



2017

Corporate Social Responsibility Report

About the Report

This is China National Petroleum Corporation's 12th 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, 2017. 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 2016 Corporate Social Responsibility Report was issued on May 25, 2017.

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

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

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

Report improvements: In order to showcase our social responsibility performance in a more objective, comprehensive and prioritized manner, the 2017 report features some important new issues, such as "strengthen Party self-discipline", "energy revolution", "supply-side structural reform", "green and low-carbon transition" and "Belt and Road". While compiling this report, we carried out on-site investigations on the CSR performance of our affiliated companies, verified the authenticity of enterprises case studies, extensively solicited opinions and suggestions and actively responded to the concerns of all stakeholders.

References: *The Guideline on Better Fulfilling Social Responsibility by Central Enterprises* issued by the State-owned Assets Supervision and Administration Commission (SASAC). We also referred to the *Sustainability Reporting Guideline (G4.0)* published by the Global Reporting Initiative, *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (2010)* co-published by the International Petroleum Industry Environmental Conservation Association and the American Petroleum Institute, *ISO26000 Guidance on Social Responsibility* by ISO, *The 2030 Agenda for Sustainable Development*, the *Guidance on Social Responsibility Reporting (GB/T 36001-2015)* by China National Standardization Management Committee, and *China CSR Reporting Guide (CASS-CSR2.0)* by CASS.

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

Access to the report: You may send 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 or scan the QR code for the mobile version.

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Chairman's Message



I feel very pleased to present the CNPC Corporate Social Responsibility Report 2017. In 2017, we followed the general principle of seeking progress while maintaining steady development in the face of profound adjustments in the global economic pattern and the ever-changing energy market. As a result, we made substantial progress while ensuring stability, taking a solid step forward in our endeavor to build a world-class integrated international energy company.

Always bearing in mind that our sustainable development is inseparable from that of society, we strived to explore opportunities, seek development, and create shared value with all our stakeholders while meeting the demand of society and addressing common challenges based on the development concept of innovation, coordination, green, openness and sharing.

Deepening reform & innovation and building twin engines to drive development

Reform is the only way for CNPC to achieve steady development and to promote the building of a world-class integrated international energy company. In 2017, we made fresh progress in accelerating the building of a modern state-owned enterprise system with Chinese characteristics, improving corporate governance, adjusting and optimizing our structure and carrying out continuous reorganization, improving the market-oriented operating mechanism, developing the mixed ownership economy, deepening reform of labor, personnel and salary distribution systems, and advancing market-oriented and commercial development of the staff community service business. In order to strengthen party building, we made every effort to promote the reform of the party building system and incorporated the requirements by party leadership and party building into all aspects of corporate governance.

Innovation plays an important role in driving our development. In 2017, we actively promoted the reform of technological systems and mechanisms and the implementation of innovation strategies. These efforts led to new progress in scientific and technological research, application of technological achievements, domestic production of technology and equipment, and information technology application. Specifically, our technology for reservoir exploration evaluation and development in lithologic formations promoted sustained growth of reserves and production in the eastern part of Gansu. The supporting technologies for shale gas extraction under depth of 3,500m effectively enabled the scale development of the Changning-Weiyuan demonstration zone. The development and application of high-value oil products and new products of synthetic materials with high added-value contributed to the restructuring of the refining business. The centralized regulation system of long-distance oil and gas pipeline networks effectively guaranteed the safe operation of pipelines. Additionally, construction of the integrated application of ERP system was completed, application of the cloud technology platform was deepened, capability of data sharing and integrated application was enhanced, digital and intelligent construction was in steady progress, and outstanding achievements were made in the information system application. Four achievements including the "ASP flooding technology for EOR and industrial application" won the Second Prize of National Science and Technology Progress Award; and the "Technology for high-diversion, multi-fracture stimulation of temporary targeting plugging of deep reservoirs and application" won the Second Prize of National Technical Invention Award.

We conscientiously implemented the government's deployment on the supply side structural reform, kept increasing income and efficiency while

cutting cost and expense, and raised overall development quality and efficiency. In 2017, while our investment was reduced by 10.6% from the amount planned at the beginning of the year, we generated RMB 53.34 billion in profit and paid RMB 377.36 billion in tax.

Developing clean energy to build low-carbon energy system

In 2017, important steps were taken in the global efforts to build a low-carbon future. The *Paris Agreement* and the UN Sustainable Development Goals (SDGs) entered into force, setting new goals for addressing climate change and providing modern energy. We actively took part in cooperation projects of the Oil and Gas Climate Initiative (OGCI), including the formulation of the *OGCI Low-emission Roadmap* for 2040 and collaboration with other OGCI members. In addition, according to relevant national plans and work programs for greenhouse gas control in China, we established our *Roadmap for Low-carbon Development* with specific goals and work tasks.

Recognized as the trend of the times, green development is an urgent demand of Chinese people in the new era, and is critical to the sustainable development of CNPC. In response to the dual challenges of growing energy demand and carbon emissions reduction, we spared no efforts to develop green and low-carbon energy while stabilizing oil production, actively enhancing refining capacity and improving oil product quality. We accelerated the development of natural gas, which is a realistic approach to promoting green development and a strategic and value-added project, and intensified our efforts in gas exploration and development. As a result, the proportion of gas in CNPC's domestic oil & gas production (in equivalent terms) increased by about 9 percentage points over 2011, and our domestic gas production accounted for over 70% of the national total. We supplied 66.2% of China's total natural gas, and our gas pipeline network covered 30 provinces, municipalities, autonomous regions and the Hong Kong SAR, benefiting over 500 million people. At the same time, we formulated and implemented the new energy development action plan, and explored ways to develop and utilize new energy such as geothermal energy, hydrogen energy, biomass energy and combustible ice; we promoted energy conservation and emission reduction, increased energy utilization efficiency, and pursued the comprehensive, coordinated and sustainable development of economy, society and ecology. We are confident that with the concerted efforts of the government, enterprises and consumers, the development of green energy will contribute to a better ecological environment with bluer skies, greener mountains and cleaner waters.

Staying committed to connectivity and creating a community of shared interests

In today's world, countries are increasingly bound together in a community of shared interests, where the zero-sum game is being replaced by mutually beneficial and win-win competition and cooperation, and cooperation is a realistic option for complementary advantages and mutual benefit. We are unswervingly committed to strengthening energy cooperation with countries and regions along the "Belt and Road". A relatively integrated industry chain has taken shape in our international oil and gas cooperation, with an expansion from upstream exploration and development to refining and chemicals, pipeline storage and distribution, and sales and trade. Five overseas oil


and gas cooperation zones and three international oil and gas operation centers have been basically established. Based on the principle of "achieving shared growth through discussion and collaboration", we explored innovative business models and deepened multi-dimensional strategic cooperation with our counterparts and partners at home and abroad, so as to jointly respond to major changes in the energy industry and work hard to build a community of shared interests for open, win-win and mutually beneficial oil and gas cooperation in the new era.

In 2017, a great number of major oil and gas cooperation projects were put into operation, adding new highlights to the "Belt and Road" construction. Particularly, numerous achievements were made in oil and gas cooperation in the Central Asia-Russia region. The Second Russia-China Crude Pipeline became fully operational, the first LNG train of Yamal LNG project with an annual capacity of 5.5 million tons was completed and put into operation, and the modernization Project (Phase I) of Shymkent Refinery in Kazakhstan was put into operation. A solid first step has been taken in pursuing the Belt and Road Initiative. We will build on the sound momentum generated from the existing projects to promote the Belt and Road Initiative toward greater success.

Creating shared value for balanced and inclusive development

While seeking our own development, we are committed to sharing development opportunities and resource with our stakeholders for mutual benefit. We attach great importance to social responsibility management throughout the industry chain, and advocate and encourage our suppliers and contractors to fulfill their social responsibility by leveraging our advantages in funding, technology and management to achieve common development. Adhering to the principle of putting people first, we provide our employees with career development platforms and promotion channels. We actively support social welfare undertakings and drive local socioeconomic progress where we operate, in pursuit of mutually beneficial development. In Kazakhstan, we contributed more than 70% of taxes and fees in Aktobe Region for many consecutive years, and created more than 20,000 local jobs. We were granted the "Special Award of Corporate Social Contribution 2017" for our outstanding social and economic contributions in Kazakhstan.

Looking to the future, CNPC will faithfully fulfill our responsibilities and obligations, and give back to society, our stakeholders and employees with excellent performance. We are grateful for your attention and support over the years. We will continue to promote communication through platforms such as this report, further enhance our interaction with all stakeholders, and jointly create a better future for all of us.



Wang Yilin, Chairman

About Us

As one of China's largest oil and gas producers and suppliers, CNPC is an integrated international energy corporation, with our business covering oil and gas exploration and development, refining and chemicals, marketing and trading, pipeline transmission and stockpiling, technical services, engineering construction, equipment manufacturing, and financial services. We are the leading company in oil and gas exploration and development in China, and possess oil and gas assets and interests in 38 countries. In 2017, CNPC ranked 3rd among world's top 50 oil companies and 4th in the Fortune Global 500.

- Our mission

Caring for Energy, Caring for You

- Our value

Integrity, innovation, safety, excellence

- Our philosophy

Patriotism, honesty, dedication, entrepreneurship

- Our strategy

Resources, market, internationalization, innovation

Business Ethics

- Compliance Management (P9)
- Supply Chain Management (P51)
- Management of Business Impact on Community (P71)



Governance Structure and Decision-making Mechanism and Process

- Governance Structure (P9)

Compliance Management

- Compliance Management (P9)



Climate Change

- Energy Challenge (P21)
- Promotion of Natural Gas Utilization and Alternative Fuel (P27)
- Climate Change (P45)
- Management of Business Impact on Community (P71)



Water Resource Management

- Water Resources (P42)



Atmospheric Environment




- Promotion of Natural Gas Utilization and Alternative Fuel (P27)
- Climate Change (P45)



Biological Diversity and Environmentally Sensitive Areas

- Protection of Biological Diversity and Natural Habitats (P44)
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Figures in 2017

4.09872 Total assets
trillion RMB



Assets & Profits

CNPC registered total assets of RMB 4.09872 trillion. We recorded sales revenues of RMB 2.34032 trillion and total profits of RMB 53.34 billion, up 25% and 5.1% respectively year-on-year. Our tax and fees payments totaled RMB 377.36 billion.



Resources Base

569.8 Newly-added proven gas in place
billion cubic meters

In China, our newly added proven oil in place totaled 659 million tons, exceeding 600 million tons for the 12th consecutive year; and newly added proven gas in place reached 569.8 billion cubic meters, exceeding 400 billion cubic meters for the 11th consecutive year.



Oil and Gas Pipelines Network

85,582

Total length of CNPC operated oil and gas pipelines
kilometers

CNPC operated oil and gas pipelines with a total mileage of 85,582 kilometers, covering 30 provinces (municipalities and autonomous regions) and the Hong Kong SAR.

273.91 Domestic and overseas oil and gas equity production
million tons of oil equivalent



Oil & Gas Production

Domestic and overseas oil and gas production amounted to 273.91 million tons of oil and gas equivalent. Domestically, we produced a total of 102.54 million tons of crude and 103.27 billion cubic meters of natural gas, accounting for 53.6% and 71.1% of China's total respectively.

151.84 Domestic sales volume of natural gas
billion cubic meters



Oil & Gas Supply

Our domestic marketing volume of refined products was 114.163 million tons, accounting for over 37.2% of the domestic market share; we increased supply of clean energy, and our domestic marketing volume of natural gas was 151.84 billion cubic meters, up 15.5% year-on-year.

89.08 Overseas oil and gas
equity production
million tons



International Business

Our overseas oil and gas operations in 38 countries yielded an equity production of 89.08 million tons of oil and gas equivalent. We provided technical services and engineering construction in 76 countries and regions around the world.

5 National Scientific and
Technological Advancement Prize
awards



Technological Progress

Technological Progress: five of our R & D achievements won China's national science and technology awards. In particular, four achievements including the "ASP flooding technology for EOR and industrial application" were awarded the second-class National Science and Technology Progress Award; the "technology for high-diversion, multi-fracture stimulation of temporary targeting plugging of deep reservoirs and application" was awarded the second-class National Technical Invention Award.



Environmental Protection

880,000

Saved energy
tons of standard coal

Environmental Protection: We saved energy equal to 880,000 tons of standard coal, 12.41 million cubic meters of water, and 1,180 hectares of land emissions of major pollutants decreased year-on-year.



Public Welfare

1 Investment in public
welfare undertakings
billion RMB

We invested more than RMB 1000 million in public welfare undertakings globally, benefiting 100 million people. In China, we spent RMB 77.85 million launching 45 projects to support 13 counties (districts) in 7 provinces (municipalities and autonomous regions).

1.6 Spending on employee training
billion RMB



Employee Development

We have a total of 1,407,200 employees, and more than 83.14% of our overseas employees are local hires. We spent 1.6 billion RMB on employee training and a total of 993,000 employees were trained, among which 100% frontline staff was covered.

Corporate Governance

CNPC is a solely state-owned enterprise. According to laws and regulations such as the *Company Law of the PRC*, the *Law of the PRC on the State-owned Assets of Enterprises*, the *Constitution of the Communist Party of China*, and the *Regulation of Leading Party Members' Groups of CCP (for Trial Implementation)*, in addition to arrangements made by the State-owned Assets Supervision and Administration Commission of the State Council, CNPC has built and continuously perfected the legal person governance structure with clearly defined rights and responsibilities among the board of directors, supervisory committee and defined rights and responsibilities among the board of directors, supervisory committee and senior executives, to ensure that each department carries out its own duties with effective balance, scientific decision-making and coordinated operations. In 2017, CNPC amended its *Articles of Association*, setting forth the overall requirements for Party building and establishing the statutory status of the Party group in the corporate governance structure. It also strengthened its supervision and accountability system with a focus on system building and fulfillment of responsibilities, and realized clear control objectives, effective integration of resources and optimal efficiency and effectiveness. We also enhanced corporate social responsibility performance and achieved sustainable growth.

Governance Structure

Board of Directors

The Board of Directors consists of seven members. The Board has four affiliated committees, 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 *Board of Directors Authorization Management of CNPC*, the Board of Directors issues conventional authorization on decision-making regarding corporate operations to the Chairman.

“We uphold the Party's leadership in reform, implement the requirements for applying strict party discipline, strengthening Party leadership while improving corporate governance, and make innovation to give full play to the role of the Party organization. In 2017, we studied and implemented the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the guiding principles of the 19th CPC National Congress, established and improved the accountability system for Party building, and carried out special supervision over Party building performance and the practice of “being qualified in politics, discipline enforcement, morality and performance and demonstrating loyalty through responsibility, conscientiousness through hard work, responsibility fulfillment through achievements, and integrity through friendliness”, in an effort to make solid progress in Party building.

Key Work of the Board of Directors in 2017

Setting development strategy	Reviewing and approving major issues	Strengthening team building	Strengthening risk prevention and control
<ul style="list-style-type: none">• Drafted annual plan for business development, investment and budget• Established strategic priorities for supply-side structural reform and innovation-driven development	<ul style="list-style-type: none">• Reviewed and approved major investment projects such as the east route of the Russia-China Gas Pipeline• Decided on major issues such as corporate restructuring, business restructuring, and asset disposal	<ul style="list-style-type: none">• Appointed 3 vice presidents• Enhanced communication with executives to provide more guidance and counseling• Organized five meetings of the Board of directors, five meetings of the affiliated Board Committees and three targeted field studies to advise on the development of the Company	<ul style="list-style-type: none">• Reviewed and approved the annual audit work report and risk management report, and proposed comments and suggestions for improvement• Guided related departments to reinforce risk liability and to implement major risk response measures• Strengthened analysis of and response to decision-making risks of major projects, and ensured risks are minimized while achieving business objectives

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 SASAC, and provide advice and recommendations for Board decisions.

In 2017, giving full play to their respective professional advantages, the Board of Directors exercised due care and diligence, playing a positive role in guiding the strategic development of the Company, strengthening the management of appointment of the senior executives, reviewing major issues, and strengthening risk control.

Compliance Management

CNPC Key Actions in Compliance Management in 2017

Ensured responsibility fulfillment

- The Party group issued the *Implementation Measures for Fulfilling Leadership Duties for Promoting Governance by Law*
- Included compliance in the assessment indicators of leadership competency

Improved policies and regulations

- Organized development and revision of rules and regulations
- Formulated and released guidelines on mandatory and prohibitive rules of the Company's main scope of operation and management, and organized employees to learn the guidelines

Prevented and controlled relevant risks

- Carried out risk identification, assessment and early warning in compliance management
- Identified risks and hazards, and rectified non-compliance problems
- Performed targeted and various forms of training
- Compiled compliance training courseware for new staff, which serves as an essential part of the training
- Strengthened compliance regulation of business partners

The Company regards legal compliance as a basic requirement for boosting reform and achieving sustainable development. Compliance is of overriding importance. Therefore, we put legal compliance above economic interests, include compliance requirements into the whole process of operation and management and set up a compliance management system covering both headquarters and all regional subsidiaries with rigorous enforcement and assessment. We strictly implement national laws and regulations and government regulatory requirements, and we continue strengthening compliance management in key areas. As a result, we have gradually strengthened our mechanism which attaches equal importance to business management and compliance management. We further define responsibilities for compliance management, assign duties to relevant departments, and constantly improve a management pattern featuring joint management and coordination. Therefore, an increasingly intense atmosphere in which all the staff of the Company values, stresses and supervises compliance is being created.

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



Corporate Social Responsibility Management

Corporate Citizenship Philosophy

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

Upholding the corporate mission of "Caring for Energy, Caring for You", 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 charisma to society. We have never relented in our efforts to implement our social Corporate Social Responsibility Management responsibilities, adhere to legal operation, be honest and trustworthy, conserve resources and protect the environment, insist on the people-oriented principle and build a harmonious enterprise, in order to make return to society and realize value sharing.

Responsibility Management

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

System Building

We have developed working rules and regulations on economic, environmental and social responsibilities, laying a solid foundation for the fulfillment of social responsibilities. In 2017, we continued our efforts to promote social responsibility management according to the *Guideline on Better Fulfilling Corporate Social Responsibility* for the SOEs by SASAC.

Organizational Structure

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

Capability Building

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

Communication with Stakeholders

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

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

Improving Disclosure of Social Responsibility Information

In 2017, we released reports on our progress in overseas community building and green, low-carbon development, including the *Special Report on Social Responsibility of Myanmar-China Oil & Gas Pipeline Project (Myanmar Section)*, *Environmental Protection Communique*, *Roadmap for Low-carbon Development*, *Ecological Protection Program*, and the *Plan for the Upgrading of Pollutant Discharge Standards*.

Expanding Public Communication Channels

In 2017, 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 communication with our stakeholders including the staff congress, announcements, seminars, and dialogues. We also launched a series of activities including the Service Station Open Day, CNPC Open House Day, mystery customer visits, and other activities allowing visits to CNPC.

Case Study The Students Invited to Visit CNPC

In partnership with China Youth Daily, we launched a campaign to invite outstanding student reporters from over 30 Chinese colleges and universities to visit CNPC. This campaign provided them with a good opportunity to get a real picture of CNPC, especially its strength, spirit and responsibilities.



Campaigns to Present an Open CNPC



Media reporters paid a visit to Changqing Oilfield to experience the green development of the oilfield



Deputies of NPC, CPPCC members, the media and community residents were invited to the factory area of Dagang Petrochemical



The technicians of Huabei Petrochemical introduced the production process of clean oil products to more than 50 visiting delegates



Yunnan Petrochemical invited more than 600 representatives from all walks of life to visit HSE facilities and solicited their opinions and suggestions on environmental protection



Third-party Feedback

"During the overhaul period, Dagang Petrochemical is open to the public, demonstrating the efforts of a refining and chemical enterprise, particularly its concept of environmental protection."

—Wu Weimin, Deputy Director of the Bureau of Culture, Radio, TV and Film of Binhai New Area, Tianjin, and Director of the Civilization Office

"While maintaining advanced production technology and strict management, Dalian Petrochemical makes every effort to communicate with the public. It takes initiative to invite people from all walks of life to the enterprise, establishing a good corporate image and promoting the sustainable development of the company."

—Sun Hui, Deputy of NPC of Ganjingzi District in Dalian and Director of Dalian Limestone Mine

"What a surprise! This plant area is even better than the residential quarter in landscaping. There is no odor in the air even at the time of equipment overhaul."

—A deputy of NPC who has worked and lived in Dagang for more than 20 years and visited the installation inspection site of an oil refinery for the first time



More than 60 people including deputies of NPC, CPPCC members and community residents in Ganjingzi District in Dalian visited Dalian PetroChemical



Changqing Petrochemical volunteers explained the flue gas desulfurization, denitrification and dust removal device to the children of Xianyang Fenglun Elementary School, telling them that the device emits water vapor instead of smoke



Guangxi Petrochemical invited more than 20 delegates from the surrounding communities to visit the production plant area and the sewage treatment plant, providing them with a face-to-face picture of a green refinery.



Media reporters visited "intelligent gas stations" in Chongqing, praising its emphasis on quality control and its efforts to provide reliable, high-quality oil products.

"Though a native of an oil province, I've never been to the factory of Dagang Petrochemical. On this visit, what impresses me most is that this place is so clean, free from any unpleasant smell. With bright tubes, fresh air and a quiet surrounding environment, this refinery is totally different from what I've imaged."

——Deng Jinjin, a resident in Tianjin

"It is my first time to pay a field visit to a petrochemical plant. I am deeply impressed by the tangible efforts of Sichuan Petrochemical Project in environmental protection and safety. Misunderstandings and misinterpretations is mostly caused by a lack of information transparency."

——Li Yulan, Deputy of NPC of Chengdu City

"We used to regard the emissions from the chimney as uncontrolled exhaust gas emissions. Thanks to today's explanations, we have learned that the white gas from the chimney is nothing but steam!"

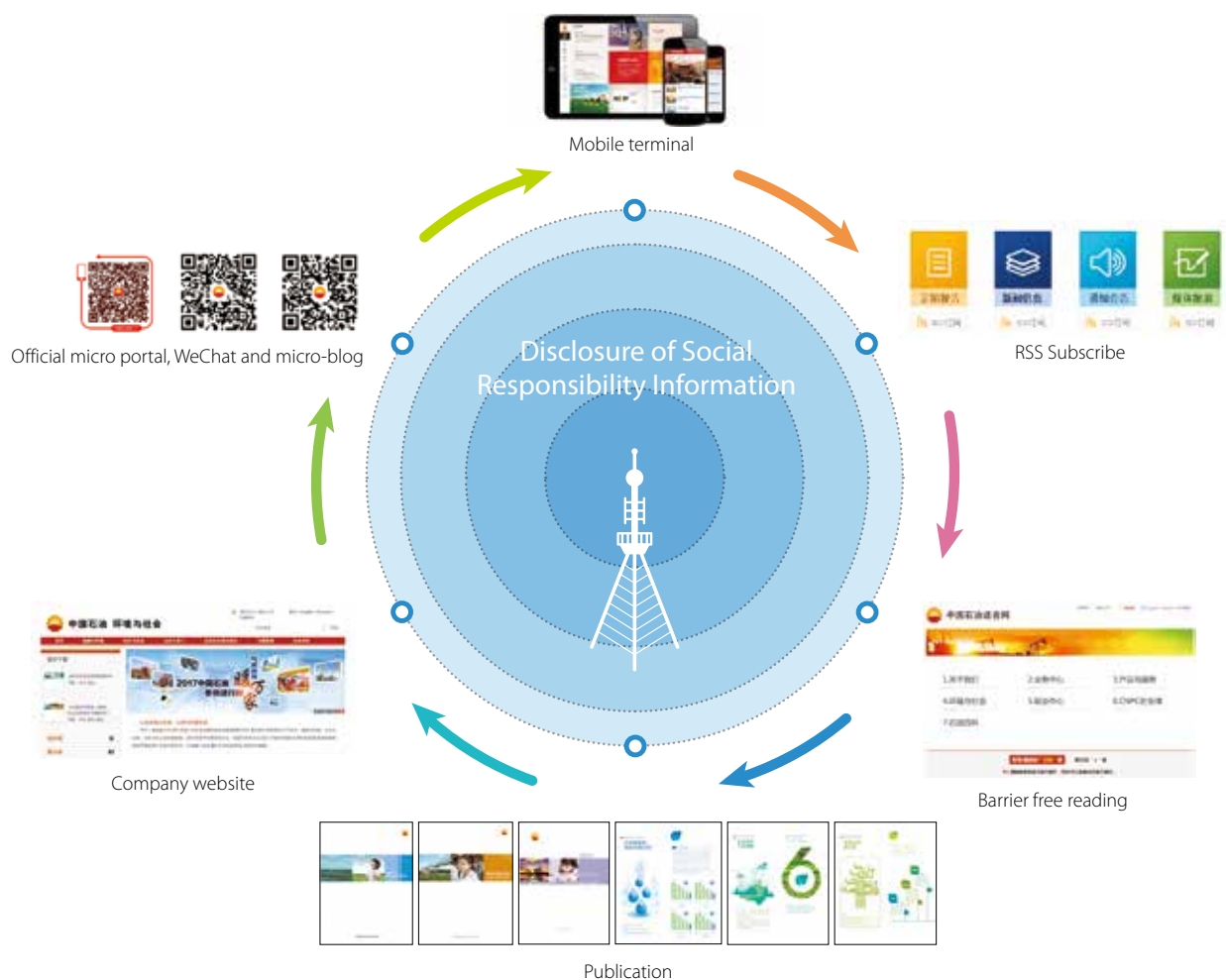
——A visitor to Dagang PetroChemical

"My first visit to the refinery turned out to be a real eye-opener, for it has provided me with a totally different insight into the traditional petrochemical companies. It is so beautiful and highly automated here. The company has achieved both economic and social benefits."

