



2014  
Corporate Social Responsibility Report

# About the Report

This is China National Petroleum Corporation's ninth annual Corporate Social Responsibility Report since 2006. This report accurately represents what we did in 2014 to honor our commitments to the economy, the environment and society. It is important that we provide the following 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:** January 1 to December 31, 2014. Given the continuity and comparability of the disclosed information, part of the information may be taken forward or backward as necessary.

**Report cycle:** This is an annual report. The 2013 Corporate Social Responsibility Report was released in May 2014.

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

**Report content:** What we do to honor our economic, environmental and social responsibilities.

**Information sources:** The Company's official documents, statistical reports and statistics related to the Company's units and enterprises. 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 an objective, comprehensive and prioritized manner, the 2014 report added content such as "Water Management". While compiling this report, we carried out on-site investigations on the CSR performance of our affiliated companies, verified the authenticity of case studies, extensively solicited opinions and actively responded to the concerns of all stakeholders.

**References:** The Guideline on Fulfilling Social Responsibility by Central Enterprises and Guidance on Central Enterprises' Harmonious Development Implementation in the 12th Five-Year Plan Period issued by the State-owned Assets Supervision and Administration Commission. 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, and China CSR Reporting Guide (CASS-CSR2.0).

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

**Access to the report:** You can write to [csr@cnpc.com.cn](mailto:csr@cnpc.com.cn) or phone 8610-59984395 for a hard copy. It is strongly recommended that you download the PDF version of this report at [www.cnpc.com.cn](http://www.cnpc.com.cn) or scan the QR code for the mobile version.



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## Chairman's Address

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I am very pleased to introduce the Corporate Social Responsibility Report 2014. In the face of profound adjustments in the global economic pattern and the ever-changing energy market, we forged ahead in 2014 and achieved steady and sound business growth, meanwhile fulfilling our commitment to sharing the fruits of our development.

CNPC pursues sustainable development as a long-term goal and a way to progress. We operate in a responsible manner and provide premium and reliable products and services to make our due contribution to the global energy sector. We spare no efforts to meet the expectations of our investors, customers, communities and other stakeholders, and build a clean, efficient, safe and sustainable energy system, in order to facilitate sustainable social development.

### **Providing diversified and clean energy**

Natural gas is by far the cleanest fossil fuel. As the world's largest emerging economy, China consumes more energy than any other country in the world. Securing China's energy supply is significant to the stability of the global energy market. While ensuring a stable supply of crude oil, the Company attaches strategic importance to its natural gas business, in order to optimize the energy mix and achieve green development underpinned by a diversified energy supply system. In 2014, we obtained a number of important gas discoveries in the Sichuan and Tarim basins. By reasonably organizing production, steadily pushing forward the exploration and development of tight gas, shale gas and

coalbed methane, and coordinating the amount of domestically-produced gas and imported gas, we registered a sales volume of 119.5 billion cubic meters of natural gas in the domestic market, an increase of 8.1% year-on-year. We steadily push ahead with our gas utilization business, and actively promote the substitution of natural gas for coal and oil in the electricity and transportation sectors, in order to help reduce carbon emissions. Additionally, we develop and utilize geothermal energy and other renewable energies in an orderly manner, in an effort to diversify sources of clean energy.

### **Driving industrial upgrading through technological innovation**

Innovation is the driving force of industrial upgrading and development. We keep abreast of new trends in the global energy technology revolution, particularly with regard to green and low-carbon technologies, and integrate them with high-tech in other fields. Thereby, we can promote innovation in oil and gas-related industries and in business models, and make energy technology and related industries a new growth point of national industrial upgrading. In 2014, we saw wide application of several R&D deliverables, including clean gasoline and diesel production technology, and technology for substituting gas for oil as vessel fuel, which helped improve ancillary products through a demonstration project. With the wider use of and expanding market for substitution technology, we expect to see the development of

relevant industries such as LNG cryogenic tanks and carburetors, and the important role local and private gas companies will play in the marine LNG supply market. We are confident of fostering new economic growth points and cultivating sunrise industries through continuous technological innovation, and playing a leading role in the energy technology revolution to boost the transformation and upgrading of China's economy.

### Promoting low-carbon production and operation

Green development has become a global trend in recent years. The core of green development is to improve the efficiency of resource utilization and cut excessive consumption of natural resources. CNPC is both an energy provider and an energy consumer. We not only provide high-efficiency energy solutions, but also save energy in every process of production and operation. To this end, we make great efforts to promote the efficient use of natural gas, accelerate the upgrading of gasoline and diesel products, and increase the supply of high-quality, high value-added products. We give priority to energy saving and spare no efforts to cut our own energy consumption in order to establish an economical production model. In response to the "Energy-saving and Low-carbon Program for 10,000 Enterprises", a campaign launched by the Chinese government, we have accelerated the implementation of key energy conservation projects, and developed and promoted the application of advanced energy-saving technology, and further improved the efficiency of key energy-using equipment. We also advocate a green office and low-carbon lifestyle, and implement the energy-saving action plan throughout CNPC to enhance the energy-saving awareness of our employees.

### Working together for common development

While seeking our own development, we are committed to sharing development opportunities and resource values with our stakeholders for mutual benefits. We attach great importance to social responsibility management throughout the industry chain, and advocate and lead our suppliers and contractors to fulfill their social responsibility while achieving common development by leveraging our advantages in funding, technology and management. Adhering to the principle of putting people first, we provide our employees with career development platforms and promotion channels. In particular, Rouzimaimiti Bake, a talented Uygur employee from the Xinjiang Oilfield, has become a national technical expert through training provided by the Company. We actively support social welfare undertakings and drive local

socioeconomic progress where we operate, in pursuit of mutually beneficial development. In Indonesia, we were granted the special award of merit in 2014 by the Ministry of Energy and Mineral Resources for our outstanding contribution to local socio-economic development.

In 2015, we will continue our efforts to deepen enterprise reform, strengthen innovation-driven development, enhance lawful corporate governance, and push forward our goal of becoming a world-class integrated international energy company. We endeavor to operate in a safer, greener and more efficient manner, fulfill our economic, environmental and social responsibilities, and become an outstanding corporate citizen with better profitability, greater brand influence, and higher inspiration, so as to make our due contribution to the Chinese Dream of the great rejuvenation of the Chinese nation.

