the work of production, operation, HSE and risk prevention and control; promote the coordinated development of various sectors.
 Enhancement of risk prevention and control	• Take the prevention of various risks as an important part of business decision-making; listen to audit reports and risk management reports twice a year. • Give full play to the role of the Audit and Risk Management Committee; guide relevant departments to enhance their accountability in risk management, and improve business processes and risk assessment procedures. • Strengthen risk analysis for decision-making for major projects. • Pay attention to matters such as debt scale to ensure that business risks are minimized when deliberating on debt financing and other proposals.
 Team building	• Formulate and implement the <i>Performance Guarantee Scheme for External Directors</i>; improve the performance guarantee of external directors. • Invite external directors to attend important meetings of the Company, and to visit enterprises in Daqing and other regions for field inspection, in order to enable external directors to understand the production status of the Company. • Strengthen communication with external directors on major decision-making issues such as major investment projects.

Compliance Management

Legal compliance, as one of the guiding principles to the Company's prosperity and the guarantee for high-quality development, has been incorporated in the "14th Five-Year Plan" of CNPC. CNPC has promoted the concept of "law first, compliance first, remaining honest and trustworthy, safeguarding rights according to law", continuously strengthened the construction of a compliance management system, strictly implemented the laws, regulations and government regulatory requirements, incorporated compliance requirements into systems and processes, established compliance specifications and operational guidelines covering key business areas and items, continuously improved the legal compliance review system for major decisions and major matters, actively promoted the implementation of compliance management requirements and responsibilities, and continuously improved the Company's compliance management performance.

CNPC strictly upholds business ethics and market rules, adheres to the principles of credibility, integrity, equal consultation, mutual benefit and win-win results, promotes transparent trading, remains committed to maintaining fair competition, strictly abides by laws, regulations and international practices in anti-monopoly, anti-bribery, anti-unfair competition, anti-extortion and fraud. We respect human rights protection and trade controls, and resolutely refuse to engage in, participate in or assist in any form of money laundering.



Management System

CNPC Management and Control Systems		Goals	Measures
 Compliance management system		• Build a scientific, complete and effective management system • Keep personnel behavior regulated and controlled • Guarantee the Company's operational compliance and sustainable and sound development	• Revise the <i>Integrity and Compliance Manual</i>; formulate the positive and negative list of Employee Integrity and Compliance; enhance employee education on integrity and compliance; require employees to sign compliance commitments • Prioritize the improvement of the international compliance system; establish compliance guidelines for international investment, trade, engineering construction and technical services respectively • Compile the <i>Guidelines on Legal Compliance Risk Prevention and Control of Chemical Sales Enterprises</i>; implement risk prevention and control measures and compliance requirements at each business link and position • Continuously promote the establishment of compliance management demonstrations in 17 units • Improve the assessment indicators and scoring methods for compliant business operations • Carry out company-wide compliance training, covering 100% staff; provide professional training on antitrust compliance, economic sanctions and regulation
 Internal control and risk management system		• Complete system • Overall control • Effective implementation	• Revised the internal control and risk management evaluation system, and formulated <i>Standard on Business Procedure and Control Design</i>, laying a solid foundation for internal control management • Evaluated the top ten major risk events, and monitored 36 risk indicators, safeguarding risk management, basically achieving the target of major risk control • Summarized and optimized procedures in 17 departments in the headquarters in an orderly manner, and arranged 569 approval items, and promoted the mechanism, standards and procedures of corporate governance • Conducted management tests for the headquarters and 57 companies, in order to strengthen supervision and the effectiveness of internal controls
 QHSE management system		• Standardized operation • Controlled risks • Continuous improvement	• Coordinate development and safety, prioritize safety and environmental risks in decision-making issues, improve the risk classification management and control mechanism, continuously strengthen the implementation of work safety accountability mechanism for all employees, especially managers • Strengthen integrated QHSE audit. Revise and improve quantitative audit standard for HSE management; formulate the Quantitative Audit Standard for QHSE Management System (3rd edition) • Print and distribute the <i>Implementation Guide for Audit of HSE Management System of Overseas Projects</i> and the <i>HSE Audit Standards for Overseas Projects</i> to promote the integration of domestic and international HSE management • Implement two full-coverage QHSE audits of more than 120 production and operation units, urge the rectification of hazards, dismiss unqualified contractors, assess and hold relevant management personnel accountable • Implement the Demonstration Projects for HSE standardization construction of grassroots stations, select 20 companies as the demonstration stations, and strengthen the leadership of the demonstration stations • Strengthen the assessment of work safety and environmental protection performance, urge newly appointed responsible persons to develop work safety reports, and conduct full-coverage assessment of newly promoted and appointed personnel, in order to ensure each post can effectively perform its duty
 Anti-corruption system		• Consolidate and extend the resounding success in the fight against corruption • Promote the coupling and integration of supervision system and governance system • Strengthen the restriction and supervision over the exercise of powers	• Promote an integrated mechanism to prevent corruption, establish and strictly implement the institutionalized and normalized work methods and supporting lists for promoting reform through cases, and continuously improve the comprehensive efficiency of corruption governance • Formulate opinions on the implementation of the investigation of both recipients of bribes and bribers, and promote the formation of a clean and positive political ecology and business environment • Formulate and implement detailed rules and regulations on strengthening supervision over the head and members of management team, and strengthen the restriction and supervision of the exercise of powers • Conduct discipline education and interpretation of anti-corruption laws and policies through relevant platforms (Iron Man Pioneer, Clean CNPC, etc.) in order to create a good atmosphere of clean governance and anti-corruption

Sustainable Development Management

Concept of Sustainable Development

For a company, fulfilling its corporate social responsibilities 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 sustainable development, but also a strategic requirement for expanding its international operations.

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 returns to society and realize value sharing.



CNPC Sustainable Development Model

Management Mechanisms

Sustainable development management is an important part of CNPC's drive for deepening the modernization of its governance system and capabilities. At CNPC, we regard the establishment and improvement of the social responsibility management mechanism as a fundamental task in advancing sustainable development management. Focusing on system establishment, organizational structure and capability building, we have established a set of comparatively comprehensive sustainable development management mechanisms.

System Building

We have developed a "1+N" system covering economic, environmental and social responsibilities. Guided by the *Guideline of CNPC on Fulfilling Social Responsibility*, we improve working rules and regulations on corporate governance, safety and environmental protection, low-carbon development, product quality, employee health, and social welfare, laying a solid foundation for sustainable development management.

Organizational Structure

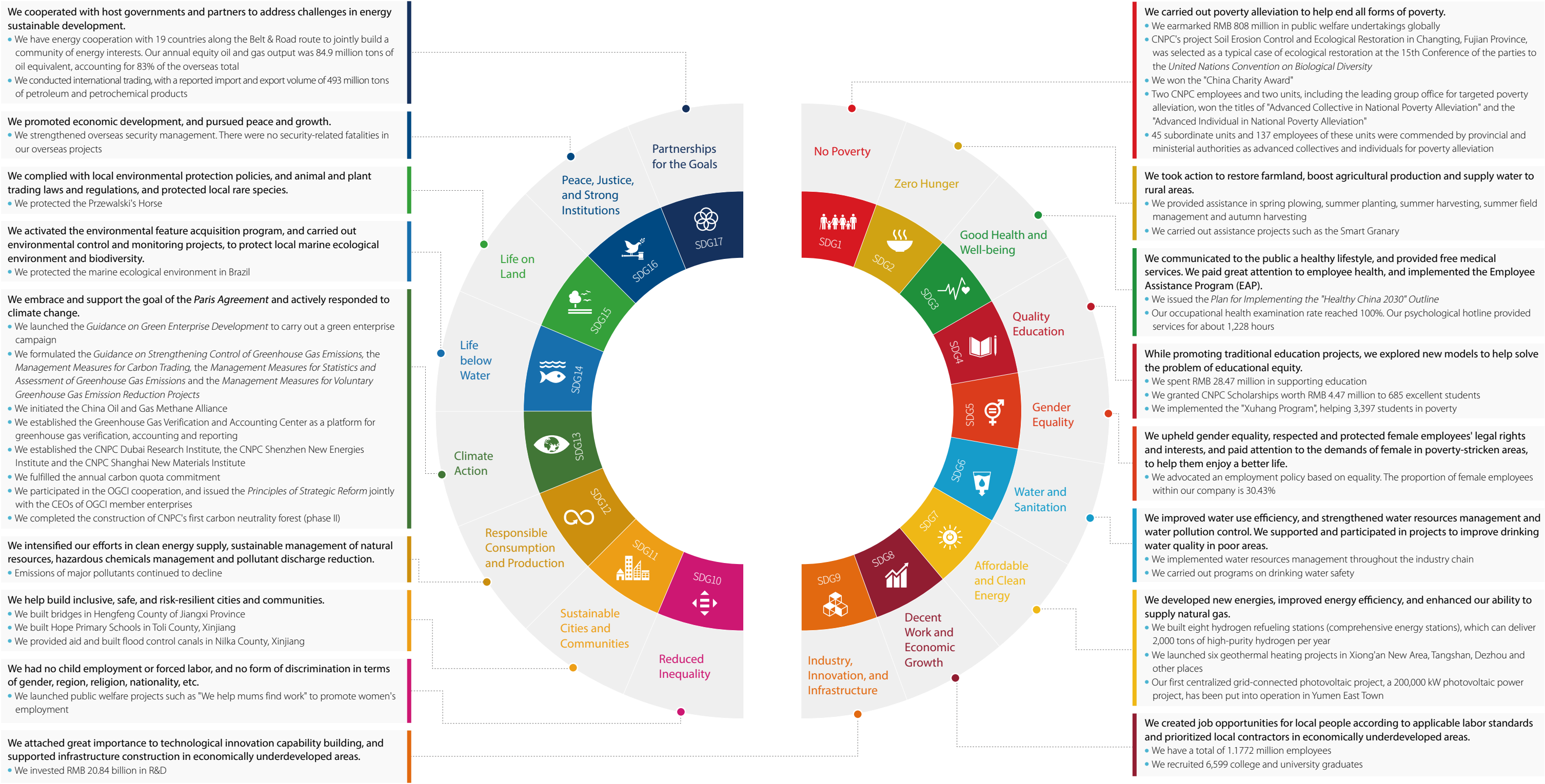
The Social Responsibility Management Committee is responsible for making social responsibility strategies and plans. The Committee is composed of heads of headquarters functional departments, with a company leader as the director. Meanwhile, we have established an External Experts Committee and regularly hold meetings to solicit professional advice on social responsibility management and best practices, and to provide support for our decision-making. At the headquarters, 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, and boost communication with relevant organizations at home and abroad, in order to continue enhancing CSR awareness and our capability to fulfill responsibilities among all employees.

CNPC and the UN SDGs

The UN SDGs represent the greatest consensus of mankind on sustainable development. As a global corporate citizen, CNPC strives to give full play to its own advantages, and seeks opportunities and common development through meeting social development and addressing common challenges, in order to create shared value with stakeholders.



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 at home and abroad to continuously improve stakeholder participation.

Increasing Routine Disclosure

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

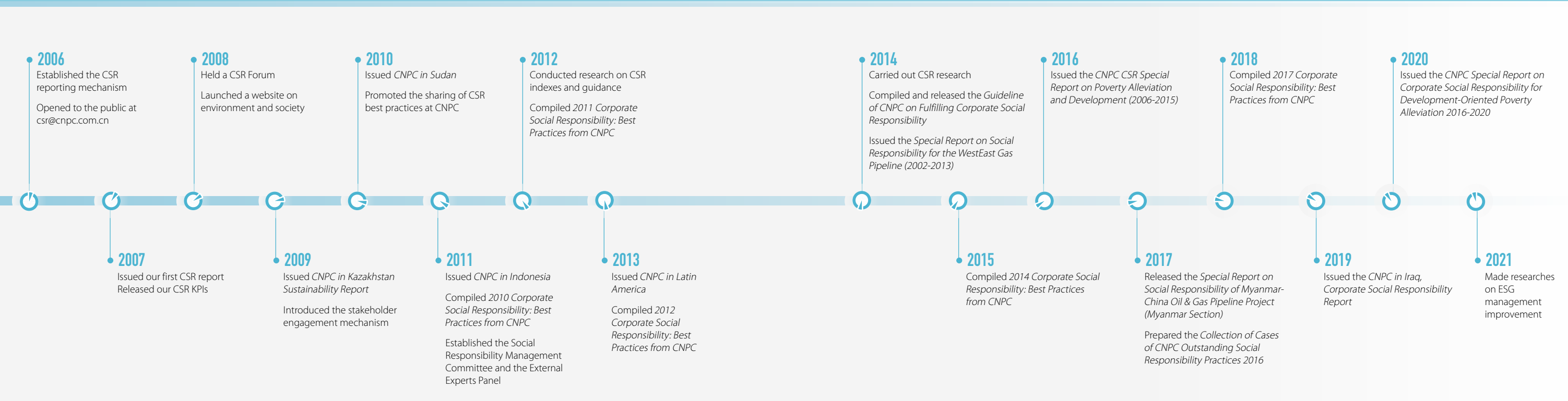
Expanding Public Communication Channels

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 the CNPC Open Day, and other activities allowing visits to CNPC.

Case

Meeting CNPC

We actively communicate with the public through various platforms. In 2021, we held the Fourth CNPC Open Day, and launched live streaming. During the events, over 10,000 stakeholders including representatives of local government, media reporters, customer representatives, community residents, and student representatives were invited to learn more about and gain a deeper insight into CNPC. Through on-site experience and in-depth discussion, an innovative, open, green and sharing CNPC is presented to the public.



CNPC and Stakeholders

	Government	Employees	Customers and Consumers	Business Partners	NGOs and Relevant Organizations	Communities and the Public
 Goals and Concerns	• Guarantee energy security • Stabilize market supply • Fulfill social responsibility • Address climate change • Operate in compliance with all legal requirements • Protect ecological civilization • Deepen corporate reform • Protect the rights and interests of investors	• Guarantee employees' rights and interests • Employee career development • Employee value realization • Employee health and safety	• Provide safe, environmental-friendly, and high-quality products • Provide quality services • Improve customer satisfaction • Establish communication mechanisms • Advocate sustainable consumption patterns • Protect consumer privacy • Improve consumer complaints mechanism	• Comply with national laws, regulations and business ethics • Standardized HSE management • Promote fair competition and mutual benefits • Promote social responsibility throughout the value chain	• Participate in discussion on public policy and industry standards • Pay attention to industry trends and policy moves • Advance the sustainable development of enterprises and industries • Carry out cooperation in social development and environmental protection	• Promote community development • Protect community environment • Increase local employment • Support education, public health and other public welfare activities • Perform social investment • Enhance sustainable development capacity
 Means of Communication and Participation	• Legal operation, integrity and trustworthiness • Respond to the government's call, and accept supervision • Contribute to the formulation of energy policies, laws and regulations and industry standards • Enhance the quality of products, engineering and services • Improve environmental performance	• Support trade unions at different levels • Hold staff congresses • Reinforce staff training • Improve salary distribution system • Hold contests and evaluations	• Safeguard consumers' interests • Supervise product quality • Solicit the opinions of customers and consumers	• Promote e-procurement through e-commerce platform • Share management experience and technical standards • Strengthen communication with suppliers and contractors	• Share corporate experience • Attend related meetings and forums • Facilitate international exchanges and cooperation	• Provide education, training and employment opportunities • Promote cultural exchange • Pay community visits
 Our Actions	• Change the mode of development, increase resource potential, promote technological innovation, maintain sound operations and increase the value of state-owned assets • Safeguard energy supply and optimize energy mix, in coordination with national energy strategy • Promote the building of national key laboratories and major scientific and technological innovation projects	• Implement human resource development programs. • Improve the staff development mechanism • Enhance employee training by hosting professional skills competitions • Protect the legitimate rights and interests of employees, including remuneration, education and training, rest and vacations, and labor protection • Continue to organize occupational health examination and poverty alleviation activities	• Increase clean oil supply and supply Beijing VIB standard gasoline and diesel nationwide ahead of schedule • Further promote the CNPC Quality Month Campaign • Provide natural gas and other clean energy and products • Establish a unified service station management system and launch overall inspections on service stations • Implement customer satisfaction investigation and conduct mystery customer visits	• Advocate fair competition and standardized operations, and promote the use of e-procurement and management platform • Strengthen control over key processes including design, procurement, construction and supervision, and strengthen HSE management for suppliers and contractors	• Exchanges with the public on their concerns • Participate in high-level strategic cooperation forums to discuss how to build an efficient, safe and competitive supply chain	• Carry out disaster relief, poverty alleviation and donations to education, and support the reconstruction of disaster-stricken areas • Implement Rural Revitalization Project • Support and drive the development of local economies through major project construction • Implement oil-to-gas projects to minimize air pollution • Support the development of SMEs and promote local procurement



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 enhance technological innovation to continuously increase our efficiency in hydrocarbon development and utilization. We boost the natural gas industry, expand new energies and new materials business, and raise the proportion of clean energy in our energy supply. With these efforts, we strive to make contributions to the construction of a diversified, clean energy supply system and the prosperity of human society.



Energy and Future

Opportunities and Challenges

Steady growth in global energy demand. The global population will continue to grow, with the world population on track to hit 9.8 billion in 2050. In the long run, economic and population growth and the development of modern industrialization in developing countries will boost sustained growth in global energy demand and consumption.

A serious lack of equal access to energy. Over 1.2 billion people worldwide still lack access to affordable modern energy, and developing countries are still using large amounts of high-pollution and high-carbon energy. Helping this group obtain equal access to clean, low-carbon and affordable energy is not only a requirement for achieving the Sustainable Development Goals (SDGs) of the United Nations, but also the key to achieving global temperature control goals.