——A visitor to a Guangxi Petrochemical refinery

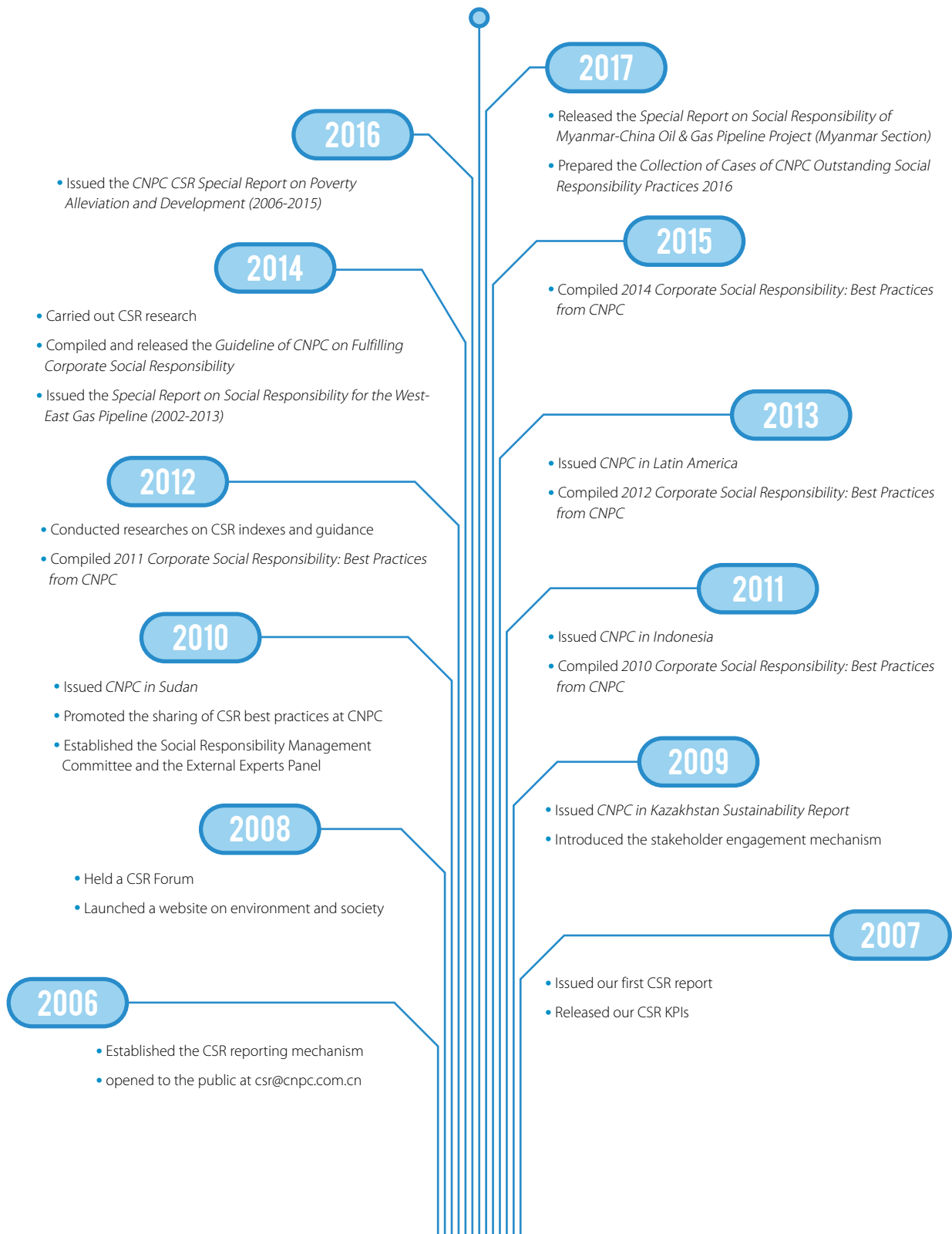
Increasing Routine Disclosures

Through the Company's website and its microblog, WeChat, mobile platforms, barrier free reading and other new media, we enrich information disclosure on social responsibility and enhance the effectiveness of our communications.









Official Micro portal for Interactive Communication

In 2017, we set up our official micro portal to tell our stories and send our messages to the general public, and respond to public concerns.



Stakeholders

			
	Government	Employees	Customers and consumers
Goals and Concerns	<ul style="list-style-type: none"> • Guarantee energy security • Stabilize market supply • Fulfill social responsibility • Energy conservation and emission reduction • Strengthen operation in compliance with all legal requirements • Deepen enterprise reform • Guarantee investors' interests 	<ul style="list-style-type: none"> • Guarantee employees' rights and interests • Employee career development • Employee value realization • Employee health and safety 	<ul style="list-style-type: none"> • Provide safe, environmentally 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
Means of Communication and Participation	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Support trade unions at different levels • Hold staff congresses • Reinforce staff training • Improve salary distribution system • Hold contests and evaluations 	<ul style="list-style-type: none"> • Safeguard consumers' interests • Supervise product quality • Solicit the opinions of customers and consumers
Our Actions	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Increase clean oil supply and realize supply of National V standard gasoline and diesel nationwide • Further promote the CNPC Quality Month Campaign • Provide natural gas and other clean energy products • Establish a unified service station management system and launch overall inspections on service stations • Implement customer satisfaction investigation and conduct mystery customer visits

			
	Business partners	NGOs and relevant organizations	Communities and the public
Goals and Concerns	<ul style="list-style-type: none"> • Comply with national laws, regulations and business ethics • Standardize HSE management • Fair competition, mutual benefits • Promote social responsibility in the value chain 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Promote e-procurement through e-commerce platform • Share management experience and technical standards • Strengthen communication with suppliers and contractors 	<ul style="list-style-type: none"> • Share corporate experience • Attend related meetings and forums • Facilitate international exchanges and cooperation 	<ul style="list-style-type: none"> • Provide education, training and employment opportunities • Promote cultural exchange • Pay community visits
Our Actions	<ul style="list-style-type: none"> • Advocate fair competition, 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Carry out disaster relief, poverty alleviation and donations to education, and support the reconstruction of disaster-stricken areas • Carry out fixed-point poverty alleviation and aid programs • Support and drive the development of local economies through major project construction, and make steady progress in joint venture cooperation in refining, pipelines, shale gas, and marketing network • Implement oil and gas recovery projects to minimize evaporation • Support the development of SMEs and promote local procurement

Special Report

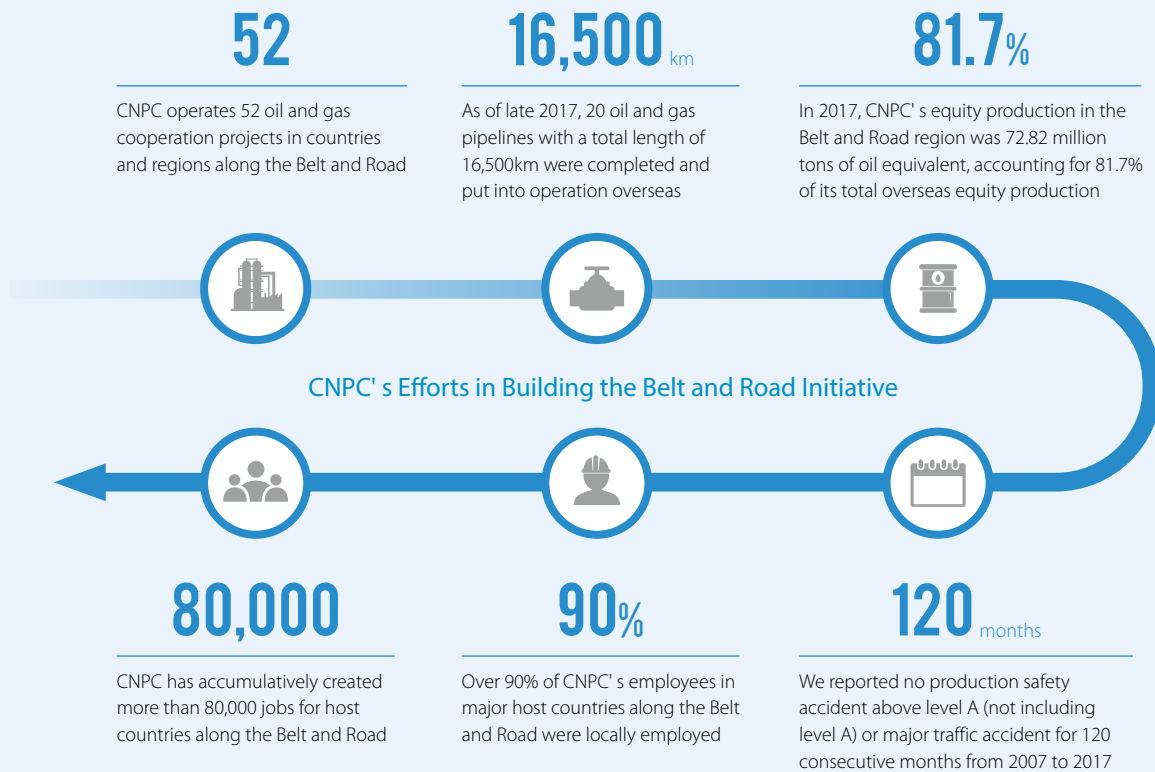
Promoting Energy Cooperation for Mutual Benefit and Win-win Development

CNPC Supporting the Belt and Road Initiative

In 1997, CNPC entered into an agreement to develop the Aktobe project in Kazakhstan, taking the first step in oil and gas cooperation under the Belt and Road Initiative. 2017 marked the 20th anniversary of CNPC's oil and gas cooperation with countries and regions along the Belt and Road. Relying on more than 20 years of experience in multinational operations, CNPC is becoming a pioneer and an important player in practicing the Belt and Road Initiative, and has enhanced mutual understanding and trust with stakeholders such as partners, host governments and community residents.

Contributing to integrated development: We operate 52 oil and gas cooperation projects in 20 countries along the Belt and Road. In 2017, our equity oil and gas production hit 72.82 million tons, playing an increasingly important role in building a sustainable international energy supply system. Over the past two decades, leveraging its unique technologies and management advantages, especially its advantages in upstream and downstream integration, CNPC has been actively participating in the development of the local oil industry and providing host countries with package solutions.





Promoting infrastructure connectivity: We accelerate the building of four major oil and gas corridors (to China's northwest, northeast, southwest and offshore respectively) and three overseas operations hubs. The operation hub in Asia has been basically completed, and our international oil and gas trade volume has been on a constant rise. In 2017, we reported 469 million tons of international trading volume, about 230 million tons of which was from the Belt and Road region. As Myanmar-China Oil and Gas Pipelines were successively put into operation, the layout of the four major oil and gas corridors has taken shape. Central Asia-China Gas Pipeline is an important energy corridor connecting many countries in Central Asia with China. Line A was completed and put into operation in December 2009, and currently the project has Line A, Line B and Line C running in parallel, extending from Turkmenistan to China through Uzbekistan and Kazakhstan. Capable of delivering 55 billion cubic meters of natural gas every year, the pipeline plays an important role in promoting the development and utilization of natural gas in Central Asian countries, improving the regional energy mix, promoting industrial restructuring, and addressing climate change.

Winning recognition for environmental protection performance: We actively responded to China's initiative of Green Belt and Road, and CNPC is one of the first Chinese companies to sign the initiative. We actively fulfilled our environmental responsibilities, made specific HSE commitments, established and implemented the HSE system, timely disclosed our environmental protection performance, accepted public supervision, and promoted common community development. As a result, we have been widely recognized by the international community, and were granted more than 30 environmental awards by countries along the Belt and Road.

Promoting economic and social development: The past two decades have witnessed CNPC's rapid development in countries and regions along the Belt and Road as well as our sincere cooperation and common development with the host countries. We made unswerving efforts in the localization of our international business, creating 80,000 jobs and training tens of thousands of technicians and management personnel for the host countries in recent years. By such means as paying taxes and fees and promoting industrial development, we actively engaged in local economic and social development. The completion of Myanmar-China Oil and Gas Pipelines has provided Myanmar with diversified oil and gas export channels, and created jobs, revenue and other economic benefits. Former Vice President of Myanmar U Nyan Tun spoke highly of the project, which not only brings mutual benefit and win-win development to the four countries that invested in the project, but also is of great significance to the long-term development of Myanmar, helping to improve the economy, industrialization and electrification of the country. In Kazakhstan, we contributed more than 70% of the tax revenues of the Aktobe region for many years, and created more than 20,000 jobs for the local people. In 2017, we won the "Special Award for Corporate Social Contribution" for our outstanding performance in Kazakhstan.

1

Sustainable Energy Supply

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



SDGs

7 Affordable and clean energy



Ensure access to affordable, reliable, sustainable and modern energy for all

8 Decent work and economic growth



Promote inclusive and sustainable economic growth, employment and decent work for all

9 Industry, innovation and infrastructure



Build resilient infrastructure, promote sustainable industrialization and foster innovation

17 Partnerships for the goals



Revitalize the global partnership for sustainable development

Energy and Future

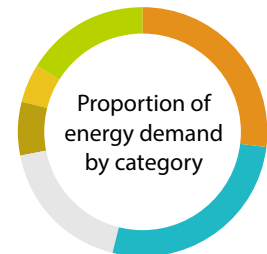
Energy Challenges

Energy demand continues to increase. Revenue and population growth, and the urbanization and industrialization of developing countries are driving forces of growing energy demand. Although there are still uncertainties in global GDP growth, the world certainly requires more energy to ensure global economic prosperity and development in the future.

Energy structure keeps changing. Despite the accelerated energy structural transition to clean and low-carbon development in a safe and high-efficiency manner, fossil fuels remain the most important energy, whereas non-fossil fuels will grow rapidly. Oil accounts for a fairly stable share of primary energy consumption mix, and natural gas has become and is becoming the fastest growing fossil fuel, and is expected to reach 31% of primary energy consumption mix by 2050.

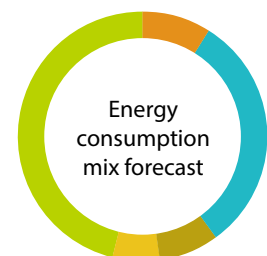
Equal access to energy. Over 1.2 billion people in the world still do not have access to affordable modern energy, losing the opportunity for equal development. Helping this group of people to obtain energy is an important part of the target of realizing the United Nations' goal of sustainable development.

China's economy enters into "new normal". China's economy is moving forward steadily at a reasonable speed with improved quality and efficiency. But there is a serious conflict between overcapacity and upgraded demand structure, with slow growth of domestic oil demand and ample natural gas supply.



Forecast of global primary energy demand by category by 2050 *

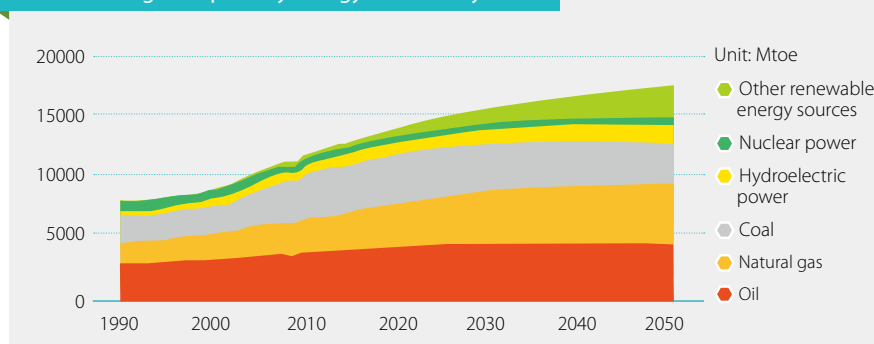
Oil	27%
Natural gas	27%
Coal	18%
Hydroelectric power	7%
Nuclear power	5%
Other renewable energy sources (including wind power and photovoltaics)	16%



Forecast of global energy consumption mix by 2050 *

Oil	9%
Natural gas	31%
Hydroelectric power	8%
Nuclear power	6%
Other renewable energy sources (including wind power and photovoltaics)	46%

Forecast of global primary energy demand by 2050 *



* Data source: *Energy Outlook 2050* by CNPC Economics & Technology Research Institute (2017)

Providing Clean, Low-carbon and Affordable Energy

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

We implement the development concept of innovation, harmonization, green, openness and sharing, actively improve ways of energy production, strengthen technological and management innovation, and constantly consolidate our resource basis. With the aim of future sustainable energy supply, we accelerate the development of natural gas, explore unconventional energy, deploy new energy development, and supply more clean energy. In addition, we expand international cooperation, optimize global business layout, and strive to become a major supplier to provide energy in a more environmentally responsible way to drive the socio-economic development.



We

- support the UN' s goal of "Ensuring access to affordable, reliable, sustainable and modern energy for all"
- actively respond to Chinese government' s "13th Five-Year Plan for Energy Development" and intensify our efforts to promote the energy revolution

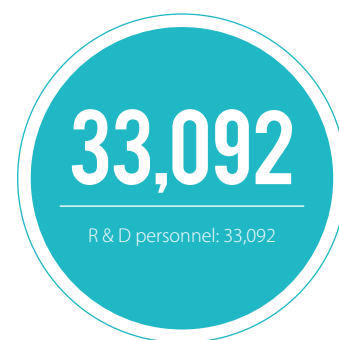
Technological and Managerial Innovation

Advanced and applicable technology and effective management innovation enable us to provide better energy solutions, address climate change, improve energy utilization efficiency, and mitigate hedge against the economic risk of low oil prices.

Building the Future of Energy with Science and Technology

Technological innovation is the driving force for us to keep overcoming challenges. The remaining proven recoverable reserves are now mainly low permeability and lithologic reservoirs, whereas new discoveries are deteriorating in grade and difficult to recover. The overall exploration & development environment is getting more complex. Thanks to continuous technological breakthroughs, CNPC increases enhances the recovery of existing resources, explores new areas of energy development through cutting-edge technologies, and develops green production technology to provide energy for society in a more responsible way.

In 2017, CNPC focused on removing technological obstacles to sustainable development and actively promoted R & D of cutting-edge technologies. This provided theoretical and technological support for our major strategic projects, including the steady development of Daqing Oilfield, stable production of Changqing Oilfield, rapid growth of new businesses such as tight oil and gas and shale gas, and increased overseas production and business scope, refinery restructuring and product quality upgrading.



Technological innovation platform and talent development

Key laboratories and experiment bases: 47 improved, 5 newly built

47

456

Research institutes: 84,
senior technical experts: 456,
researchers: 33,092

144 experiment/test functions improved

144

240

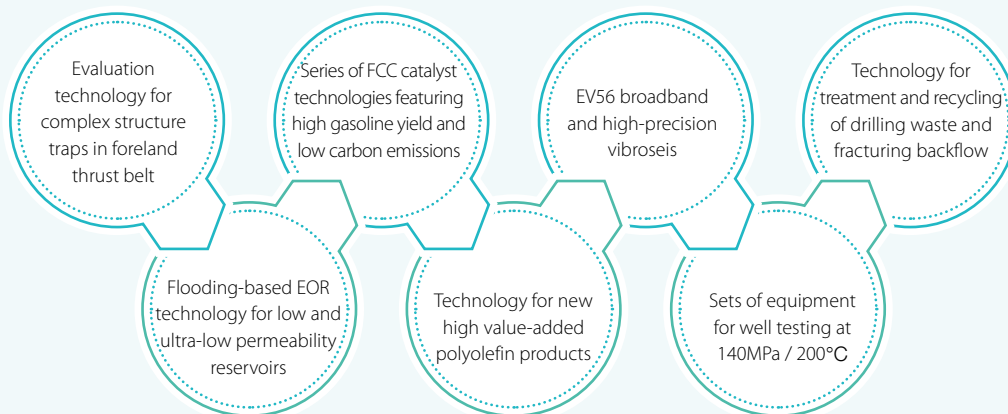
240 new experiment/test techniques and methods developed

Key Laboratories and Experiment Bases

National R & D Platforms

- National Key Laboratory for Enhanced Oil Recovery
- National Carbon Fiber Engineering Technology Research Center
- Chinese National Engineering Research Center for Petroleum and Natural Gas Tubular Goods
- Chinese National Engineering Research Center for Oil & Gas Drilling Equipment
- Chinese National Engineering Research Center for Computer Software for Oil and Gas Exploration
- National Engineering Laboratory for Exploration & Development of Low Permeability Oil & Gas Field
- National Engineering Laboratory for Drilling Engineering
- National Engineering Laboratory for Pipeline Safety
- National Engineering and Research Center for CBM Development and Utilization
- Support Platform for Fire and Explosion Protection Technology of Petroleum and Petrochemical Enterprises
- National Energy Experiment Center for Shale Gas Research and Development
- National Energy Center for Industrial Testing of Technical Equipment for Long Distance Gas Pipeline
- National Energy R & D Center for LNG Technologies
- National Energy R & D Center for High-sulfur Gas Reservoir Development
- National Energy R & D Center for Tight Oil and Gas
- National Energy R & D Center for Heavy Oil Extraction
- National Key Laboratory for Service Behavior and Structural Safety of Petroleum Pipe and Equipment Materials
- National Key Laboratory for Petroleum and Petrochemical Pollutants Control and Treatment
- State Administration of Work Safety Base for Oil and Gas Pipeline Emergency Rescue

Major Technical Achievements



In 2017, CNPC achieved intensive science and technology research

7

5,050

CNPC scored seven major landmark achievements, applied for 5,050 patents

Won four Second-prize of National Science and Technology Progress Award

4

1

One Second-Prize of National Technical Invention Award

CNPC Innovative Technologies Winning National Awards in 2017

Technology	Award
<ul style="list-style-type: none"> ASP flooding technology for EOR and its industrial application Industrial application of catalytic cracking catalysts with high gasoline yield and low carbon emissions Key technology for lightweight design and manufacturing of heavy pressure vessels and its industrial application Key technology and exploration equipment for geological dynamic assessment of CBM reservoir development 	Second-prize of National Science and Technology Progress Award
Technology for high-diversion, multi-fracture stimulation of temporary targeted plugging of deep reservoirs and application	Second-prize of National Technical Invention Award
Seven technologies including parallel processing technique of prestack Kirchhoff time migration without speedup ratio bottlenecks	Outstanding Medal of China Patent Award



"ASP flooding technology for EOR and its industrial application" won the Second-prize of National Science and Technology Progress Award

54% of the world's proven oil reserves are stored in sandstone reservoirs. Generally, 33% of the reserves can be ultimately recovered through natural energy development and water flooding, leaving about two thirds irrecoverable. For each one-percent's increase in recovery, there has to be another discovery the size of Daqing Oilfield. Therefore, enhancing oil recovery is a major technological challenge in the industry at home and abroad which needs to be addressed immediately.