Looking to the future, CNPC will better fulfill its responsibilities and obligations, and give back to stakeholders with excellent performance. We are grateful for your attention and support, and welcome your comments and recommendations.



Zhou Jiping, Chairman

## About us

One of China's largest oil and gas producers and suppliers, CNPC is an integrated international energy corporation, with businesses covering oil and gas exploration and development, refining and chemicals, natural gas and pipelines, marketing and trading, storage and transportation, oilfield services, engineering and construction, equipment manufacturing, and finance. We have oil and gas assets and interests in more than 30 countries. In 2014, 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 values

Honesty, innovation, safety, excellence

### Our philosophy

Dynamic, loyal, honest, committed



### Assets & Profits

CNPC registered total assets of RMB 3.9 trillion. We recorded sales revenues of RMB 2.7 trillion and net profits of RMB 123.8 billion, down 1.1% and 12.1% respectively. Our taxation payments totaled RMB 407.0 billion, down 0.2%.



#### Total assets

**3.9**  
trillion RMB

### International Operations

Our overseas oil and gas operations in over 30 countries yielded an equity production of 65.2 million tons of oil equivalent.



#### Overseas oil and gas operations in over

**30**  
countries

### Resource Base

In China, our newly added proven oil in place and gas in place totaled 690 million tons and 484 billion cubic meters respectively.



#### Newly-added proven gas in place

**484**  
billion cubic meters



## Figures in 2014

We saved energy equal to 1.26 million tons of standard coal and 24.62 million cubic meters of water. COD and SO<sub>2</sub> emissions dropped year-on-year.

### Saved energy

# 1.26

million tons of standard coal

Domestic and overseas oil and gas equity production exceeded 254.94 million tons of oil equivalent, up by 5.1%. Domestically, we produced a total of 113.7 million tons of crude and 95.5 billion cubic meters of natural gas, accounting for 54.2% and 74.8% of China's total respectively.

### Domestic and overseas oil and gas equity production

# 254.94

million tons of oil equivalent

Nine of our R&D achievements won the National Scientific and Technological Advancement Prize, of which the "Key technology for the construction and operation of strategic oil and gas channels" won the First Prize.

### National Scientific and Technological Advancement Prize

# 9

CNPC operated oil and gas pipelines with a total length of 79,000 kilometers, covering 29 provinces (municipalities and autonomous regions) and the Hong Kong SAR. The Myanmar-China Gas Pipeline was completed and became operational.

### Total length of oil and gas pipelines

# 79,000

kilometers

### Energy Conservation and Emission Reduction



### Oil & Gas Production



### Technological Innovation



### Oil and Gas Pipelines



### Employee Development

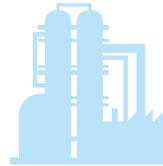


We have a total of 1,500,200 employees, and more than 91% of our overseas employees are local hires. A total of 163 employee training projects were implemented by our headquarters, and 44 employees were granted the "National May 1st Labor Medal".

### Total employees

# 1,500,200

### Oil & Gas Supply



Our domestic sales volume of refined products was 117.02 million tons, accounting for over 40% of the domestic market share; our domestic sales volume of natural gas was 119.5 billion cubic meters, up by 8.1%; all our diesel products for motor use reached the National IV standard.

### Sales volume of refined products accounting for over

# 40%

domestic market share

### Public Welfare



We invested more than RMB 1,000 million in public welfare undertakings globally, benefiting 100 million people. In China, we spent RMB 67.19 million launching 29 projects to support 14 counties (districts) in eight provinces (municipalities and autonomous regions).

### Invested in public welfare undertakings

# 1,000

million RMB

# Corporate Governance

CNPC is a solely state-owned enterprise. According to laws and regulations such as the Company Law of the PRC, and the Law of the PRC on the State-owned Assets of Enterprises, in addition to arrangements made by the State-owned Assets Supervision and Administration Commission of the State Council, CNPC promotes and regulates the establishment of a board of directors, and constructs and continuously perfects the legal person governance structure with clearly defined rights and responsibilities among the board of directors, board of supervisors and management, to ensure that each department carries out its own duties with effective balance, scientific decision-making and coordinated

operations. In 2014, we established the Board of Directors in accordance with the requirements of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) for establishing and regulating the Board of Directors. CNPC pays a great deal of attention to honesty and operational compliance. We abide by laws, regulations, international common practice and business ethics, and insist on basing our relationships with stakeholders on the principles of justice and integrity to win the market and respect, and improve our quality and value through operational compliance.



Management and control system of corporate governance

	Objectives	Measures	Effect
<b>Compliance Management System</b>	<ul style="list-style-type: none"> <li>Establish a comprehensive and effective compliance management system</li> <li>Ensure employee behavior and the Company's lawful operation and sound development</li> </ul>	<ul style="list-style-type: none"> <li>Issue integrity and compliance manuals and compliance management standards</li> <li>Carry out compliance education and training for all employees</li> <li>Regulate the review system of related matters</li> <li>Strengthen compliance evaluation and assessment</li> <li>Intensify efforts to investigate and report violations</li> <li>Improve staff compliance archives</li> </ul>	In implementation
<b>Corruption Punishment and Prevention System</b>	<ul style="list-style-type: none"> <li>Strengthen work style building</li> <li>Intensify fight against corruption</li> <li>Steadily prevent corruption</li> </ul>	<ul style="list-style-type: none"> <li>Set up the anti-corruption leadership group and anti-corruption coordination group</li> <li>Implement the 2013-2017 work plan for the corruption punishment and prevention system</li> <li>Implement the responsibility system for improving Party conduct and constructing honest and clean administration</li> <li>Conduct strict disciplinary reviews</li> <li>Strengthen inspection and compliance supervision</li> </ul>	<ul style="list-style-type: none"> <li>Improved the responsibility system for improving Party conduct and constructing honest and clean administration</li> <li>Strengthened disciplinary reviews</li> <li>Reinforced the targeted and effective compliance management supervision</li> <li>Made remarkable achievements in fighting against formalism, bureaucracy, hedonism and extravagance</li> </ul>
<b>Internal Control and Risk Management System</b>	<ul style="list-style-type: none"> <li>Design the system effectively</li> <li>Implement the system effectively</li> </ul>	<ul style="list-style-type: none"> <li>Continue to promote system building and optimize and improve system design</li> <li>Highlight risk orientation, deepen comprehensive risk management</li> <li>Strengthen process control, optimize business process management</li> <li>Strengthen internal control testing, intensify assessment</li> </ul>	<ul style="list-style-type: none"> <li>Accelerated the improvement of the internal control system</li> <li>Deepened comprehensive risk management</li> <li>Optimized and improved business process management</li> <li>Gave full play to internal control and supervision</li> </ul>

# Management and Corporate Governance Control System

## 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 sustainable development; it is not only an external requirement to adapt to economic and social development trends, but also an internal requirement to enhance our sustainability; it is not only an important way to change our development mode and achieve scientific development, but also a strategic requirement for our internationalized operation.