Accelerated transformation to diversified, clean and low-carbon energy driven by addressing climate change. Addressing climate change has become an important task for global energy development. At the 26th UN Climate Change Conference (COP26), a number of important consensuses were reached on addressing climate change. The share of cleaner energy sources (natural gas and non-fossil energy) is expected to reach 85% by 2050. The accelerated clean, low-carbon development of fossil energy and the integrated development of fossil energy and renewable energy will reshape the energy mix.

Accelerating construction of China's clean and low-carbon energy system. China is committed to peak carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060. The energy transition will be greatly accelerated under the guidance of the new energy security strategy and the requirements of the Carbon Peak and Carbon Neutrality goals. Energy enterprises are accelerating the construction of a clean, low-carbon, safe and efficient modern energy system to support high-quality economic development.

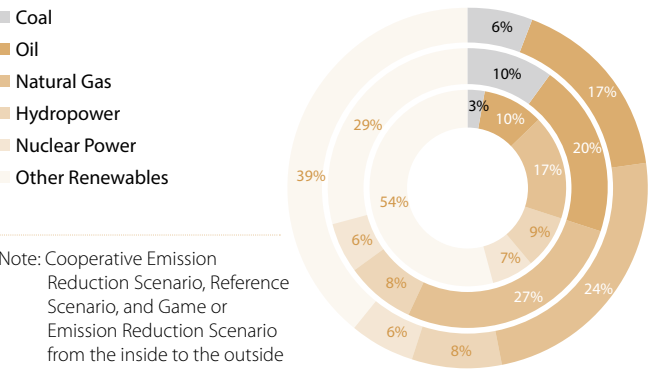
Important strategic opportunities for CNPC during the "14th Five-Year Plan" period. Oil and gas will continue to remain a foundational player in China's energy system, with natural gas being an energy source of growing importance and a dominant energy source by 2040; the building of the new development paradigm will take national economic growth to a stage of high-quality development, and there is still space for growth in energy demand; under the Belt and Road Initiative, energy cooperation will be deepened; the technological revolution represented by digitalization and intelligence sustains traditional industries; energy transformation opens up more opportunities for the integrated development of traditional energy and new energies.

Data source

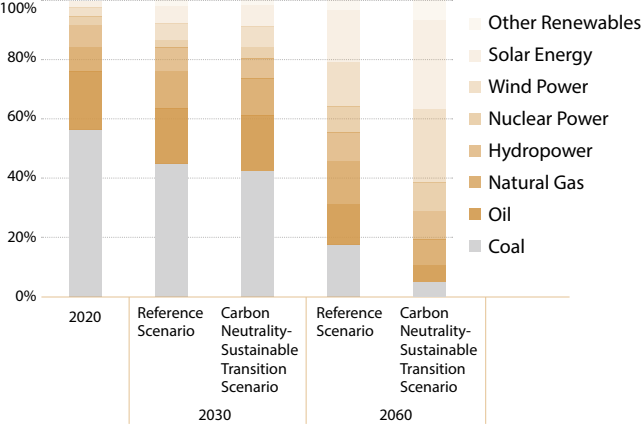
World and China Energy Outlook 2060 (2021 Edition), CNPC Economics & Technology Research Institute



Global primary energy mix in 2060 under different scenarios



China's primary energy mix under different scenarios



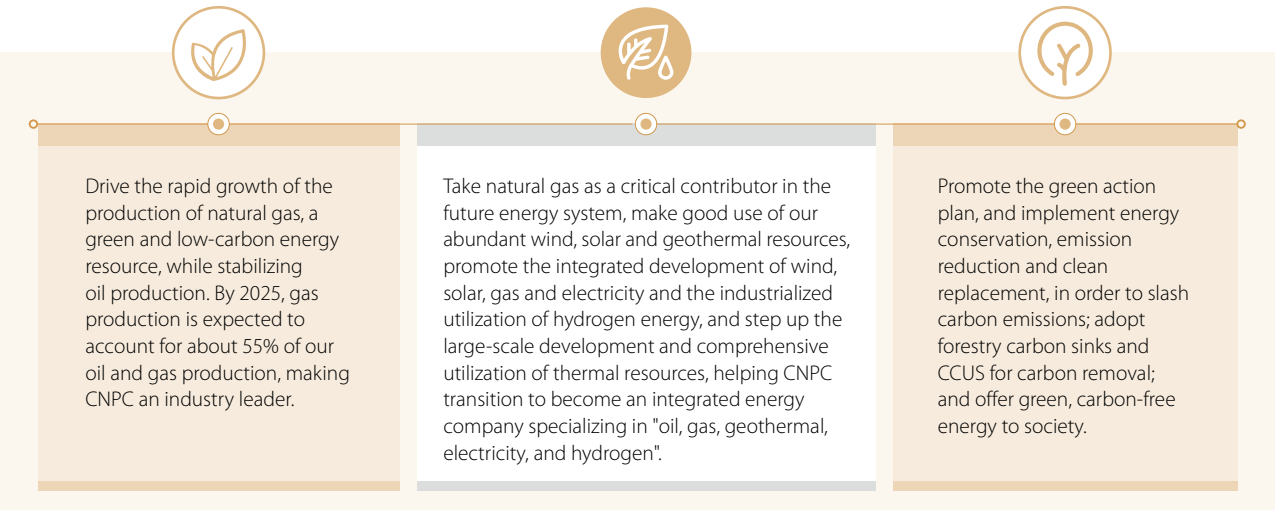
Strategic Response

The world is undergoing a profound and rapid energy transition towards a cleaner, low-carbon, more efficient and diversified energy structure. Especially at a time of sluggish global economic growth and an intensified backlash against globalization, energy companies should work together to overcome difficulties, explore new opportunities and seek sustainable development. As a major player in the oil and gas industry and China's largest oil and gas producer and supplier, CNPC has been actively cooperating with the government and companies in the industry chain, and strives to provide clean, low-carbon, safe and efficient energy while meeting future energy demand, in an effort to jointly build a sustainable energy future.

We have included "green & low-carbon" into our development strategies. We actively expand new space for development, and commit ourselves to the pursuit of "green development and reliable energy supply to fuel our customers' growth and power people's happy life", in order to contribute to China's efforts to achieve carbon neutrality by 2060. First, we have ensured the top-level design of green development, established the plan for the development of green and low-carbon industry and the special plan for new energies development, implemented new green action plans, and took a three-step approach of "Clean Alternative, Strategic Replacement and Green Development"; second, we increased the supply of clean energy sources, considered the development of natural gas as a strategic green development project, and accelerated the building of a growth engine of green development that comprises multiple energy sources with oil and gas in a dominant position; third, we optimized the layout of green industries, actively deployed the development of new energies, new materials, and new business, and promoted the implementation of a green industry layout with "six bases" and "five projects" as the core, in order to promote the green and low-carbon transformation and development of the Company.

CNPC's Path of Green and Low-carbon Development

CNPC attaches great importance to green and low-carbon transition. We have developed a green and low-carbon development path to support China's efforts to peak CO₂ emissions before 2030 and achieve carbon neutrality before 2060, and took a three-step approach of "Clean Alternative, Strategic Replacement and Green Development", aiming to achieve peak carbon emissions by around 2025, ensure that the supply of green, carbon-free energy is in excess of the fossil energy consumed by 2035, and reach "near-zero" emissions by around 2050.



Technology and Innovation



0.74%

CNPC's R&D investment intensity

60%

Ratio of contribution to scientific and technological progress in the "13th Five-Year Plan" period



We put more emphasis on the innovation strategy. We endeavor to deploy innovation chains based on industrial chains and promote value chains through innovation chains. We drive high-quality supply through innovation, and address global challenges such as equal access to energy, reduction of carbon emissions, and improved energy efficiency.

CNPC's Overall Goal for Technological Development

2025	To basically solve key technical problems in the oil and gas industry chain, and further consolidate our technological strength and informatization level in the national oil and gas innovation system by 2025	✓
2030	To basically achieve high-level technological self-reliance by 2030	✓
2035	To basically build national strategic science and technology capabilities and develop significant advantages in energy and chemical innovation by 2035	✓
the middle of this century	To comprehensively build national strategic science and technology capabilities and take energy and chemical innovation to new heights by the middle of this century	✓

Innovation Platforms

CNPC has 90 research institutions and departments, with seven directly affiliated to the Company and 83 enterprise-level scientific research institutions. CNPC also has 21 national R&D platforms 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.

CNPC maintains a two-level (national-level and provincial/industry-level) skills cultivation platform and has a powerful group of 24 academicians, 24 scholars from the national "Hundred, Thousand and Ten Thousand Talents Program", 264 enterprise-level chief technical experts, 536 enterprise-level technical experts, 9 China Skills Award winners, and 30,139 researchers.



Actively pushing for the building of national innovation platforms

The Big Data Security Research Center for the Petroleum and Petrochemical Industry under the National Engineering Laboratory for Big Data Security was established in CNPC.

Four national engineering research centers and laboratories, for coalbed methane development and utilization, geophysical software, drilling engineering, and pipeline safety, were included in the new national platforms.

The Key Laboratory for Natural Gas Quality Control and Energy Measurement and the Key Laboratory for Oil Pipeline and Equipment Quality and Safety were approved as National Key Laboratories for Market Supervision.



Continuing to improve the layout of innovation platforms

Kicked off the innovation platform building plan for the "14th Five-Year Plan" period, improved a number of key platforms in new energies and new fields, such as key laboratories for hydrogen energy, CCUS, carbon neutrality and big data security platforms.

Studied and developed construction plans for technology research and development centers in upstream fields such as exploration and development, engineering technology and new energies.



In 2021

- Issued the *Guiding Opinions on Digital Transformation and Intelligent Development*, making clear the overall goal of completing the implementation of key business scenarios for digital transformation in major units and basically putting in place a "Digital CNPC" by 2025.

Information Technology

Guided by a "value-oriented, strategy-led, innovation-driven and platform-supported" overall principle and in an effort to maximize the overall benefit of the industrial chain, we push for digital transformation and intelligent development, strive to build an open and shared smart energy and chemical industry ecosystem, and empower the high-quality development of the oil and gas business through the new generation of information technology.

A new level in information-based development. We completed and put into operation our intelligent operation center, registered significant achievements in core technology research, and initially established an industrial Internet system. We also make unremitting efforts to expand the scope of application of state-owned assets supervision, shared services and e-commerce. The application of information systems in various business areas has gradually deepened, infrastructure and network security assurance capabilities have been further enhanced, and informatization has played an important role in our high-quality development and pandemic prevention and control.

New progress in digital transformation and intelligent development. Lanzhou Petrochemical Company completed the construction of an ethane-to-ethylene "smart factory" in Yulin, CNPC Chuanqing Drilling Engineering Company Limited built CNPC's first digital transformation pilot team, and China's first refueling robots serving the Beijing 2022 Winter Olympics up to the new standard were launched in Chongli Gas Station in Zhangjiakou City in Hebei Province.

Technological Achievements

Guided by major national science and technology 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. CNPC also accelerated efforts in breakthroughs in a number of key and core technologies, in order to provide strong technological support for the high-quality development of the Company.



In 2021, CNPC won 1 silver award and 5 excellence awards of the China Patent Award; and 1 first prize and 2 excellence awards of the Shining Star Innovation and Creativity Competition conducted among central government supervised and managed SOEs.

Objective	Measures	Progress
Increase both reserves and production under complex geological conditions	• Innovatively develop theories and technologies for deep/ultra-deep oil and gas exploration and development • Independently develop three types of chemical oil displacement agents such as DS series salt-resistant polymers, which have been applied in more than 400 wells • Develop the geological theory of continental shale oil enrichment in China, innovate technical systems such as optimal and fast drilling of horizontal wells of shale oil, and three-dimensional development in well plant mode on large platforms	• Supported the Tarim Basin in obtaining industrial gas flows at a depth of 8,000 meters in Kuqa Piedmont, and underpinned the new discovery of a large-scale monoblock gas reservoir at a capacity of about 100 billion cubic meters • Sustained the continuous and stable production of 10 million tons of chemical flooding in Daqing Oilfield for 20 consecutive years • Accelerated the building of national shale oil demonstration areas such as the Junggar Basin and Gulong in the Songliao Basin, effectively guided and promoted the continental "shale oil revolution", and boosted the large-scale building and commissioning of shale oil in Changqing Oilfield, Xinjiang Oilfield and other oilfields
Promote green production and low-carbon development	• Carry out research to address challenges in waste treatment in complex system operations caused by the large-scale development of unconventional, deep and ultra-deep well oil and gas resources • Carry out technology research on CO₂ capture, oil displacement and storage technologies • Independently develop a complete set of technologies for megatonnage ethane to ethylene conversion with internationally advanced key technical indicators, strongly underpin the construction of key projects for the transformation and upgrading of refining and chemical business	• Completed 11 demonstration projects, treated over 90% of operating waste liquid, and created over RMB 400 million in economic benefits • Injected a cumulative total of more than 4.5 million tons of CO₂ in the Jilin Oilfield, sequestered more than 3.7 million tons of CO₂, produced more than 1.5 million tons of oil through CO₂ injection and production, and maintained a leading position domestically • Applied to the ethane-to-ethylene project in Changqing, a national demonstration project, the ethylene consumption per unit reached 551.76 kg standard oil/ton, with significant energy-saving performance; the NO_x content of flue gas and discharge of waste alkali liquid both reduced sharply
Improve energy efficiency, reduce costs and ensure energy security	• Pioneer a breakthrough of the technical bottleneck of low-frequency seismic signal excitation, and successfully develop high-precision broadband vibroseis • Successfully develop multi-dimensional, high-precision imaging, formation evaluation imaging while drilling and other CPLog logging devices; comprehensively upgrade interactive fine fusion processing platform for logging (CIFLog3.0), which covers the full logging process • Develop the integrated application of "one-trip drilling" technology for long horizontal sections, and promote a continuous increase in the number of horizontal wells, the length of horizontal sections, and production and performance • Keep promoting the development and production of high-grade lubricating oil, high-grade asphalt, synthetic rubber and other new featured products, and underpin the optimization of refining and chemical product structure and business performance	• Significantly enhanced imaging accuracy and reservoir prediction capabilities, making it a powerful tool for high-precision and high-efficiency deep oil and gas exploration that has contributed to large-scale breakthroughs in deep oil and gas exploration • CIFLog treated more than 100,000 wells in five years, with data covering more than 40 oil and gas fields in 25 countries • Changqing Oilfield kept breaking records for domestic onshore horizontal sections in the length of the horizontal section; the "one-trip drilling" footage has exceeded 3,000 m • The drilling cycle of Gulong shale oil in Daqing Oilfield has been reduced to less than 20 days • Our dedicated lubricants for CR high-speed rail have been used for a cumulative total of 150 million kilometers, realizing the catch-up and surpassing of China's gear box oil • Developed a new generation of UHV transformer oil, effectively guaranteeing the construction and safe operation of a series of UHV power transmission projects

Clean Energy

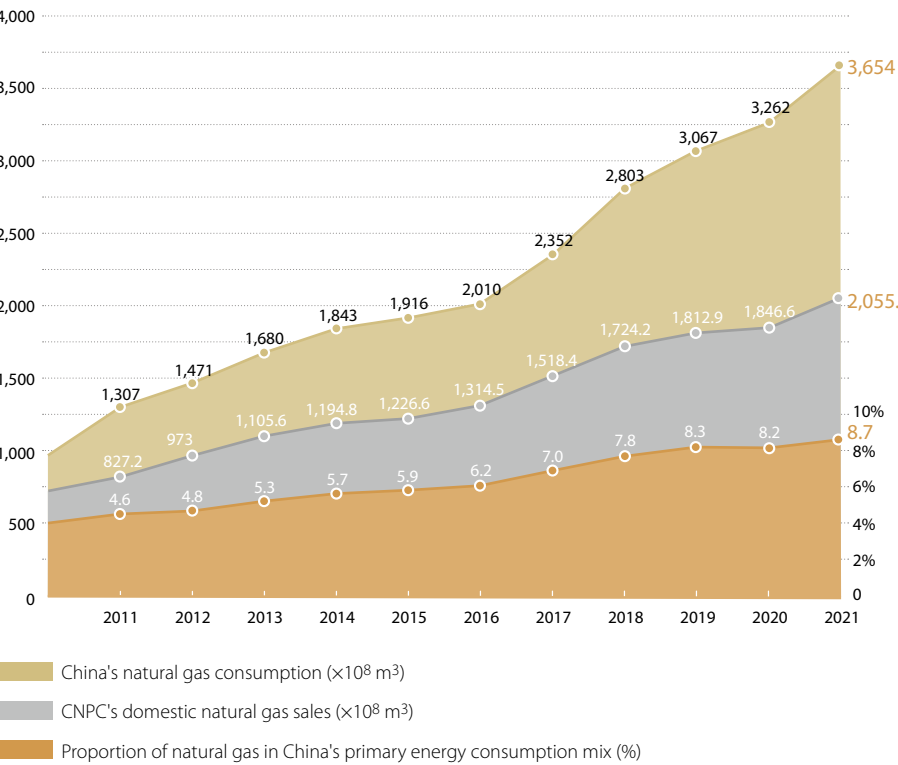
In order to secure the sustainable supply of clean energy in the future, we have been vigorously developing natural gas. Particularly, we accelerate the development and utilization of unconventional natural gas and deploy the new energies and new materials businesses in a faster manner to meet market demand for clean and high-quality energy and products.

Natural Gas

As natural gas is a bridge from fossil energy to clean energy, its development and utilization is fundamental for green and low-carbon transition. Taking natural gas as a strategic, growing and value-added project, CNPC keeps strengthening natural gas exploration and development, developing unconventional natural gas such as tight gas, shale gas and coalbed methane, and importing overseas natural gas to build a diversified energy supply system.