In partnership with Research Institute of Petroleum Exploration and Development, Northeast Petroleum University and China University of Petroleum (Beijing), and through more than two decades of technical research, Daqing Oilfield has made innovation on ASP flooding theories, independently developed industrial surfactants, and established a complete engineering and technical system. Thereby China has become the only country with a complete set of such technologies which were put into industrial use.

The application of the ASP flooding technology has enabled an accumulative increase of 20.56 million tons in oil production in Daqing Oilfield, representing a production value of RMB 67.75 billion.

In 2017, CNPC's newly-added proven oil in place exceeded 600 million tons for the 12th consecutive year, and newly-added proven gas in place exceeded 400 billion cubic meters for the 11th consecutive year, with the total of proven oil and gas reserves exceeding 1 billion tons for the 11th consecutive year. CNPC's total oil and gas production reached 184.82 million tons of oil equivalent in 2017. In addition, CNPC is capable of supplying National-VI gasoline and diesel, and its comprehensive energy consumption for oil refining and ethylene combustion dropped continuously. Daqing Oilfield carried out water flooding for fine potential tapping, polymer flooding for efficiency optimization and ASP flooding for large-scale promotion, providing a strong support for the sustainable development of the oilfield. The total oil and gas production reached 37.198 million tons of oil equivalent in 2017. Changqing Oilfield focused on technical innovation to develop core tools for exploration and development, and promoted cost-effective development of tight oil and gas through stimulation technologies such as horizontal well volume fracturing, enabling over 50 million tons of production of oil and gas equivalent for the fifth consecutive year in 2017.

CCUS

CCS-EOR, generally known as carbon capture and storage-enhanced oil recovery technology, is used to effectively enhance crude oil recovery and permanently sequester most of the carbon dioxide in the reservoir. Some of the carbon dioxide emitted together with crude oil is recycled and injected into the reservoir. The carbon dioxide is fully stored after the reservoir is abandoned, ensuring the zero emission of carbon dioxide.

As of late 2017, 1.1 million tons of carbon dioxide emissions, or over 96% of the total emissions, were stored using the CCS-EOR technology in Jilin Oilfield, enhancing oil recovery by more than 12% on average compared with flooding.





Case Study Discovery of the World's Largest Conglomerate Oilfield

CNPC has discovered in Mahu Sag, Junggar Basin, Xinjiang a one-billion-ton conglomerate oilfield, the largest conglomerate oilfield ever discovered in the world. In Mahu Oil Province, 1.24 billion tons of possible oil reserves have been discovered, including 500 million tons of proven reserves, which equal the size of the Karamay oilfield.

"Mahu Sag is absolutely a great discovery. It is a giant oilfield, and will expand as more work is done."

—— Academician Zhai Guangming

"The large-scale discovery and capacity building of the One-billion-ton Giant Oilfield is of positive and practical significance to Xinjiang Oilfield. We look forward to make more theoretical innovation and more delicate mechanism innovation, so that the achievements will be fully recognized and well received by the industry."

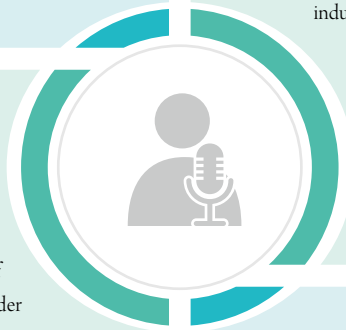
—— Academician Zhao Wenzhi

"Mahu Oilfield is unique in that there is no such conglomerate oilfield with the same formation elsewhere in the world. Therefore, it can guide us in future oil and gas exploration in terms of theories, techniques and the whole process of discovery. More importantly, it was discovered under challenging circumstances. Therefore, it is highly innovative, and its experience should be drawn on. It also plays an important role in guiding the discovery of this type of oilfields at home and abroad."

—— Academician Kang Yuzhu

"The discovery of the giant Mahu Oilfield is one of the most exciting discoveries of crude oil exploration in China, and is a major achievement in our crude oil exploration."

—— Academician Liyang



Increase Profits through Managerial Innovation

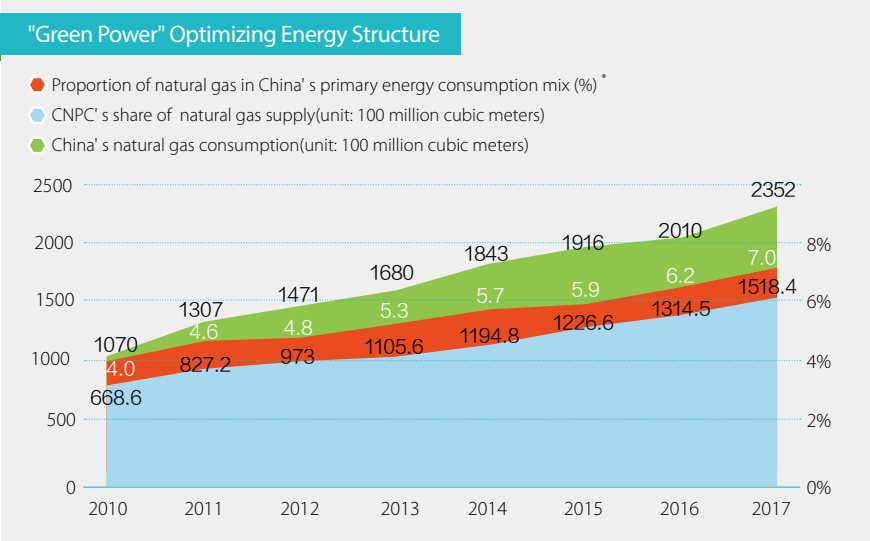
In face of low oil prices and the "new normal" of economic development, CNPC continued to increase profits through managerial innovation. New breakthroughs were made in tackling bottlenecks in reform and pushing forward innovation-driven development. Corporate restructuring at the level of CNPC and its state-owned subsidiaries was completed, and functional optimization and institutional reform of headquarters organs were accomplished. China Petroleum Engineering Company Limited and CNPC Capital Company Limited were successfully listed. The management system reform and professional restructuring and integration of CNPC International division and CNPC Oilfield Service division were in full swing. We optimized the management and control model and management mechanism, exercised differentiated management and control, and promoted mixed ownership reform. We kept increasing efficiency and profit as well as cutting cost and expenditure, strengthened management and technological progress, and controlled costs and enhanced efficiency through adjusting program deployment, innovating production organization models, and making good use of labor force. In 2017, operational costs per unit of oil and gas and marketing cost for per ton oil dropped by 2.2% and 3% respectively.

Clean Energy

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

Natural Gas

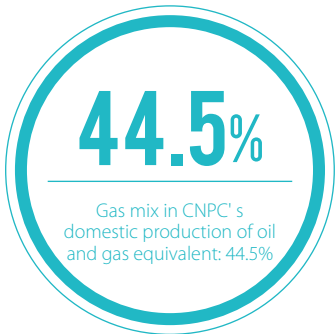
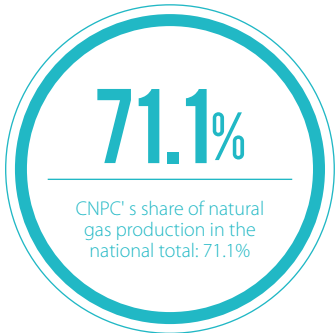
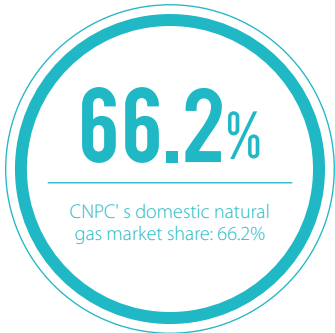
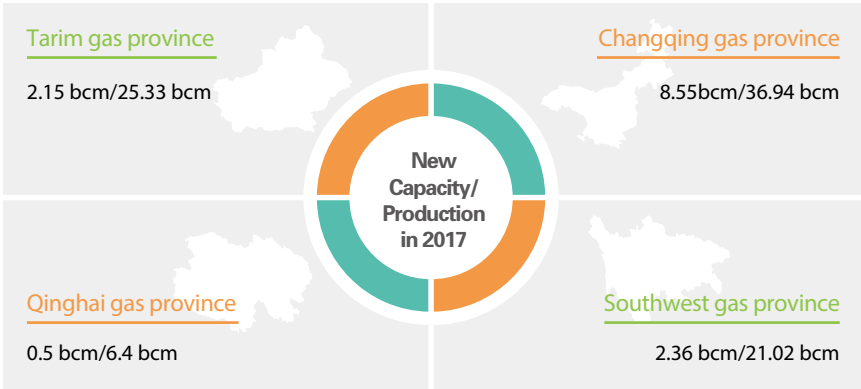
CNPC deems natural gas exploration and development as a strategic and growth-oriented project, keeps accelerating the construction of transnational natural gas pipelines and domestic natural gas pipeline network, promotes the development of conventional natural gas and unconventional gas such as tight gas, shale gas and coalbed methane, and imports overseas natural gas to build a diversified energy supply system.



* Data source: Energy Statistic Data by CNPC Economics & Technology Research Institute

Production Capacity

With a focus on capacity building projects in mature gas fields including four gas provinces in China (Changqing, Tarim, Southwest and Qinghai), we constantly intensify our efforts in the exploration and development of natural gas fields, further consolidating our resource bases. As of late 2017, our natural gas production capacity reached 104 billion cubic meters.



In order to secure sustainable energy supply, CNPC steadily promoted the exploration and development of unconventional natural gas resources

- **CBM:** Steady progress in production capacity building in new blocks such as Mabidong, Daning-Jixian and Jiergalangtu; and comprehensive adjustment in mature blocks in Fanzhuang, Zhengzhuang and Hancheng
- **Shale gas:** Steady progress in the building of shale gas demonstration zones at Changning-Weiyuan and Zhaotong; and 156.5 billion cubic meters of proven geological reserves of shale gas added

Pipeline Construction

In 2017, the Fourth Shaanxi-Beijing Gas Pipeline and the Zhongwei-Jingbian connecting line were completed and put into operation, effectively enhancing resource allocation efficiency and market supply capacity in the Bohai Rim. By the end of 2017, CNPC operated 53,834 kilometers of natural gas pipelines, forming a gas network crisscrossing the country and connecting China with other countries. The pipeline network covers 30 provinces (municipalities and autonomous regions) and Hong Kong SAR in China, benefiting more than 500 million people.

Progress in Natural Gas Pipeline Construction

Project	Main Progress
Eastern Route of Russia-China Gas Pipeline	In smooth progress
Central Asia-China Gas Pipeline	Line A / B / C put into operation, Line D put into preliminary work
Fourth Shaanxi-Beijing Gas Pipeline	Put into operation on schedule
Zhongwei-Jingbian Connecting Line	Put into operation on schedule

Utilization of Natural Gas and Alternative Fuels

We actively promote the comprehensive utilization of natural gas in city gas, industrial fuels, natural gas power generation, chemical feedstock and vehicle fuels. In 2017, we implemented 10 projects including Changxing Island City Gas and two natural gas power generation projects including Zengcheng Power Plant.

CNPC' s Measures to Secure Market Supply during Special Periods in 2017

Agricultural production

During spring plowing, summer planting, summer harvesting and summer field management

we.....

- Surveyed oil demand, developed plans to secure supply, and opened green channels;
- Scheduled resources availability, and coordinated distribution of fuel in advance

Natural disasters

In response to the mountain collapse in Maoxian County in Sichuan Province, the earthquake in Jiuzhaigou, Aba Prefecture, Sichuan Province, and the landslide in Zhangjiawan Town, Nayong County, Bijie Prefecture, Guizhou Province

we.....

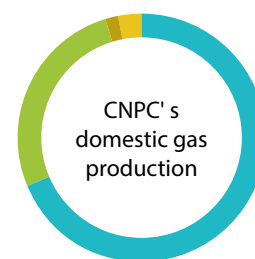
- Started an emergency plan to secure oil supply
- Opened green channels to secure oil supply for disaster relief
- Fully supported earthquake relief efforts

Major national events

During the major events such as the Belt and Road Forum for International Cooperation, the ninth BRICS Summit, Dialogue of Emerging Market and Developing Countries and the 19th National Congress of the Communist Party of China (CPC)

we.....

- Strengthened security of regional resources supply
- Optimized secondary distribution management
- Guaranteed stable supply of resources during the events



CNPC' s domestic natural gas production in 2017

Conventional gas	68.8%
Tight gas	26.6%
CBM	1.7%
Shale gas	2.9%

Case Study Promoting Connectivity of Domestic Pipeline Networks

By the end of 2017, CNPC' s Shaanxi-Beijing Gas Pipelines were connected with Sinopec' s Yulin-Jinan Pipeline and Anping-Jinan Pipeline, and our Second West-East Gas Pipeline was connected with Sinopec' s Sichuan-East Gas Pipeline and CNOOC' s LNG lines, further enhancing the capacity and flexibility of natural gas allocation.

Question The year 2017 saw robust demand for gas. What measures has CNPC taken to secure gas supply during winter months when gas consumption for heating peaked?

Answer In order to minimize the imbalance between gas supply and demand caused by various factors, we responded immediately with emergency plan, took multiple measures to increase production and supply, strictly reduced industrial gas consumption in the petroleum sector, and orderly cut gas supply to direct industrial users. In coordination with users in relevant regions and downstream users, we strived to secure gas supply for people' s livelihood and ensure stable market supply.

Upgrading of Refined Products

We strive to provide cleaner and more efficient refined products and optimize the energy consumption mix by increasing investment, accelerating R & D and application of new technologies, and upgrading gasoline and diesel quality. In 2017, while completing National V gasoline and diesel upgrading on schedule, the Company earmarked on a special-fund R & D program for National VI gasoline and diesel upgrading. As of 2017, we supplied National VI gasoline and diesel to "2+26" cities of Beijing, Tianjin, Hebei, and surrounding areas ahead of schedule.

In 2017, we supplied 114.163 million tons of refined oil (gasoline and diesel) to the domestic market, accounting for 37.2% of the domestic market share. Among them, supply of high-grade gasoline and aviation kerosene both increased over last year.

Accelerating R & D and Application of New Technologies

We developed a series of catalysts featuring high gasoline yield and low carbon emissions, which have been promoted and applied in Lanzhou Petrochemical, Guangxi Petrochemical, and Dagang Petrochemical. Making a technological breakthrough as it can reduce carbon emissions while enhancing gasoline yield, the technology has won the Second Prize of National Science and Technology Progress Award in 2017.

We actively respond to



- Air Pollution Prevention and Control Action Plan
- Work Plan for the Acceleration of the Quality Upgrading of Refined Oil
- Work Plan for Air Pollution Control in the Beijing Tianjin-Hebei Region and Surrounding Areas in 2017

New Energy

With an eye on the future, we continued to promote the development of renewable energy including geothermal energy and biofuels, and made substantial progress in the exploitation and utilization of natural gas hydrates and some other resources.

Case Study

Contributing to the Successful Test Production of Combustible Ice in South China Sea

Natural gas hydrates are also known as "combustible ice". Combustible ice is abundant worldwide, equivalent to twice the amount of other known fossil energy resources in the world. It is mainly distributed in the ocean, and a small amount of it can be found in the tundra on land. Once decomposed, one cubic meter of natural gas hydrates can release 164 to 180 cubic meters of natural gas. It is a high-efficiency clean energy and is hailed as the green energy of the 21st century.

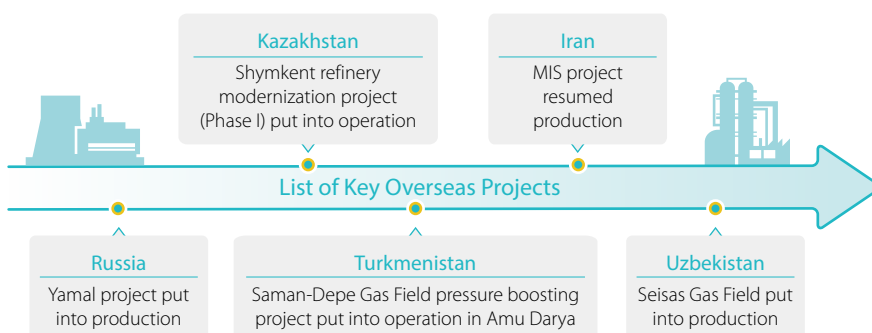
From March to July 2017, CNPC carried out China's first test production program of combustible ice in Shenhu area of South China Sea as the general contractor. It successfully produced gas for 60 consecutive days, with a total production of 309,000 cubic meters of gas, or an average daily production of 5,151 cubic meters. The test production has set two world records: the longest production time and the highest total gas production. Thus, combustible ice was listed as the country's 173rd mineral variety. As a result, we received a congratulatory message from the CPC Central Committee and the State Council.

Energy Cooperation

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

International Energy Cooperation

In response to low oil prices and regional turmoil, we worked hand in hand with the government of the host countries and our partners to guarantee the stable operation of cooperation projects. Leveraging China's Belt and Road Initiative, we entered into a great number of cooperation agreements with companies in Russia, Uzbekistan, Azerbaijan and other countries on gas purchase and sales, pipeline transportation, and gas storage construction. In 2017, CNPC produced 162.74 million tons of oil and gas equivalent overseas, with CNPC equity production of 89.08 million tons, up 17.2% year-on-year. The Company made due contributions to meeting energy demand in host countries and supporting local economic development.



Joint E & P in China

We continue to make steady progress in cooperation with international partners in developing oil and gas resources in China. While deepening cooperation in conventional areas, we reinforced cooperation with IOCs in shale gas and other unconventional resources. In Neijiang-Dazu and Rongchangbei shale gas blocks in partnership with BP, we actively performed 3D seismic data acquisition, processing and interpretation as well as exploration well drilling. In the South Sulige Project, we promoted the large-scale application of velocity strings, leading to an annual gas output of more than 2 billion cubic meters. In the implementation of the Chuanzhong Project in Sichuan Province, channel sand was finely characterized and SRV fracturing technology for horizontal wells was adopted, enhancing drilling efficiency and reducing costs and reaching a new high in production and efficiency. Our domestic oil and gas production equivalent in cooperation with international partners amounted to 9.86 million tons.

Major Joint E & P Projects in China in 2017

Project	Partner	Progress
Zhaodong crude oil project	New XCL Roc Oil (Bohai) Company	Stable production
Changbei natural gas project	Shell	Stable production
Chuandongbei natural gas project	Chevron	Increased production
South Sulige natural gas project	Total	Increased production

International Marketing

Supported by our overseas operation hubs and trade networks, we conduct international trading through cooperation and joint ventures in over 80 countries and regions around the world, constantly improving our resource deployment capability. In 2017, we reported 469 million tons of international trading volume, and witnessed improvements in both scale and operational quality.

38

CNPC operates in 38 countries and regions

95

CNPC operates 95 projects

76

CNPC provides technical service and engineering construction for 76 countries and regions

Special Report

CNPC in the Era of Intelligent Energy

CNPC integrates the latest internet information technology into the traditional oil and gas industry, and applies new technologies such as cloud computing, big data and Internet of Things (IoT) to the whole process of production and operation. While reducing costs and enhancing efficiency, it provides consumers with much cleaner, safer energy with lower carbon emission and higher efficiency.

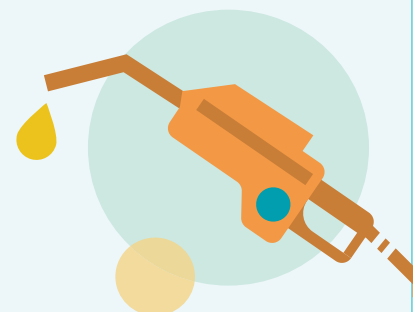


Digital Oilfield

The widespread use of IoT technology makes it possible to build digital oilfields. CNPC widely has used IoT technology in the building of oilfields such as Daqing, Changqing, Tarim, Xinjiang and Dagang, realizing cross-regional cooperation and information sharing among the oilfields. Specifically, Dagang Oilfield worked hard to build digital oilfields using IoT technology, and integrated the thinking of IoT in all processes including technology, production and management. As a result, it has realized unattended operation at medium and small stations and few-man operation at large stations, significantly reducing costs of manpower and vehicle operation.

Intelligent Pipeline

Taking the Eastern Route of the Russia-China Gas Pipeline as a pilot project, CNPC is dedicated to the construction of intelligent pipelines featuring comprehensive and unified data, visual and perceptive interaction, system integration and interconnection, accurately matched supply, intelligent and efficient operation, and controllable forecast and warning. Intelligent analysis and decision-making support can be provided through the "mobile client + cloud computing + big data" system by integrating the full life circle data of the pipelines; the quality, work pace, and safety control of engineering projects can be substantially improved through the IoT and intelligent sites and other means; and an intelligent oil and gas pipeline network can be gradually built by such means as intelligent equipment management and overall optimization of the pipeline network.



Intelligent Environmental Management

CNPC applied "Internet +" to its environmental management. Our HSE information system (Version 2.0) became operational, forming a globally integrated HSE platform and risk control platform, which fully cover HSE management business both at home and abroad. This can serve as the platform for the Company's HSE decision-making and early warning, management work, real-time monitoring, and problem handling and follow-up measures.

Intelligent Gas Station

In the field of sales, based on the traditional gas station sales system and the internet, while using big data, cloud computing, Internet of Vehicles, IoT, mobile payment and other internet technologies, we provide consumers with more convenient and considerate services. Based on mobile payment and refueling card services and focusing on the notion of "People, Car and Life", CNPC e-station APP provides consumers with an efficient, convenient and intelligent automotive service platform. Its core functions include gas station navigation, mobile payment, online refueling card recharge, and refueling card inquiries. In particular, the mobile payment function allows consumers to pay for gasoline or diesel without leaving their vehicles.

Special Report

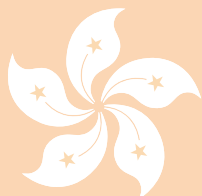
Contributing CNPC's Solutions to a Low-Carbon Future

The world energy pattern is going through profound adjustment, and transition to efficient, clean and diversified energy is accelerating. As the world's largest emerging economy, China has become the largest energy consumer in the world. Optimizing China's energy mix and promoting China's revolution in energy production and consumption would significantly contribute to addressing global energy challenges.

In order to promote the low-carbon transition of China's energy mix and deliver modern and efficient energy for all, CNPC has taken the accelerated development and utilization of natural gas as a strategic and valuable project. In the ever-bright city of Hong Kong, remote regions in Tibet, smog-hit Beijing-Tianjin-Hebei, and the "Oriental Pearl" city of Shanghai, we accelerated the construction of natural gas pipe networks, and successively implemented natural gas green projects. By the end of 2017, CNPC had completed a trunk pipeline network crisscrossing the country. Covering 30 provinces (municipalities and autonomous regions) and the Hong Kong Special Administrative Region, CNPC's pipeline network is mainly supported by the West-East Gas Pipeline System, Shaanxi-Beijing Gas Pipeline System, Myanmar-China Gas Pipeline System and Northeast Pipeline Network System. In 2017, CNPC supplied 151.84 billion cubic meters of natural gas, which, if calculated by equivalent heat value, is equal to the substitution of 310 million tons of standard coal, and a reduction of 570 million tons of carbon dioxide and 3.89 million tons of sulfur dioxide.



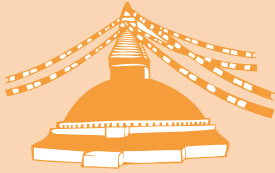
Hong Kong



5.17 billion cubic meters

Hong Kong, a prosperous and densely populated city, still uses coal for power generation. In 2012, the Hong Kong Branch of the Second West-East Gas Pipeline was completed and put into operation, and natural gas was delivered to the west coast of the Pacific Ocean from the right bank of Amu Darya River in Central Asia. Castle Peak Power Station, the largest power station in Hong Kong, achieved replacement of coal with gas. It can replace 3.4 million tons of standard coal and reduce 6.3 million tons of carbon dioxide emissions and 40,000 tons of sulfur dioxide emissions on a yearly basis. By the end of 2017, a total of 5.17 billion cubic meters of natural gas had been delivered to Hong Kong through the Second West-East Gas Pipeline. According to the report of Hong Kong's Environmental Protection Department (EPD), the past decade saw a decline in the concentration of PM2.5 in Hong Kong; moreover, the overall air quality continued to improve in 2016, with a decline in the concentration of various air pollutants.