Upholding the 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 contribution to society. We have never relented in our efforts to implement our social responsibilities, adhere to legal operation, be honest and trustworthy, save resources and protect the environment, insist on the people-oriented principle and build a harmonious enterprise, in order to give back to society and realize value sharing.

### CNPC as an outstanding corporate citizen

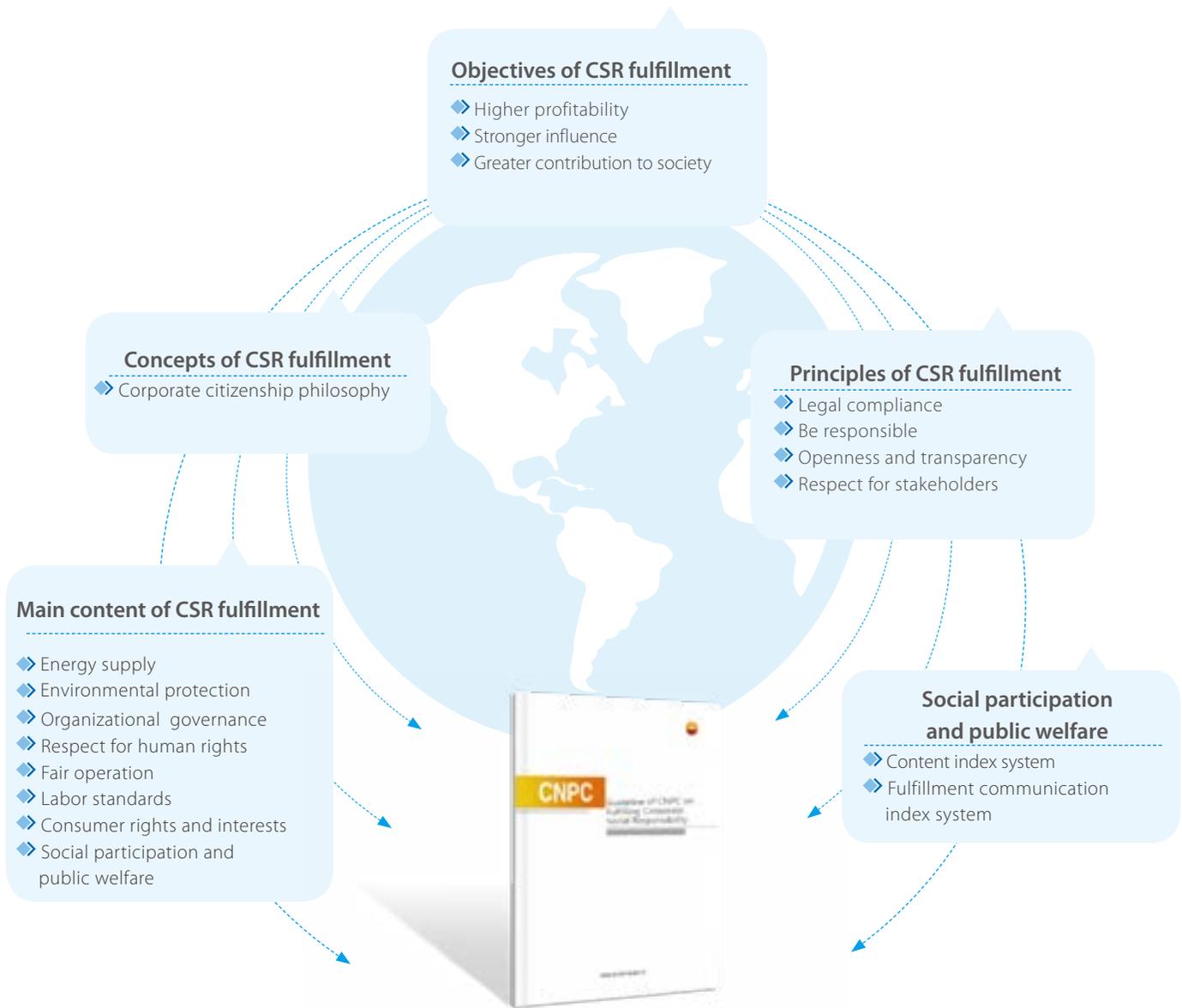


## Responsibility Management

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 building and organizational structure, we have established a set of comparatively complete mechanisms on social responsibility management.

### 1. 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 2014, to further strengthen and regulate our social responsibility management, we formulated and published the Guideline of CNPC on Fulfilling Corporate Social Responsibility, CNPC's first programmatic document on social responsibility.



In the Guidance, we defined the concept, scope and content of social responsibility, and established the CSR Content Index System and CSR Fulfillment Communication Index System.

## 2.Organizational Structure

CNPC has established the Committee of Social Responsibility Management to make major decisions on social responsibility policies and planning. The Committee is composed of department heads of the 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 Promotion Office for CSR execution, which is responsible for organizing and coordinating the planning and implementation of 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.

## 3.Capacity Building

We actively carry out research in the field of social responsibility, promote CSR education and training, and boost CSR communication with relevant organizations at home and abroad, in order to continue enhancing CSR awareness and the capability for fulfilling responsibilities among all employees. In particular, special research has been carried out on CNPC Social Responsibility Management and CNPC Public Welfare Management. We actively promote various forms of social responsibility training at all levels, and include social responsibility training in our overall planning for education and training. We encourage them to participate in CSR training and professional communication activities, in order to improve the professional quality of our full-time and part-time employees in charge of social responsibility work.



Question: Is the performance of senior executives relevant to the achievement of the Company's environmental, social or strategic objectives?