"Green Power" Optimizing Energy Structure

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



In 2021, CNPC produced 169.24 billion cubic meters of natural gas, including 137.8 billion cubic meters domestically, a 5.5% year-on-year increase, and accounting for 66.4% of China's total production. CNPC increased PNG and LNG imports while working to increase its production capacity. CNPC supplied 205.55 billion cubic meters of natural gas, an 11.3% increase over the previous year.



66.4%

CNPC's share of domestic natural gas production

51.6%

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

56.2%

CNPC's share of domestic natural gas sales in domestic market

Tight gas	27.6%
CBM	1.7%
Shale gas	9.3%
Conventional gas	61.4%



Changqing Oilfield natural gas purification plant

Unconventional natural gas



Shale gas

CNPC produced 12.86 billion cubic meters of shale gas, representing a year-on-year increase of 1.25 billion cubic meters, of which, 12.69 billion cubic meters were produced in southern Sichuan.



Coal methane

The Qinnan and Edong coalbed methane production bases, which had a production capacity of 2.45 billion cubic meters, contributed 2.32 billion cubic meters per year.



Tight gas

- Changqing Oilfield – the largest tight gas production base in China – was built.
- 38.036 billion cubic meters of tight gas were produced throughout the year.

Utilization of Natural Gas as Replacment

We actively promote the comprehensive utilization of natural gas in city gas, industrial fuels, natural gas power generation, chemical feedstock and vehicle fuels, and accelerate the implementation of renovation projects using natural gas as an alternative to coal and the building of zero-coal-emissions demonstration areas. We continue our efforts to carry out "coal-to-gas" projects and promote projects such as the gasification of Xiong'an New Area, gasification of Hebei and gasification of the Yangtze River, in order to make clean energy accessible to more people. In 2021, our domestic natural gas terminal sales increased by 11.2%.

Case Coal-to-gas Switching, a Contributor to the Building of a Beautiful China

In recent years, CNPC has been accelerating the development of natural gas. It promotes "coal-to-gas" projects nationwide, in order to contribute to China's efforts to peak CO₂ emissions before 2030 and achieve carbon neutrality before 2060, and to build a beautiful China.

In Jiangsu: we supplied natural gas to characteristic ancient towns such as Jinxi and Zhangpu to improve the local living environment, promoting the development of local tourism and homestay industries.

In Shanxi: "coal-to-gas" model villages were built in Jiexiu, a city known as the "capital of coke", improving local people's livelihoods by making natural gas accessible to every household in every village.

In Guangdong: we promoted the industrial application of natural gas in Chaozhou, and supplied more stable and controllable clean fuels to ceramic factories in Chaozhou, a city known as the "Porcelain Capital of China".

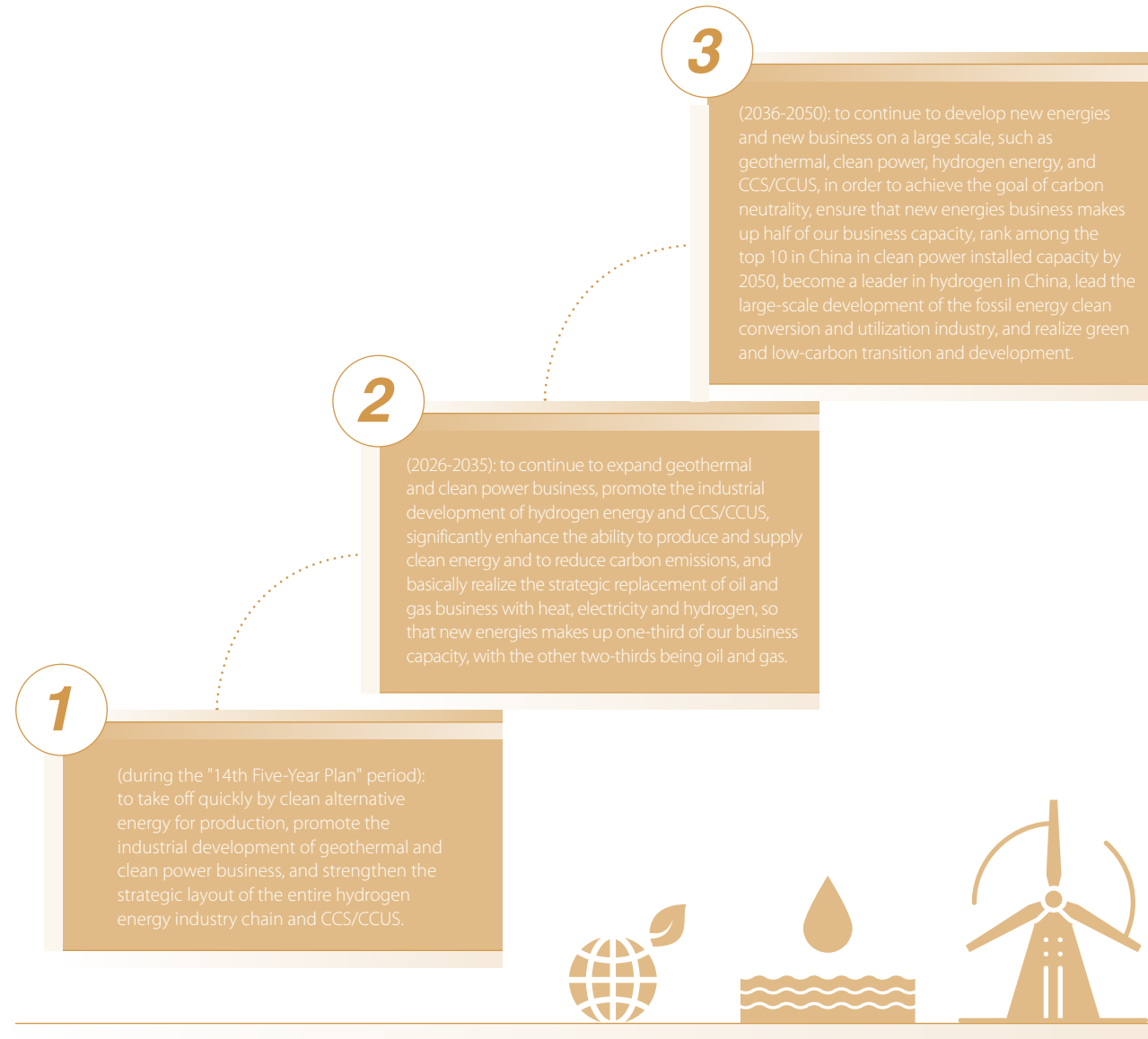
In Gansu: overcoming construction difficulties, we laid gas pipelines for Linxia County, a remote area in Gansu Province, ushering local residents into a new era of gas heating.

In Shandong: we supplied stable natural gas for Lanling County National Agricultural Park to boost the development of local characteristic ecological agriculture.

New Energies

CNPC is transiting from a supplier of "oil and gas" to a supplier of "comprehensive energy" by increasing the proportion of clean and low-carbon energy in the energy mix and takes more active measures to address the challenges of climate change. In 2021, we advanced the development of new energies business as part of our main business, pressed ahead with the integrated development of geothermal, wind, solar, gas and electricity, promoted the development of the entire industry chain of hydrogen energy: production, transportation, storage and utilization, strengthened the CCS/CCUS industrial layout, established three research institutes (Dubai, Shenzhen and Shanghai), and advanced the transformation of CNPC into an integrated energy company of "oil, gas, geothermal, electricity and hydrogen".

CNPC's New Energies Business Development Plan



In 2021, we

- Saw our new energies development and utilization capacity increase by 3.5 million tons of coal equivalent and our total amount of clean energy development and utilization reach 7 million tons of coal equivalent.
- Added 9.6 million square meters of geothermal heating area.
- Added 240,000 kilowatts to our installed capacity of wind and solar power generation, and connected to the grid for power generation the 200,000-kilowatt photovoltaic power generation project in Yumendong Town, our first centralized grid-connected photovoltaic project.
- Actively deployed hydrogen energy business, put into use 1,500 tons of high-purity hydrogen per year, built eight hydrogen refueling stations (integrated energy service stations) with a hydrogen refueling capacity of seven tons/day; among them, four hydrogen refueling stations including Chongli Taizicheng Hydrogen Refueling Station (integrated energy service stations) provide guaranteed supplies for 816 hydrogen fuel cell vehicles for the Beijing 2022 Winter Olympics and supply hydrogen energy for the main torch of the Winter Olympics.
- Stepped up research on CCS/CCUS industrial layout, kicked off 18 CCUS evaluation and test projects, with 570,000 tons of CO₂ was injected in 2021.



New Materials

- We prepared the *Plan for New Materials for Refining and Chemical Operations*, focusing on 26 new materials in seven categories and implementing projects to accelerate new materials development, with a planned annual production capacity of more than 3 million tons.
- The tire products made of functionalized solution-polymerized styrene-butadiene rubber manufactured by Dushanzi Petrochemical reached Class A and Class B of the EU tire labeling rules in rolling resistance and wet skid resistance respectively.

Green Products

We optimize the energy consumption structure by upgrading energy products. In 2021, we supplied gasoline and diesel up to the "Beijing VIB" standard, a higher environmental standard, in Beijing to meet the market demand for high-quality oil products; we also significantly increased the production of low-sulfur marine fuel oil to expand the market share of our green marine products.

All-out Efforts to Secure Winter Supply

In 2021, robust growth in global demand for natural gas and increasing supply led energy prices in the international market to rise sharply. Domestically, natural gas demand was "not low in the off-season" and "even much higher in the peak season", which, coupled with soaring demand as a result of extreme weather and some other factors, posed more daunting challenges in terms of securing natural gas supply in the winter of 2021-2022.

In the face of the complex situation of securing natural gas and amid COVID-19 cases (prevention and control) across China in the winter of 2021-2022, CNPC comprehensively upgraded management, set up a leading group for winter natural gas supply, and established an overall coordination mechanism for

winter supply and four special task forces; we mobilized and coordinated the entire industrial chain and all links to work together to form a diversified and interconnected resource guarantee system combining domestic gas, imported pipeline gas, imported LNG, and gas from gas storage. Our domestic gas volume, imported gas volume and the gas production volume of gas storage increased by 5.5%, 24.4% and 5.5% respectively, laying a solid resource foundation for natural gas supply in the winter of 2021-2022. During the winter supply period, we produced 61.35 billion cubic meters of natural gas and supplied 98.57 billion cubic meters of natural gas to the market, increases of 11.6% and 11.1% respectively over the previous heating season.

Increasing natural gas supply

- Changqing Oilfield: Daily natural gas production remained above 128 million cubic meters in 2021, and the annual natural gas production surged by 1.69 billion cubic meters compared to 2020, an increase of 3.8%.
- Tarim Oilfield: Daily natural gas production topped 90 million cubic meters, and it added 3 billion cubic meters of natural gas supporting capacity.
- Southwest Oil & Gas Field: Produced 35.42 billion cubic meters of natural gas in 2021, reaching a record high of 35 billion cubic meters.
- Qinghai Oilfield: Completed maintenance and repair on schedule before winter, and increased natural gas production by nearly 3 million cubic meters per day.

Increasing gas production in gas storage

Our gas storage facilities produced a cumulative total of 12.3 billion cubic meters of natural gas, a year-on-year increase of 10.8%, and used 156 million cubic meters of natural gas for peak shaving on a peak day.

- Liaohe Oilfield gas storage cluster: Put into operation gas treatment units with a total capacity of 18 million cubic meters of produced gas before winter, with a maximum daily peak shaving capacity of 30 million cubic meters.
- Xinjiang Hutubi Gas Storage: Had a maximum daily emergency peak shaving capacity of 30 million cubic meters in winter and more than 10 billion cubic meters of inventory.
- Xiangguosi Gas Storage in Southwest Oil & Gas Field: Gas storage exceeded 4 billion cubic meters.

Coordinating emergency LNG supply

LNG terminals in Tangshan and Jiangsu delivered a maximum of 90 million cubic meters per day in the heating season.

- Four LNG storage tanks were newly built and put into operation at Tangshan LNG Terminal, bringing the cumulative unloading amount to more than 40 billion cubic meters.
- Two 200,000-cubic-meter LNG storage tanks were put into operation in Jiangsu LNG Terminal to deliver natural gas, making the area the first 10 million-ton LNG receiving base in the Yangtze River Delta region and bringing the annual receiving and unloading capacity to more than 10 billion cubic meters for the first time.

Imported natural gas

- 32.9 billion cubic meters of natural gas were imported during the winter supply period, a year-on-year increase of 5.4%.

Achievements in Securing Natural Gas Supply

Natural gas exploration	• Proved two trillion-cubic-meter giant gas provinces in the Bozi-Dabei section of the Tarim Basin and the north slope of Central Sichuan Palaeohigh in the Sichuan Basin • Established in Luzhou the first trillion-cubic-meter deep shale gas reserve area in China • Added 1,095.1 billion cubic meters of proven geological reserves of natural gas and 365.8 billion cubic meters of recoverable reserves
Natural gas production	• Strengthened the construction of key natural gas production capacity projects in Keshen, Bozi-Dabei, Sulige, Jingbian, Shenmu, Luzhou, Changning and Weiyuan • Built 24.5 billion cubic meters of natural gas production capacity throughout the year • Domestically produced 137.8 billion cubic meters of natural gas, a year-on-year increase of 5.5%, with 60.9% of natural gas sold being domestically produced
Natural gas import	• Strengthened communication and coordination with resource countries, actively promoted the increasing supply of natural gas from Russia in advance, and carried out price negotiations on imported pipeline gas and review of imported LNG prices • Imported 81.12 billion cubic meters of natural gas throughout the year, a year-on-year increase of 24.4%
Natural gas sales	• Sold 205.55 billion cubic meters of natural gas throughout the year, a year-on-year increase of 11.3%
Natural gas infrastructure	• Completed and put into operation the Tangshan LNG emergency peak shaving support project and the expansion project of Jiangsu LNG Terminal Phase III, providing strong support for securing supply in winter

Power the Winter Olympics for a Shared Future



As the official oil and gas partner of the Beijing 2022 Winter Olympics and Paralympics, CNPC has been actively fulfilling its responsibilities and missions. Contributing to the events by providing all-weather and all-round services for the Winter Olympics, CNPC is powering the "Green Winter Olympics".

Enhancing oil and gas supply to facilitate the Beijing 2022 Winter Olympics in an all-round way

Coordinating the production and sales across the entire industry chain, CNPC is making overall efforts in upstream and downstream sectors to provide sufficient and stable oil and gas supply for the Winter Olympics.

- We have prioritized 26 refueling (gas, hydrogen) stations near the venues and along the transportation lines for the Winter Olympics to provide refueling services for the events. Among them, five are mobile skid-mounted facilities specially built for high-altitude areas, which can ensure the supply of oil products in extremely cold environments.
- We are implementing oil products quality upgrading, to provide Beijing with cleaner Beijing VIB standard automotive gasoline and diesel to help improve the air quality for the Winter Olympics. During the Winter Olympics, CNPC supplied up to over 2,500 tons of oil products.
- The company's subsidiary Kunlun Lube has launched engine oils that exceed the highest international standards, to serve new energy vehicles (NEVs) and gear them up for the Winter Olympics with high technology.
- We carried out the "Gem Flower Warms Your Homes" campaign, enhanced the guarantee for residential gas consumption in winter, and ensured a stable gas supply for the Olympic events.
- We have developed a special plan for the LNG supply in Winter Olympics areas, especially Chongli, and coordinated LNG terminals and plants to provide backup gas supply for the Winter Olympics.
- We took an active part in the carbon neutrality campaign for the Beijing Winter Olympics and Paralympics, and contributed over 200,000 tons of carbon dioxide equivalent of VERs certified by the state.

Comprehensively accelerating the green transition and actively powering the Winter Olympics with hydrogen energy

Taking the event as an opportunity, CNPC actively promoted the deployment of hydrogen energy, to provide cleaner fuel for the Winter Olympics.

- The green hydrogen independently developed and produced by CNPC ignited the first torch fueled by green hydrogen in the history of the Winter Olympics in the past 100 years.
- We have successively built four hydrogen refueling stations in Beijing and Hebei, to serve nearly 1,000 hydrogen fuel cell vehicles (FCVs), supplying 206 tons of hydrogen fuel.
- We have built "Five-in-One" comprehensive energy service stations (integrating oil refueling, gas refueling, hydrogen refueling, electricity recharging and convenience store services) in Olympic areas in Yanqing, Beijing, to provide one-stop energy supply for the events and the public.
- Completed and put into use two by-product hydrogen purification units at a capacity of 2,000 standard cubic meters per hour and 500 standard cubic meters per hour respectively in North China Petrochemical Company, which produced hydrogen with a purity of over 99.999% for the Winter Olympics.

Reinforcing the atmosphere for the Winter Olympics and actively promoting the Winter Olympics culture

Supporting the Olympic Games and China's sports undertakings with zeal, CNPC has rolled out the campaign to help upgrade services for the Winter Olympics, and encouraged its employees to actively participate in order to jointly promote the Winter Olympics culture.

- We built over 1,600 Winter Olympics themed model stations and retail counters for Winter Olympics licensed merchandise, and issued 1 million Winter Olympics themed refueling cards to provide a wider range of people with services for travel and ice & snow sports.
- We carried out a series of Winter Olympics themed activities, so that the Winter Olympics culture reached hundreds of enterprises, thousands of communities, and 10,000 gas stations.
- We actively carried out the recruitment and training of volunteers for the Winter Olympics, and encouraged employees to participate in services for the sporting events.

Carrying forward the Oil Worker Spirit and making all-out efforts to serve the Winter Olympics

As an accommodation and catering service provider for the villages of the Beijing 2022 Winter Olympics and Winter Paralympics, CNPC's subsidiary Huayou Group set the goal of "strive for perfection and excellence" to provide high quality services for the Winter Olympics.