Tibet



400 million cubic meters

Tibet is located in the alpine area and ecologically sensitive area. However, gasoline, diesel, coal and liquefied petroleum gas were mainly used for industrial production and residential life, while fuel wood, coal and cow dung were still used by some farmers and herdsmen as fuel, which was not environmentally friendly. Since 2010, CNPC has started to build a gasification station in Lhasa to process the liquefied natural gas delivered from Qinghai Oilfield, meeting the local industrial and domestic gas demand. As of 2017, CNPC had completed one liquefaction plant in Golmud with a daily processing capacity of 350,000 cubic meters and a LNG gasification station in Lhasa with a daily processing capacity of 150,000 cubic meters. In addition, seven LNG filling stations were built in the Haixi region of Qinghai Province and the Lhasa Economic and Technological Development Zone. Since the projects were put into operation, an accumulative total of 400 million cubic meters of LNG has been produced and a total of 80 million cubic meters of natural gas was supplied steadily to Tibet, improving the local energy mix.

Beijing-Tianjin-Hebei region



275.1 billion cubic meters

Air pollution has become a major problem hindering the development of the Beijing-Tianjin-Hebei region. In cooperation with the government and companies, CNPC has been making great efforts to promote the construction of natural gas pipeline networks and the development of "coal-to-gas" projects in the region. Since their operation, the first, second and third Shaanxi-Beijing Gas Pipelines have delivered a total of 275.1 billion cubic meters of natural gas to Beijing and the rest of North China. On average, days with good or excellent air quality in November 2017 in 13 cities in the region was up 31.6% year-on-year, while PM 2.5 concentration was down 41.2%, as shown in the air quality report for November released by the Ministry of Environmental Protection of the People's Republic of China.

Shanghai



24.7%

Natural gas has been in use in Shanghai since April 1999, however, the source of gas supply has always been a bottleneck. In January 2004, natural gas from the West-East Gas Pipeline was officially delivered to Shanghai. Since then, the proportion of natural gas has been on the rise in Shanghai's energy consumption mix, directly changing the coal-dominated energy consumption structure. In recent years, the Special Steel Plant, a subsidiary of Baosteel, has removed 149 coal gas furnaces, contributing to an emission reduction of sulfur dioxide and soot by 59.5% and 26.8% respectively, and a decrease of atmospheric dust fall index by 24.7%. The steady stream of green energy will inject new momentum into Shanghai's efforts to develop Chongming Island into a world-class eco-island.

Special Report

Yamal LNG Project Completed and Put into Operation

Yamal LNG Project is China's first overseas megaproject since the launch of the Belt and Road Initiative. It is also the country's largest investment project in Russia, widely hailed as a fine example of China-Russia cooperation. CNPC participates in the operation of the project throughout the entire industrial chain and has become a vital player in the international LNG industry.

Located in the Arctic Circle of the Yamal Peninsula in Russia, the Yamal project is an integrated project encompassing oil and gas exploration and development, natural gas processing, liquefaction, marketing and shipping. CNPC, China's Silk Road Fund, Novatek and Total hold 20%, 9.9%, 50.1% and 20% of the equity shares of the project, respectively.



"This project is of great significance, for it can help strengthen our economic cooperation with countries in the Asia Pacific region, particularly the People's Republic of China, one of our most important partners in the region. Meanwhile, it is a model for successful international cooperation with France, Italy, Germany and other European countries."

—Vladimir Putin, President of Russia



Reserves

60 million tons of condensate, 1.3 trillion cubic meters of natural gas



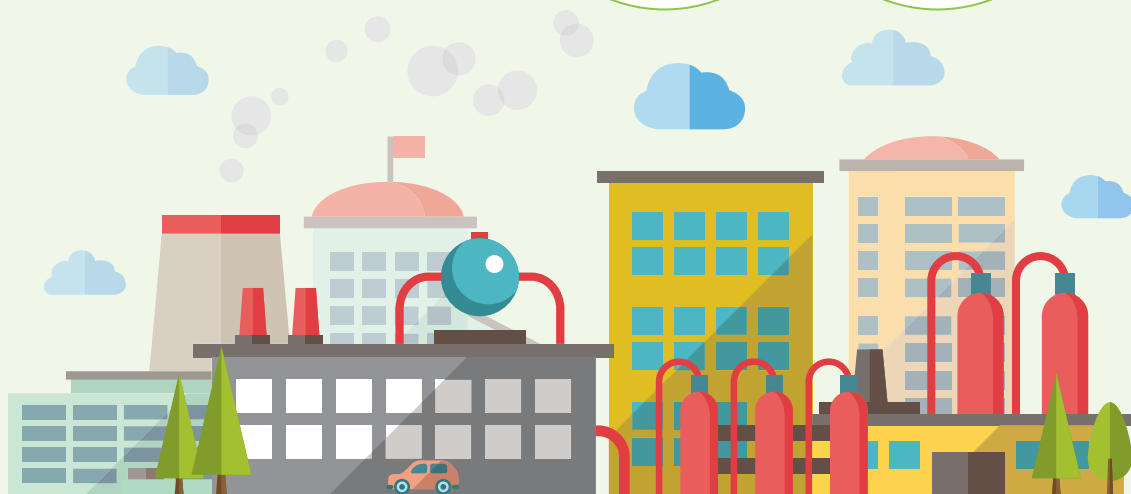
Annual capacity

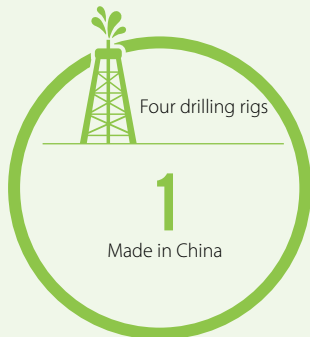
25 billion cubic meters of natural gas, 1 million tons of condensate



Funds raised

USD 19 billion, 63% of which contributed by China





Mutual Benefit and Win-win Results

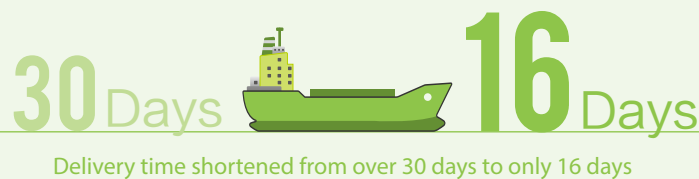
Thanks to concerted efforts of various parties, the first LNG Train of Yamal Project became operational in December 2017. This will not only drive the development of Russia's energy sector and its border areas, but will also diversify China's clean energy supply. Once completed, the project can provide 3 million tons of liquefied natural gas to China every year.

Promoting Industrial Development

Chinese enterprises have participated in project construction in an all-round way, from financing, design to construction. The construction of the Yamal project has directly promoted the technological innovation and restructuring of Chinese industrial sectors including steel, equipment, materials, construction and shipbuilding. During the construction of the project, Chinese enterprises undertook 85% of the workload for the construction of all modules, and exported products more than USD 10 billion.

Waterway Expansion

During the construction of the project, more than 60% of the modules were shipped through the Bering Strait and via the North-East Arctic Waterway, which shortened the delivery time from over 30 days via the traditional routes to only 16 days. The opening and development of the North-East Arctic Waterway not only provided convenience for Russia and China, but also facilitated logistics in Asia-Pacific, Europe and even the whole world.



Environmental Protection

Yamal LNG Project is located on the west bank of the Gulf of Ob in the north of the Arctic Circle. 60% of the surface is covered by marshes and lakes. In order to protect the ecological environment of the arctic region, dedicated equipment and systems were used to treat wastewater, waste gas and solid waste, and rational casing structure was selected to ensure high-quality well-building and protect underground resources. Additionally, engineering recovery and biological recovery were made on the land at the well sites. Since 2013, a total of 761 hectares of land has been restored, which can be used as agricultural land. In June 2017, the project was successfully certified and highly rated by the British Standards Institution HSE management system.



"We are especially grateful for the help from China during our most difficult times, which helped us smoothly advance the Yamal LNG Project. We look forward to further cooperation with CNPC, a trustworthy partner."

— Leonid Mikhelson, Chairman of Management Board of Novatek



2

Responsible Operation

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



SDGs



Safe Operation

We actively promote the building of a long-acting safety system and comprehensively enhance our work safety management. In 2017, we continued to take regulatory measures and fulfilled safety responsibilities, resulting in further progress in our grassroots work and a stable improvement in safety performance.

Management System and Performance Assessment

In 2017, we enacted and amended some management rules and regulations including the *Regulations on Administrative Sanctions against Persons Liable for Production Safety Accidents and Environmental Incidents*, fully implemented the production safety responsibility system, and strengthened regulations on production safety at the grassroots level. In order to further enhance the ability of all the employees to fulfill their duties in a safe manner, we evaluated their ability to perform duties safely and their safety skills, and organized matrix training on safety knowledge and skills.



HSE management system objectives	Major progress in 2017
To optimize the system examination mode and achieve full coverage of quantitative HSE examination	<ul style="list-style-type: none"> Developed and issued the Standard for Quantitative Examination of HSE Management System (Second Edition) Examined over 110 production and operation enterprises
To fully promote the standardized construction of grassroots stations	<ul style="list-style-type: none"> Compliance of standardized construction at grassroots stations: 56% 84.8% and 77.3% of managers and employees were assessed in HSE performance
To comprehensively promote the job-oriented training matrix	<ul style="list-style-type: none"> Prepared HSE training matrix guidelines for 10 major specialties

Hazard Control

We attach equal importance to both prevention and control of hazards. To effectively improve the fundamental safety of the Company, we set a closed-loop management mechanism for hazard identification and control. In 2017, we fully launched special campaigns to treat hazardous chemicals and to identify and eliminate safety hazards relating to oil and gas pipelines. After completing hazard treatment of long-distance pipelines, we continued the rectification of hazards in the gathering and transmission pipelines of oil and gas fields. The rectification rate of hazards in the chemical tank field hazards reached 100%.

Safety Risk Management

We fully guaranteed process safety, strengthened management and control over safety risks in the production process, implemented a dual-prevention mechanism covering risk prevention and control and hazard identification and treatment for production safety, and established a classified risk prevention and control system, so as to eliminate safety risks and potential hazards to prevent accidents. In order to further strengthen risk supervision and control in high-risk and risk operations and sensitive periods, we set up "red lines" for strengthening ideology, discipline, enforcement and assessment in critical risk areas. Safety and environmental protection technology diagnosis and management assessment were carried out on key areas such as hazardous chemicals, key subsidiaries, key projects and high-risk areas to ensure major risks are under control.

Supply Chain Safety

We included suppliers and contractors into our safety management, and had an all-process management on their access, selection, training, use and evaluation, so as to prevent and reduce accidents caused by suppliers and contractors.

100%

Rectification rate of long-distance pipeline hazards reached 100%

100%

Rectification rate of oil and gas field gathering and transport pipeline hazards reached 100%

100%

Rectification rate of chemical tank field hazards reached 100%

7

Safety and environmental technology diagnosis and management assessment were conducted at 7 key subsidiaries and projects; significant problems and major hazards were handled with follow-up measures

CNPC Supply Chain Safety Management Process



We

- Fully promoted and implemented the safety access system for contractors' construction operation
- Issued the *Opinions on Further Strengthening Management of Contractors' Construction Operation Safety*
- Adopted the contractor project joint safety committee system

Hazardous Chemicals Management

We exercised full process management on hazardous chemicals covering production, storage and transportation. In 2017, we carried out a comprehensive survey on basic information on hazardous chemicals and established an information platform on hazardous chemical safety supervision. We issued the *Implementation Plan for Comprehensive Management of Hazardous Chemical Safety*, established and improved hazardous chemicals management systems, organized centralized training for key personnel in charge of hazardous chemicals enterprises, and operated the information platform for comprehensive regulation of hazardous chemicals, so as to keep improving our safety management of hazardous chemicals.

Emergency Management

We make unremitting efforts to improve our emergency management system and our comprehensive capability of emergency response has been steadily improved. In 2017, we urged our subsidiaries to revise their emergency plan, continued to promote the application of the site handling plan and emergency response card at the grassroots level. As a result, our emergency plan system was continuously improved. We organized the desktop maneuver of "emergency disasters in Myanmar-China Pipeline Project (Chinese Section)". Some of our subsidiaries including Southwest Pipeline and Yunnan Petrochemical carried out emergency drills. We promoted the building of the national base for hazardous chemicals emergency rescue and training. The construction of the emergency response center and the establishment of locations for supplying emergency materials and equipment for oil-spill were in orderly progress, and our capacity of emergency response and rescue was further enhanced.



Offshore Oil Production Safety

We strengthened supervision of offshore oil production safety. We carried out special inspections on project commencement in spring, typhoon prevention, offshore operations in winter, and wharf workplace safety. We implemented the "tag and check" system on major potential hazards. Additionally, emergency response drills were carried out for fire and explosions at offshore oil and gas production facilities, rescue of personnel overboard, as well as oil spills and pollution, so as to ensure the steady and orderly operation of offshore oil production. In 2017, we realized stable and orderly operation at our offshore oil production facilities.

Overseas Security Management

Personnel safety has always been an overriding priority in our operations. We constantly reinforced the operation of social security management system, fully strengthened social security risk prevention and control, and continuously enhanced emergency response capabilities. In 2017, there were no fatalities in our overseas projects concerning social security.

Overseas Security Risk Management

Risk level	Management measures
Extremely high risk	CNPC sets out clear and unified security management requirements and implements intensified security management policies
High risk	Before project implementation: carry out security risk assessment and formulate an effective security program. The project shall not be implemented until it is reviewed and approved by the Company. During project implementation: keep improving the security program and revising the emergency response plan according to changes in local security situations, and organize drills to ensure personnel safety
Medium risk	Carry out risk assessment, formulate an emergency response plan and implement security measures before project implementation
Low risk	Implement necessary security measures

Major initiatives for overseas security in 2017

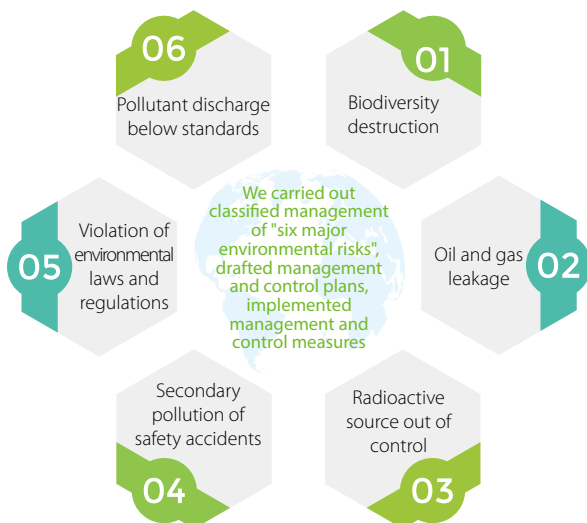
- Kept improving security management system to increase its relevance, practicality and operability
- Strengthened monitoring and evaluation of the security management system's operational performance, and conducted security management system review of overseas projects
- Continuously strengthened anti-terrorism security training for overseas employees to improve their emergency response capabilities. More than 17,000 employees were trained at 281 training sessions in 2017
- Strengthened IT-based management, comprehensively promoted the application of the "overseas risk" APP, and strengthened information sharing and emergency management capabilities

Environmental Protection

We take the initiative to evaluate the environmental impact of our management and activities, and make efforts to reduce adverse effects on the environment and climate. By improving the resource utilization efficiency, implementing the Clean Air Act, promoting energy conservation and emission reduction, and striving to achieve environmentally-friendly and resource-saving operations. We vigorously advocate ecological civilization, in order to achieve harmonious development with the environment.

Strengthening Risk Prevention and Control

Improving the environmental management mechanism. We carried out environmental risk identification and assessment, and implemented a risk prevention and control management model focusing on environmental forecasting, pre-warning and monitoring. We began the environmental risk management at an earlier stage, and established a sound risk management mechanism featuring "management in tiers, prevention and control by levels", in order to ensure overall control over environmental risks. In 2017, no major environmental accidents were reported and all major pollutants reduction targets were achieved.



Strengthened HSE compliance management of construction projects

- Developed rules and regulations on environmental protection of construction projects
- Regulated responsibilities, management procedures and requirements for safety and environmental protection of construction projects
- Operated the management information platform for safety and environmental protection in the process of design, construction and operation of construction projects





Case Study Sichuan Petrochemical Promotes Green Development

CNPC Sichuan Petrochemical Co., Ltd. (hereinafter referred to as "Sichuan Petrochemical") strictly complied with environmental regulations. Internally, it strengthened requirements and kept updating HSE software and hardware; externally, it strengthened communication, so that the public could know and supervise the HSE measures taken by the Company.

Strengthened control at source. At the very beginning of project construction, Sichuan Petrochemical put environmental protection in the first place and earmarked more than 10% of the total investment for environmental protection. The environmentally-friendly full hydrogenation process was used to replace the traditional coking process, and measures such as the use of natural gas and other clean fuels and circulating filtration and recycling systems were taken to prevent and control pollutants at source.

Strictly prevented water pollution. Sichuan Petrochemical established a four-level prevention and control system to prevent water pollution. Material pipelines were laid on the ground to prevent possible leaks from polluting groundwater; the leakage contaminant collection system was installed, and 193 pumping wells for groundwater monitoring were drilled around the plants, within the installations and peripheral drainage lines to monitor leaks in real time; based on the characteristics and changes of the seepage field and the transformation relationship between groundwater and surface water, strict groundwater defense lines for plant boundaries were set up; a complete drainage system and a sewage treatment system were established, and the wastewater reuse rate reached 73%. In 2017, the average concentration of COD in the effluent of the company was 20.58 mg/L and the average concentration of ammonia nitrogen was 0.24 mg/L, both below the limits of relevant national standards.

Strengthened information disclosure. Sichuan Petrochemical carried out its business in an open and transparent manner. It invited the public to visit production facilities and made clear its HSE measures and performance; in partnership with the local government, it launched the campaign of "eco-industrial tourism of the most beautiful villages", to invite the public to the plants to see the production process in petrochemical enterprises. Through LED screens and online platforms, the environmental authorities released realtime data of ambient air quality within the plants every day. Sichuan Petrochemical published monitoring data about the ambient air and sewage in the plants every day on its official websites and microblogs, introduced the green production process of refined products through the official microblogs, and provided the public with multiple channels for environmental information.

Continuing to enhance environmental monitoring capabilities. We completed the installation and data networking of online monitoring equipment for waste water and waste gas, and performed real-time monitoring and alarm of discharges from major pollution sources. In order to strengthen supervision and evaluation of subsidiaries, we set up an environmental monitoring network featuring "three-tiered environmental monitoring, environmental emergency monitoring and online monitoring of pollutants", which ensured treatment at the source, and control over the production process.

Case Study Comprehensive Treatment of Volatile Organic Compounds (VOCs) Pollution

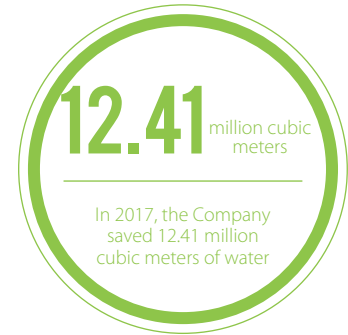
We make unswerving efforts to promote the application of Internet technology and big data in environmental protection. In 2017, we developed and established the VOCs management and control platform, managed and controlled VOCs emissions from refining companies from 12 source items, tracked the progress of comprehensive VOCs treatment, and built a large database for VOCs emission statistics.

Sustainable Use of Resources




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

Water Resources

We endeavor to improve water utilization efficiency and realize sustainable water utilization throughout various links in our production and operation activities. Through strengthening water conservation management, water-saving technological transformation and wastewater treatment and recycling technology and other measures, we worked to reduce the use of fresh water. In 2017, we saved 12.41 million cubic meters of water.

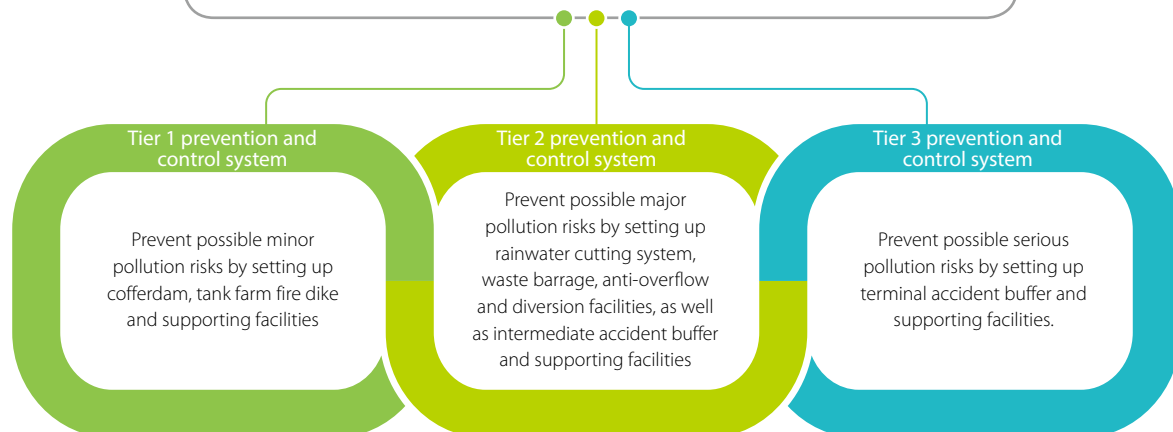


Eco-environmental Management in Full Life Cycle throughout the Industry Chain

 Exploration and Development	 Pipeline Operations	 Refining and Chemicals
<p>In our oil and gas development, equal importance was given to water pollution prevention & control and water recycling. After the oil-water separation and filtration treatment of the recycled wastewater, oil recovery and water reinjection were both realized, preventing groundwater and surface water contamination. By the end of 2017, over 100% of oil extraction wastewater in our oil and gas fields was treated, with a reinjection rate of more than 95%.</p> <p>We carried out water system maintenance and revamping, improved the water qualification rate, optimized operation programs, and upgraded wastewater discharge and treatment processes to reduce production water discharge, and promoted the application of new technologies for water treatment to maximize water conservation. In 2017, the comprehensive qualification rate of the Company's oilfield wastewater reached 100%, and water discharges were reduced by 5% year on year.</p>	<p>We focused on managing the impact on water resources by construction projects and the risk of leakage accidents during pipeline operations. Environmental impact assessments (involving water environment) were conducted, and water conservation and protection concepts and awareness were assimilated into construction activities.</p>	<p>We improved water consumption efficiency by promoting clean production processes, saving water from the source, and optimizing water consumption systems. We increased the concentration time of circulating water to reduce water supplement, and strengthened steam condensate water recovery to realize water saving. In addition, we emphasized wastewater treatment and reuse to reduce wastewater discharge and improve the industrial water recycling rate; and enhanced underground pipelines to get lower groundwater leakage rate.</p>

Reducing water pollution risks through three-tiered pollution prevention and control system

We set up a safe, timely and effective pollution prevention and control system, conducted environmental risk assessment, and adopted necessary prevention measures to control water pollution risks and prevent oil spill accidents.



Land Resources

On the principle of scientific siting, efficient use, proper protection, and timely restoration and through innovation in land-saving technologies and management models, we made careful and intensive use of land during production, strictly controlled land use growth, made good use of land through various ways, actively reclaimed land, carried out environmental treatment and recovery in mining areas, and enhanced land use efficiency. In 2017, we saved 1,180 hectares of land, about 7,867 square kilometers.

Sustainable Utilization of Land Resources of CNPC in 2017

	Measures	Achievements in 2017
Economical and intensive use of land	<ul style="list-style-type: none"> Optimize engineering design through technological innovation Made good use of land 	1,180 hectares of land saved
Land reclamation	<ul style="list-style-type: none"> Guarantee reclamation funds Fulfill reclamation responsibilities by various means including self-reclamation 	Some 15,000 hectares of land reclaimed
Withdraw from inefficient or unused land	<ul style="list-style-type: none"> Return land not in use or with insufficient use to the government 	20,500 hectares of land returned



Energy

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



Waste and Pollutants

We strictly monitored and controlled discharges of waste and pollutants in the production process, strengthened waste management, and reduced discharges of pollutants in the air, land and water.