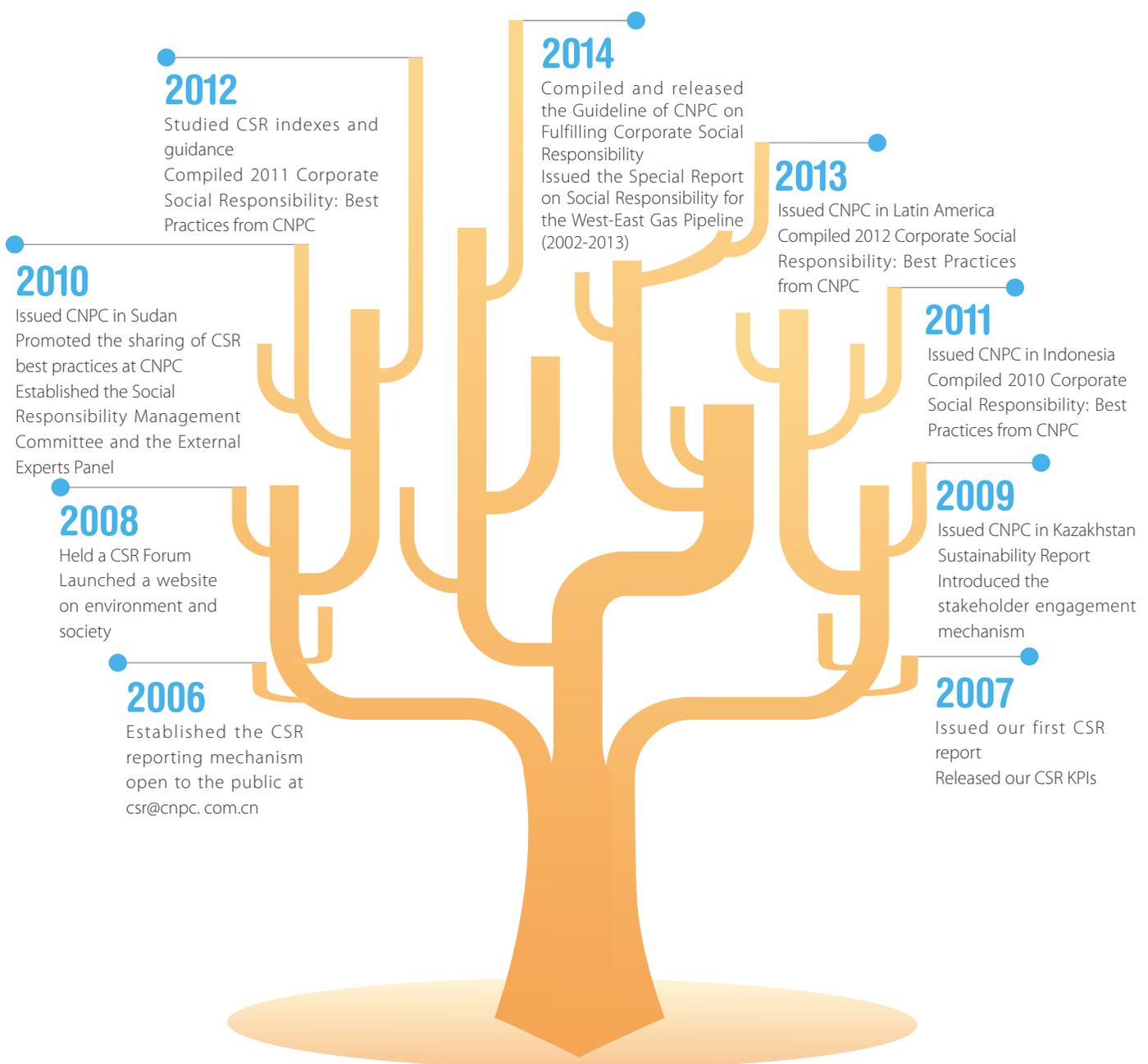
Answer: We integrate economic, environmental and social objectives into the performance evaluation of senior executives. Executives are held accountable for HSE misconduct with a one-vote veto.



## Communication with Stakeholders

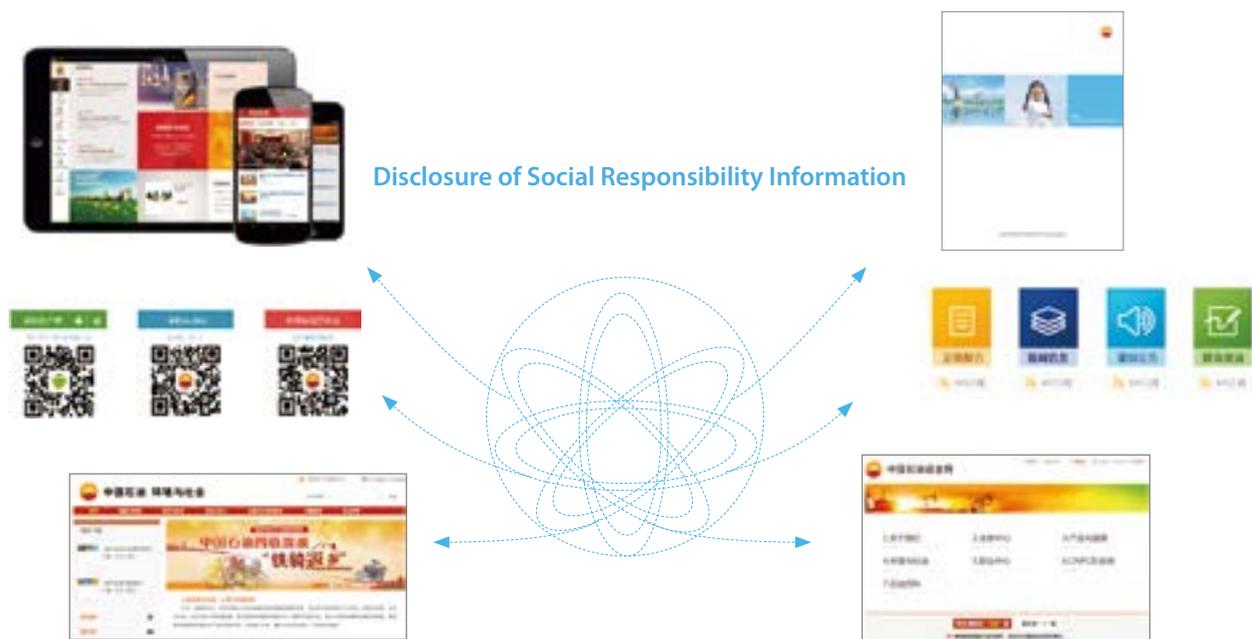
Stakeholders are the groups or individuals which are able to influence corporate decisions and activities or are subject to influence from corporate decisions and activities, including government, employees, customers and consumers, partners, relevant agencies and communities, etc. Stakeholders' participation 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 relating to our sustainable development. In addition, we learn from international standards and advanced experiences at home and abroad to continuously improve stakeholder participation.