- We set up a field service team of 1,357 people to meet the accommodation and catering services of villagers.
- We received over 500 letters of gratitude, over 650 praise cards, and 12 silk banners of appreciation.



Climate Change

We respond to the *Paris Agreement* adopted by the United Nations Climate Change Conference, and actively contribute to China's efforts to peak CO₂ emissions before 2030 and achieve carbon neutrality before 2060. We take the initiative in international climate governance, and actively respond to climate change.

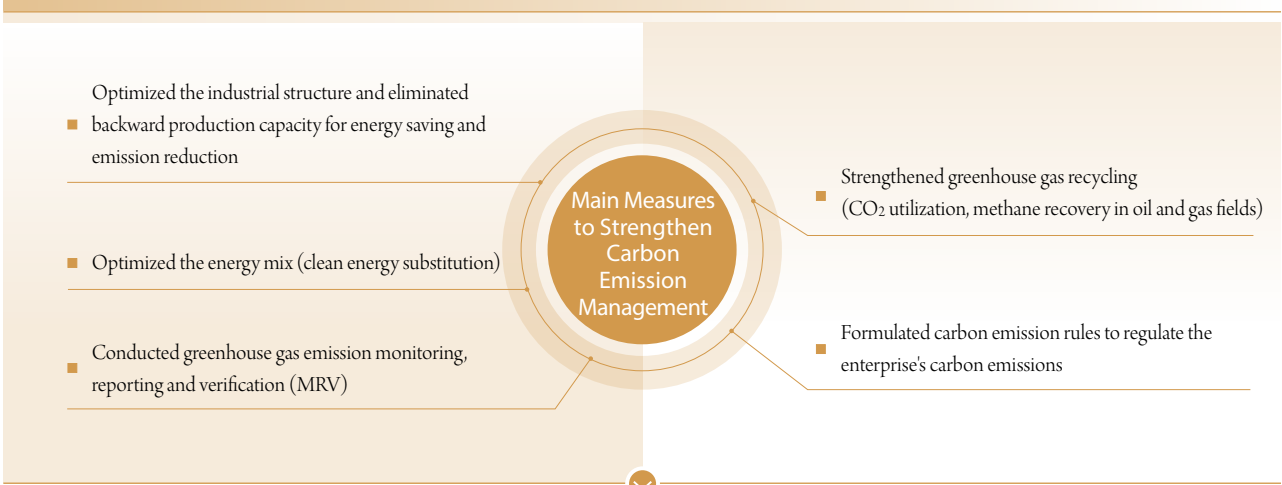
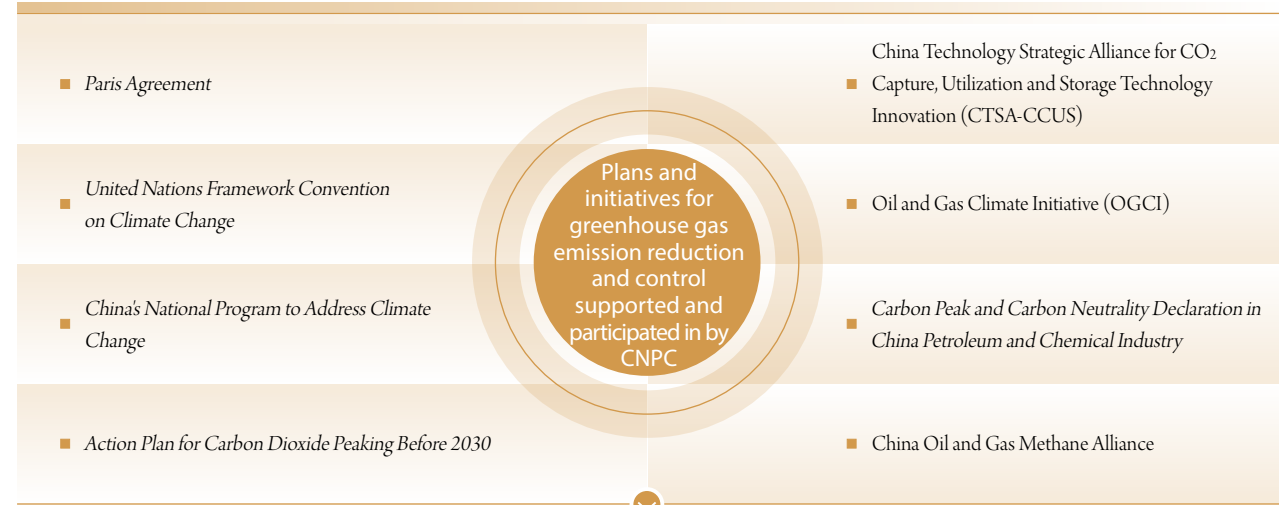
Carbon Emission Management

We pay close attention to greenhouse gas emissions. In 2021, we continually improved our carbon emission control system, strengthened methane emission reduction management and control, took an active part in the construction of the carbon market, and deeply participated in cooperation with the global oil and gas industry to cope with climate change. In a drive to push for the green and low-carbon transformation of the oil and gas industry, we initiated and established the China Oil and Gas Methane Alliance.



In 2021, we accelerated the building of our carbon emission management and control system, initially putting in place a "1+3" system for carbon emission

- *Guiding Opinions on Strengthening the Control of Greenhouse Gas Emissions*
- *Administrative Measures for Carbon Trading*
- *Administrative Measures for the Statistics and Assessment of Greenhouse Gas Emissions*
- *Administrative Measures for Voluntary Greenhouse Gas Emission Reduction Projects*

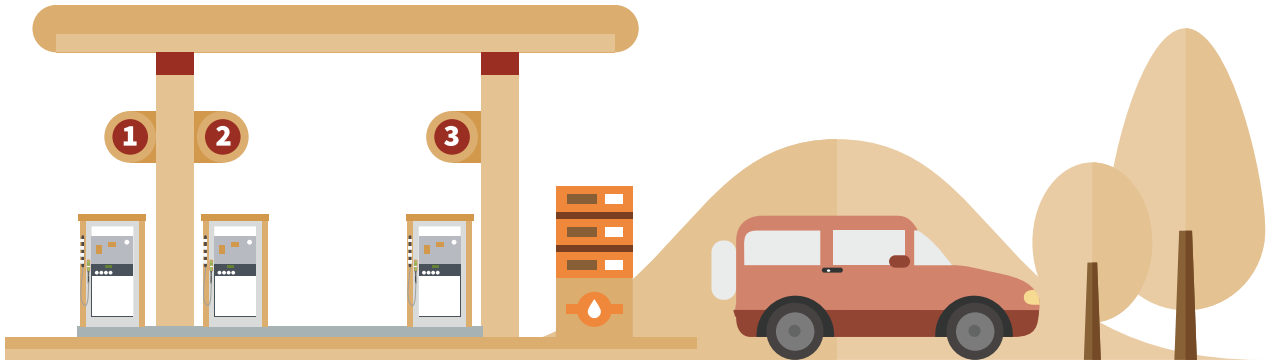


Air Pollutant Emission Management

We continue to carry out comprehensive treatment of waste gas, fully respond to the national call for keeping our skies blue and the requirements set forth in the *Action Plan for Comprehensive Control of Air Pollution in Autumn and Winter 2021-2022*, promote the comprehensive treatment of volatile organic compounds (VOCs) and other waste gases, and improve our management and control. In 2021, emissions of volatile organic compounds in the refining and chemical business decreased by 7.4% year-on-year.



We strengthen VOCs emissions management and promote VOCs control efforts and benchmarking in our refineries. In 2021, the VOCs emissions of our refining and chemical enterprises decreased by 7.4% year-on-year.



Case

CNPC Actively Participates in OGCI Activities to Promote Carbon Emission Reduction in the Industry

As the sole member of OGCI in China, CNPC is deeply involved in international cooperation to address climate change, and works with other OGCI members to contribute to China's drive to address climate change and build agreeen, low-carbon oil and gas industry.

Jointly signing and issuing the *OGCI Strategic Reform Principles*

Chairman Dai Houliang and chairmen/CEOs of other member companies jointly signed and issued the "OGCI Strategy". Through the document, they undertook to achieve carbon neutrality (net-zero emissions) in the business activities under the jurisdiction within the time specified in the *Paris Agreement* and accelerate the realization of the temperature control target; upgrade the carbon and methane intensity targets of oil and gas operations by 2025, and propose to achieve the zero emission of regular flaring by 2030; and enhance technical cooperation throughout the industry chain in the fields of energy efficiency improvement, low-carbon hydrogen energy, low-carbon fuels and CCUS.

Releasing the *OGCI China CCUS Commercialization White Paper*

The *OGCI China CCUS Commercialization White Paper*, whose preparation was led by CNPC, was officially released on September 23, 2021, providing relevant national ministries and commissions and the Company with an effective reference for CCUS development planning for the "14th Five-Year Plan" period.

Promoting CCUS technology research and development and project application

We were committed to global standard governance and platform development, carried out CO₂ storage potential assessment and compilation of the *Catalogue of CO₂ Storage Resources*, and assessed CO₂ storage resource sites in 715 oil and gas fields and saline aquifers in 18 countries/regions; we also developed the CCUS Industry Promotion Center Platform and provided interactive global hub search tools.

Committing to sustainable transportation development

We carried out the economic and technological evaluation of hydrogen storage and transportation and the evaluation of the development potential of hydrogen energy in leading global economies, and created the development roadmap for the transportation of low-carbon/zero-carbon energy such as hydrogen energy, methanol, and electricity; studied the technical and economic feasibility of the application of CCUS in shipping; and invited global organizations in oil, hydrogen energy, road transportation and other industries to hold international seminars to boost the huge emission reduction potential and innovation in new technologies in the transportation sector.

Carrying out industry exchanges and cooperation

In partnership with Saudi Aramco, the Company led the research on emission reduction technology in key transportation areas, fully participated in CCUS research, and cooperated with relevant international organizations in carbon credit, carbon monitoring and carbon sequestration, studied the feasibility of incorporating CCUS into the international carbon market, endeavored to promote the commercial application of CCUS, and contributed to the low-carbon transformation of the international oil and gas industry.



Carbon Emission Reduction during Production

While supplying society with clean oil products, we pay high attention to the optimization of our own energy consumption mix. We also address our carbon emissions and our carbon footprint during production and operation, and endeavor to reduce the consumption of fossil fuels and reduce energy intensity. We regard energy efficiency as the resource of first priority, enhance oil and gas commodity rates and energy utilization efficiency, and accelerate green and clean replacement. In Huabei Oilfield, Tarim Oilfield and other areas, we use renewable energies such as geothermal energy and solar energy to reduce carbon emissions during production.



The Company actively participates in the construction of the national carbon trading market. On July 16, 2021, the Company participated in the first day of online trading at the Shanghai Environment and Energy Exchange, making it one of the 10 enterprise groups that obtained the "Certificate for First Day Trading on the National Carbon Market".



Market-based Mechanism for Carbon Reduction

We actively participate in the construction of the carbon trading market. We are the co-founder of the Tianjin Climate Exchange (TCE), the first comprehensive emissions trading institution in China. In 2021, we mobilized all compliance enterprises to actively participate in carbon trading, encouraged the development of voluntary emission reduction projects, stepped up our own efforts in carbon emission reduction, and fulfilled our contracts for carbon quota compliance.

Energy Cooperation

In the face of mutation-induced global resurgences of COVID-19 cases, increasing geopolitical turmoil caused by global power games, a complicated business environment amid overseas security risks, and accelerated green transition of the industry driven by global carbon emission reduction, we work with host governments and partners to guarantee the smooth operation of cooperation projects, resulting in steady progress in overseas oil and gas cooperation.

International Energy Cooperation

The Company manages and operates 90 oil and gas cooperation projects in 32 countries around the world, and has built a production network covering five oil and gas cooperation areas in Central Asia-Russia, the Middle East, Africa, the Americas and Asia-Pacific. In 2021, CNPC's overseas operating production of oil and gas was 177.95 million tons of oil equivalent, with equity production of 101.39 million tons, 83% of which was contributed by countries along the Belt and Road. Our cooperation has effectively secured energy supply from the northwest channel, the northeast channel, the southwest channel and the eastern maritime channel, the four strategic oil and gas channels in China.

Relying on the Central Asia-China Gas Pipeline, the Kazakhstan-China Oil Pipeline, the Russia-China Crude Pipeline and Russia-China Gas Pipeline, the Myanmar-China Oil & Gas Pipeline and the eastern maritime channel that cover the core areas of the Belt and Road, we effectively promote the green transition of the energy mix and make our due contributions to meeting energy demand in host countries and supporting local economic development.

E&P Cooperation 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 unconventional resources. Projects including the Changbei Project, the Zhaodong Project, the South Sulige Project and the Northeast Sichuan Project made steady progress. Our domestic oil and gas production equivalent in cooperation with international partners amounted to 11.941 million tons in 2021.

International Trade

By optimizing the resource mix, we make every effort to promote the high-quality development of international trade. In 2021, overcoming unfavorable factors such as oil price fluctuations, rebounds of COVID-19 cases in some areas and frequent meteorological disasters, we managed to achieve the stable operation of the oil and gas industry chain, steady gains in the value and benefits of the industry chain, and further deepening of globally integrated operations. We conducted international trading in over 80 countries/regions around the world, and imports and exports of petroleum and petrochemical products totaled 493 million tons.



Responsible Operations

2

We are always committed to the principle of "people-centered, quality foremost, safety first, environment prioritized" to achieve "zero accidents, zero pollution and zero injuries". We regard minimizing the environmental impact, reducing emissions and providing high-quality products and services as the strategic foundation of the Company's sustainable development. We continue 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.



Safe Operation

We actively promote the building of a long-acting safety system and comprehensively enhance our work safety management. In 2021, the Company maintained a stable improvement in safety performance.

Quality, Health, Safety and Environment (QHSE) System

The QHSE management system is a guideline that must be followed by all employees in production and operation activities. The Company integrates the requirements of the QHSE management system into its daily work, and ensures the effective operation of the system and the normal operation of all links, in order to guarantee the safe and steady development of the Company. In 2021, the Company developed the quantitative audit standard for the QHSE management system (Version 3), and performed two full-coverage QHSE audits of more than 120 production and operation units.

Management System and Performance Assessment

In 2021, in accordance with the new *Law of the People's Republic of China on Work Safety*, we incorporated safety management in our industrial management, business management and production and operation, and improved the work safety responsibility system and the Company-wide work safety responsibility list. We defined the work safety responsibilities of managers, and deployed, implemented, inspected and assessed work safety requirements together with our daily operation, and ensured the concrete and strict fulfillment of work safety by all employees.

Work safety debriefings and inquiry

To conduct safety debriefing for newly appointed head of an enterprise, and inquire the leadership team of an enterprise with serious safety hazards.



Safety and environmental protection performance assessment

- Safety and environmental protection performance assessment**
To review employees' performance in safety and environmental protection, with the assessment results included in performance appraisals
- Safety and environmental performance capability assessment**
To review employees' capabilities in safety and environmental protection, with the assessment results serving as a reference for determining whether the employee is qualified for the job transfer



0.0014 person /million work hours
Work safety accident mortality rate



In 2021, we continued to improve the safety management system through revising the following

- Regulations on Management Responsibilities for Work Safety and Environmental Protection
- Measures for the Supervision and Administration of Work Safety
- Measures for the Safety Management of Road Traffic
- Measures for the Management of Major Hazardous Sources



Hazard Control

We attach equal importance to both prevention and control of hazards, and build a long-acting mechanism for hazard control, in order to ensure all hazards are treated in a timely and effective manner, and to enhance the overall safety performance of the Company.



In 2021, we

- Launched "special campaigns to rectify violations", developed special activity plans, set up special working groups, intensified supervision, earnestly implemented the accountability system, and strictly fulfilled work safety responsibilities.
- Steadily advanced the Three-year Action Plan for Special Ratification of Work Safety, and strengthened risk prevention in key areas such as oil depot tank farms, gas storage, urban gas and well control.
- Carried out risk assessment of large oil and gas storage bases for hazardous chemicals, and comprehensively rectified potential hazards of oil depots.



Safety Risk Management

We implement a dual-prevention mechanism covering risk prevention and control and hazard identification and treatment for production safety, and improve the sound classified risk prevention and control system, in order to eliminate safety risks and potential hazards to prevent accidents.



In 2021, we

- Comprehensively carried out safety supervision of key construction projects such as the Guangdong Petrochemical construction project, the Tarim and Lanzhou ethane-to-ethylene production projects and risky construction projects such as shutdown overhaul of refining and chemical enterprises, promoted a grid-based safety supervision mode for high-risk operation sites, and prevented and defused major security risks in the operation process.
- Strengthened the proactive assessment of safety risks and responded in a targeted way to different seasons and special periods such as holidays.



Work Safety Emergency Management

Following the principle of "Prioritizing emergency preparedness, combining emergency preparedness and emergency rescue", we constantly improve the emergency management mechanism and enhance emergency rescue capabilities. In 2021, we revised the plan for emergencies at the headquarters, put in place a "1+21" emergency plan system, and compiled the new version of the emergency material catalog; we also completed the building of the national base for the emergency rescue of hazardous chemicals, carried out emergency drills, and continued to enhanced our emergency response capabilities.

Supplier Safety

We include suppliers and contractors in our safety management, and conduct systematic management of their access, selection, training, use, evaluation and assessment, in order to prevent and reduce accidents caused by suppliers and contractors. In 2021, we strengthened the selection of high-quality strategic contractors, strictly implemented measures for "zero tolerance for unqualified contractors", and carried out training for key positions of contractors and refused to hire those who failed the examination.