In 2017, we formulated the *Plan on the Upgrading of Pollutant Discharge Compliance*, and proposed 12 major directions for the management of environmental protection, covering all elements of water, air, noise, and solid waste, as well as the whole process of exploration and production, refining and petrochemical, natural gas and pipeline, and engineering technology.

Energy Management and Control

In 2017, We carried out demonstration projects of energy management in Changqing Oilfield and Jinzhou Petrochemical, and organized major energy consuming subsidiaries to formulate and implement action plans for energy management to increase energy efficiency and lower energy consumption.

Conservation of Biodiversity and Natural Habitats

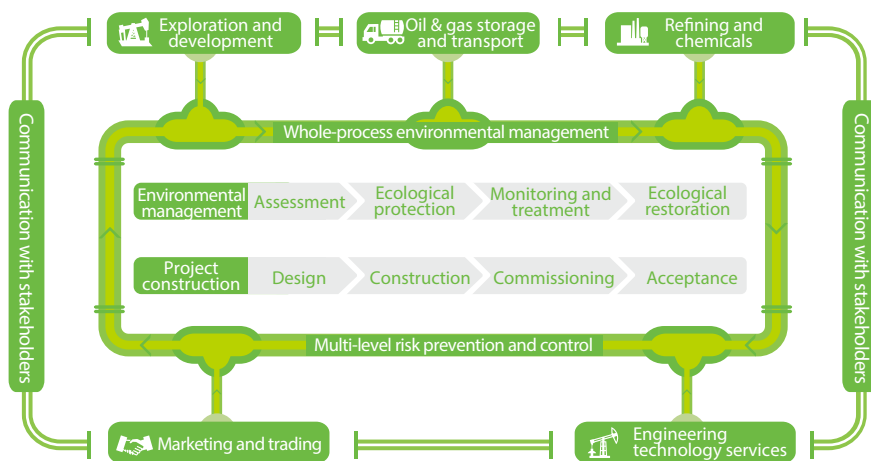
We are devoted to reducing the potential influence on ecological environment and biodiversity during production and operation, and take full precautions to avoid environmental impact and work hard to restore the environment to its original state in case of any adverse impact. We make an all-out effort to identify and address environmental pollution and ecological damage, and reduce the impact on the ecological environment by various means, including reducing noise and emissions. We do our utmost to reduce the occupation of cultivated land, protect water and land, and restore vegetation. Various measures are taken to restore the ecological environment in the working areas and protect biodiversity. In 2017, we formulated the *Action Plan for Ecological Conservation*, and implemented six major projects for ecological protection.



We

- Regard ecological security as a prerequisite for human survival, a foundation for sustainable economic and social development, and a guarantee for the safety of ecological products
- Respond to the development goal of "protect, restore and promote sustainable use of terrestrial ecosystems, and halt and reverse land degradation and halt biodiversity loss" set in the *UN's 2030 Agenda for Sustainable Development*
- Make every effort to support China's fulfillment of its responsibilities and obligations under international conventions such as the *Convention on Biological Diversity* and the amendment to the *Measures for the Administration of Environmental Protection of Construction Projects*, further regulating independent environmental acceptance of construction projects

Eco-environmental Management in Full Life Cycle throughout the Industry Chain

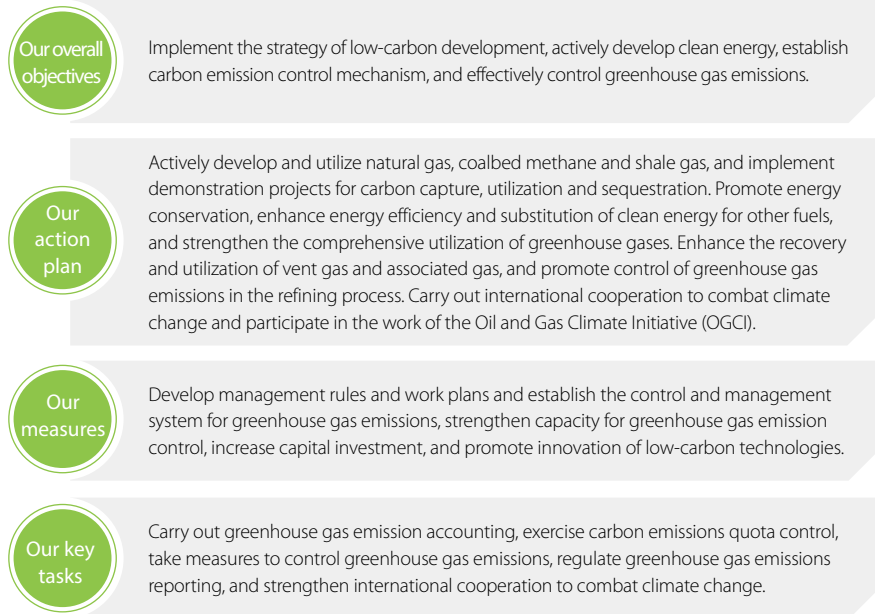


Principles, Objectives and Measures for Ecological Protection

Basic principles of ecological protection	<ul style="list-style-type: none"> • Protection first: exercise ecological space management and control, and implement the requirements for enforcing red lines for ecological conservation, setting the threshold for environmental quality, imposing a ceiling on resource utilization, and implementing a negative list of environmental standards for market access. • Scientific coordination: strengthen supervision over the full life cycle and all factors of development and construction. • Green development: minimize the ecological impact of development and construction activities. • Cooperation and sharing: coordinate with host countries (regions) where projects are operated to jointly achieve sustainable development.
Main objectives of ecological protection	<ul style="list-style-type: none"> • To ensure the compliance of industrial layout and project siting with ecological space regulations and control and red line requirements. • To effectively protect biodiversity, improve ecological quality, enhance ecological functions and effectively guarantee ecological security within the scope of development and construction activities and their impact. • To achieve sustainable development of business in harmony with the country (region) where the business is located, establish a green, harmonious relationship between enterprises and local communities, strive to be a "good corporate citizen", and achieve sharing of green development fruits.
Major measures	<ul style="list-style-type: none"> • To implement the requirements of ecological space utilization control. • To strictly exercise construction project ecological protection management. • To intensify efforts on ecological construction and restoration. • To promote green, harmonious relationship between enterprises and local communities. • To improve ecological protection management system.

Climate Change

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

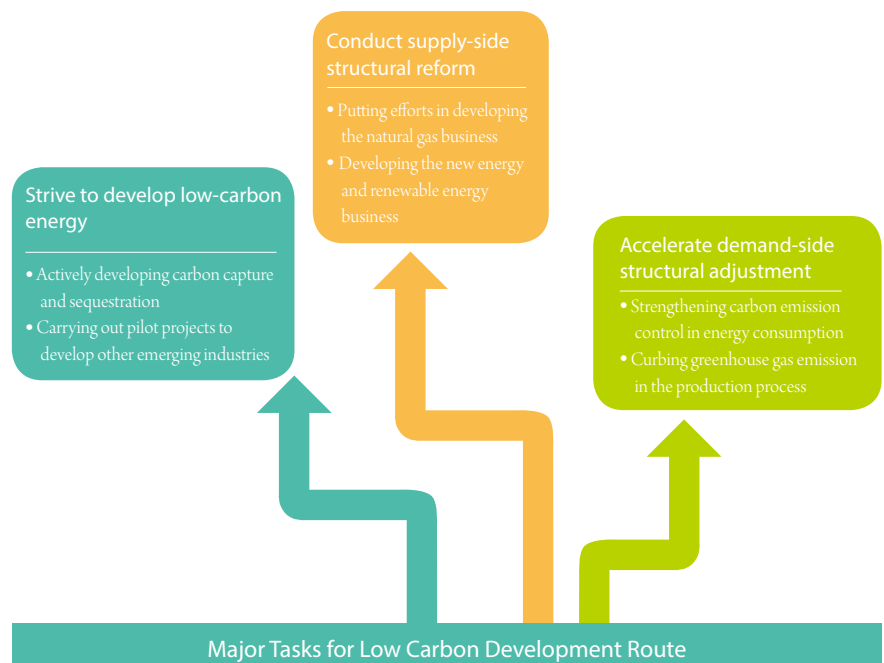


Plans and initiatives for greenhouse gas emission reduction and control supported and participated in by CNPC

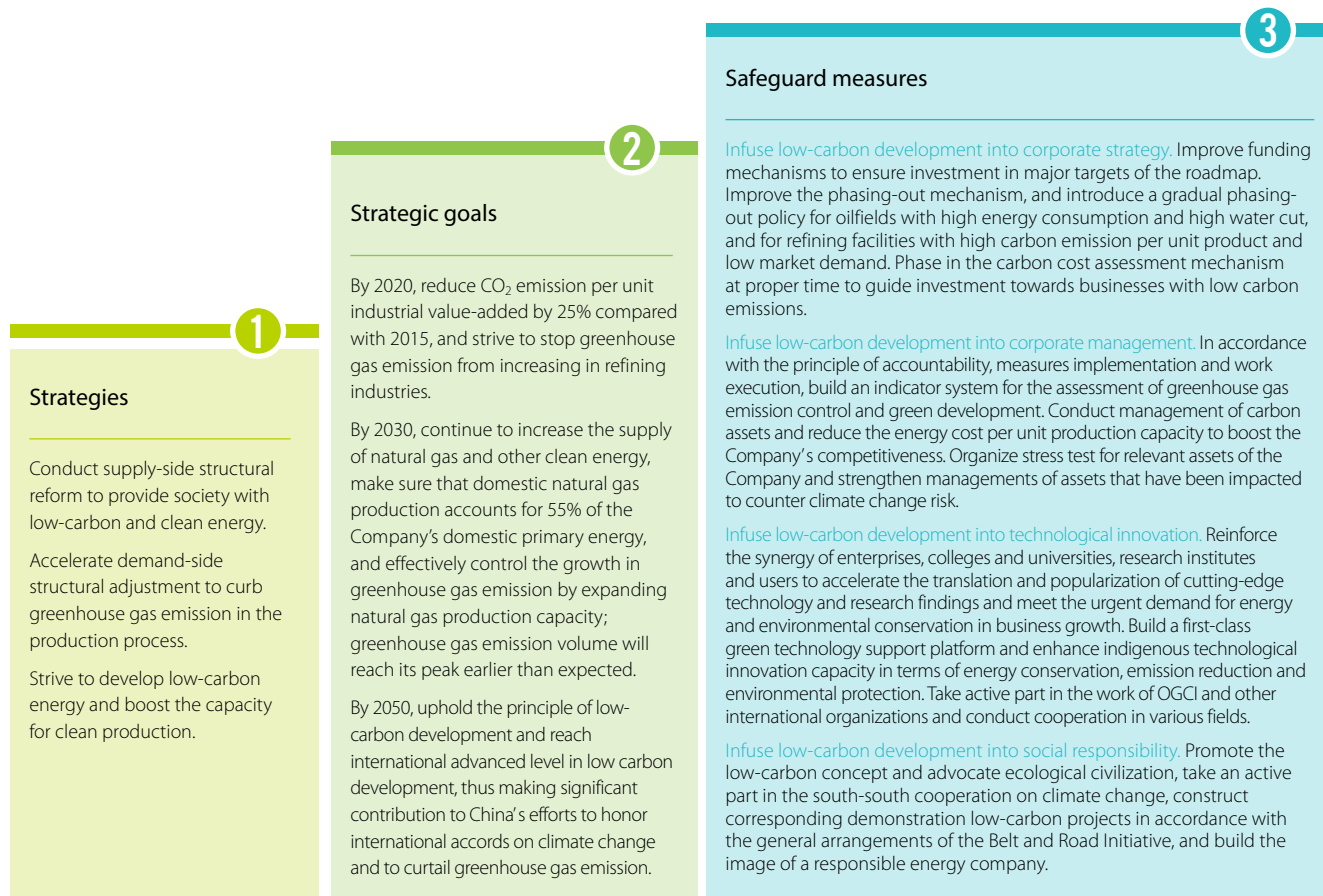
- Paris Agreement
- China's National Program to Address Climate Change
- National Plan on Climate Change (2014-2020)
- China Technology Strategic Alliance for CO₂ Capture, Utilization and Storage Technology Innovation (CTSA-CCUS)
- Oil and Gas Climate Initiative(OGCI)

Carbon Emission Management

We paid close attention to greenhouse gas emissions and included combating climate change in our development plan. In 2017, in accordance with the relevant planning and work program for greenhouse gas control, we formulated the *Roadmap for Low-carbon Development*, and set goals and tasks for low-carbon development. Meanwhile, we conducted accounting of greenhouse gas emission according to relevant national technical specifications.



CNPC Low Carbon Development Route



Case Study OGCI Actions in 2017

We were solemnly committed to the effective control of methane emissions in the natural gas industrial chain, took active part in the Oil and Gas Industry Climate Initiative (OGCI), coordinated with BP, Shell, Total and other partner companies as well as all sectors of the community in their positions and initiatives in combating climate change, and carried out relevant cooperation. We participated in the drafting of *OGCI-2040 Low Emissions Roadmap*, conducted survey on methane emission along the industrial chain of the oil and gas industry, and jointly formulated with other companies the assessment standard for CO₂ storage capacity of the oil and gas industry.

Case Study Green Finance Promotes Energy Consumption Transformation

In July 2017, Kunlun Financial Leasing Co., Ltd. directly under CNPC granted the first loans in an amount of RMB 60 million to State Power Investment Corporation Limited to fund the construction of a waste-to-energy plant in Bazhou City, Hebei Province. This project is one of the key green financial projects of the company. Kunlun Financial Leasing Co., Ltd. will provide RMB 200 million for the purchase of environmentally-friendly power generation equipment for the project. Once completed, the project can treat 1,200 tons of domestic waste every day at the new airport in Beijing and Xiong'an New Area in Hebei Province.

In response to the initiative of green finance proposed in China's "13th Five-year Plan", we actively participated in the construction of clean energy and environmental protection projects such as hydropower, wind power, photovoltaic power generation, and waste power generation. We successively invested clean energy projects in cities such as Chongqing, Guiyang, and Zhangpu, reduced the proportion of coal-fired power generation in the consumption mix, and provided the energy guarantee for the building of a new countryside and the development of special tourism. By the end of 2017, the Company had provided financing leasing services for 7 clean energy projects, aiming to reduce CO₂ emissions by millions of tons per year.

The Company will, following the investment strategy of giving top priority to the development of oil and gas while developing hydropower, nuclear power, wind power and photovoltaic power generation, keep intensifying its efforts to expand green finance business in the clean energy market. It is expected that green finance will become one of the pillar businesses of the Company by 2020.

Development of Low-Carbon Energy

We actively develop natural gas, coal-bed methane, shale gas, biomass energy and other low-carbon energies, constantly promote the exploitation of geothermal energy, solar energy and other renewable energies, and studied the exploitation of natural gas hydrate and other resources, in order to play a positive role in improving China's energy structure. The company attaches great importance to producing and supplying clean products, and works hard to achieve clean production of the products and clean consumption process (see Chapter 1: Sustainable Energy Supply for details).

Development and Application of Low-Carbon Technologies

With science and technology playing a significant role in controlling greenhouse gas emissions and addressing climate change, we carried out special studies on R & D of low-carbon technologies, established major projects in key technologies for low-carbon and clean development, and engaged in technological research on CO₂ flooding and storage, aviation bio-fuel production, refining energy system optimization, etc.

Carbon Emission Reduction during Production

While supplying society with clean oil products, we paid high attention to optimizing the structure of energy consumption by ourselves. We also cared about carbon emissions and carbon footprint during production and operation. In Huabei Oilfield, Tarim Oilfield and other areas, we used renewable energies such as geothermal energy and solar energy to reduce carbon emissions during production.

Market-based Mechanism for Carbon Saving

We actively participated in carbon trading activities to achieve carbon emissions reduction targets through market-based mechanisms. We are the co-founder of the Tianjin Climate Exchange (TCE), the first comprehensive emissions trading institution in China. The energy saving and emissions reduction projects developed by TCE could save more than 200,000 tons of standard coal annually, equivalent to over 500,000 tons of carbon dioxide emission reduction.

2009	Completed China's first carbon neutral deal based on standardizing carbon verification
2010	Certified the first carbon emission reduction (CER) at the energy efficiency market
2011	Completed the first voluntary emission reduction deal in China based on the PAS2060 carbon-neutrality standard
2012	Built a financing vehicle dedicated to energy-saving service companies jointly with financial institutions including Shanghai Pudong Development Bank and Industrial Bank, as well as the ESCO Committee of the China Energy Conservation Association
2015	Completed the largest CCER (Chinese Certified Emissions Reduction) transaction in China, with a trading volume of 506,125 tons
2016	Established the China Carbon Market Capacity Building (Tianjin) Center to help enterprises in non-pilot areas enhance their capacity in low-carbon development and carbon market participation
2017	Technically prepared the initial emission right verification and quota management according to China's planning for the establishment and operation of the carbon emission trading system

Forestry Carbon Sequestration

We actively support carbon sink forest construction and forestation activities in China. We established the China Green Carbon Foundation together with the State Forestry Administration, building an accumulative total of over 20 million hectares of carbon sink forests. Meanwhile, we set up the Forestation Committee to ensure continuous forestation in our production areas and living quarters. As of late 2017, green coverage in CNPC's production areas reached 293 million square meters, representing a vegetation coverage rate of 43.97%. A total of 649,000 employees voluntarily planted 2.1785 million trees in 2017.

Zero Coal

We formulated the *Measures for Strengthening Actions on Comprehensive Air Pollution Control in Autumn and Winter in 2017-2018 in Beijing-Tianjin-Hebei and Surrounding Areas*. In support of these measures, we also enacted the *Special Supervision Plan and Plan for the Control of Pollution Sources for Stability and Compliance with Standard*, and took strict implementing measures and strengthened supervision and inspection. By the end of 2017, all of the 285 coal-fired boilers had been phased out or replaced by clean energy in the Beijing-Tianjin-Hebei region and surrounding areas. No coal was used, low nitrogen transformation was carried out on gas-fired boilers in Beijing, oil and gas recycling in gas stations and VOCs treatment in refining companies were fully enhanced.

Case Study 10 Large-scale Carbon Sink Bases were Established in Changqing Oilfield

Changqing Oilfield operates in five provinces (autonomous regions): Shaanxi, Gansu, Ningxia, Inner Mongolia and Shanxi. About 70% of its oil and gas areas are located in the deserts and sparsely populated mountains, where, with a fragile ecological environment, environmental protection is essential.

Following the concept of "improving the local environment whenever building an oilfield", Changqing Oilfield invests tens of millions of RMB each year in establishing and maintaining large-scale carbon emission reduction bases and restoring vegetation on abandoned well fields and roads in the well area. In most areas of the oil and gas area, a green landscape featuring green belts along the road and lawns at the station has taken shape.

Over the past decade, Changqing Oilfield created about 3 million square meters of green land and planted more than 250,000 trees every year. As of late 2017, 10 large carbon sink bases had been built. It is estimated that the 66,667 hectares of carbon sinks established by Changqing Oilfield in Qingyang, Gansu Province alone can absorb more than 2.3 million tons of carbon dioxide every year, which will play an important role in local environmental protection and ecological restoration with the ability to release more than 1.7 million tons of oxygen for sequestration and carbon reduction.



Products and Services

Following the principle of people oriented, quality foremost, safety first, environment prioritized, we strengthen the quality management system and improve process quality control to create brand products. In addition, we continue to improve product, project and service quality.

Quality Control

In 2017, CNPC continued to enhance quality management and improved the quality of products, projects and services, focusing on quality supervision, metrological verification and standard revision.

Main Work	Content
Culture of quality-awareness	Conducted quality promotion, supervision and popularization of relevant knowledge
	Organized open house day in our labs, and 140,000 employees took part in a knowledge competition on overall quality management
	40 groups won the national award on excellent quality management, 27 teams won the national award on trustworthy quality, and four subsidiaries won the title of excellent enterprises in quality management
Quality supervision and inspection	Supervised and conducted spot-checks on the quality of supplier's products on key projects
	Conducted targeted spot-checks during key time periods of quality upgrading on Beijing VI and National IV general diesel, and National VI Standard oil products in "2+26" cities
	Conducted group spot-checks on key projects such as the Second Russia-China Crude Pipeline and the Fourth Shaanxi-Beijing Gas Pipeline
	Conducted spot-checks on 1,347 batches of purchased products
Metering verification	Medium and low-pressure primary standard device of Chengdu branch of the National Oil and Gas Large Flow Metering Station passed construction standard test
	Urumqi branch of the National Oil and Gas Large Flow Metering Station completed its construction and passed national test



100%

100% of our production and operation enterprises had their quality management system certified by a third party certification agency

Product Management

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

Quality Products and Services

Providing Quality Products

By strengthening technological innovation and promoting product quality upgrading, we provided applicable solutions for our industry as well as safe, reliable, high-quality and environmentally-friendly products for our customers.

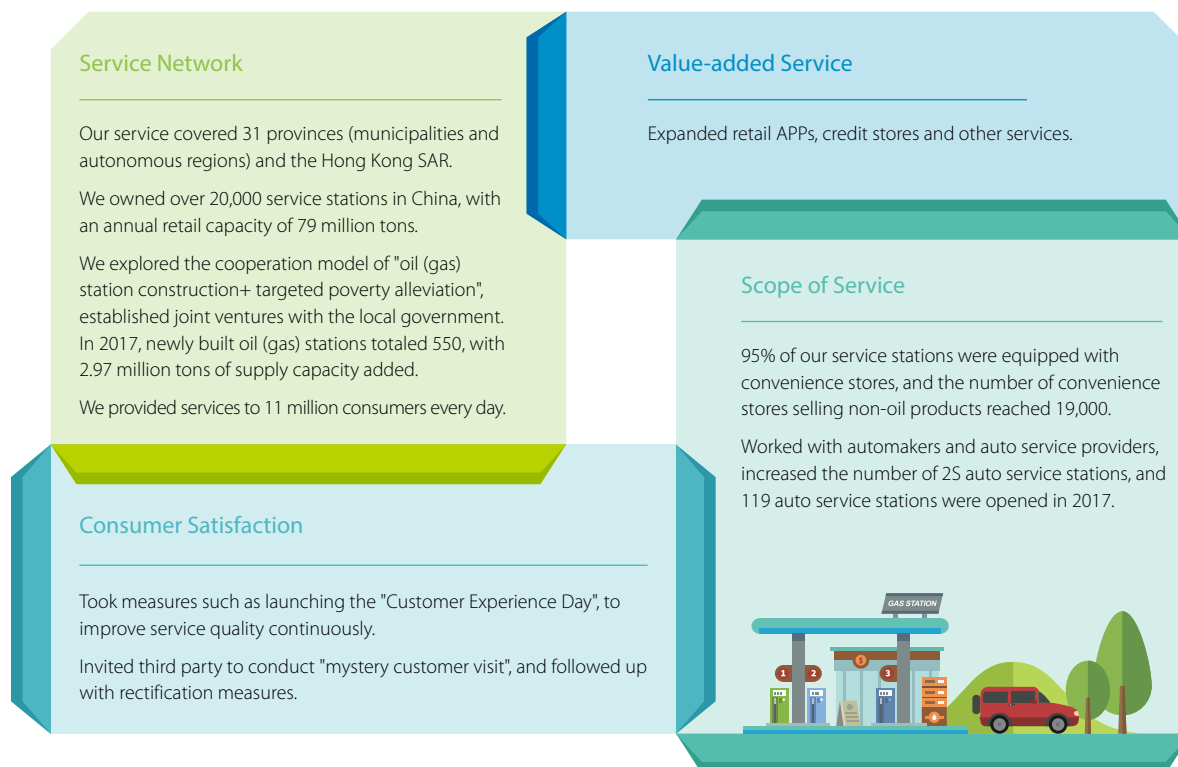
The "quality management experience of Lanzhou Petrochemical and China Huanqiu Contracting & Engineering Co., Ltd." won the title of quality benchmark for China's petroleum and chemical industry in 2017.

Refined Products and Chemicals

- Completed National VI refined product upgrading in "2+26" cities in Beijing-Tianjin-Hebei area and National V ordinary diesel upgrading nationwide
- Ethylene production increased by 170,000 tons year-on-year
- Synthetic resin increased by 200,000 tons year-on-year and synthetic rubber increased 50,000 tons
- Produced polyethylene, polypropylene and synthetic rubber and new chemical products under 70 brands
- Promoted more than 30 new products including metallocene linear polyethylene, low-melting point polypropylene and PERT pipes

Promoting Service Level

We constantly improve consumer experience and provide consumers with satisfactory and efficient services.