### Promoting Transparency

Through a microblog, WeChat, mobile platforms and other new media, we enrich information disclosure on social responsibility and enhance the effectiveness of our communications.



### Disclosure of Social Responsibility Information

In 2014, in partnership with China Youth Daily and China University Media Union, we launched a campaign to invite outstanding student reporters from 22 Chinese colleges and universities to visit CNPC's Daqing Oilfield, Changqing Oilfield, Qinghai Oilfield and PetroChina West Pipeline Company. Fully understanding

the exploration, production, gathering, transportation and other processes, they can present a real picture of CNPC through their unique perspective and independent thought, and help to enhance the public's understanding of the Company.



## Goals and Concerns

## Means of Communication and Participation

## Our Actions

### Government

- 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

- Legal operation, honesty 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



- Change the mode of development, increase resource potential, promote technological innovation, maintain sound operations and increase asset value
- Discuss energy cooperation with host countries
- Safeguard energy supply and optimize energy mix, in coordination with national energy strategy
- Establish the national energy R&D center for heavy oil development
- Establish the CNPC Board of Directors, regulate its operation, and make substantial progress in the corporate governance structure
- Set up the Central Leading Group for Comprehensively Deepening Reforms, and make steady progress in reform
- Establish the anti-corruption leading group and anti-corruption coordination group to promote clean governance and anti-corruption
- Implement the emission reduction targets for the "12th Five-Year Plan" Period, and control total pollutant emissions

### Employees

- Guarantee employees' rights and interests
- Employee career development
- Employee value realization
- Employee health and safety

- Support trade unions at different levels
- Hold staff congresses
- Reinforce staff training
- Improve salary distribution system
- Hold contests and evaluations



- 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 relief activities
- Study and implement the Work Safety Law of the People's Republic of China and the Environmental Protection Law of the People's Republic of China, and carry out hazard control in key areas such as oil and gas pipelines
- Launch the CNPC EAP networking platform

### Customers and consumers

- Provide safe, environmentally friendly, and high-quality products
- Provide quality services
- Improve customer satisfaction
- Good communication
- Advocate sustainable consumption patterns
- Protect consumer privacy
- Improve consumer complaints mechanism

- Safeguard consumers' interests
- Supervise product quality
- Solicit the opinions of customers and consumers



- Increase supply of clean oil products, with all motor diesel products reaching the National IV standard
- Further promote the CNPC Quality Month Campaign
- Implement oil and gas recovery projects to minimize pollution
- Establish a unified service station management system and launch overall inspections
- Launch the Customer Experience Day campaign

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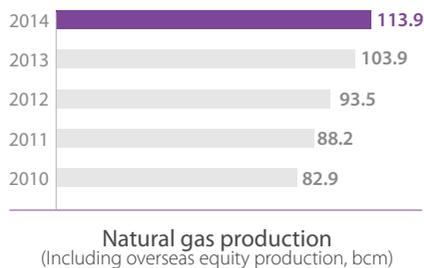
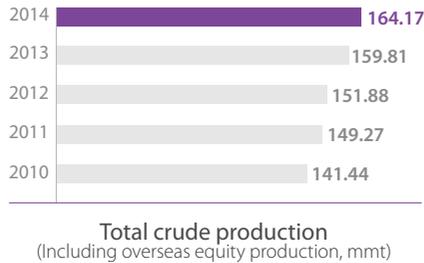
## Sustainable Energy Supply

- Intensifying Exploration and Development
- Development of Natural Gas
- Promoting Unconventional Oil and Gas Development
- Accelerating Upgrading of Oil Products
- Ensuring Stable Oil Supply
- Deepening International Energy Cooperation

As an integrated international energy company and a leading oil and gas producer and supplier in China, CNPC plays an important role in ensuring sustainable energy supply and promoting Socioeconomic development in China. To this end, we keep intensifying oil and gas exploration and development, constantly increase our efficiency in resource development, and vigorously promote the natural gas business and explore new energy development. We advocate environmental protection, energy conservation and emission reduction, and the efficient use of energy resources, promote international energy cooperation, and strive to build a clean, efficient, safe and sustainable energy system, in order to provide a sustained driving force for socioeconomic development.



## 1.Intensifying Exploration and Development



In 2014, upholding the strategy of increasing resources, we continued to intensify our efforts in exploration and development, and kept promoting projects for the peak period of reserve growth. In China, we registered 690 million tons of newly added proven oil in place, exceeding 600 million tons for the ninth consecutive year; and 484 billion cubic meters of newly added proven gas in place, exceeding 400 billion cubic meters for the eighth consecutive year. Our oil and gas production reached 254.938 million tons of oil equivalent, including domestic production of 113.67 million tons of crude oil and 95.46 billion cubic meters of natural gas. Both our oil production and gas production had hit a record high in 2014.

We focused on precise exploration in key zones and strengthened preliminary exploration and risk exploration in key areas and basins, making remarkable achievements in oil and gas exploration. A number of important oil and gas discoveries and breakthroughs were made in petroliferous basins including Tarim, Ordos and Qaidam. In particular, we discovered Moxi Longwangmiao Gas Reservoir in the

Sichuan Basin, the largest monomer marine uncompartimentalized gas reservoir in China.

To increase the efficiency and production of oil and gas development, we optimized the overall development plan, giving priority to new capacity building and stabilization of mature oilfield production. As most of our new resources are low grade, whereas the mature oilfields are in the late stages of development with high water cut, we carried out fine reservoir characterization, precise water injection, and significant development testing, and controlled the production decline of mature oilfields. In Daqing Oilfield, in the development stage of ultra-high water cut and ultra-high recovery degree, we focused on potential tapping by water flooding and chemical flooding, and achieved stable production of 40 million tons for 12 consecutive years after stabilizing production at over 50 million tons for 27 consecutive years. In Changqing Oilfield, by continuously improving tight oil and gas development technologies, and promoting the application of horizontal wells, the oilfield has become the largest oil and gas field in China. In 2014, its oil and gas equivalent production made up approximately one-sixth of China's total oil and gas production.