CNPC Supply Chain Safety Management Process

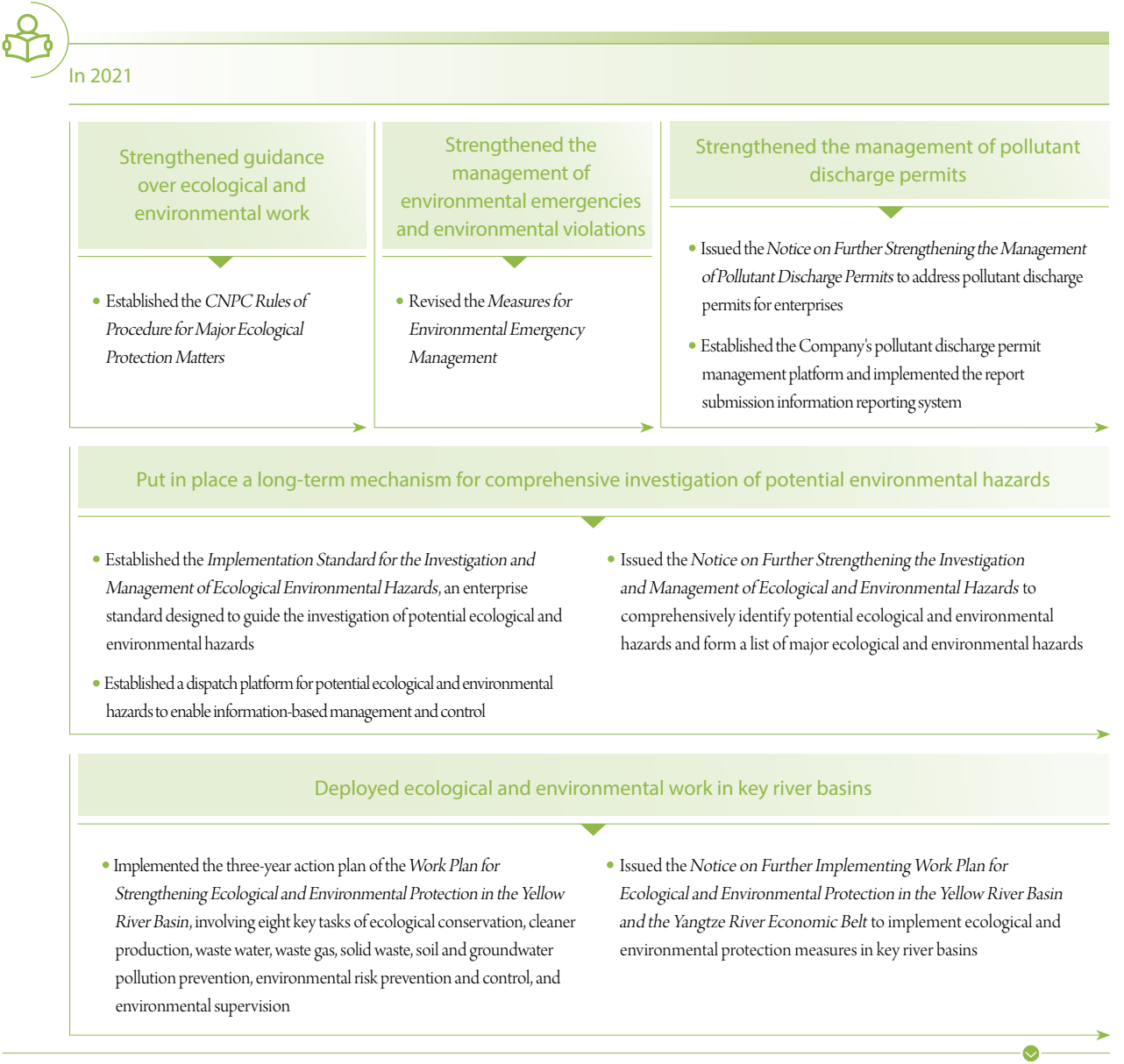


Overseas Security Management

Personnel safety has always been an overriding priority in our operations. We established and improved the social security management system, fully strengthened social security risk prevention and control, and continuously enhanced emergency response capabilities. In 2021, we registered no deaths from security fatalities in our overseas projects.

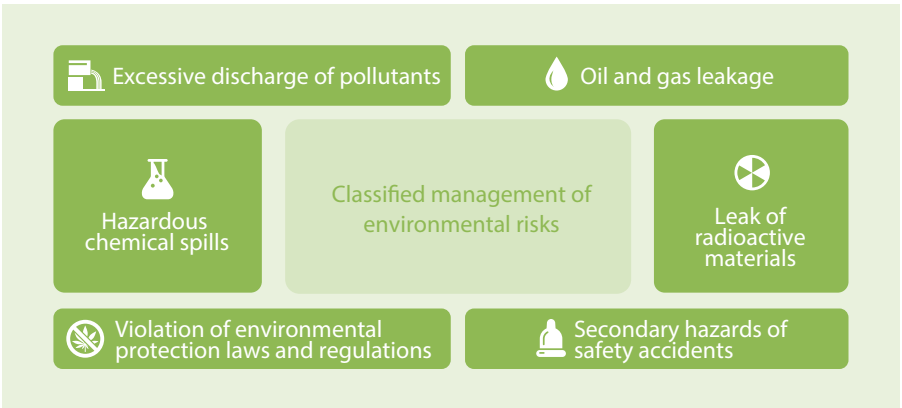
Environmental Protection

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. We endeavor to enhance resource utilization efficiency, resolutely win the battle against pollution, promote energy conservation and emission reduction, strive to achieve environmentally-friendly and resource-saving operations, and vigorously advocate ecological civilization, in order to achieve harmonious development with the environment.



Strengthening Risk Prevention and Control

In 2021, we implemented an environmental risk management system dominated by latent hazard control, continuously improved the "three-level prevention and control" facilities, carried out environmental risk identification and assessment, determined "six major environmental risks", and established an environmental risk monitoring system. Based on the environmental risk level in the areas where our enterprises were located and their environmental performance, we rated the risks of all enterprises discharging pollutants in order to take targeted measures in terms of risk management and control. All environmental emergency monitoring agencies carried out emergency environmental monitoring drills for environmental emergencies to continuously improve the environmental risk prevention and control capabilities of enterprises. In 2021, no major environmental accidents were reported.



Sustainable Management 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.

Management of Water Resources

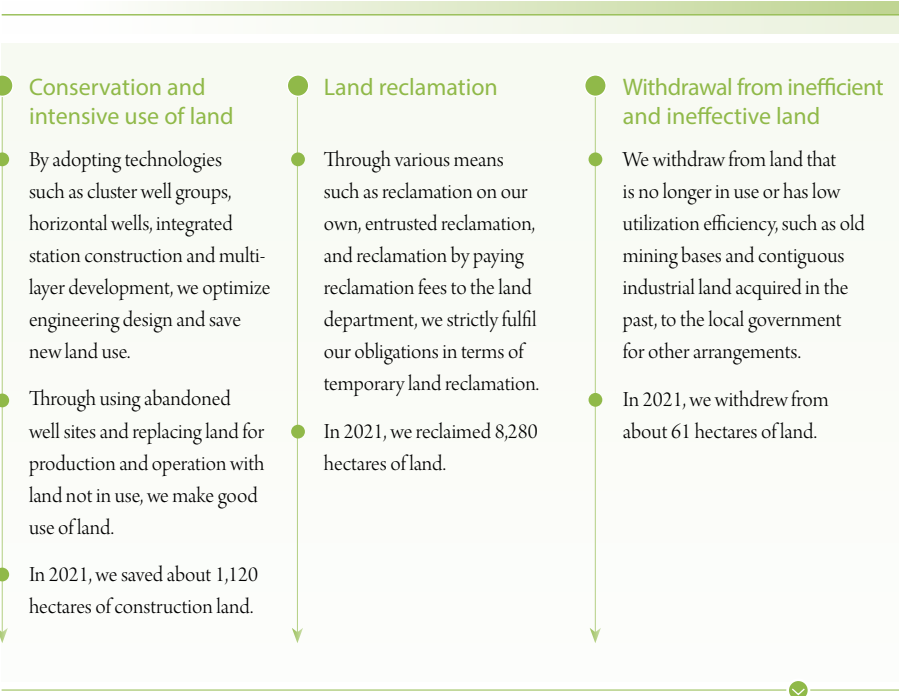
We endeavor to improve water utilization efficiency and realize sustainable use of water throughout various links in our production and operation activities. Through strengthening water utilization process management, adopting technologies for water-saving and wastewater treatment and recycling, and integrating water-saving indicators into performance evaluation and other measures, we worked to reduce the use of fresh water. Our fresh water consumption decreased by 2.38% year-on-year.

We fully implement national requirements for pollution prevention and control, effectively keeping our waters clear and conserving the ecology in the Yangtze River and the Yellow River. We continue to improve the energy efficiency of wastewater treatment, carry out cleaner production, vigorously implement source emission reduction, and strengthen the utilization of unconventional water resources and sewage reuse.



Land Resources Management

Based on the principle of scientific siting, efficient use, proper protection and timely restoration, we promote land protection and intensive land use throughout various links in our production and operation activities. 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 2021, we saved 1,120 hectares of land.



Solid Waste Management

We attach great importance to the prevention and control of solid waste, especially hazardous waste. In 2021, we stepped up our efforts to control hazardous waste pollution, effectively promoted the special treatment of oily sludge, and achieved the elimination of oily sludge; we established and improved the CNPC solid waste supervision system, carried out information-based, dynamic management and control of the entire process of hazardous waste generation, collection, storage, transportation, transfer, utilization and disposal of solid waste, especially hazardous waste through our solid waste management and control platform, in order to ensure reportable, verifiable and traceable solid waste data.



In drilling, the Company extensively promotes and applies zero mud discharge technology, strengthens resource recycling and utilization, and reduces the generation of solid waste from the source. The technology was applied to 9,768 wells throughout the year, and was adopted by 11 enterprises including Daqing Oilfield, Liaohe Oilfield and Tarim Oilfield.

Energy Management

Giving priority to saving and through accelerating energy-saving technological innovation, we take a variety of measures such as optimizing the refining and chemical energy system and intensifying technology research and development, promotion and application to reduce energy consumption. In 2021, the Company developed the *Work Plan for Energy Conservation and Energy Efficiency Improvement (2021-2025)*, advanced clean energy replacement, and advanced oil and gas loss control and energy-saving control at the source. We saved 740,000 tons of coal equivalent throughout the year.



Improving energy efficiency

- Pushed for energy management and control: Established the work plan for energy management and control during the "14th Five-Year Plan" period; Developed the annual implementation plan objectives.
- Implemented energy-saving and water-saving technological transformation, investing RMB 450 million in energy-saving and water-saving projects.
- Carried out energy-using equipment testing and evaluation, testing and evaluating the energy utilization of more than 13,000 sets of heating furnaces, pump units and other energy-consuming equipment.
- The 1.1 million t/a ethylene plant of CNPC Dushanzi Petrochemical won the first place in energy efficiency ranking among ethylene benchmarking producers by the petroleum and chemical industry in 2020.

Conservation of Biodiversity and Natural Habitats

We strictly abide by the *Convention on Biological Diversity*, *United Nations Convention to Combat Desertification (UNCCD)* and the *Ramsar Convention*, raise our ecological awareness of the need to respect, accommodate to and protect nature, and integrate biodiversity conservation into the entire operations of the Company acting on the principles of prioritizing resource conservation and environmental protection and letting nature restore itself. We also actively participate in global biodiversity governance, protect ecological environments such as wetlands, rainforests, oceans, and endangered species of wild animals and plants, and jointly build a harmonious and beautiful home for all things.

We strengthen ecological restoration, consistently inspect production facilities in sensitive areas, and never cross the ecological red line. For new projects, we step up whole-process environmental supervision to ensure their compliance with laws and regulations. For existing facilities, we withdraw from them in an orderly manner to prevent environmental pollution. In 2021, we reported no incidents related to damage to biodiversity.



As of 2021, a total of 95 oil and gas fields have been taken as national and provincial demonstration units to turn mines green and ranked at the forefront of central SOEs.

Biodiversity Conservation

Biodiversity is the basis for human survival and development, the blood and foundation of the Earth's life community, and provides human beings with rich and diverse production and living necessities, a healthy and safe ecological environment and a unique landscape culture. Humans must respect nature and conform to its ways. We must conserve biodiversity to protect nature and live in harmony with it.

Our commitments

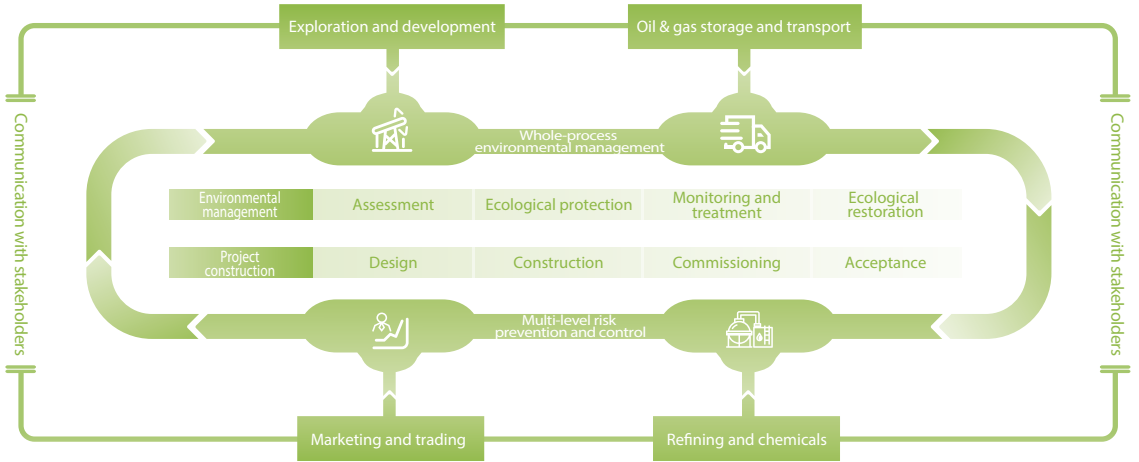
We actively respond to the UN's *2030 Agenda for Sustainable Development*, the *Convention on Biological Diversity* and other global initiatives and international conventions as well as the *Opinions on Further Strengthening Biodiversity Protection* issued by the Chinese government, strictly implement relevant international and domestic laws and regulations, and contribute to the accomplishment of the goal: "to protect, restore and promote sustainable use of ecosystems, and halt biodiversity loss".

Our actions

We are devoted to reducing the potential influence on the environment and biodiversity during production and operation. We exercise management and control at the source and implement environmental management in the full life cycle throughout the industry chain.



Protecting demoiselle cranes in Changqing Oilfield



We

- Published the *Environment Protection Program*, exited from environmentally sensitive areas in an orderly manner, explored the establishment of biodiversity conservation demonstration areas, launched green fields building campaigns, and strived to contribute to safeguarding ecological space, protecting biodiversity and improving ecological functions.
- Endeavored to establish sound biodiversity conservation management systems and working systems, and incorporated biodiversity risk assessment into the full life cycle management of projects.
- Protected, restored and promoted sustainable use of land, made every effort to reduce the occupation of cultivated land, protect soil and water, restore vegetation, and strived to restore the ecological environment of the operating area.
- Actively promoted the biodiversity conservation concept, and organized employees to participate in publicity and education activities such as "World Wildlife Day" and "World Environment Day", to enhance employees' awareness of biodiversity conservation.

Biodiversity Conservation

Our practice

Conservation of natural habitats for plants and animals

Exiting from nature reserves in an orderly manner to restore the ecological environment

Located in Panjin City, Liaoning Province, the Liaohekou National Nature Reserve is the largest wetland nature reserve in China. Nearly 100 species of migratory birds such as red-crowned cranes, gray cranes and swans migrate here from southern China to stay and feed. It is also a breeding ground for the black-billed gull, the world's rare water bird.

In order to protect the living environment of rare birds in wetlands, PetroChina Liaohe Oilfield Company formulated a work plan for the shutdown and withdrawal of production facilities and ecological restoration in Liaohekou National Nature Reserve, and carried out work for the shutdown and withdrawal of production facilities and wetland ecological restoration. It exited from all well stations in the core area, and all well sites were restored.

Protecting the Amazon Rainforest

CNPC's Andes project is located in the hinterland of the Amazon rainforest, a world-class environmental protection zone. The Company strictly abides by Ecuador's environmental protection laws and regulations, establishes and implements strict safety and environmental protection systems and procedures in accordance with the highest standards in the industry, keeps carrying out environmental impact assessments and implements environmental management

plans during oilfield construction and operation, regularly monitors water and gas discharge, noise and biological diversity, and protects the ecological environment of the rainforest. The Andean project has won many awards such as the Environmental Protection Award, the Enterprise Management Innovation Award from BIZZ and other internationally renowned institutions, and the "Outstanding Petroleum Technology Development Award" jointly granted by the Society of Petroleum Engineers (SPE) and the Ministry of Energy and Non-Renewable Natural Resources of Ecuador.



Green development of Liaohe Oilfield

Protecting habitats for migratory birds in wetlands

The Halfaya Oilfield Project in Iraq is close to the Hawizeh Wetland, the only wetland in Iraq protected by the *Convention on Wetlands* for being highly ecologically sensitive. The project strictly implements HSE standards, reduces the pollution caused by human activities to the wetlands, carries out waste and garbage recycling in the oil

area, advocates good environmental protection awareness and habits among contractors and local residents, and strives to protect the habitats of migratory birds in the wetlands. The project has won recognition and trust from the Iraqi government and partners, and its environmental management has been ISO14001 certified.

Conservation of rare animal and plant species

Protecting Populus euphratica in Tuha

Santanghu Oil Region is located in Yiwu County, Xinjiang, and is home to nearly 80,000 *mu* of *Populus euphratica* forests. There are tens of thousands of *mu* of *Populus euphratica* forests around the Company's Tuha Oilfield operation area alone. In order to avoid the impact of exploration and

development activities on the growth of *Populus euphratica*, we take measures such as oil well displacement, oilfield road detours, and station streamlining to avoid *Populus euphratica* forests to the greatest extent possible. During the development of the entire oilfield, none of the local 10,000-*mu* *Populus euphratica* forests were damaged.