CNPC ranked first in the industry in the "China Total Brand Value Management Grand Awards 2017 (TBV)" in terms of China Brand Power Index (C-BPI) and China Net Promoter Score (C-NPS). Meanwhile, it was also granted the award of China Total Brand Value Management Grand Awards 2017.



According to the 2017 China Customer Satisfaction Index (C-CSI), an index compiled by brand rating and consulting institute Chnbrand, CNPC's aggregate score came out on top in terms of three key satisfaction indicators for gas stations: customer loyalty, overall satisfaction level and elements satisfaction level.

97.1

The average score for customer service was 97.1 points, an increase of 1.7 points over last year

Case Study

Travel with CNPC on the Silk Road

In 2017, the Company held two self-driving tours "Travel with CNPC on the Silk Road". Through interactions with journalists and customers, we provided an in-depth experience of the "smart lifestyle" at our service stations.

Supply Chain Management

We actively promote the sustainable development of the industrial chain. Therefore, we work in a respectful, communicative, honest and cooperative manner to facilitate our partners to carry out cooperation in product innovation, technological advancement, green, environmentally-friendly, and sustainable development, and procurement supply chain management, equipment management, and manufacturing business, encourage our partners to jointly fulfill our social responsibilities, and provide the society with high-quality products and services.

Through public bidding, we provided suppliers with fair, transparent and competitive opportunities. A unified supplier database was established for open tenders, fair competition and online transactions. The "Open, controlled, fully documented, and permanently traceable" process could ensure the quality of procured products and services. We have also established a complete supplier quality management mechanism which covered quality approval, quality inspection, supervision and spot-checking, and on-site supervision of the manufacturing of major products. Through the use of information technology and Internet tools, we implemented supervision and inspection of different units, different positions and different stages in the same process of the same business, to minimize dishonest behavior. Moreover, at various stages of supplier access, supplier assessment, strategic supplier development, materials and service procurement, tender invitations and tender evaluations, we clearly stated specific requirements in terms of business ethics, human rights, HSE, quality standards and public responsibility, in order to jointly build a responsible supply chain of petrochemical products.

In 2017, we kept optimizing business processes and standards, achieved integrated business management and control and IT-based processes from top to bottom; to strengthen dynamic supplier management, we carried out supplier inspections on-site. We also selected suppliers around the world through public bidding and qualification review, providing suppliers with equal access and accepting supervision from the general public.

Supplier Management Principles, Systems and Mechanisms

Management principles	Management system	Operating mechanism
Open and voluntary, small quantity but high quality, dynamic management, resource sharing, global sourcing, mutual benefits and win-win	Unified management at two levels, integrated management of domestic and foreign resources	Separation of management from sourcing, implementation by sections, joint participation and effective supervision

Supplier Management Measures

Centralized, two-level management	<ul style="list-style-type: none"> The headquarters is responsible for management of suppliers of materials within the Class-I materials directory.
System construction	<ul style="list-style-type: none"> Build a supplier management system framework to regulate supplier evaluation, assessed and classified management, and supplier evaluation management. Formulate supplier Management Measures and regulations for supplier management standardization.
Strict access, dynamic management	<ul style="list-style-type: none"> Establish performance appraisal system; implement survival of the fittest and dynamic management to weed out unqualified suppliers.
Establish a unified shared resource library	<ul style="list-style-type: none"> Apply materials procurement management information system to realize supplier resource sharing and computer-based whole-process management.



3

Employee Development

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



SDGs



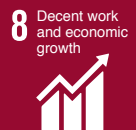
Ensure healthy lives and promote well-being for all at all ages



Ensure inclusive and quality education for all and promote lifelong learning



Achieve gender equality and empower all women and girls



Promote inclusive and sustainable economic growth, employment and decent work for all



Reduce inequality within and among countries

Employees' Rights and Interests

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

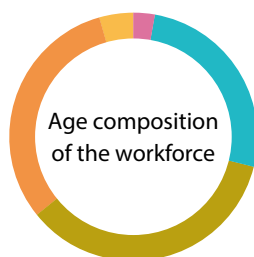
Employment Policies

CNPC always puts people first and values and safeguards the lawful rights and interests of the employees. We strictly comply with the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China* and the *Trade Union Law of the People's Republic of China*, relevant international conventions approved by the Chinese Government, and relevant laws and regulations of the host countries. We promote the employment policies of equality and non-discrimination, and provide equal opportunities and fair treatment to all employees regardless of nationality, race, gender, religion or cultural background; resolutely prohibit child labor and forced labor; and always aim to promote the employment of women and ethnic minorities. Specifically, we strictly implement the regulations on pregnancy, maternity and parental leave for female employees, and guarantee that the female employees enjoy equal compensation and benefits and career development opportunities. As of the end of 2017, the Company had 49 female senior executives and 1,852 female middle-level managers.



Education background composition of the workforce

Master's Degree and Above	3.09%
Bachelor's Degree	30.36%
Junior College	24.16%
Technical Secondary School and Below	42.39%



Age composition of the workforce

Under 25	2.97%
26~35	26.14%
36~45	35.11%
46~55	31.57%
Over 56	4.21%



Gender composition of the workforce by the end of 2017

Male	66.15%
Female	33.85%

Democratic Participation

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

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

Compensation and Incentives

We intensified our efforts to reform the remuneration system, improving policies on enterprise annuity and supplementary medical insurance, and further improving the salary distribution system closely linked with performance appraisal results. The remuneration system, highlighting on-the-post contribution of employees was put in place. Besides, we pay special attention, in terms of income, to employees engaged in technological innovation and those working at grass-roots level and in key positions or in harsh environments in an effort to fully demonstrate the value of each staff.

Career Development Platform

We believe that the Company's development is underpinned by our employees' growth. We endeavor to inspire employees' creativity and help them fulfill their personal value through staff training, career promotion and an improved incentive mechanism.

Education and Training

We continuously improve the construction of our training centers and networks, and provide flexible training program for employees such as knowledge training, professional training, on-job training, off-job training and spare-time training to create a learning culture for the growth of both the Company and individuals.

On the basis of promoting all-staff training, we carried out the "Four Training Projects for Talents" for the managerial personnel, technical experts, skilled operators and internationalized talents. In 2017, there were about 20,000 employees who received key training sessions organized by the Headquarters.

"Four Training Projects for Talents" Conducted by the Headquarters

 Managerial Personnel	 Technical Experts	 Internationalized Talents	 Skilled Operators
<ul style="list-style-type: none"> Seminars for management personnel of subsidiary companies Party school training classes Training classes for young and middle-aged management personnel Visiting scholars program at Stanford University Training sessions for senior executives in GE in the USA, and in Siemens in Germany Training sessions for personnel in charge of party building and for secretary of discipline inspection commission Training sessions for division-level officials at key positions 	<ul style="list-style-type: none"> Technical experts received elective-course training at Tsinghua University Training sessions for senior technicians Training sessions on safety management for executives of enterprises dealing with hazardous chemicals Training sessions of upstream business for oil and gas plant chief executives Expert training sessions in Russia and Germany Training sessions at Tsinghua University, Beijing Institute of Technology and other universities 	<ul style="list-style-type: none"> Training sessions for core youth employees in GE Overseas training sessions of engineering technology projects, finance and IT for core management personnel 	<ul style="list-style-type: none"> The Company held vocational skills competitions. Training sessions for various types of technical personnel The Company launched "Petroleum Craftsman Development Program".

100%

The coverage rate of collective contract signing is 100%

The coverage rate of social insurance is 100%

31

There are altogether 31 training centers throughout the Company

1.6

 billion RMB

Training expenditure: 1.6 billion RMB
993,000 employees participated in various training programs

100%

100% senior skilled staff, key post operators, and grassroots employees received training in various forms in 2017

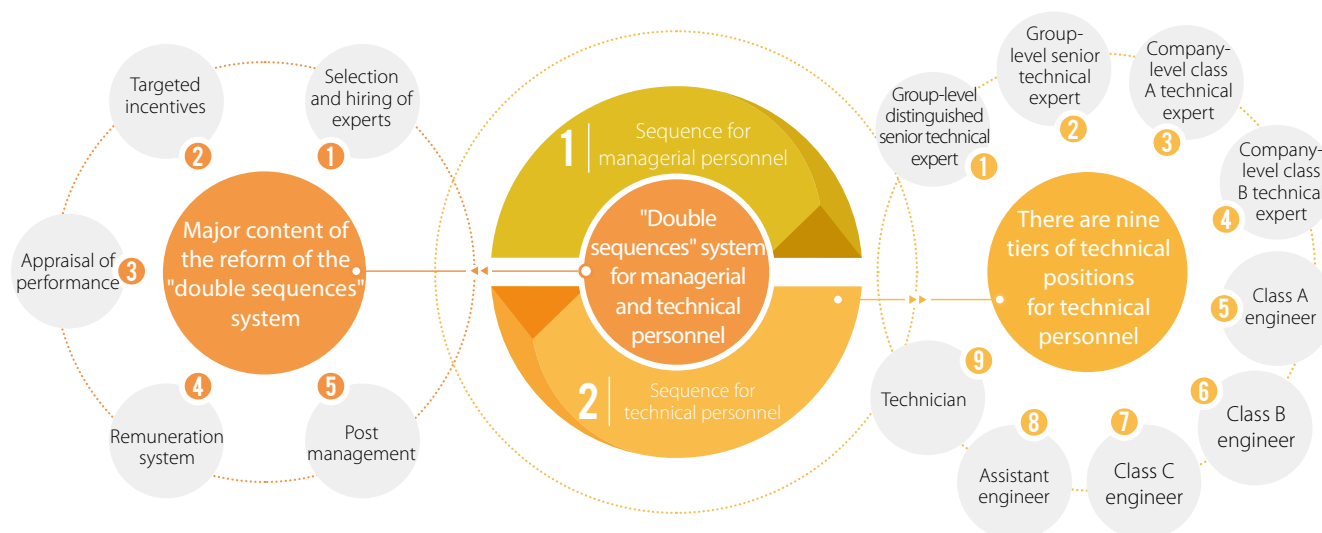
Career Development

We attach great importance to the career planning of employees and support the career development of employees to realize their self-value. In 2017, we deepened the reform of technical rank-based career development for technical staff at R & D institutions, and continued to improve incentive mechanism to fully unleash the potential of employees in an effort to provide technical personnel with clear, transparent and stable career path. For the career development of skilled operators, we worked out promotion policy based on technical competence, and developed program for improving innovation and profit generating capabilities, as well as program for petroleum craftsman development, in order to promote petroleum craftsmanship and guide and encourage employees to establish themselves and excel at what they do on their own posts.

By the end of 2017, we have set up 54 Skilled Expert Studios, including 16 National Skilled Expert Studios. We have 456 senior technical experts, 338 skilled experts, 21 academicians (including Chinese Academy of Sciences & Chinese Academy of Engineering) and 511 experts entitled to government special allowances.

🔧 Skilled Operators		💡 Innovation Talents
Promotion Plan for operators	Petroleum Craftsman Development Program	Oil Scientists Training Program, Outstanding Young Technicians Training Project
Carry out operator training and development project to improve career development path	Train top-level talents to play the leading role as skilled experts	Train high-end leading technical talents and develop talent pool for core talents
<ul style="list-style-type: none"> Standardize skill classifications Carry out level and category based management Improve selection and employment mechanism for skilled experts Launch the work of evaluation and appointment of chief skilled experts Improve incentive and punishment mechanism 	<ul style="list-style-type: none"> Select 63 employees as key objects of training High-end technicians seminar and vocational training Hold skill exchange activities for skilled experts and organize cross-enterprise, cross-region and cross-profession skill exchanges for key training objects Strengthen one-on-one cooperation between skilled experts and technical experts 	<ul style="list-style-type: none"> Conduct recommendation and selection of key training objects Implement measures such as "building special zones, delegating powers, providing projects, ensuring funds and promoting exchanges" Organize senior technical experts to give advice on academic and technical issues to solve prominent technical problems in production and make breakthroughs in key technology

Diagram of Ranks in Double Categories



Rewards and Incentives

We carry out multiple campaigns to select model workers, outstanding workers, technical experts and academic leaders, encourage employees to participate in international and domestic competitions, and award winners spiritually and materially. In 2017, we launched vocational skill competitions on oil production, gas production, collection and storage, and electric welding, and participated in international vocational skill competitions. Our employees teamed up to compete in five international and industrial skill competitions, and won four first team prizes and one second team prize. In addition, three of our employees won the title of "National Skill Experts", six were honored as "Industry Skill Experts" and 27 employees won individual awards.

We initiated a number of activities to encourage innovation and creativity among all employees, and established a rewarding mechanism to encourage innovation-orientated practices. We attached great importance to the career development of technical staff, and promoted project-style management of all research topics, revised the awarding plan for technological innovations, introduced Basic Research Award and Outstanding Accomplishment Award, and released rewarding plan for the translation of technological innovation into profits with the aim to motivate the technical staff. We provide opportunities for outstanding young researchers in key domestic and overseas projects and research centers to enroll in national or CNPC-level R & D programs. In 2017, three of our employees were elected academicians (including Chinese Academy of Sciences & Chinese Academy of Engineering), and one employee was listed in the national "Ten Thousand Talents Program", one employee was listed in the national "Millions Talents Program", and 60 employees were entitled to government special allowances of the State Council.

Case Study The Story of Roz Mamat Barker

In Xinjiang Oilfield Company, 25.7% of the employees are ethnic minorities, and nearly one quarter of them are oilfield management personnel, core technical talents and core skilled talents. Roz Mamat Barker is an outstanding representative.

Roz Mamat Barker is of Uyghur ethnic minority from Hotan, Xinjiang, and works as an oil production team leader in Xinjiang Oilfield. He has improved his skill through the Company's various development platforms over 23 years of career development. At the very beginning, he didn't understand Chinese and oil production, but now he is a promoter of Mandarin Chinese and he's a training coach and a national technical expert in the oil production industry. He has received 48 honors including National Outstanding CPC Member, National Model Worker, National Model of Ethnic Unity, National Skill Expert and Outstanding CPC Member in Enterprises directly under SASAC, and 23 of the honors are above provincial or ministerial level. He was also elected a delegate for the 19th CPC National Congress in 2017.

He has provided oil production training for over 10,000 person times, and helped employees of ethnic minorities learn Mandarin and master skills. After becoming the head of oil production team, he innovated the management model and the composite decline rate of oil production under his supervision stood at 9%. The technical exchange website (www.hlsyw.com) set up by him has received more than 400,000 visits, making it an influential platform for oil workers to learn skills and share experience and information.

Roz Mamat Barker has set up the "Innovation Studio" with core employees in his team, and carried out technical breakthroughs with 16 national level patents, making great contributions to the profitability of the oilfield. Under his leadership, his team has won more than 30 honors, including "National Exemplary Collective for National Unity and Progress", "Top Ten Unit for Culture Building by Company Teams in China", "Top 1000 Exemplary Unit of CNPC" and "Iron Man Pioneer of CNPC".

The story of Roz Mamat Barker has motivated a lot of dream-seekers. He explained the importance of knowledge and the charm of outside world to his fellow villagers. More than 100 children who had dropped out of school went back to school from wheat field, workshops, and markets after learning about his story.

Encourage employees to take part in skill competitions at all levels



• World Skills Russia Hi-Tech Competition

Zang Lihuan from Daqing Oilfield topped the scoreboard in welding competition

• SCO Worker Skills Contest

CNPC candidates won one special award, two gold prizes and one silver prize

• 9th National Petroleum and Chemical Vocational Skills Competition of China Skills Competition 2017

Seven candidates from CNPC won the title of "National Petroleum and Chemical Vocational Skill Experts"; six subsidiaries including Liaohe Petrochemical won "Group Awards"

• CNPC Vocational Skill Competition

The event included competitions on four major professions, appraisal of innovation achievements, and skills exchanges and trainings

Employees and Collectives Granted National Awards in 2017

Awards	Award-winning employees and collectives(number)
National May 1st Labor Medal	10
National May 1st Labor Certificate	1
National Pioneer Worker	17
China Skills Award	6

Localization and Diversification

We initiate respectful, open and inclusive culture, and are committed to the localization, professionalization and marketization of overseas talent. We constantly improve the employee cultivation mechanism and endeavor to promote employee localization and talent internalization. By the end of 2017, the localization rate of our overseas employees reached 83.14%.

Local Employment

We continuously improve the localization of our workforce, attach great importance to attracting and retaining excellent local talents, enhance the local employee training, and increase the proportion of local employees in important technical and management posts. Our employee localization policy not only enables the local employees play a more important role in the Company's development, but also helps to build a talent pool for the sustainable development of local petroleum industry.

Case Study CNPC's Localization Rate in Kazakhstan Projects Exceeds 98%

In Kazakhstan, CNPC emphasizes cultural openness and inclusiveness by creating a friendly, harmonious and pioneering atmosphere, and encourages staff of different cultural backgrounds to enhance trust and understanding and learn from each other, so as to build harmonious internal and external development environment. Meanwhile, the Company attaches great importance to the training of local employees and explores an integrated strategy for talents development, and has formed a competitive team composed of all professions under reasonable structures. The localization rate in our projects in Kazakhstan has exceeded 98%.



Saka

Team leader of logistics department in the North Azadegan project

“

With working experience of four years at an international telecommunications company and six years at petroleum companies, I can see that CNPC in Iran is an extraordinary company. It has stringent and high-principled management but with flexibility. Meanwhile, all the reasonable proposals of employees are treated seriously by the management, which is not very common in many multinationals.

”

Taghian

Director of human resources management and training in the North Azadegan project

“

I used to work as a journalist for a media organization and a local television station in Tehran, and I also worked at the Embassy of Brunei Darussalam in Iran. As I have been in contact with many companies, what impresses me most about CNPC is the harmonious relationship between management and employees. The Company respects the culture, customs and religious beliefs of local employees, and the affinity of Chinese culture is in full display at CNPC.

”

Respect for Cultural Diversity

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

Culture Integration Activities



The Phoenix dragon boat team of CNPC in Canada competes in Calgary



Tai chi activities of CNPC in Japan enable employees to conduct cultural exchanges while working out



CNPC's subsidiary in America organizes employees to participate in team building activities

Localization and training of overseas employees

Middle East

Halfaya project in Iraq invests USD **5 million** each year in the training of local employees. With international staff from **37** countries, the localization rate at the project has reached **79%**.

Asia

By the end of 2016, the localization rate of South-East Asia Pipeline Company Limited (SEAP) in Myanmar reached **72%**, and **78** person-times of local employees won "excellent employee" award.

Case Study CNODC Held a Theme Lecture on Tajikistan Culture



During the Nouruz holiday, Sino-pipeline International Company held a theme lecture on Tajik traditional culture for its employees as part of the activities of Central Asian Cultural Tour.

The lecture started with the celebration of Nouruz, explained the demographic and migration history of the Tajik people, introduced their traditional culture and holiday culture, conducted a comparative analysis of the

production, living and cultural activities of Tajik people in China and Tajikistan, and showed employees the significance of culture to politics, society and economy.

The lecture enriched the cultural life of employees working on the project and enabled them to better understand Tajik history and culture and improve relations with local employees. As the company is compiling a social science treatise, *Approaching Tajikistan*, the lecture provided helpful reference for its compilation.

Physical and Psychological Health

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

Occupational Health

We provide the same health and labor protection for all participants. We have carried out research on occupational health management, consolidated the health management of production frontlines, especially at the field construction sites, and enhanced the risk prevention and control of occupational disease hazards and health monitoring. Additionally, we investigate the occupational history of employees exposed to toxic and harmful gas and employees transferred to other posts, improve the employee occupational health monitoring archives, and guarantee the employees' safety and health.



Key Achievements in Occupational Health in 2017

Improved occupational health management	<ul style="list-style-type: none"> Revised <i>Regulations on Detection of Occupational Hazards at Workplace, Regulations on Occupational Health Surveillance and Regulations on Integrating Occupational Disease Prevention and Protection Facilities in the Process of Design, Construction and Operation of Construction Projects</i> Completed the plan for occupational hazards surveillance at hazardous workplace and the plan for occupational health examination Improved the prevention and protection facilities for occupational health at workplace and their management
Improved occupational health	<ul style="list-style-type: none"> Carried out the "Occupational Health Week" activity
Identified substandard facilities for occupational disease prevention and protection at workplace	<ul style="list-style-type: none"> Rectified substandard facilities for occupational disease prevention and protection in laboratories and dusty environment

Dust Hazard Treatment



Mental Health

We took measures to continuously improve the employee vacation system. We implemented the Employee Assistance Program (EAP), set up hotlines and website for psychological consultation, and carried out various forms of training on mental health improvement, in order to build a positive and healthy mindset for employees. In 2017, the company continued to implement mental health service projects overseas to improve employees' mental health and boost their sense of happiness. In addition, we employed consultants to deliver lectures on self-stress release for overseas employees working in harsh natural environments such as saline and alkaline barren land and Gobi desert and those working in adverse social environment.



EAP ambassador training session

CNPC's EAP Overseas



Caring for Employees

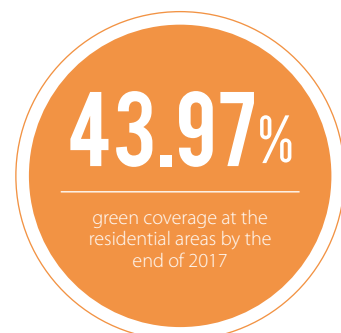
We advocate a good work-life balance and make great efforts to create a healthy and comfortable living environment for our employees. We continuously push forward the market-oriented reforms on service of staff communities and improve the poverty alleviation and aid mechanism, in order to improve the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

Employee Community Service

Our staff communities are located in more than a dozen provinces (municipalities and autonomous regions), with 4 million residents in 1.3 million households. We actively bring our strengths into play, make full use of social resources, innovate community governance, and improve employees' living conditions. We are incorporating our petroleum and petrochemical communities into the government public service system, step by step so as to introduce favorable government policies on medical care, caring for the elderly, education, employment, community cultural building and other aspects. Combining the merits of government policy, corporate support, social aid and voluntary mutual assistance, we strive to provide convenience and security for people's life.

Community safety renovation Supported by relevant national policies, we have transferred the water/power/heating supply and property management to professional private companies, and invested in the maintenance and renovation of relevant facilities to eliminate safety hazards, enhance service function and improve the living environment.

Building livable communities We keep our efforts in tree planting in the staff communities and strive to build high-standard green ecosystem, and as a result, we have seen continuous improvement in the working and living environment. By the end of 2017, the total green zones at staff communities have reached 293 million square meters, with green coverage of 43.97% at the living areas.





Employees Assistance

The Company continuously carried out employee help and support activities, focusing on the settlement of life difficulties of the employees, including retirees, employees' family members and family dependants of the deceased. In 2017, we helped employees in difficulty via campaigns such as "donating tuition fees for the new semester", "one-on-one assistance", and "hand-in-hand activity".

Recreational Activities

In 2017, we organized activities, such as sports meetings for Chinese and foreign employees, fitness walking competitions, basketball finals, ping-pong games, and tug-of-war championships, in order to enrich the spare-time life of the employees.

Case Study Daqing Oilfield University for the Aged Enriches the Cultural Life of Retired Employees

We care for the retired employees. Through measures such as community assistance, we have made our contributions to solving the problem of population aging. CNPC Daqing Oilfield has established a university for the elderly to meet the cultural needs of the elderly and to address the issue of population aging. Having 12,000 registered students and 13 majors such as calligraphy and photography, the university organizes activities like poetry recitals and cultural lectures to create a cozy learning environment for its elderly students. The university has also set up platforms for the elderly to serve and repay the society with what they have learned. To show love to the disabled and the poor families, and lonely old people in the surrounding communities, the Loving Volunteers Association of the Elderly University has organized donations.