### Case Study

#### ASP Flooding Technology - A Powerful Tool for the Sustainable Development of Daqing Oilfield

In Daqing Oilfield, after producing from natural flows, and with the help of water flooding and polymer flooding, it is very important that we find a way to free the residual resources.

In the early development stage when Daqing Oilfield experienced robust growth in oil production, we had already started research on EOR technology. Based on the successful development and large-scale application of polymer flooding technology, we carried out research on ASP flooding since the 1980s. Through laboratory evaluation, pilot field tests, industrial field tests, and industrial demonstration development, progress has been made in many aspects: Application of ASP flooding in low-acid crude oil, challenging the traditional view that ASP flooding can only be used for high-acid crude oil; independent production of heavy alkyl benzene sulfonate (HABS) surfactants, solving the core problem of ASP flooding; solution for scaling of mechanical recovery wells and treatment of

produced fluids; and transformation from strong base ASP flooding to weak base ASP flooding to alkali-free SP flooding. While improving our technology, we also made great efforts to cut production costs and improve economic efficiency.

Through over 30 years of research, ASP flooding was put into industrial use in Daqing Oilfield. The technology was applied in more than 4,000 wells in 11 blocks, involving over 97 million tons of oil and gas in place. Annual production of ASP flooding had been exceeding one million tons since 2009 until 2014, when production reached two million tons for the first time. A total of over 12 million tons of oil has been produced by ASP flooding, with a recovery rate of over 60% in main oilfields, 20% higher than their counterparts. On top of water flooding, more than 200 million tons of new recoverable reserves have become accessible by ASP flooding, which has become a leading development technology for sustainable development.

Daqing Oilfield has long been the world's largest EOR production and R&D base, with a steady annual increase in EOR production represented by polymer flooding and ASP flooding. In 2014, its EOR production reached 14.59 million tons, accounting for 36% of the total production of 40 million tons. Thanks to the EOR technology, more than 100 million tons of oil has been cumulatively produced by the oilfield.

**Knowledge:** The alkali-surfactant-polymer (ASP) flooding technology is an EOR technology developed in the 1980s, by injecting alkali, surfactant and polymer in a certain proportion into the formation. Under the synergy effect of multiple displacing agents, it can increase the viscosity of the displacement fluid, improve the water/oil mobility ratio and displacement efficiency, and significantly enhance oil recovery.

## Case Study

## Large-scale Development of Ultra Heavy Oil in Fengcheng Oilfield

The ultra heavy oil in Fengcheng Oilfield is a type of naphthenic crude oil, accounting for only 2.2% of the world's proven oil reserves. A total of 75 types of high-end chemical products can be produced from naphthenic crude oil.

In 2014, Fengcheng Oilfield became the largest uncompartimentalized ultra heavy oilfield in China, with oil production of 2.237 million tons. Located in the Junggar Basin, the oilfield was discovered in the 1950s with 210 million tons of proven reserves. However, as the oil viscosity could be as high as 100,000 mPa.s, in order to find an effective and economical way for large-scale development, CNPC has been carrying out technical research on super heavy oil recovery since the 1980s, through a variety of pilot tests including SAGD, steam flooding for small well spacing, and VHSD. We overcame technical difficulties such as transforming heavy oil from "solid" to liquid, insufficient steam force, and high drilling costs, by developing multiple supporting technologies including steam assisted gravity drainage (SAGD) for dual horizontal wells, steam flooding for "vertical wells + horizontal wells", superheated steam injection, and drilling of shallow super-heavy oil horizontal wells. As a result, we have achieved the large-scale development of super heavy oil in Fengcheng Oilfield.



Fengcheng Oilfield

## 2. Development of Natural Gas

Fossil fuels are and will remain the main driving force for global economic development in the foreseeable future. As a low-carbon fossil fuel, natural gas is playing an increasingly important role, especially amid the worldwide campaign to address ecological issues and pursue green development. In China as well, natural gas has become an important energy guarantee of the country's ecological civilization construction in the process of urbanization and industrialization.

Striving to provide more clean energy represented by natural gas, CNPC continuously intensifies natural gas exploration and development, accelerates capacity building, and enhances production and supply capabilities. Additionally, we promote the construction of gas pipeline networks and facilities to efficiently and stably deliver resources to the market, and expand gas import channels in order to enhance gas supply capability through a diversified supply system. In 2014, we produced 95.46 billion cubic meters of natural gas in China, and supplied 119.5 billion cubic meters of natural gas. Gas delivery consists of our domestic production and gas and LNG imports, and increased 8.1% over 2013.

In 2014, CNPC continued to improve the building of our natural gas pipeline network to enhance resource allocation and guarantee market supply. The western section of the Third West-East Gas Pipeline, the Liangxiang-Xishatun section of the Third Shaanxi-Beijing Gas Pipeline, and Line C of the Central Asia-China Gas Pipeline were completed and put into operation. Now natural gas from Central Asia and coal gas from Xinjiang can be transported to the Yangtze River Delta, the Pearl River Delta, the Bohai Rim, Sichuan and Chongqing through the Third West-East Gas Pipeline, the Shaanxi-Beijing Gas Pipelines, and the Zhongwei-Guiyang Gas Pipeline, benefiting millions of people. In addition, six gas storages including Hutubi Storage in Xinjiang and Xiangguosi Storage in Southwest China were put into operation, further enhancing our gas supply and peak-shaving capabilities.

We have established a supply system featuring diverse sources and efficient operation. By the end of 2014, we operated 51,000 kilometers of gas pipelines in 29 provinces (municipalities and autonomous regions) and the Hong Kong SAR, and built 10 gas storages (complexes) and three coastal LNG terminals.



Q: Technological innovation is the main driving force of the sustainable development of an enterprise. How does CNPC enhance its technology innovation capabilities?



A: At CNPC, we keep increasing our science and technology input to create a good environment for technological innovation. Aiming to stay ahead in advantageous fields, realize accelerated development in fields where we lag behind, and take the lead in technical reserves, we keep building the technology innovation system. As a result, over 80% of our key technologies and major equipment have been independently developed, and over 53% of our growth has been attributable to technological progress. Making remarkable economic and social benefits through technology innovation, CNPC has been named an "innovation-driven enterprise".