Protecting the Arabian Oryx

The Arabian oryx is native to the Middle East and the Arabian Peninsula, with corresponding sanctuaries established in Saudi Arabia, the United Arab Emirates and other countries. In the United Arab Emirates, we strictly abide by local environmental protection policies and relevant laws and

regulations on animal and plant protection. At the project construction site, we conduct surveys and assessments of the surrounding environment in advance, record the route, time and location of the Arabian oryx, and develop avoidance, mitigation and transfer plans. The life of the Arabian oryx has not been affected by the construction.

Products and Services



High-quality chemical products in 2021

370,000 tons
Ethylene production increased by 370,000 tons year-on-year

620,000 tons
Synthetic resin production increased by 620,000 tons year-on-year

40,000 tons
Synthetic rubber production increased by 40,000 tons year-on-year



According to the China Brand Power IndexSM (C-BPI) 2021 brand ranking and analysis report released by Chnbrand, a renowned brand rating institute, CNPC ranked first by overall rating for the fifth consecutive year.



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 the high-quality development of the Company by consistently improving product, project and service quality.

Quality Control

In 2021, CNPC continued to enhance quality management, with a focus on carrying out quality training and education, fulfilling quality responsibilities, strengthening quality supervision, and promoting quality improvement. No major quality accidents were reported.

Major Progress in Quality Management in 2021	
Key work	Content
Improve product quality	- Established and implemented plans for upgrading Beijing VIB oil products, and completed tasks for oil product upgrading - Promoted the upgrading and improvement and brand building of chemical products, and increased the quality of ABS resin and other products
Carry out quality culture building	- More than 450,000 employees attended the total quality management contest for central government supervised and managed SOEs - Carried out special actions such as quality index benchmarking analysis
Strengthen quality supervision and check	Randomly checked 912 batches of purchased materials, identified 67 unqualified batches, and strictly handled unqualified products and suppliers

Quality Products and Services

Providing Quality Products. By strengthening technological innovation and optimizing the product mix, we provided safe, reliable, high-quality and environmentally friendly products for our customers. In 2021, we further increased the proportion of high-end, high-performance products. The output of high-grade gasoline increased by 12.5% over the previous year; the output of chemical products increased by 5.5% over the previous year; and the output of high-performance products such as synthetic resin and synthetic rubber increased by 6% and 4.3%, respectively.

Promoting Service Level. We constantly improve consumer experience and provide consumers with convenient and efficient services. In 2021, we worked to create new service scenarios, and put into operation the Zhangjiakou Taizicheng Hydrogen Refueling Station (integrated energy service station) and eight hydrogen refueling stations for Beijing Jinlong Integrated Energy Supply Station (integrated energy service station); as of the end of 2021, our 22,684 serve stations provided services throughout 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR.

Service network	- Our services covered 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR - Our sales capacity exceeded 110 million tons per year - We provided 9 million person-time services every day
Service category	- We have 22,700 domestic gas stations - We have 20,200 uSmile convenience stores - We have issued more than 203 million Kunlun refueling cards
Consumer satisfaction	- We carried out 9,020 station-time joint inspections and mystery customer visits - Customer satisfaction rate for follow-up calls of CNPC reached 97.8%

Supply Chain Management

We uphold the supplier management philosophy of global sourcing, open cooperation, resource sharing, mutual benefit and win-win relationships, and exercise a life cycle closed-loop management of suppliers from admission to withdrawal. The Company implements responsible procurement, and adequately identifies and controls possible environmental and social risks in the supply chain, such as safety and health, labor rights, environmental protection and business ethics. The Company requires its suppliers to carry out lawful and ethical business operation, fulfill corporate social responsibilities and continuously improve the quality of suppliers.

CNPC is committed to interconnection and interaction with its suppliers, using various means to understand their concerns and claims via a well-established mechanism for constant communication. We supervise suppliers' health, safety, environmental protection and compliance operations, communicate with suppliers in various aspects such as green procurement and sustainable development, and improve coordination in the supply chain.



93.16%
93.16% of Tier 1 manufacturers have been ISO14000 certified

91.48%
91.48% of Tier 1 manufacturers have been ISO18000 certified

98.01%
98.01% of Tier 1 manufacturers have been ISO9000 certified



Key Initiatives for Supply Chain Management	
Improved systems	- Completed the centralized revision of 57 management systems for projects, materials, bidding and equipment, and established a "1+N" management system framework - Comprehensively sorted out business processes, determined four first-level, 21 second-level, 55 third-level, 57 fourth-level, and 72 fifth-level process catalogs, and drew 66 flow charts to regulate business behavior
Optimized resources supply	- Regularly admitted suppliers, and added 265 suppliers for 107 first-class materials - Continued to improve the resource pool structure, reducing 3,106 agents and traders, a reduction of more than 30%
Exerted strict management	- Promulgated regulations on the dishonest behavior of bidders, and established a column on CNPC's bidding and tendering network to regularly publish dishonest behavior information - Handled 147 problematic suppliers in a timely manner according to regulations, effectively preventing supply risks

Management Principles

Compliance, quality, efficiency, benefit

Supplier Management Philosophy and Principles

Management Philosophy

Global sourcing, open cooperation, resource sharing, mutual benefit and win-win relationship



Employee Development

3

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.



Employees' Rights and Interests



Male	69.57%
Female	30.43%

25 and under	1.55%
26~35	19.26%
36~45	32.16%
46~55	38.07%
56 and over	8.96%



6.51%

Ethnic minority employees accounted for 6.51% of CNPC's workforce



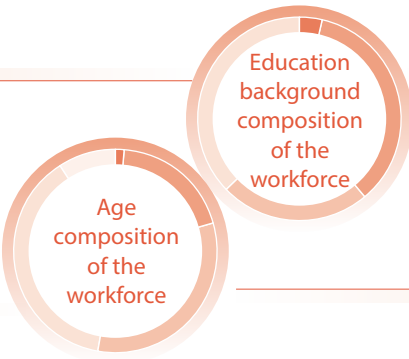
Strictly complying with international conventions on labor and human rights, we respect and protect employees' legal rights and interests, and advocate an employment policy based on equality and non-discrimination. We continue to perfect the compensation and benefits system, and improve democratic mechanisms, 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 equal and non-discriminatory employment policies, 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; always aim to promote employment in ethnic minority areas and poverty-stricken areas, and actively provide jobs as required. We safeguard the rights and interests of women. Specifically, we strictly implement the regulations on pregnancy, maternity and parental leave for female employees, and guarantee that female employees enjoy equal compensation and benefits and career development opportunities. By the end of 2021, the Company had 70 female senior executives and 1,462 female middle-level managers.



In 2021, CNPC recruited 6,599 graduates, 40.5% of them holding a master's degree or above.



Compensation and Incentives

Through efforts such as improving business performance, scientific and technological innovation, and developing a quality workforce, we continued to improve our salary and welfare system and the market-oriented salary distribution mechanism. We adjusted and improved the special incentive and restraint measures for better business performance, and improved the salary distribution system commensurate with the price level of the labor market and linked to the efficiency of the Company. Our salary structure was optimized and adjusted by giving priority to those working at the frontline at the grassroots level, in key and challenging positions and to professional and technical personnel in salary distribution. We implemented talent-driven corporate development program, deepened talent-oriented incentives, improved differentiated salary incentives, and stepped up incentives for high-end management talents, core technology R&D talents, and high-skilled leading talents, so that employees can better realize their own value.

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' congresses and adopted a transparent approach to factory affairs. Specifically, we have standardized the content, procedures and model of our open system for factory affairs by clarifying the rights and obligations, organizational system, and working processes of the workers' congresses. By doing so, the Company has improved our enterprise democratic management.

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



Career Development Platform

We provide a broad arena for employees to realize their self-value by addressing their need for professional development at different stages, respecting their career planning, and creating an innovative environment, system and mechanism and building a resource guarantee system for their development.

Education and Training

We keep applying modern corporate training concepts, and carry out "Internet Plus training" to tap the value of human resources. We identify talent training needs, and deliver diversified, differentiated job training through continuous innovation. In 2021, we established the *Plan for Employee Education and Training during the "14th Five-Year Plan" Period* to carry out standardized classified and graded job training; we scientifically develop job training standards and content systems focusing on cultivating the spirit of innovation, professional capabilities and the capability of innovation and performance, in order to make our training more standardized, scientific and normalized. The Company invested RMB 1.52 billion in training throughout the year, providing 318,000 person-times of offline training and 14.36 million person-times of online training.

 Talent Training Program	Talent echelon performance capability enhancement program	Talent succession training for managerial personnel, technical personnel, international personnel and skilled personnel
	Special talent capacity and quality improvement program	Training for personnel in areas such as new energies, new materials, new business, marketing business and new recruits



318,000 employees
attended face to face training

14.36 million employees
attended online training

26.62 million class-hours
were delivered

100%
of frontline personnel were trained

100%
of high-caliber technical personnel
and critical operational personnel were
trained



Major Training Programs for Core Personnel

	• Leadership improvement training courses • Key manager training courses • Training programs for division-chief managers at key positions • More than 2,000 middle and senior managerial personnel trained
	• Courses for improving the capabilities of candidates for Key Talent Project • Expert refresher programs at Tsinghua University, Beijing Institute of Technology and other colleges/universities • More than 900 key professional and technical personnel were trained
	• Training programs for international backup talents • More than 140 key international young personnel trained
	• Demonstration training courses for high-caliber technical personnel • Academic seminars for technical experts • Demonstration training courses for team leaders to improve competence • More than 500 high-caliber technical personnel trained



Liu Li, supervisor of oil production team 48, No.6 production area, No.2 production plant of Daqing Oilfield received the honor of "Craftsman of the Nation—Person of the Year"

Career Development

We attach great importance to the career planning of employees and support their career development to realize their value. In 2021, we continued to deepen professional-rank personnel management and improve the incentive mechanism, to fully unleash the potential of employees and provide technical professionals with independent, unimpeded and stable career development paths; we established China's first innovation fund for skilled personnel to support front-line skilled personnel in technical skills research and achievement transformation. Our achievements won 53 national invention patents and 193 were applied for.



In 2021, we

- Recruited employees on the basis of both their moral integrity and their professional competence, with priority given to the former
- Established a democratic, open, competitive and merits-based talent selection mechanism
- Pushed for 10 projects for business development through talent building
- Established and improved the mechanism to train & groom, attack & pool, appraise & motivate, and use & develop talents



In 2021, we actively promoted
talent fostering

1 person
was elected as an academican of the
Chinese Academy of Engineering

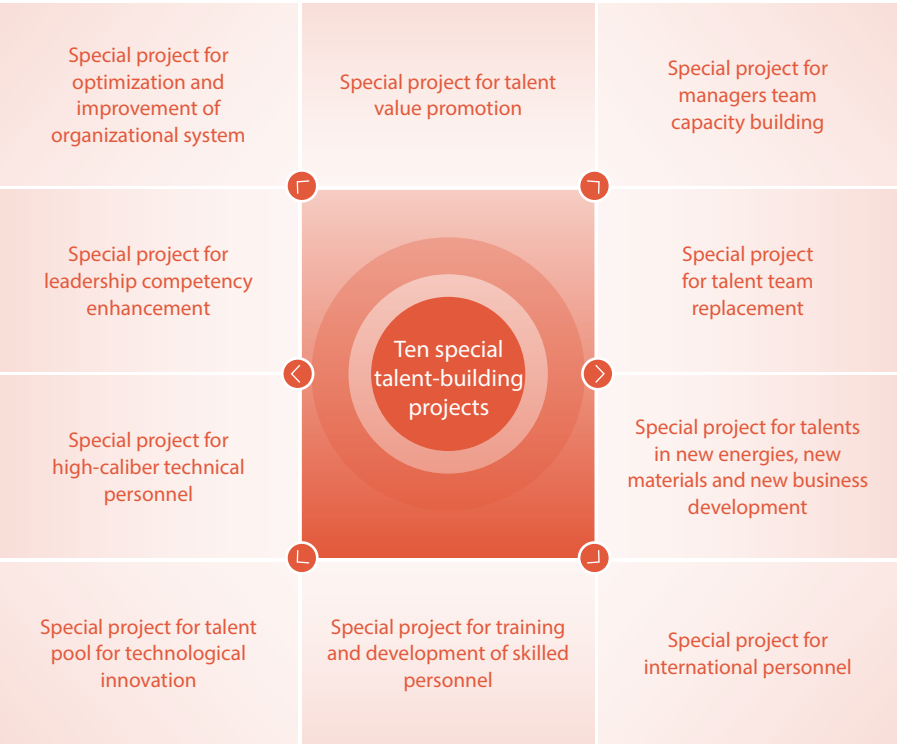
2 person
won the Chinese Skills Award

2 person
were elected as fellows of the Chemical
Industry and Engineering Society of
China (CIESC)

3 person
won the Fourth Outstanding Engineer
Award

14 person
were named the "National Technical
Expert"

1 person
was named among the "Top Ten Annual
Figures of Craftsmen of the Nation"
in the petroleum and petrochemical
industry



By the end of 2021, CNPC had 24 academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering, 360 on-the-job experts entitled to the Government Special Allowance, 264 chief technical experts and 536 technical experts. We had set up 92 Skilled Expert Studios, including 28 National Skilled Expert Studios.

Rewards and Incentives

We provide spiritual and material rewards/incentives to employees through selecting model workers, advanced workers, technical experts and academic leaders, and encouraging our employees to enter for international and domestic award contests. We believe in the importance of growth and development of technical staff, and select young key research staff to take part in national and company-level technology programs for domestic and overseas key projects, major works and research bases.



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.



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. In order to promote innovation and practices in overseas employment management, we formulated the *Management Methods for Overseas Local Employees*. 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 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 80 countries/regions. Through unremitting efforts to strengthen and improve career development channels for overseas local employees, we have put in place localized, regionalized and internationalized career development channels, leading a number of local employees to take up management positions. In 2021, international employees and local employees accounted for 86.67% of our overseas workforce.



Rate of local employment in major overseas business cooperation areas



Case

Building an International Competitive Stage and Speeding up the Cultivation of Overseas Talents

In June 2021, the Company held the first vocational skills competition for overseas employees to build a skills integration platform and accelerate training on vocational skills of overseas employees.

The competition, themed around "developing skills along the Belt and Road", was held online simultaneously in China, Kazakhstan, Uzbekistan (Bukhara) and Myanmar (Mandalay). More than 3,000 local employees of the Company's overseas projects entered the competition, with 16 individual awards and 8 group awards presented. The vocational skills competition has built a platform for overseas employees to demonstrate their skills. It not only helps local employees develop themselves, but also helps the host countries enhance the level of vocational skills.

Respect for Cultural Diversity

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

Physical and Psychological Health

Cherishing employees' lives and attaching great importance to their health, we continue to improve working conditions, strive to provide a favorable working environment for the physical and psychological health of our employees 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 2021, we implemented the *Plan for Implementing the "Healthy China 2030" Outline*, issued the *Administrative Regulations for Occupational Health and Employee Health* and *Administrative Measures for Employee Occupational Health Examination*, and launched the Publicity Week of the *Law on Prevention and Control of Occupational Diseases*. Occupational health monitoring was provided to all employees, and the occupational health examination rate was 100%; the detection rate of occupational hazards in the workplace was 99.92%; and the establishment rate of employee occupational health monitoring archives was 100%.

99.92%

The detection rate of occupational hazards in the workplace was 99.92%

100%

The occupational health examination rate was 100%

100%

The establishment rate of employee occupational health monitoring archives was 100%

Key Actions for Occupational Health in 2021

 Occupational health management	• Issued the <i>Regulations on Occupational Hygiene and Employee Health</i> • Issued the <i>Administrative Measures for Employee Health Examination</i> • Issued the <i>Administrative Measures for Non-production-related Employee Fatality Incident</i> • Promoted the implementation of critical illness insurance programs
 Popularization of occupational health knowledge	• Launched the Publicity Week of the <i>Law of the People's Republic of China on the Prevention and Control of Occupational Diseases</i>, with 950,000 participants • Carried out the quiz activity of "Learning Health Management Systems, Enhancing Self-Health Awareness", with more than 1.28 million participants
 "Health-caring enterprises" building	• Issued the <i>Plan for Promoting the Building of Health-caring Enterprises</i> and the <i>Standard for Acceptance of Health-caring Enterprises</i> to promote the building of health-caring enterprises • A total of 13 enterprises and units met the requirement of being a health-caring enterprise in 2021
 Overseas employee health management	• Comprehensively built a "four-in-one" overseas medical security system featuring monitoring, early warning, prevention and control and treatment • Carried out special work on malaria prevention and control in Niger, Chad and South Sudan to improve malaria prevention and control capabilities • Provided health examination, evaluation, monitoring and management for all employees going to work abroad, with nearly 20,000 employees physically examined and evaluated in 2021 • Successfully treated six critically ill employees through transnational medical transfer and remote consultation
 Overseas pandemic prevention and control	• Established an on-going pandemic prevention and control system for international business • Followed the strategy of enforcing prevention and control measures targeting people, objects and environment simultaneously, strictly exercised grid management based on different categories of personnel and different functions of places • Enhanced the pandemic prevention capabilities of on-site employees through intensive knowledge publicity and training. Promoted COVID-19 vaccination rollout to speed up the building of prevention barriers

Mental Health

We took measures to continuously improve the employee vacation system. We implemented the Employee Assistance Program (EAP), set up hotlines and a website for psychological counseling, and carried out various forms of training on mental health improvement, in order to build a positive and healthy mindset among employees. In 2021, the Company opened a mental health consultation hotline to provide psychological assistance to employees and their families; we carried out the Employee Assistance Program for overseas employees to provide employees with mental health consultation services, in order to guide them to release mental stress and enable them to work well and live happily.