Themed performance

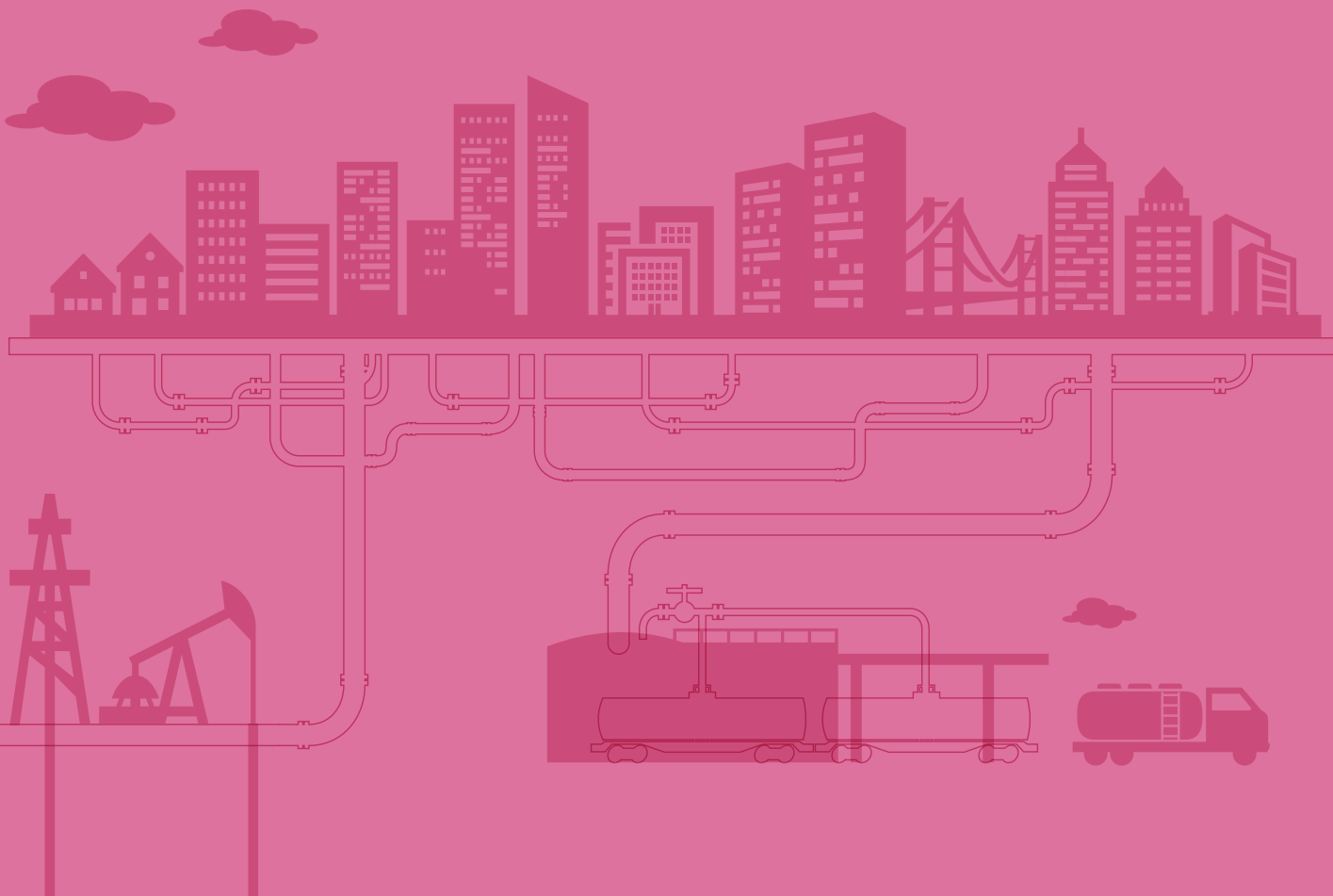


Performance for widowed senior citizens from nearby communities

4

Public Welfare

We are committed to sharing our business achievements and development opportunities with local communities where we operate in the pursuit of mutually beneficial sustainable development. To this end, we attach great importance to activities promoting public welfare and social progress, in order to facilitate community and socioeconomic development.

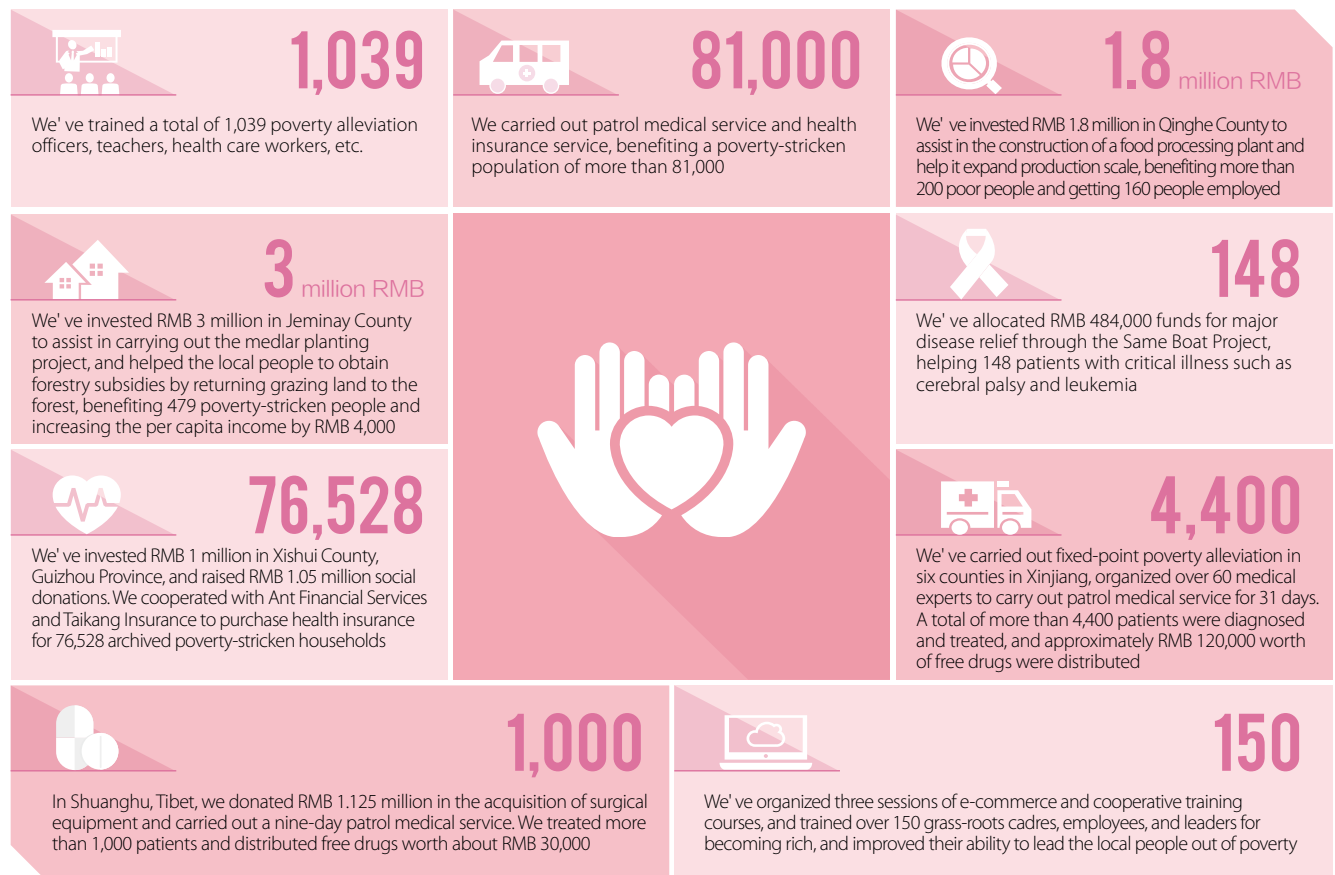




Poverty Alleviation

Poverty alleviation is an important topic in global sustainable development and also one of our key concerns. We have responded positively to the initiatives of the *UN's 2030 Agenda for Sustainable Development*, and to policies of the Chinese Government on poverty alleviation. Focusing on improving the intellectual level, industrial development, medical service and livelihood of local people, we integrate our business strengths with local resources and market advantages, take targeted measures in poverty alleviation and promote the local self-development capacity in innovative ways.

In 2017, the Company continued to implement fixed-point poverty alleviation and counterpart support. We have invested RMB 77.85 million in infrastructure reconstruction, education & training, health care and industrial cooperation in 13 counties (districts) in seven provinces (municipalities, autonomous regions) including Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou. We have established 45 poverty alleviation projects, directly benefiting an archived poverty-stricken population of more than 20,000. The Company passed the national special assessment and inspection in the fixed-point poverty alleviation counties of Xinjiang, including the Barköl Kazakh Autonomous County, Qapqal Xibe Autonomous County, and Toli and Qinghe counties, lifting these areas out of poverty.



Targeted Poverty Alleviation Projects Implemented by CNPC in 2017 and the Outcome

Project	Start Time	Place	Partner (s)	Content	Outcome
Safflower Industrial Park Project	April, 2016	Qapqal Xibe Autonomous County, Qapqal County, Xinjiang	Yili Yaqina Agricultural Development Co., Ltd.	Introducing professional safflower oil production enterprises and expanding the construction of local safflower cultivation bases	After the project is completed, it will benefit more than 800 poor people. The average annual income will increase by more than RMB 2,000 and 30 people will be employed.
Dry land irrigation project	2016	Dry land irrigation project in Nilka County and Qinghe County, Xinjiang	—	Building supporting facilities such as drip irrigation trunk & support system and power supply engineering	After the project is completed, it will radiate and protect 1,300 hectares of arable land, so that agricultural products will increase by nearly 3 times per <i>mu</i> , benefiting more than 4,780 people living in poverty.
Grass-livestock joint cooperatives	2017	Toli County, Xinjiang	—	Investing in the establishment of grass-and-livestock joint cooperatives in Langgutle Village and Jiamate Village Kufu Township, Toli County, to realize the improvement and breeding of local sheep and dairy goats, and increase the income of herdsmen.	Construction of infrastructure, such as pens, forage storage, and veterinary housing, has been completed. It is estimated that 180 impoverished households will be able to increase their annual income by more than RMB 2,000 after the project is completed.
Cheese processing plant project		Barköl Kazakh Autonomous County		Helping build a cheese processing plant to fill in the gap in local dairy processing	Construction of infrastructure such as workshops and offices has been completed, and it is expected that more than 8,700 people will benefit from the project after it is completed.
Beautiful countryside demonstration project	2017	Fanxian County	China Foundation for Poverty Alleviation (CFPA) Fanxian County Government	Developing a beautiful countryside demonstration project in Hanxuzhuang Village, Chenzhuang Town, Fanxian County, relying on unique local resources to develop a cultural tourism industry featuring lotus cultivation	After the project is completed, the estimated annual income will exceed RMB 4 million, which can directly promote the employment of local villagers and promote the development of local specialty industries.

Case Study Targeted Measures Focusing on Results in Lifting Qinghe out of Poverty

Qinghe County, a typical border county of ethnic minorities in Xinjiang, is listed as a key county for national poverty alleviation and development due to the harsh natural environment and weak industrial foundation. In 2002, designated by the Central Government, CNPC began targeted poverty alleviation in Qinghe County.

By the end of 2017, CNPC had invested more than RMB 31 million in poverty alleviation funds for Qinghe County. It has sent eight cadres to assist in the construction of 17 projects involving infrastructure, medical and health care, culture and education, and so on, effectively boosted the pace of poverty alleviation in Qinghe County. With concerted efforts, Qinghe County passed the national special assessment and inspection in 2017 and was lifted out of poverty.

Targeted project positioning. We have investigated and demonstrated the causes of poverty and the bottleneck of poverty alleviation in Qinghe County. To address the long-term drought and the low crop yields in the area, the land drip irrigation project was carried out successively in Saertuohai Township and Areletuobie Town of Qinghe County from 2016 to 2017, which has improved the conditions for crop cultivation and enlarged the range of plantable cash crops.

In 2016, the Company invested RMB 3 million in Saerharen in Saertohai in a highly efficient water-saving project, and newly reclaimed 150 hectares of land. Once completed, this project will benefit 196 people, and generate RMB 900,000 in revenue to farmers, herdsmen and village collectives every year. In addition, the project can also provide more than 200 local farmers and herdsmen with opportunities for grazing, transportation and other employment.

In Kalawolen Village of Areletuobie Town, 187 poverty-stricken farmers and herdsmen had poor harvests and even abandoned their land due to the lack of water. In 2017, the Company invested RMB 1.2 million in a drip irrigation project in the village, reclaiming 66.67 hectares of arable land. Once completed, this project will bring more than RMB 500,000 in benefits to the impoverished herders in the village each year, and 40 surplus laborers can also get employment opportunities in the nearby enterprises.

Innovation in poverty-alleviation modes. Specific measures have been taken based on "the cause of poverty" in the process of poverty alleviation. The Company found through investigation that Qinghe County's meat production has exceeded 6,000 tons, and the meat products that can be used for deep processing have exceed 10,000 tons. However, the meat processing industry in Qinghe County is plagued by slow development due to lack of funds and technology. To upgrade the industrial chain of animal products in Qinghe, the Company injected RMB 1.8 million in 2017 to help expand the production scale of Jixing Food Processing Co., Ltd. in Areletuobie Town, Qinghe County. The expanding production has led to the Company's "rolling dividends" to poor households in the town, and the employment of 160 local farmers and herdsmen.

Case Study A Special Medical Emergency in Shuanghu County

On August 23, 2017, CNPC's medical team aiding Tibet successfully helped a lying-in woman deliver a baby through cesarean section in People's Hospital in Shuanghu County, the highest county in the world. It was the first baby that was delivered through cesarean section here and both the mother and baby were safe and sound. This is a breakthrough for the medical team aiding Tibet, and also the first emergency cesarean delivery operated at an altitude of 5,000 meters in Chinese medical history.

Love is our lasting motivation. Since 2009, CNPC sends medical teams every year to Shuanghu County in Tibet to provide physical examination, diagnosis and medicines for local people. Targeting common high-altitude diseases, CNPC has provided medical services and training, and improving local medical conditions.

Case Study "Hand in Hand with CNPC", Realize Every Public Welfare Dream for Ordinary People

01

Partner

China Foundation for Poverty Alleviation



Program Purpose

To help ordinary people realize their public welfare dreams, and spread the concept of people's public welfare



03

02

Program Nature

Mobile client platform for public welfare

04

Actions of CNPC

To set up the platform, donate special funds to China Foundation for Poverty Alleviation, and explore and fund innovative, feasible public welfare initiatives with social influence

Project Achievements

In 2017, a total of 1,230 initiatives were collected and 222 were funded. These initiatives were contributed by colleges, universities, primary and middle schools, community residents, NGOs, industry associations and other groups in 30 provinces, cities and autonomous regions including Beijing and Sichuan. They covered a wide range of areas, including youth education, services for the elderly, environmental protection and community development. We hosted special public welfare events for 215 associations in 145 Chinese universities and colleges, and 136 initiatives were funded.

Scale of Public Participation

The mobile app of the platform boasts 128,000 users, an increase of 66% compared with the end of 2016. And 75% of its users are under 24 years old. A total of 3.35 million votes have been cast and nearly 130,000 comments given. It is becoming a platform for the public to demonstrate their creativity, exchange ideas, realize dreams, and spread positive energy.



05

06

Ways of Public Participation

Processes such as collection, approval, voting, funding and supervision of implementation are required to turn the initiatives into actions. The public can log onto the website of the platform to offer ideas and download the "Hand in Hand with CNPC for Public Welfare" mobile app to view and vote for these ideas and communicate with others.

07



Supporting Education

Supporting education is one of our focuses in fulfilling social responsibilities. We try to help youths to enjoy equal education opportunities and help them pursue their goals and personal growth through various supportive activities. We continue to carry out the ongoing education programs, including scholarships, loans and subsidies to students from underprivileged families, improve teaching conditions in impoverished regions, and support scientific and cultural activities as well as relevant competitive activities. In 2017, we granted CNPC Scholarships worth a total of RMB 7.98 million to 1,270 excellent students. We have sponsored the Kunlun Lubricant Formula Student China (FSC) program for seven consecutive years, aiming to create a cooperation platform for the government, enterprises, colleges and universities, research institutes and users, to nurture talents for the automotive industry.

In addition, we explore new models to support education, and call on the public to focus on and work together to achieve education equality. In cooperation with China Foundation for Poverty Alleviation (CFPA), Beijing Shijia Education Group and Tencent Foundation, we sponsored the Xuhang Program, Teacher Training Program, and Rural Village. Chinese Dream Program to help students from poverty-stricken areas to pursue their studies.

12,317

 students

Since its inception in 2002, we have granted CNPC Scholarships to 12,317 outstanding students (including 4,969 impoverished students)

57.68

 million RMB

We have granted a total of RMB 57.68 million



Teacher Benefiting Program

We continue to collaborate with quality education resources, such as Beijing Experimental Middle School, Beijing Shijia Education Group, Beijing No. 171 Middle School Education Group, and Urumqi No.58 Middle School, to train elementary and middle school teachers for impoverished areas.

80

 primary and secondary school principals and academic directors

In 2017, a total of 45 primary and secondary school teachers were stationed in various places to participate in learning and training for 3 months; short-term trainings were carried out for more than 80 primary and secondary school principals and academic directors



800

 local teachers

We organized Beijing No. 171 Middle School and Experimental High School teachers to go to Xishui, Guizhou and Hengfeng, Jiangxi to conduct a one-week on-site teaching and exchange, training more than 800 local teachers

Case Study CNPC Xuhang Educational Program



In 2017, CNPC Xuhang Educational Program received the "2016 Excellent Program of Targeted Poverty Alleviation" award.

The Xuhang Program is a public welfare project launched by CNPC in 2015, aiming to help impoverished senior high school students from underdeveloped areas complete their studies and gain access to college education by providing financial support for their tuition and living expenditure.

In 2017, the Program was implemented in 10 schools in 10 counties in Sichuan, Henan, Jiangxi and Guizhou, doubling its assistance capabilities. A total of 1,500 students in senior high schools in extreme poverty received assistance from this Program.



Make Financial Donation to Help Solve Students' Problems with Living Expenses

Offline Activities

"Walker for Kindness", a large scale outdoor hiking activity launched by China Foundation for Poverty Alleviation in 2014 to help raise funds, combines public welfare with outdoor hiking exercise. The activity requires 4 people to form a team, complete the hiking challenge of 50 kilometers or 100 kilometers within the prescribed time, and raise funds to help children in poverty-stricken areas.

In 2017, we organized 30 teams including 120 employees to participate in the "Walker for Kindness" activity launched by China Foundation for Poverty Alleviation to raise funds for the Xuhang Program.

Our teams joined over 3,000 people on the hike. Teams from CNPC won the championship, the runner-up and the third place in the 50km hike, and the second in the 100km hike. Ranking the first for the total funds raised as a group, we initiated nearly ten thousand employees, along with other generous people, to donate a total of RMB 600,000 to support the Xuhang Program.

Online Activities

With the help of the online public welfare platform of Ant Financial, the Xuhang Program has received RMB 334,200 from 13,900 people since it started fund-raising on September 6.



Care for Growth and Development of Students

We launched activities such as the service station donation "one liter of oil, one lifetime of kindness" for students during the college entrance exams and work-study programs. During the summer vacation, over 200 service stations of ten thousand tons, several hundred employee volunteers and nearly one million people participated in these activities.

Local Development

The company's development owes much to the understanding and support of the government, communities and the general public. While providing stable energy for socioeconomic development, we expand, in the upstream, midstream and downstream sectors, our joint-venture cooperation with local capital, develop local suppliers and contractors, increase job opportunities and boost the development of related industries based on the principle of open cooperation for mutual benefit. In 2017, Kunlun Trust Co., Ltd. and Kunlun Royal Seal Factoring reached a 10-year Kunlun Royal Seal Property Rights No.1 Trust Plan with a total worth of RMB 500 million to support the development of socio-economy and enterprises in Karamay, Xinjiang.

Case Study Bringing Warmth to Southern Xinjiang in Winter

The five prefectures in southern Xinjiang are underdeveloped regions with extremely fragile ecological environment. To improve the life of people from various ethnic groups in southern Xinjiang, protect ecological environment, CNPC has successively carried out the "Bringing Natural Gas to Southern Xinjiang" Project and "Southern Xinjiang Natural Gas" Project.

The Southern Xinjiang Natural Gas Project was put in production in July, 2013. Since then, local people started to use natural gas instead of burning coals and firewood. In 2017, CNPC launched several gas pipeline projects and the Awat branch pipeline project, interconnecting the five large gas fields including Dabei Gas Field, Yingmaili Gas Field and Hetianhe Gas Field with constructed pipeline network. This has effectively coordinated gas supply to the western and eastern regions in China, boosted gas supply to southern Xinjiang, and alleviated their gas supply shortage.

By the end of 2017, this project has cumulatively delivered over 3.786 billion cubic meters of quality natural gas to southern Xinjiang, benefiting 500,000 households.

Natural gas has not only changed people's lifestyle in southern Xinjiang, but also improved the ecological environment and promoted local socio-economic development.



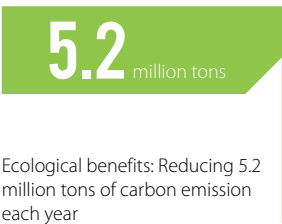
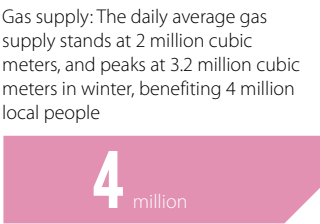
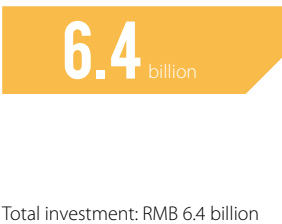
Natural gas promotes the rapid development of local economy



Residents in Hotan, Xinjiang, use clean natural gas



Figures of "Southern Xinjiang Natural Gas Project"



Case Study Employment Project in Xinjiang

In 2017, CNPC recruited ethnic minority employees in Kashgar Prefecture and Hotan Prefecture, Xinjiang, and helped 205 locals get employed. We formulated training plans for new employees, carried out training on laws and regulations, Mandarin and professional skills, and helped employees overcome difficulties in their life.



Security patrol in Kashgar oil and gas operation center



Kokia operating area pipeline inspection

Humanistic Care

In CNPC, we attach great importance to public welfare and encourage our employees to take part in volunteer activities. We advocate civilized practices, assist the disadvantaged groups, and contribute to cultural progress.

Launch Employee Volunteer Activities

We advocate volunteerism, and encourage and support the employees' participation in volunteer activities to serve the community and the society. In 2017, we had over 163,300 young volunteers in 5,903 teams, serving altogether 394,600 hours. Specifically, our employees were actively committed to various activities including donating to the disadvantaged groups, donating blood without payment, afforestation, rescue of wild animals and plants, and protection of natural and cultural heritages.

Beijing Marketing Company of CNPC joined hands with Beijing Municipal Environmental Protection Bureau to carry out the "Clear Air and Green Driving" environmental protection campaign at the Company's service stations. Our youth volunteer teams have been honored with titles such as Beijing Model Stations for Volunteer Services. Dalian Petrochemical Corporation established the volunteer association, and organized its employees to clean up marine litter. CNPC Shandong Marketing Company provided break rooms at service stations for sanitation workers and launched work experience days to raise public awareness of respecting and caring about sanitation workers.

Help Migrant Workers Return Home

The Spring Festival in 2018 marked the seventh consecutive year we provided free gasoline, food and insurance at the Company's nearly 100 services stations at major national and inter-provincial highways in Fujian, Guangxi, Jiangxi, Hunan and Hubei provinces for migrant workers who need to travel home on motorcycles. The volunteer service was extended from 10 to 40 days.

The Selection of "Beijing Taxi Heroes"

In 2017, together with China Foundation For Justice And Courage and AUTO LIFE, CNPC launched the 11th Competition of "CNPC Award for Beijing Taxi Heroes", and has selected and awarded 60 heroic taxi drivers. The event provides financial aids to the awarded taxi drivers and their families who suffered from illnesses or lived in harsh conditions through special taxi fund of CNPC. Since its inception in 2004, "CNPC Award for Beijing Taxi Heroes" has inspired city residents to take active part in the spiritual civilization of the capital and to uphold social morals.



Construction of Overseas Communities

We respect the culture and customs of the host countries in which we operate, commit ourselves to establishing long-term and stable cooperative relations with the host countries. We incorporate our development into the local socio-economic growth and create socio-economic value to jointly promote the development and prosperity of local communities.