# 40.1%

Proportion of gas production in the Company's domestic production in oil equivalent

# 70%

Domestic market share of gas supply

## Case Study

### Fueling buses with natural gas in Lhasa

In Lhasa, Tibet, the Qinghai Oilfield Company launched a bus refitting campaign with Lhasa Public Transport Corporation to replace oil with natural gas for bus fuel. On February 5, 2015, the first bus was successfully refitted and put into operation. Subsequently, all the existing 200 buses in Lhasa will be refitted, ushering in an era of natural gas for the city's bus system.

Qinghai Oilfield supplies natural gas to Qinghai and Tibet. In order to accelerate green economic development in Tibet by supplying the region with more natural gas, Qinghai Oilfield has actively developed the vehicle gas market while promoting urban gas projects in Lhasa.

In 2014, Qinghai Oilfield and Lhasa Public Transport Corporation worked together to promote a gasification project in Lhasa City. Apart from refitting buses to change the bus fuel from oil to gas, another 107 gas-fueled buses are planned to be purchased and put into operation. This will play a positive role in reducing exhaust emissions and protecting the environment in Tibet.

## Case Study

### Securing Gas Supply to Beijing

On January 7, 2015, the Liangxiang-Xishatun section of the Third Shaanxi-Beijing Gas Pipeline started gas delivery, indicating that the whole pipeline project has been completed and became operational. Beijing and North China used to depend on the first and second Shaanxi-Beijing Gas Pipelines for gas supply of 20 billion cubic meters annually. In recent years, with rapid economic development and continuously improving living standards in North China, gas consumption has been on the rise rapidly. Beijing in particular, has seen an average annual growth of over 20% in gas demand. Therefore, gas delivery from existing pipelines could hardly meet market demand, leaving natural gas in short supply, especially in winter peak demand periods. In the winter of 2013, the peak daily gas consumption in Beijing registered 53.43 million cubic meters. As the Shaanxi-Beijing Gas Pipelines were operating at full capacity, the gas supply for many industrial users along the pipelines had to be suspended to secure supplies for household use.

To alleviate gas shortages in Beijing and North China, CNPC started the construction of the Third Shaanxi-Beijing Gas Pipeline in September 2009 in two phases. The phase-I project (Yulin-Liangxiang Section) started supplying gas to Beijing in early 2011, whereas the Phase-II project (Liangxiang-Xishatun Section) became operational in 2014, which altogether has increased the city's daily gas transmission and distribution capacity by 20 million cubic meters. This has improved the layout of gas sources surrounding Beijing, and helped the city achieve its goal of gas transmission. It has also met the gas demand of replacement of coal for heating boilers, and enhanced the guarantee capability of gas pipeline network in Beijing.

Interconnected with the first and second West-East Gas Pipelines, the first and second Shaanxi-Beijing Gas Pipelines, Ji-Ning branch of West-East Gas Pipeline, and Yongqing-Tangshan-Qinhuangdao Pipeline, the Third Shaanxi-Beijing Gas Pipeline is an important link line to guarantee gas distribution in the pipeline network. Natural gas is mainly delivered from Changqing Oilfield and Central Asian countries including Turkmenistan and Kazakhstan, to Beijing and Shandong as the major target markets, and also to provinces and municipalities such as Tianjin, Hebei, Shanxi and Liaoning. The Third Shaanxi-Beijing Gas Pipeline will supply high-quality gas to the Bohai Economic Rim through multiple channels, which will effectively relieve the pressure on gas supply in Beijing, optimize the regional energy mix, and improve the environment and people's lives.



# 28%

Proportion of tight gas production  
in the Company's natural gas  
production in 2014

Cumulative production of  
commercial shale gas

# 177

million cubic meters

### 3.Promoting Unconventional Oil and Gas Development

In response to the decline in easy-to-tap and high-quality conventional hydrocarbon resources, we are extending our exploration and development to new areas, such as shale gas, coal-bed methane and deep water. In these areas, we face great challenges not only in the safe and economical development of the resources, but more importantly in obtaining these resources at the lowest environmental and social costs. In order to secure future

energy supply, CNPC actively promotes the development of unconventional oil and gas resources and strengthens research, tests and cooperation in these fields.

In 2014, we continued to strengthen the exploration of unconventional oil and gas resources including tight oil, tight gas, shale gas and coalbed methane. We intensified technical R&D, established a national R&D center for tight oil and gas, and set up two national shale gas demonstration zones in Changning-Weiyuan, Sichuan Province and Zhaotong, Yunnan Province.

We took the lead in carrying out comprehensive geological evaluation of shale gas in China to select favorable formations. We applied innovative mechanisms to the industrial development of shale gas, and developed a model for its efficient exploration and development featuring "platform-based well placement, industrial drilling and fracturing, skid-mounted construction, and digital production management". Relying on our experience and advantages in low-permeability reservoir fracturing, we have developed the exploration and staged fracturing technologies for shale gas recovery with independent intellectual property, which have been successfully applied to the fracturing of vertical wells and horizontal wells. In recent years, the Company has cumulatively invested RMB 7.3 billion, completed 41 shale

gas wells and produced 177 million cubic meters of commercial shale gas.

We were engaged in shale gas development in a clean and intensive manner. We have established a sound HSE management system adapted to the characteristics of shale gas development. We promptly collected and treated drilling waste by applying treatment-while-drilling technology; and fully recycled oil-based mud and reduced the amount of waste, with a recycling rate of over 90% for fracturing flowback fluid. Furthermore, we saved water resources by actively exploring anhydrous fracturing technology; and saved over 70% of land use through the platform-based well placement technology compared with single-well placement.

In 2014, in CBM exploration and development, we made major breakthroughs in the theoretical research and technological development of exploration and development of medium-to-low rank coalbed methane. Our CBM production capacity has experienced steady growth in Qinshui Basin, Ordos Basin and the 500-million-cubic-meter development project in North Baode in Shanxi Province. The annual capacity at the North Baode project has reached 360 million cubic meters, making it the first demonstration base for the development of medium-to-low rank coalbed methane in China.