Case

First "Mental Health Center" Established in West Africa

West Africa is one of the tough regions where CNPC's overseas projects are located. In 2021, the Company built in N'Djamena, the capital of Chad, the "Mental Health Clinic", the first psychological experience center to provide employees with entertainment and scientific education. The clinic is equipped with scientific equipment such as emotional testing and stress relief training to help employees scientifically evaluate their sleep, anxiety and depression indexes. At the same time, targeted training such as concentration and emotional regulation are carried out based on the evaluation results to help employees enhance their ability to control their emotion and stress. In addition, an online and offline emotional training system for family members for overseas employees has been developed to enhance family cohesion and the sense of companionship.



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 improve the poverty alleviation and aid mechanism, in order to improve the employees' quality of life.

Employee Assistance

We continuously carried out employee help and support activities, focusing on the settlement of difficulties facing employees, including retirees, employees' family members and family dependents of the deceased. In 2021, we got to fully understand the difficulties confronting employees in their daily life, health status, children's education, etc., and took targeted measures to help employees in need, especially those in extreme poverty, through a variety of effective campaigns such as charitable voluntary service and student subsidies.

Cultural and Sports Activities

We set up cultural and sports associations, which are responsible for organizing a variety of cultural activities, sport competitions and knowledge games to enrich employees' spare time and enhance their overall quality and team cohesion.



Public Welfare

We always adhere to combining our business growth with the sustainable development of the host countries in which we operate. We aim to become an outstanding business enterprise in host countries by attaching importance to people's livelihoods 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.



Rural Revitalization



In 2021, CNPC

300 million

earmarked RMB 300 million in assistance funds in China

600

implemented 600 assistance projects, including ecological forests for environmental protection, planting and breeding bases and smart granaries

984 people

dispatched 984 assistance managers

70,500 people

trained 70,500 grassroots leaders, prosperity-pursuing pacesetters and technical personnel

900 million

purchased and sold RMB 900 million worth of agricultural products in areas that had been lifted out of poverty

500,000 people

benefiting 500,000 people



Poverty alleviation is an important topic in sustainable development around the world. We have responded positively to China's strategy for rural revitalization and the initiatives of the United Nation's *2030 Agenda for Sustainable Development*. Making full use of our business advantages and based on the characteristics of resources in the recipient areas, we take a variety of measures to enhance the capacity of the local economy for self-development and effectively align efforts to consolidate and expand the achievements in poverty alleviation with efforts to promote rural revitalization. These measures include deepening support for characteristic industries, expanding the scope of intellectual medical assistance, stepping up assistance through boosting consumption, helping local areas create more jobs locally, and continuing to promote the implementation of key projects.

We strive to explore solutions to rural revitalization and make positive contributions as an oil company. In 2021, we earmarked nearly RMB 300 million in rural revitalization and pairing assistance, implemented nearly 600 assistance projects, and carried out various assistance measures in a high-quality manner.

For the third consecutive time, CNPC has been honored by the Ministry of Civil Affairs with the China Charity Award, the highest-level government award in the field of public welfare and charity in China.

Awards

At the 17th International CSR Forum hosted by China News Service and *News China*, CNPC was honored as the 2021 Responsible Corporate of the Year.

Case CNPC Pursues Common Development with Tibet

CNPC has long been committed to securing oil and gas supply, integrating enterprises with localities, and reducing poverty through development of local industries and boosting consumption, making contributions to the high-quality development of Tibet. At the exhibition on the achievements of central SOEs in assistance to Tibet during the "13th Five-Year Plan" held by the SASAC, the Company was highly recognized for its outstanding contributions in completing investment, paying taxes, providing assistance funds for free, reducing poverty by assistance by boosting consumption, and recruiting Tibetan college graduates.

CNPC Tibet Marketing Company has established 173 gas stations across 74 counties, one district area and six cities, supplying 83% of the refined oil in the Tibet Autonomous Region.

We invested RMB 430 million in the YalaXiangbu project. The Gesang spring mineral water produced by the project was sold nationwide through CNPC's more than 20,000 gas stations, creating tens of millions of yuan in revenue for poverty alleviation every year.

During the "13th Five-Year Plan" period, CNPC Tibet Marketing Company spent more than RMB 17 million in 72 projects to help farmers and herdsman get rid of poverty.

During the "13th Five-Year Plan" period, CNPC's enterprises in Tibet provided more than 1,900 jobs, mainly for local herdsman and their children, including more than 350 new graduates from colleges and universities in Tibet.



Changting ecological demonstration forest in Fujian Province



CNPC Writes "Stories of Changting": From Poverty Alleviation to Rural Revitalization

Changting, an old revolutionary base in western Fujian, used to be one of the four areas hit hardest by soil erosion. This area was plagued by barren mountains, turbid waters, barren soil and impoverished people. Over the past nine years, CNPC has worked hand in hand with Changting to successively make mountains green and lift the local people from poverty, achieving leapfrog development in three stages, namely ecological governance, poverty alleviation and rural revitalization.

We spent RMB 40 million to plant more than 770,000 trees, creating the largest ecological landscape forest and wealth-creation forest in soil erosion control in Fujian. Today, surrounded by lucid waters and lush mountains, Changting has been transformed from the worst-hit area for soil erosion in China to a demonstration county for ecological progress, offering the "Changting Experience" in soil erosion control.

The vast expanse of ecological demonstration forest for soil and water conservation built by CNPC has not only improved the local environment, but also brought long-term economic benefits to the local area. Over the past nine years, the forest has generated a total of more than RMB 51 million in revenue, bringing benefits to more than 2,300 people and directly lifting more than 100 people out of poverty.

As a paired-up assistance project, the main units of the Changting Catalyst Project of CNPC Lanzhou Petrochemical have been successively put into operation since 2019. A total of 23,000 tons of catalyst products with excellent quality and performance have been produced, bringing nearly RMB 300 million in revenue. With an estimated production capacity of 50,000 tons per year, the annual output value of CNPC (Changting) Catalyst Co., Ltd. is estimated at RMB 1 billion, which is expected to generate RMB 100 million in profit and tax; the utilization of its resources and chemical raw materials will generate about RMB 40 million in profit and tax, which is expected to increase the economic aggregate of the Longyan area by RMB 1.5 billion.



CNPC's Contributions to Rural Revitalization

In 2021, China secured a complete victory in its fight against poverty. However, shaking off poverty is not the finishing line, but the starting point of a new life and new endeavors. Without the vitalization of the countryside in China, there can be no national rejuvenation.

CNPC thoroughly implements China's rural revitalization strategy. By giving full play to its resource advantages and based on the development needs and actual conditions of the areas under CNPC's poverty alleviation program, it continues to deepen poverty alleviation through industrial development, ramps up poverty alleviation by boosting consumption, and advances educational assistance. It consolidates and builds on achievements in poverty alleviation, bolsters sustained development in areas that had been lifted out of poverty, and promotes the effective connection between poverty alleviation and rural revitalization.



In the safflower industrial park built partly by CNPC in Qapqal

Laying a solid foundation through industrial development

Focusing on empowering rural areas with the means to prosper, CNPC takes targeted measures to support the development of local characteristic industries. Based on projects such as local food processing, planting and breeding bases, and tourist homestays, it helps improve the industrial chain, enhances market competitiveness and risk resistance capabilities, explores new assistance measures in digital agriculture, environmental protection industry and other fields, and promotes the diversified and sustainable development of rural industries.

2021, the Company spent RMB 77.4 million in Nilka, Toli, Chabchal, Qinghe, Jeminay and Barkol to help build nine projects such as the wetland ancient poplar scenic spot and national reserve forest, as well as six livelihood projects such as the water-saving irrigation project.

Building bridges through boosting consumption

CNPC makes full use of the advantages of its own channels and platforms to help develop markets for local specialty products.

In 2021, the Company issued a number of documents including the *Notice on Work for Recommendation of Products for Consumption Assistance for 2021*, bringing more than 3,000 types of products from more than 200 counties lifted out of poverty across China to 144 units and departments of the Company. We also sell characteristic agricultural products through different channels, such as more than 20,000 gas stations and uSmile convenience stores, and have developed a series of high-quality products that have been well received nationwide, producing good economic benefits and brand effects. In addition, through multiple channels and in multiple forms, such as trade fairs and online sales, we also enhance the brand awareness and reputation of the products under our consumption-based assistance program. Linking poverty-stricken farmers with broad markets, our sales terminals have served as a bridge bringing local specialty products from farmland to dining tables.

Case

Laying a Solid Foundation for Building a Moderately Prosperous Society in the Guangxi Zhuang Autonomous Region

We consider supporting the sustainable development of local characteristic industries as an important means for rural revitalization. In Guangxi, we partnered with local enterprises to develop the Liuzhou snail rice noodle under the brand of "Luoxianghaoke". Since it was launched, the product has created jobs for more than 150 local residents in more than 10 surrounding villages, mostly stay-at-home mothers who used to take care of their children at home. With these jobs, they have realized their dream of working without leaving home.

In addition, we also help local fruit farmers sell fruit, and strive to build offline platforms for the sales of specialty fresh products inside and outside the region. Featured fruits grown abundantly in areas across Guangxi, such as Fuchuan navel oranges, Rong'an kumquats and Baise mangoes, are sold offline at gas stations. We have also accurately explored new forms of customer consumption, opened online platforms such as the "Mall for Guangxi Products", and developed small ecological specialties into a large industry that boosts rural revitalization. We help people in the Guangxi Zhuang Autonomous Region increase rural incomes through multiple channels both online and offline.



This job has not only brought us a considerable income, but also offered us hope for a bright future, said a 37-year-old local female worker of the Zhuang ethnic group.

CNPC's Contributions to Rural Revitalization

Building a future through educational assistance

We have innovatively carried out training on rural revitalization, new forms of agriculture and animal husbandry, digital agriculture, industrial operation and other matters, and cultivated a number of local experts through such means as online classrooms, video teaching and allocation of resources to the countryside for rural education, in order to effectively enhance the self-development capacity of local people in areas lifted out of poverty. In 2021, a total of 70,500 people were trained, including 24,400 grassroots managers at county, township and village levels, 23,700 rural revitalization leaders, and 22,400 professional and technical personnel, laying a personnel foundation for rural revitalization. CNPC has also continued to promote teacher and doctor training, and regularly sent teachers and doctors to the countryside.

Promoting good and up-to-date practices and trends through cultural assistance

We focus on carrying on fine traditional rural culture, in order to promote rural civilization, good family virtues and simple folkways. When developing the local economy, we integrate ourselves with local culture to inherit and improve the traditions. For example, in Taiqian County and Fan County of Henan Province, two counties famous for ancient Jiang Ziya culture and the lotus industry respectively, we have built the brands of "Jiang Ziya's Ferry" and "Fragrant Lotus in North Henan". We have also piloted the construction of "Petroleum Bookstores" in many places to regularly circulate the latest books to introduce people economic policies and knowledge of planting and breeding, and to enrich the cultural life of local residents.



Xuhang Program for Educational Support

In 2021, we earmarked 11 million yuan in 20 high schools in 8 provinces, covering 3,397 poverty-hit students.



Case "Teacher Training Program" in Support of Rural Education Revitalization

In September 2021, CNPC continued the "Teacher Training Program" by improving the teaching platform and training content. Based on the platform of Beijing Normal University, the Company conducted online learning and research programs for around 20,000 teachers in primary and middle schools in rural areas in 10 counties in Xinjiang, Jiangxi, Guizhou and Henan. Featuring mainly online learning and targeted training, the project cultivated excellent educators for sustainable educational development, promotes equal access to education, and laid a solid foundation for the development of education in counties lifted out of poverty in central and western regions.

Building a good environment through ecological assistance

Staying true to the principle that lucid waters and lush mountains are invaluable assets, we continue to promote the improvement of the living and ecological environment in the areas under our assistance program. According to the requirements of the *Five-Year Action Plan on Improving Rural Living Environment*, we have made progress in the Toilet Revolution and sewage treatment. We spent RMB 45.21 million to help nine villages in Qinghe and other counties carry out household garbage and sewage treatment and improve toilet facilities for 286 rural households.

With fruitful results in poverty alleviation, we embark on a journey toward rural revitalization. Compared with poverty alleviation, rural revitalization has a larger scope, wider fields and higher standards. CNPC will, with a stronger sense of responsibility and mission and based on local conditions, take multiple measures to promote the revitalization of industries, a skilled workforce, culture, ecology and other areas in rural areas that have been lifted out of poverty.



Supporting Education

Education is an important cornerstone of national rejuvenation and social progress. Regarding supporting education as an important part of the fulfillment of our social responsibilities, we give young people equal access to education and help them pursue their goals and boost their personal growth. We continue to support education by providing scholarships and grants for students from underprivileged families. In 2021, with a total donation of RMB 4.47 million, CNPC Scholarships were granted to 685 students at 17 colleges and universities.

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



The "CNPC Scholarships" program was established in 2001 and has been renewed every five years. The number of recipient universities has been expanded from 13 to 17. Over the past 20 years, we have helped 14,000 students accumulatively.

Promotion of Local Development

Industries are the foundation for the development of cities, while cities are where industries are developed. CNPC is committed to stable energy supply for economic development, and its own development is also inseparable from the understanding, support and help of governments, communities and residents. We insist on the principle of open cooperation for mutual benefit, expanding our joint-venture cooperation with local stakeholders. 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, in order to realize "urban development through boosting industries, industrial development through city prosperity, and city-industry integration".

Case South Xinjiang Gasification Project Boosts Local Economic Development

Tarim Oilfield accelerates the process of "gasification of southern Xinjiang". As 10 pipelines including the branch line in Daqiao Township were completed and put into operation, a dozen towns and villages in Aksu and Kashgar now have access to natural gas, making them models for the building of a beautiful countryside. Relying on major projects in support of Xinjiang, such as providing natural gas to improve people's well-being, the natural gas industry cluster formed in southern Xinjiang has attracted more than 300 enterprises from outside Xinjiang to settle down and has created nearly 30,000 local jobs. So far, Tarim Oilfield has supplied a total of 45 billion cubic meters of gas to five prefectures in southern Xinjiang, making positive contributions to improve the production and living conditions of local people of all ethnic groups, as well as economic and social development.

Volunteer Activities

We promote and advocate volunteerism, and organized "Gem Flower" Young Volunteer Activities in ecological civilization, rural revitalization, pandemic control and community services, etc.

In 2021, we had 3,027 young volunteer service organizations, with 139,000 young volunteers, conducting 8,969 service activities.

Contributions to the Development of Overseas Communities

We respect the cultures and conventions of the host countries in which we operate. 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 socioeconomic growth, build a community of shared future, and create socioeconomic value to jointly promote the development and prosperity of local communities.



Outward bound activities for Chinese and foreign employees in Latin America

Enhancing Communication with Local Communities

We attach great importance to communication with all social parties in host countries, especially the stakeholders. 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, enhance mutual understanding, and achieve a win-win situation in cooperation.

Manage Our Impact in Local Communities

We strive to make a positive impact on community development through carrying out responsible operations, which is not only through more employment opportunities, more tax contributions, and more business opportunities to local suppliers, but also through protecting the local natural environment, safeguarding the human rights of community residents, and involving ourselves in public welfare undertakings.

Case Community Association, a Bridge for All Parties to Communicate

In consultation with the northern and southern communities in the oil province, Andes Petroleum Ecuador Ltd., an oil company partly held by CNPC, established a community association with seven "office desks", namely employment, wages, bidding and tendering, material supply, dispute resolution, environmental protection, and health and safety. All of these "office desks" are composed of community workers from Andes Petroleum Ecuador Ltd., social workers sent by the government and community representatives. All matters involving the relationship between Andes Petroleum Ecuador Ltd. and the communities are resolved by the three parties at the "office desks".

Manage Our Impact in Local Communities			
	Potential Positive Impact	Potential Negative Impact	How We Mitigate Potential Risks
 Local Communities	Job Opportunities	Land Acquisition, Relocation, Environmental Impact	• Before the construction of a project, we conduct assessments of the social and economic impact, such as the requirements of local communities, human rights, cultural heritage, involuntary resettlement, etc. • We listen to the demands of local communities along the locations of our operations to protect the interests of residents. We uphold standard operation 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 in a timely manner to ensure operational transparency. • We prioritize the hiring of local people, conduct skills training for them, arrange them to participate in project construction and increase their income. • We strictly follow safety and environmental protection regulations, formulate management systems on environmental protection that involve participation of all stakeholders and closely monitor the environmental impact throughout the entire operation. We immediately restore the surface right after the completion of the operation so as to minimize the impact of production activities on the ecological environment.
 Capacity Building for Local Businesses and Industries	• Business Opportunities • Capacity Building • Technology Transfers	Risk of neglecting local products and services and failing to share advanced technology with the local communities	• By leveraging local social resources, we actively support the development of local enterprises, focus on local sourcing of products and services, and strengthen cooperation with local enterprises in terms of technical services to promote the development of relevant small and medium-sized enterprises. • We support the talent training program of the petroleum industry within the host country.
 Community Consultation and Participation	Residents adjacent to operation locations will be given fair access to express their concerns and understand how they will be affected	Risk of neglecting the concerns raised by communities surrounding operation sites	• We set up the Community Committee to provide public welfare assistance to the community residents and supervise the progress and implementation of public welfare projects. • We have established a joint communication mechanism connecting companies with government associations, companies with community associations, and companies with employees to strengthen engagement with stakeholders.
 Social Investment	We conduct early consultation with community members when implementing social investment in order to meet actual needs and bring long-term benefits	Risk of social investment overlooking actual needs and failing to bring long-term benefits	• We plan reasonable community investment projects based on the local socioeconomic development plans of the host country and the needs 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 enhance the literacy of residents and lay the foundation for the sustainable development of the local society.