In 2017, the Company won "the Special Award for Corporate Social Contribution in 2017" in Kazakhstan due to our outstanding performance in the building of overseas community.



Enhance Communication with Local Communities

We have set up departments of environmental protection and community relations coordination in many places to promote cooperation with local governments, NGOs and community representatives. By holding conferences, issuing reports and paying visits, we have strengthened communication and coordination for a win-win situation in cooperation. In Peru, we set up the public relations department to coordinate and develop cooperative relations with local communities, and adopt flexible and effective measures to communicate with local communities so as to win their trust and support.

Management of Business Impact on Community

We are making a positive impact on community development through our efforts in responsible operation. The impact consists of not only creating jobs, paying taxes and bringing business opportunities to local suppliers, but also reducing the impact of production and operation on community environment and the society as well as safeguarding the human rights of community residents.

	Potential Positive Impacts	Potential Negative Impacts	Measures to Reduce Potential Risks
Indigenous people	Job opportunity	Land requisition, resettlement, Environmental impact	<ul style="list-style-type: none"> Before the construction of a project, we conduct assessments of the social and economic impact, such as the requirements of the indigenous people, human rights, culture heritage, involuntary resettlement, etc., and try our best to protect all the lawful rights and interests of the indigenous people. In Myanmar, we protect the reasonable interests of local residents by soliciting their opinions, and stick to standard operation for land compensation. The compensation program was formulated based on the opinions of the local government, our cooperating partners and the villagers, and compensation was made before land use. At the same time, the land compensation information was released timely to guarantee transparency. On Madaya Island in Myanmar, we preferentially recruit the indigenous people, and help them receive skill trainings, participate in the project construction and operation, and enjoy higher incomes. In the Andes Project in South America, we implement strict safety and environmental protection procedures, and establish the environmental protection management system with stakeholders' participation. We carry out whole-process environmental impact monitoring, and restore the ground surface in the shortest possible time after operation, in order to minimize the influence of our operation on the local ecology.
Capability building of local enterprise and industry	Business cooperation opportunity, Capacity improvement, Technology transfer	Possibly neglect local products and services, and lack of sharing of advanced technology with the locals	<ul style="list-style-type: none"> Giving priority to local products and services in our procurement, we strengthen cooperation with local enterprises in technical services, in order to boost the development of local SMEs. We support the personnel training program for the oil industry of the host countries.
Community consulting and participation	The local residents have fair opportunities to express their concerns and know the impacts of the project	Possibly neglect of concerns of the local people	<ul style="list-style-type: none"> In Iraq, we have established the Community Contribution Committee for Al-Ahdab Oilfield Communities. We provide assistance of public welfare to community residents through the committee, and supervise the implementation of such welfare projects. In the Andes Project in South America, we have established the joint mechanism (joint committees with the local government, local communities and employees respectively), in order to enhance communication with the stakeholders.
Social investment	Preliminary negotiation with the community members helps meet the locals' requirements and bring long-term benefits	Planning and execution of the social investment may not be practical and may not bring long-term benefits	<ul style="list-style-type: none"> We make social investment plans based on the local social and economic development planning and requirement of the community residents in the host countries.

Community Engagement

We play an active role to help improve the living conditions of local people, and build up harmonious relations with local communities by offering financial aid to education, healthcare and other public welfare programs. At the same time, we provide training opportunities for people in the countries where we operate, in order to cultivate talents for the local petroleum industry.

Public Welfare to Community



Donated school supplies for children of monk school in Myanmar



Donated earthquake relief funds to South Sudan



Launched "The Boys' Brigade Share-a-Gift" (BSBG) in Singapore

Overseas Public Welfare Activities

In Singapore	<ul style="list-style-type: none"> • Have sponsored and held the "New Year Birthday Banquet for Elderly People" for several consecutive years, having invited over 300 senior citizens of different ethnic groups from nursing homes to celebrate the New Year. • Have provided financial support for Singapore Children's Society for years, and donated to Movement for the Intellectually Disabled of Singapore and other charity organizations. • Launched BBSG. • In 2017, invested RMB 680,000 in various aiding programs and our volunteers served a total of 308 hours, which were highly appraised by members of parliament.
In Kazakhstan	<ul style="list-style-type: none"> • Took part in charity activities in winter at local orphanages. • Bought musical instruments for disabled children. • Provided free vehicle fuels for the association of blind people. • Provided financial support for local public fund to treat children with life-threatening illnesses. • Supported the Almaty government to conduct fire drills and other public welfare activities.
In Japan	<ul style="list-style-type: none"> • Sponsored the local Go Congress. • Assisted in the organization of football games for teenagers. • Invited local primary school students to visit the refinery plant and helped them gain knowledge of petroleum.
In America	<ul style="list-style-type: none"> • Continuously carried out volunteer activities in local communities, and voluntarily worked in a peanut butter plant of a local church.

Provide Training Opportunities to Cultivate Talents in the Local Petroleum Industry

Peru	Myanmar	Turkmenistan	Kazakhstan	South Sudan
Provide training in vocational certification of mechanic, electrician and other professions; provide employment opportunities for residents living in communities around the oilfields.	Design post-specific training plan, offer courses in pipeline skills and other areas. Selected and sent in batches 58 Burmese employees to Rangoon and Chinese petroleum colleges and universities to study petroleum-related technology and knowledge.	Sent at least 10 classes of different professions with over 150 employees to Chinese petroleum colleges and universities and petroleum companies to receive training, with a total of 6,300 person-times of Turkmen employees being trained.	Since 1998, Aktobe company has provided 14,992 person-times of training for senior management personnel and professional technicians through various means.	From 2016 to 2018, we provided short-term training (15 days) in technology and management for 60 person-times to nurture petroleum talents. We provided 3 sessions of short-term training in 2017, the topics of which were petroleum economy, management of oil reservoirs and petroleum geology.

Case Study 16 Burmese Employees from Southeast Asia Pipeline Company Got Permission for Electrical Operation

From March 18 to April 8, 2017, the Southeast Asia Pipeline Company held a training session on certification of electrical skills with Tech Vocational School of Myanmar in Rangoon. After systemic study and technical training, 16 Myanmar employees mastered theoretical knowledge of electrics, handling of common failures and other basic skills, and went on to pass qualification test of electrical operations with high scores and got certificates for electrical operation issued by the Ministry of Labor, Immigration and Population of Myanmar, which means that they have got the official permit for electrical operation in ASEAN.

"I'd like to thank the Company for this learning opportunity, which enables me to better handle maintenance and emergency repair, I hope I can contribute more to the Company".

—— Gao Miandu, a Burmese employee from the management office on Maday island.

Case Study Provide Training Opportunities for Staff from the Ministry of Oil and Gas of Sudan

Training has been served to enhance the friendship between the Company and host countries and to strengthen our mutual communications and understanding. Since 2006, the Company headquarters have invested a total of 3.67 million dollars in training personnel from relevant departments of the Ministry of Oil and Gas of Sudan and its subsidiaries. By the end of 2017, we had completed short-term technical training for 276 person-times and master's degree training for 12 person-times.

In 2017, 20 personnel from the subsidiaries and relevant departments of the Ministry of Oil and Gas of Sudan came to China to take part in two sessions of training in experiment on reservoir characterization and in oil refining and petrochemical. When the training came to its end, trainees said they had acquired lots of practical theories and knowledge, and what they had experienced and learnt in China and at CNPC renewed their understanding of China's development and the strength, technical and management prowess of CNPC, and deepened their understanding of Chinese culture and Chinese people.

Protect Local Environment

We stress the importance of striking a balance between business development and environmental protection. Therefore, we strictly comply with the laws and international standards on environmental protection in the countries in which we operate, protect local ecological environment, and strive to minimize the impact of our operations on the environment. Our company in Andes which gives top priority to environmental protection and applies high-standard operation has been recommended by local industry peers and highly appraised by local government.

In Myanmar

- Have followed international standards over the whole length of China-Myanmar pipelines and strictly required building companies to guarantee quality and ecological protection.

In Indonesia

- Strictly abide by relevant laws and regulations of Indonesian government and implement high standards on work safety and environment protection; keep improving the HSE management system and protect the ecological environment in production and operation zones.

In Oman

- Treat oily soils through bioremediation, with the industrial solid wastes 100% recycled and harmlessly treated.

In Kazakhstan

- Adopt new techniques and technologies to decrease the vaporization and evaporation of oil in projects of natural gas utilization and oil-gas mixed transportation.
- Apply harmless treatment to the waste drilling fluid and rock debris; discharge wastewater into environmentally-friendly tanks for recycling, and restore the landform and plants at the well site upon completion of wells.

In Russia

- Yamal Project attaches great importance to environmental protection in the polar region. We designed special processing systems for wastewater, exhaust gases and solid wastes, including oily wastewater collector, and solid wastes disposal system.
- Since 2013, Yamal Project has restored a total of 761 hectares of land.

In Singapore

- Installed vapor recovery system for fuel filling.

In Japan

- Assisted local environmental protection organizations to carry out forest protection activities. The Osaka prefecture government and Izumisano government sent us letters of appreciation.



Yamal Project was re-certified under ISO 14001 and OHSAS 18001, which is valid until June 2020.



Biological waste water treatment system in the 124 district oilfields in Sudan is the largest of its kind to treat waste water from oilfields with biomass and plants.

Case Study Environmental Protection in Niger

Recycling of waste

The refinery in Niger has designed and constructed landfills for solid wastes in accordance with the most advanced standard in China; it treats household garbage through harmless landfill or waste incineration, and hires special recycling companies to deal with recyclable wastes like woods and steel plates. We have also built monitoring sites and monitoring wells around the refinery to monitor changes of atmosphere and water quality.

Greening efforts

Our refinery in Niger has continuously explored ways of growing green vegetation. Employees would take saplings with them when they take planes or trucks to change work shifts. From 2009 to 2017, more than 10,000 trees have been planted on the Sahara Desert, with survival rate exceeding 80%. Our efforts were highly praised by the Niger government and people from all sectors of society. By the end of 2017, we have planted a total of 3,296 trees, covering 18,726 square meters.

Saving water

By adopting state-of-the-art water saving technology of the industry such as waste water reuse, our refinery in Niger has saved a total of 2.876 million tons of fresh water by the end of 2017. It has invested 2 million dollars in the building of camp waste water treatment station, which has become functional in March, 2017. It has realized recycling and reuse of waste water, and will save 94,000 tons of ground water used for green space.



A corner of green space in the desert camp

Boost Local Economy

Our Andes Company has made an average annual investment of 400 million dollars for over 10 years, creating over 3,000 jobs directly or indirectly each year, creating over 6,000 jobs including subcontractors, injecting vigor into community and local economic development by setting up community hospitals, schools and scholarships. The Myanmar-China Gas Pipelines can provide 2.7 million cubic meters of natural gas each day to local power plants and factories along the pipeline at peak period. This has effectively alleviated local electricity shortage and contributed to industrialization and electrification in Myanmar.

Over the 6 years working at the Halfaya oilfield in Iraq, Awude Abdul Sabit has learnt construction skills like concrete pouring, which has helped to transform him into the manager of company with over 300 employees from a minor contractor, his company has also become a trustworthy and qualified subcontractor for multiple subsidiaries of CNPC, other Chinese companies and the owner of Halfaya oilfield.

Case Study CNPC Practices Local Purchase in Chad

To support Chadian government in developing its economy and benefiting local people, our company in Chad has been actively seeking materials and services that can be purchased locally on condition that they meet technical requirements, and has made reasonable offers for local material manufacturers and service providers.

Local Procurement First

When buying materials and services, the company will consider purchasing locally first. Materials the company buys locally include: diesel, civil construction materials, and others, and services the company buys locally include mainly: security service, car rentals, and others, covering oilfield exploration and development, ground construction, oilfield production, pipeline transportation of oil and gas and other areas.

Set up the post of Local buyer

To facilitate communication with local suppliers and guarantee smooth local purchase, the department responsible for purchase has set up a "Local buyer" post held by local employees, with the aim to conduct purchase of local materials and services more professionally and meticulously. The move has played a positive role in learning about local market and cooperating with suppliers.

Transparent Tax Payments According to Law

CNPC strictly complies with the laws and regulations in the countries where it operates, makes lawful and transparent tax payments to local governments, and makes due contributions to local economic development. In countries where the EITI (Extractive Industries Transparency Initiative) standard is implemented, such as Iraq, Mongolia and other countries, our local companies actively participate in the multi-stakeholder groups and publish information on our projects and tax payments, as required by EITI with the content beyond EITI's minimum disclosure requirements. We support and respond to 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 for our sustainable development and make due contributions to socio-economic development. In 2017, the overseas tax payment of the Company totaled RMB 47.38 billion.

CNPC TAX POLICY

CNPC carries out tax planning in support of its business strategy and in compliance with international tax agreements and principles, as well as tax laws of host countries. CNPC opposes to aggressive tax planning to avoid potential risks and negative impacts on the company's reputation and sustainability.

CNPC pays taxes in compliance with applicable tax laws of host countries, its business principles and code of conduct, and adheres to high professional standards to ensure the legitimacy and accuracy of tax payment in a timely manner.

CNPC advocates tax transparency, and ensures the accuracy and completeness of tax information disclosure in line with requirements of tax authorities.

CNPC manages tax risks through its effective internal control system and engages with tax authorities and external advisors in case of different interpretation of tax laws and regulations for professional judgment.

CNPC carries out intercompany transactions based on arm's length principle and not for the purposes of eroding tax base and shifting profits.

CNPC takes part in promoting a fair, consistent and stable taxation environment globally and strives to establish a fair, transparent and effective dialogue with tax authorities of host countries.

Protecting Indigenous People's Rights

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

Case Study Enhance Increase Interaction with Indigenous People

In Canada, we actively conduct mutually beneficial communications with the indigenous people living around the operating areas. Specifically, we signed bilateral agreements with local communities and paid local people for consultation on environment protection regularly. We set up training programs on oilfield services, provided local people with job opportunities and funding for protection of indigenous cultures.

In addition, our company in Canada entered into regular multilateral consultations and discussions with communities concerned and supervising government authorities on sustainable development, forming a community with shared interests and good interaction.

Performance Data

Performance indicators	2013	2014	2015	2016	2017
Finances and operations					
Total assets (RMB billion)	3,757.4	3,938.4	4,034.1	4,069.8	4,098.72
Owner's equity attributable to parent company (RMB billion)	1,787.5	1,978.4	2,079.4	2,098.0	2,042.58
Operating revenues (RMB billion)	2,759.3	2,730.0	2,016.8	1,871.9	2,340.32
Taxes and fees paid (foreign taxes and fees inclusive)(RMB billion)	464.8	458.9	375.7	349.7	377.36
Newly-added proved oil reserves (million tons)	115.629	99.543	75.739	78.81	60.07
Newly-added proved gas reserves (billion cubic meters)	310.32	212.69	276.49	135.1	94.9
Crude oil production (including overseas equity output) (million tons)	159.81	164.17	166.57	162.98	171.338
Natural gas production (including overseas equity output) (billion cubic meters)	103.9	113.9	116.7	121.3	128.73
Crude runs (including overseas) (million tons)	188.55	196.98	195.24	191.67	199.17
Refined products output (million tons)	128.09	131.04	135.80	131.32	136.72
Ethylene output (million tons)	3.98	4.98	5.03	5.59	5.76
Lubricant output (million tons)	1.89	1.58	1.21	1.16	1.64
Marketing volume of refined products (domestic) (million tons)	118.33	117.02	116.25	113.03	114.163
Number of service stations (domestic)	20,272	20,386	20,714	20,895	21,399
Mileage of crude pipelines (km)	17,640	18,132	18,917	18,897	20,359
Mileage of refined products pipelines (km)	9,534	10,086	10,091	10,560	11,389
Mileage of natural gas pipelines (km)	45,704	50,836	50,928	51,734	53,834
Safety					
Total number of accidents	197	215	237	270	283
Fatality rate (person/million working hours)	0.0047	0.005	0.003	0.0025	0.0048
Fatality rate (person/million working hours)- employee	0.0028	0.0045	0.0029	0.0024	0.0025
Fatality rate (person/million working hours)-contractor	0.0144	0.0078	0.0033	0.0026	0.0119
Fatality rate per thousand vehicles in traffic accidents (‰)	0.046	0.103	0.046	0.085	0.069
Environment					
COD emissions (metric tons)	—	31,300	28,800	28,700	*
NH ₃ -N emissions (metric tons)	—	12,500	11,700	11,500	*
SO ₂ emissions (metric tons)	—	197,300	142,400	127,500	*
NOx emissions (metric tons)	—	177,900	148,700	132,100	*
Energy saved (million tons of TCE)	1.18	1.26	1.16	0.95	0.88
Water conserved (million cubic meters)	24.40	24.62	20.61	13.39	12.41
Land saved (hectares)	1,225	1,232	1,200	1,135	1,180
Staff					
Number of employees in service	1,534,000	1,500,200	1,518,200	1,463,700	1,407,200
Occupational health examination ratio (%)	94	97	98	98	98.5
Public welfare					
Total contribution (RMB million)	850.89	1,007.60	1,366.03	621.41	1,085.72
- Poverty alleviation (RMB million)	227.44	206.87	341.10	197.67	218.17
- Disaster-relief (RMB million)	74.87	168.66	5.88	1.92	79.75
- Education (RMB million)	253.65	128.17	238.03	89.56	100.919
- Charity donation (RMB million)	163.40	395.26	632.03	239.85	466.118
- Environmental charity (RMB million)	131.53	108.64	148.99	92.41	220.763

*As of the date the report released, the statistics of COD, SO₂ and NOx emissions of the Company in 2017 are under review of the Ministry of Environmental Protection of PRC (MEP), which will be publicized once verified. The verified statistics for the year 2016 shall be published in this report next year.

Outlook for 2018

In 2018, the world economy will show a trend of steady recovery, whereas China's economy will usher in a stage of high-quality development. Despite greater volatility in oil and gas demand, the Company will experience a better development situation, which nevertheless will remain severe and complex. To address the challenges and difficulties caused by the external environment, we will thoroughly implement the guidelines of the 19th CPC National Congress and the Central Economic Work Conference, firmly comply with the fundamental requirements for high-quality development, keep making progress while maintaining stability, and adhere to the principle of steady development. We will further seek steady growth, promote reform, shore up weak points, guard against risks, increase efficiency, and enhance corporate image building and fully accomplish various tasks and objectives in a coordinated way, so as to make new contributions to promoting China's sustained and healthy economic and social development.

We will give top priority to high-efficiency exploration and low-cost development, and achieve steady oil production and higher gas production with enhanced efficiency. We will promote the transformation and upgrading of the refining and petrochemical business and build important pillars for value growth, and accelerate the development of natural gas and pipeline business and implement projects of strategic value. In order to maximize overall benefits, we will develop overseas operations in a high-quality and efficient manner and build a community of shared interests in international oil and gas cooperation.

We will further promote the efficient operation of the HSE management system, actively establish a dual-level prevention mechanism for graded risk control and hazard identification and treatment, vigorously improve environmental management and control, strengthen fulfillment of responsibilities and risk prevention and control, and ensure continual and steady improvement of HSE situation. We will strictly control process quality, strengthen quality supervision of products and projects, promote the quality management of the Company through upgrading the quality management system standard, and strive for excellent QHSE performance.

We will ensure the principal status of the employees, improve the democratic management system, adopt a transparent approach to factory affairs and party affairs, and earnestly safeguard the interests of employees. We will improve the mechanism for staff income growth and synchronize employees' salary growth with the increase of the Company's business efficiency and labor productivity; we will implement relevant national policies and ensure employees' interests are cared for. By doing so, the gains of reform and development will benefit all our employees in a fair way, who will in turn enjoy a stronger sense of fulfillment, happiness, and security.

We will be committed to fulfilling social responsibilities including educational donations, poverty alleviation, disaster relief and staff voluntary activities, so as to support local economic and social development. We will take targeted measures in poverty alleviation, especially through industrial poverty alleviation, to contribute to China's fight against poverty.

2018 will kick off our efforts to put all the guiding principles from the Party's 19th National Congress into action. It is the 40th anniversary of China's reform and opening up, the 20th anniversary of the reorganization of the Company, and also a crucial year for continuing to implement the 13th Five-Year Plan. In order to build a world-class integrated international energy company, we will continue to implement our strategies of resources, market, internationalization and innovation, make great efforts to strengthen party building, promote stable development of core businesses, push ahead with corporate image promotion, and carry forwards the Oil Spirit. We will make unswerving efforts to deepen reform, accelerate our reform for better quality, higher efficiency, and more robust drivers of economic growth, and keep enhancing our overall strength and global competitiveness, in order to make positive contributions to securing a decisive victory in building a moderately prosperous society in all respects and building a great modern socialist country in an all-round way.

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 $\pm 20\%$.
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 known oil & gas layer in the future according to geological and engineering documents. Their price and cost are based on the reality in evaluation. Price changes will only consider the changes of current price specified by contract agreement rather than escalations. Proved reserves include proved reserves developed and undeveloped.
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 energy	New energy refers to unconventional energy and renewable energies, mainly including CBM, shale gas, oil sands, oil shale, fuel ethanol, biodiesel, geothermal energy, wind energy, solar energy, hydrogen energy, water-soluble gas and NGH.
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 making the Earth's surface warmer, as the "greenhouse effect" sequesters solar radiation and increases the temperature of the air. Greenhouse gases in the Earth's atmosphere mainly include CO_2 , CH_4 , N_2O , HFCs, PFCs and SF_6 .
Carbon sequestration	Also refers to carbon sinks. It is the process, activity and mechanism to remove carbon dioxide from the air. Generally, it indicates the capability of forests to absorb and store carbon dioxide. Carbon dioxide in the atmosphere is artificially sequestered in biological forms in plants and the soil through forestation, forest management, and other forest carbon sequestration measures.
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 emergent accidents which result in or may result in serious casualties, and / or damage to property, the environment, society and public safety. Emergency accidents faced by CNPC include four types, namely natural disasters, accidents, public health and social security.
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.
Occupational health surveillance	A series of health examinations for professionals in an industry aimed at preventing occupational health threats and improving the health of employees. Occupational health surveillance includes occupational health checks, management of occupational health archives, etc.
Occupational health examination	Physical examination of workers exposed to occupational health threats. The items and frequency of checks should be determined by the category of health threats, and by stipulations in the <i>Items and Frequencies of Occupational Health Checks</i> . These include checks before, during and at the end of a worker's assignment, as well as emergency checks.
Occupational health examination ratio	The annual ratio between the number of workers exposed to occupational threats who have taken occupational health checks and the total number of workers who should receive such checks.
Stakeholders	Stakeholders are groups and individuals that are able to impact the accomplishment of corporate goals, or groups and individuals that are impacted by corporate goals, including the natural environment, future generations, and non-human species that are directly or indirectly affected by corporate business activities.
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 like 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.

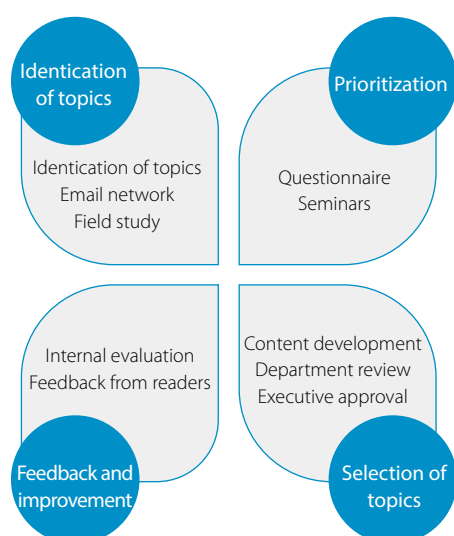
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Approach to Reporting

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



1. The Company pays close attention to the views of its stakeholders, and collects their comments through community visits, periodical reports, field study and online communication. It makes suggestions on the topics of the report by taking into account stakeholders' major concerns.
2. We assess the Company's sustainable development strategy and cover major social, economic and environmental events related to our strategies, risks and opportunities.
3. We refer to UN SDGs and the social responsibility initiatives and standards proposed by NGOs for topic selection. These include ISO26000 (Guidance on Social Responsibility).
4. Topics are selected based on the comprehensive assessment of stakeholders' concerns and their impact on the Company's strategies. The time span and the scope of impact for each specific topic are clearly defined to ensure the accuracy of the information disclosed.



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