Case

Working with Overseas Communities to Fight COVID-19

In 2021, in the face of the raging COVID-19 pandemic, CNPC continued to fight the pandemic in countries where it operates by such means as donating pandemic prevention materials, providing vaccination services, sharing pandemic prevention experience, and establishing joint prevention and control mechanisms with local governments and communities.



We

- Provided funds to local governments and hospitals to purchase medical equipment for pandemic prevention and control
- Donated masks, protective clothing, oxygen equipment and other pandemic prevention and control materials to local communities
- Worked with the local health department to assist the vaccination of surrounding communities
- Distributed daily necessities such as rice, flour, grain and oil to local families in need to help them pull through the pandemic

In 2021, we carried out a variety of community public welfare activities overseas

Kazakhstan

- Made donations to Aktobe Region to fund public welfare activities such as building local table tennis sports centers, funding local small and micro businesses, and purchasing saplings to support greening
- Supported sports and cultural development in Shymkent, and provided funds for local youth tennis competitions; improved boxing training venues and purchased equipment; supported the development of local rhythmic gymnastics and football; provided long-term funding to Shymkent Children's Ballet School and funded its clothing and performances

Iraq

- Helped the building of infrastructure in Halfaya, conducted demand research, gradually launched public welfare projects such as education, medical care, and livelihood facilities, provided food for community residents and helped them maintain roads and build infrastructure such as bridges, culverts, high-voltage lines and ditches; helped build a number of mobile homes and provided school buses and school supplies; donated electrical appliances and furniture to local community clinics, and donated money to patients

Chad

- Implemented the "Sweet Community" plan to help local people build wells to provide surrounding communities with access to drinking water
- Participated in and supported the "Peace Cup" Half Marathon, the National Women's Day Celebration, the "Chinese Bridge" Chinese Proficiency Competition for Foreign College Students Chad Finals, and the National Anti-Malaria Publicity in recent years
- Provided assistance to sickle cell anemia hospitals, orphanages and other institutions

Indonesia

- Earmarked special funds to improve the education, medical health, environmental sanitation, infrastructure and living conditions of community residents every year
- Won dozens of social responsibility awards from the central government, local governments and associations of various kinds in Indonesia in the past three years



CNPC International (Niger) helped local residents repair water wells, replace water pumps and install new solar power generators. As of July 2021, the company has built 101 water wells in the local area, effectively addressing water shortages facing local residents.

Local Environmental Protection

We strictly comply with the laws and international standards on environmental protection in the countries in which we operate, and follow the sustainable development principle of "striking a balance between business development and environmental protection", in order to minimize the impact of production activities on the local natural ecology.

Case

"Environmental Protection" and "Ecological Conservation" as Top Priority in Chad Upstream Project

The upstream project of CNPC International (Chad) Co., Ltd. is located in Chari-Baguirmi, south of Chad's capital N'Djamena, an area full of tropical grasslands. The project is committed to ecological restoration and biodiversity protection. It makes full use of post-treatment qualified sewage water from the camps to water bushes and jungles, significantly expanding the green area around the oilfield camps. Through the "pit-free treatment" of drilling waste, the project has reduced, recycled and reused pollutants.

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.

Case

Employment Opportunities for Local Residents in Ecuador

Andes Petroleum Ecuador Ltd. assists the government in building the "employment database" and employment files for community residents, trains community residents in employment skills, and gives priority to people from the Amazon region in recruitment. In recent years, the company has seen a rising proportion of employees from the Amazon region, at about 70% in 2021, providing employment to more than 700 local people.

Tax Payments According to Law

We strictly comply with the laws and regulations in the countries where we operate, pay taxes to local governments according to law, and contribute to local economic development. In countries where the Extractive Industries Transparency Initiative (EITI) standard is implemented, such as Iraq and Mongolia, our local companies actively participate in the 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 2021, we paid a total of RMB 61.47 billion in taxes overseas.

Protecting Indigenous People's Rights

Before the construction of a project, we conduct assessments of the social, economic and environmental impact, such as the requirements of the indigenous people, human rights, cultural heritage and involuntary resettlement. We make compensation plans by referring to the opinions of the local governments, our partners and the local villagers. We try our best to protect all of the rights and interests of the indigenous people.



Providing training on environmentally friendly batik craft for women

Case

Improving the Life of Indigenous People in Indonesia and Protecting the Local Cultural Heritage

CNPC International (Indonesia) actively improves its relations with the government, communities and people. Every year, it earmarks special funds to improve the education, medical health, environmental sanitation, infrastructure and living conditions of community residents. In the past three years, it has won dozens of social responsibility awards from the central government, local governments, and associations of various kinds in Indonesia. The Suku Anak Dalam Support Project won the Outstanding Community Development Award from the Ministry of Social Affairs of the Republic of Indonesia; the Traditional Batik Women Support Project won the Gold Award of Indonesia Sustainable Development Goals Award (ISDA) granted by the Indonesian Corporate Social Responsibility Business Association in September 2021.



Outlook for 2022

In 2022, the COVID-19 pandemic will accelerate changes unseen in a century. The world economy will pick up moderately, but will grow at a slower rate. Geopolitics is expected to be complicated and volatile; China will endeavor to pursue economic progress while ensuring economic stability, despite mounting challenges in keeping the economy running stably. In the face of the complex and volatile domestic and international environment, we will follow high-quality development while ensuring stability, commit ourselves to the strategies of innovation, resources, market, internationalization, and green & low-carbon development, and keep enhancing our sustainability, in order to open up new prospects for high-quality development and contribute to the global energy transition, China's energy security and its aim to peak carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060.

We will give top priority to deepening reform, and press ahead with the modernization of our governance system and capabilities. We will optimize and improve our corporate governance system and fully accomplish the three-year action tasks for the reform of state-owned enterprises. We will build the Company with quality workforce, strive for new progress in digital transformation and intelligent development, and significantly enhance our development momentum and governance efficiency.

Efforts will be made to foster development advantages and consolidate our resource base. We will safeguard the stability and security of industrial and supply chains, in a bid to keep domestic crude oil production above 100 million tons with steady growth and maintain rapid growth in natural gas production; the development of new energies business will be accelerated, the coordinated and interconnected development of upstream and downstream sectors, domestic and foreign segments, and supply, production, marketing will be strengthened, new advantages for our value enhancement and sustainable development driven jointly by different segments will be fostered, and market supply will be secured.

We will comprehensively press ahead with the Three-year Action Plan for Special Rectification of Work Safety to enhance intrinsic safety and environmental protection. We will push for the building of green enterprises and accelerate green and low-carbon transition; we will establish advanced energy efficiency standards, strengthen control of energy consumption intensity and total energy consumption, slash self energy consumption, accelerate green substitution of production energy, and boost overall energy efficiency; we will ramp up efforts to actively explore carbon neutrality technologies and paths, promote pollution prevention and ecological protection, and strengthen quality management throughout the life cycle to improve the quality of products, projects and services.

Upholding the people-centered development philosophy, we will regularly resolve the difficulties our grassroots front-line employees face in a down-to-earth manner, improve the production and living conditions of hard-working front-line employees, improve our assistance mechanism for employees in need, and establish an information platform for employee health management, in order to effectively enhance their sense of happiness, gain and security. We will respect employees as principal players, improve systems that enable employees to participate in major business decisions and democratic management, and strengthen training on their quality and skills, in order to promote the common growth of employees and the enterprise.

We will be devoted to public welfare, secure energy supply and improve people's livelihoods in the harmonious development of enterprises and localities; we will expand oil and gas cooperation with countries along the "Belt and Road", deeply participate in global energy governance, and promote the building of a community of shared interests for energy cooperation; we will fully implement the rural revitalization strategy and promote mutually beneficial cooperation between enterprises and stakeholders.

2022 will mark an important year for China to embark on a new journey towards the Second Centenary Goal of building a modern socialist country in all respects. We will comprehensively implement the new development philosophy, serve and integrate into the new development paradigm, and remain firmly committed to the general principle of pursuing progress while ensuring stability. We will focus on the development of core businesses, step up reform and innovation, green transition and risk prevention, and spare no effort to break new ground in high-quality development, in order to make new contributions to China's national energy security and economic and social development.

Performance Data

Performance indicators	2017	2018	2019	2020	2021
Finances and operations					
Total assets (RMB 100 million)	40987	41325	42357	40887	41924
Owner's equity attributable to parent company (RMB 100 million)	20426	19993	19696	19786	19902
Sales revenues (RMB 100 million)	23403	27390	27714	20871	28073
Taxes and fees payable (RMB 100 million)	3774	4212	4045	3158	3980
Newly-added proved oil reserves (10,000 tons)	6007	7076	7720	6670	7979
Newly-added proved gas reserves (100 million cubic meters)	949	1293	1258	1409	1383
Crude oil production (including overseas equity output) (10,000 tons)	17133.8	17636.6	18102.7	17864.2	17943.5
Natural gas production (including overseas equity output) (100 million cubic meters)	1287.3	1380.2	1503	1603.5	1692.4
Crude oil processed (including overseas crude oils processed) (10,000 tons)	19917	20736	20796.7	19182.7	20080.9
Output of refined products (including overseas output) (10,000 tons)	13672	14482	14943.7	13067.4	13444.7
Ethylene output (10,000 tons)	576	557	586.3	634.5	671.3
Lubricant output (10,000 tons)	164	160	163	157.5	196.4
Sales of refined products (domestic sales) (10,000 tons)	11416.3	11735.8	11959.4	10650.7	11125.6
Number of service stations (domestic)	21399	21776	22365	22612	22684
Safety					
Total number of accidents	283	214	249	176	176
Fatality rate (person/million working hours)	0.0048	0.0032	0.0024	0.0018	0.0014
— Fatality rate (person/million working hours)-employee	0.0025	0.0025	0.0012	0.0023	0.0014
— Fatality rate (person/million working hours)-contractor	0.0119	0.0045	0.0048	0.0008	0.0015
Fatality rate per thousand vehicles in traffic accidents (%)	0.069	0.050	0.0783	0.0569	0.0431
Environment					
COD emissions (10,000 tons) ^①	—	—	—	—	0.57
SO ₂ emissions (10,000 tons) ^②	—	—	—	—	1.36
NO _x emissions (10,000 tons) ^③	—	—	—	—	10.8
Energy saved (10,000 tons of TCE)	88	86	82	79	74
Water conserved (10,000 cubic meters)	1241	1213	1084	1033	1049
Land saved (hectares)	1180	1253	1247	1190	1120

①-③ Since 2018, the Company has implemented the requirements of the national pollution prevention and control battle, vigorously implemented the upgrading of wastewater treatment, ultra-low emission transformation of exhaust gases, clean production, fuel substitution and other engineering emission reduction and structural emission reduction projects, and pollutant emissions have dropped significantly; meanwhile, according to the results of the Second National Pollution Source Census and the specific standards for accounting for pollutant emissions as stipulated in the "Technical Specification for Application and Issuance of Emission Permits" for industries related to the Company's business, from 2021, the Company's pollutant emission statistics will be counted using the preferred accounting method of online monitoring data of pollution sources. Exhaust gas pollutant emission statistics include flare emissions.

Performance indicators	2017	2018	2019	2020	2021
Staff					
Number of employees (10,000 employees)	152.26	144.84	141.95	130.45	117.72
Percentage of female staff (%)	33.9	33.3	32.4	31.3	30.43
Percentage of ethnic minority employees (%)	6.2	6.3	6.3	6.4	6.51
Percentage of local employees (%)	83	84.4	84.92	88	86.67
Occupational health examination ratio (%)	98.5	99.97	99.62	99.23	100
Hours of mental health counseling hotline service (hours)	1289	1200	1200	2017	1228
Training funds spent (RMB 100 million)	16	22.4	19.8	14.5	15.2
Total training time (10,000 hours)	—	—	—	2100	2662
Number of employees trained (10,000 person-times)	—	—	102.3	69.3	31.8
Public welfare					
Total contribution (RMB 10,000)	108572	72092.6	85432	71795	80779
— Poverty alleviation (RMB 10,000)	21817	23291	24388	23224	40291
— Disaster relief (RMB 10,000)	7975	1154	4421	1271	4784
— Education (RMB 10,000)	10091.9	4937	8269	10544	7396
— Charity donation (RMB 10,000)	46611.8	37806.6	43933	30264	24189
— Environmental charity (RMB 10,000)	22076.3	4904	4421	6492	4119
Number of material suppliers	25208	25420	23623	23699	20257
Purchase expenditure (RMB 100 million)	1517	1924	2180	1683	1806

Glossary

Proven reserves	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 ±20%.
Proved reserves	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 a 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 the current price specified by the contract agreement rather than escalations. Proved reserves include developed and undeveloped proved reserves.
Reserve replacement ratio	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.
Recovery ratio	The percentage of oil/gas in place that is recoverable from underground.
Horizontal well	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.
Liquefied natural gas (LNG)	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.
New energies	New energies 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.
Low-carbon economy	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.
Greenhouse gas (GHG)	Greenhouse gases are gases in an atmosphere that absorb solar radiation from the surface and then emit radiation, such as water vapor, CO ₂ and most refrigerants. Their effect is to make 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 ₂ , CH ₄ , N ₂ O, HFCs, PFCs and SF ₆ .

Carbon sequestration	Also referred as carbon sink. 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.
HSE management system	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.
Oils (mineral oil)	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.
Chemical oxygen demand (COD)	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.
Major accident	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.
Emergency accidents	Emergency accidents refer to sudden 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.
Occupational disease	Diseases caused by exposure to dust, radioactive substances and other toxic and hazardous substances to employees working for enterprises, institutions and private organizations.
Stakeholders	Stakeholders are groups and individuals that can affect the achievement 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.
Production base	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 such as production processes, ground transportation, power supply, telecommunication scheduling, production management and living services.
Community	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.

Index of Global Reporting Initiative (GRI) and International Petroleum Industry Environmental Conservation Association/American Petroleum Institute (IPIECA/API)

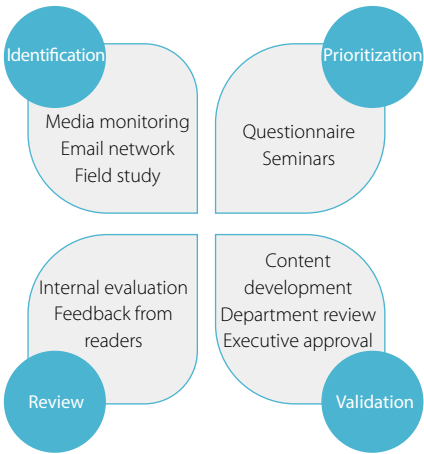
Content	IPIECA/API (2020)	GRI 2016
About the Report		102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-16, 102-45
Chairman's Message		102-14, 102-15, 102-16, 201-2, 203-2
About Us	CCE-1	102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-16, 102-45
Figures in 2021		201-1, 201-2, 201-3, 201-4
Corporate Governance	GOV-1, GOV-2, GOV-3	102-18, 102-19, 102-20, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-30, 102-31, 102-32, 102-33, 102-36, 405-1, 102-9, 102-10, 102-16, 102-17, 205-2, 414-1
Sustainable Development Management	GOV-1	
Communication with Stakeholders	SOC-1	102-21, 102-29, 102-33, 102-34, 102-40, 102-42, 102-43, 102-44
Sustainable Energy Supply		
Energy and Future	CCE-1	102-15
Technology and Innovation	CCE-3	103-2, 201-2
Clean Energy	CCE-2	203-1
Special Report: All-out Efforts to Secure Winter Supply		
Special Report: Power the Winter Olympics for a Shared Future		
Climate Change	CCE-1, CCE-2, CCE-4, CCE-5, CCE-7	102-12, 201-2, 203-1, 301-2, 302-1, 305-1, 305-2, 305-3, 305-5, 414-2
Energy Cooperation		201-1
Responsible Operations		
Safe Operation	SHS-1, SHS-3, SHS-4, SHS-7	403-3
Environmental Protection	ENV-1, ENV-2, ENV-3, ENV-4, ENV-5, ENV-6, ENV-7, ENV-8	102-11, 203-1, 302-1, 302-3, 302-4, 303-1, 303-3, 304-1, 304-2, 304-3, 305-6, 305-7
Special Report: Biodiversity Conservation		
Products and Services	SHS-5, SHS-6	416-1, 416-2, 417-1
Supply Chain Management	SOC-2, SOC-3	414-1, 414-2, 308-1, 308-2

Content	IPECA/API (2020)	GRI 2016
Employee Development		
Employees' Rights and Interests	SOC-6	102-8, 102-52, 401-1, 401-3, 405-1, 407-1, 408-1, 409-1
Career Development Platform	SOC-4, SOC-7	404-1, 404-2
Local Hiring and Diversity	SOC-4, SOC-5, SOC-15	202-2, 405-1
Physical and Psychological Health	SHS-1, SHS-2	403-3
Caring for Employees		413-1
Public Welfare		
Rural Revitalization	SOC-9	203-1, 203-2
Special Report: CNPC's Contributions to Rural Revitalization		
Supporting Education		
Promotion of Local Development	SOC-9	203-1, 203-2
Volunteer Activities	SOC-6	
Contributions to the Development of Overseas Communities	SHS-1, SHS-2, SOC-4, SOC-5, SOC-9, SOC-10, SOC-11, SOC-14, GOV-4	201-1, 203-1, 203-2, 204-1, 411-1, 413-1
Outlook for 2022		102-14, 102-15, 102-16, 201-2, 203-2
Performance Data	CCE-4, CCE-6, ENV-1, ENV-2, ENV-5, SHS-1, SHS-2, GOV-4, SOC-4, SOC-5, SOC-7, SOC-13, SOC-15	201-1, 201-2, 201-3, 201-4

Approach to Reporting

Definition process of the contents

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 society. They exert a 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.