Shale gas development

## 4. Accelerating Upgrading of Oil Products

As the vehicle population grows in China, traffic emissions are exerting an increasing impact on air pollution. In response to the National Plan on Climate Change (2014-2020) and the Air Pollution Prevention and Control Action Plan, we have accelerated the upgrading of gasoline and diesel products, and committed ourselves to independent technology R&D and the upgrading of equipment and processes. By the end of 2013, all of our motor gasoline products met the National IV standard, whereas in 2014, we made full preparations for the production and supply of motor diesel in compliance with the National IV standard, and engaged in the R&D of technologies for motor gasoline and diesel of National V standard. We have established technological projects involving oil product upgrading, including low-quality heavy oil processing, refining catalysts,

and production technology for National VI and National V gasoline. As a result, a series of independent R&D achievements have been made, providing powerful technological support for the upgrading of gasoline and diesel products. We also committed ourselves to the relevant renovation work at the refining, pipeline transportation and marketing enterprises, building and refitting a number of ancillary facilities for atmospheric and vacuum distillation, catalysis, coking, and hydrocracking. In 2014, all our refineries could produce National VI motor diesel as we completed the 14 upgrading projects on schedule. On the first day of 2015, CNPC officially started supply of National IV motor diesel, and provided sufficient National V oil products to key regions in the country.

# 100%

Proportion of motor gasoline and diesel products reaching the National IV standard

Investment in diesel quality upgrading project

# 6.52

Billion RMB



Q: What research programs has CNPC conducted for future energy development and clean energy utilization?

A: We attach great importance to the sustainable development of new areas and future energy, and focus on fundamental research and research for technical reserves. Major alternative technologies have been developed in fields such as tight oil and gas exploration and development, EOR for high water-cut, extra/ultra low permeability oil and gas fields, and new catalytic materials.



To promote clean energy utilization, as well as safety and environmental protection performance, we carried out research on exploration and development, engineering technology, oil and gas storage and transportation, refining and chemicals, and new energy. Our major research programs include "Research on Key Low-carbon Technologies" and "Research and Promotion of Key Safety and Environmental Technologies". Meanwhile, we actively promoted the application of advanced technologies and equipment to boost safety and protect the environment. Our technological package for clean gasoline production in compliance with National IV standard has been applied and promoted successfully.



Hydrogenation plant

## 5.Ensuring Stable Oil Supply

In 2014, CNPC continued to optimize its refinery layout, restructuring, and allocation of resources. We accelerated equipment upgrading, improved the product mix and sales network, and strived to ensure market stability. Sichuan Petrochemical Company's refining project was put into operation; Guangxi Petrochemical Company's sour crude supporting project was completed; and the refining project of Yunnan Petrochemical Company was accelerated. In 2014, we processed 150.16 million tons of crude oil, produced 101.84 million tons of oil products, and sold 117.02 million tons of oil products in China. While enhancing our supply capability to the market, we have established and improved emergency response mechanisms, developed plans for emergency allocation, and strived to ensure oil supply during special periods and in case of emergency.

### Securing Oil Supply in Agricultural Peak Periods

In the summer of 2014, oil products were in short supply due to agricultural activities in many regions in China. Paying close attention to oil supply during the summer period, we developed oil supply programs for key areas in advance, and provided quality products and services through rational allocation of resources, establishing green channels for



agricultural refueling, and sending skid-mounted refueling facilities and mobile fuel trucks to the farms. In 2014, we supplied 2.3 million tons of diesel in the peak period lasting for about a month, in the nine key provinces of Hebei, Shanxi, Hubei, Anhui, Henan, Shandong, Jiangsu, Sichuan, and Shaanxi, meeting local agricultural demand with high-quality oil products.

### Guaranteeing Oil Supply for Disaster Relief

In response to natural disasters such as low temperatures, floods, droughts and

earthquakes in recent years, we have established effective emergency mechanisms, conducted regular emergency dispatching, and set up comprehensive oil supply networks, in order to secure oil supply. In 2014, a 6.5-magnitude earthquake struck Ludian County of Zhaotong City in Yunnan. Yunnan Marketing Company immediately activated its emergency plan to send 29 oil tankers to the disaster area, and opened 23 green fuel channels along the roads to Ludian. Within three days of the earthquake, we had supplied 1,013 tons of oil products to the disaster area.



## 6. Deepening International Energy Cooperation

Upholding the principle of “mutually beneficial cooperation for common development” and in compliance with the laws and regulations of host countries, we participate in global oil and gas exploration and development by giving play to our advantages in integrated businesses, capital, technology and management. By the end of 2014, we operated more than 90 oil and gas cooperation projects in over 30 countries.



Gas processing plant of Amu Darya project in Turkmenistan

### Participating in International Energy Development

New progress was made in international oil and gas cooperation in 2014. We saw smooth progress in our existing cooperation projects, steady development in new projects, and deepened oil and gas cooperation in countries including Russia.

We entered into a purchase and sales contract on gas supply of 38bcm/a via the Eastern Route of the Russia-China Gas Pipeline, a framework agreement on gas imports of 30bcm/a from Russia via the Western Route, and a cooperation framework agreement on the Vankor Oilfield Project. We also signed a number of cooperation agreements with countries including Kazakhstan, Uzbekistan, Tajikistan and Turkmenistan, to enhance cooperation in pipeline construction, exploration and development, and international trade.

Phase II of the Halfaya Project in Iraq, a project built in partnership with Total and Petronas, has become operational. New breakthroughs were also made in risk exploration and progressive exploration in our project in Chad, the Amu Darya Project in Turkmenistan and the PK project in Kazakhstan, obtaining new oil and gas recoverable reserves. By strengthening risk control and coordination of production and operations, and actively implementing water injection, horizontal wells and EOR projects, we saw increased output in new oil and gas fields in Iraq, Latin America, Turkmenistan and other regions. In 2014, we

maintained rapid growth in overseas oil and gas output, with equity production of 65.2 million tons of oil equivalent, an increase of 10.1%.

### Boosting Global Oil and Gas Trade

The Company actively boosts its global oil and gas trade and keeps improving its global trading network, and has witnessed steady growth in international trade volume and operational quality. We also maintained progress at our three operating centers in Asia, Europe, and the Americas. In 2014, our trade volume grew by over 9.2%.

### Promoting Cooperation with International Companies in China

In China, we actively enhance our cooperation with international companies not only in conventional fields, but also in unconventional oil and gas including shale gas. In 2014, we entered into an agreement with HESS for the joint research of shale gas in Rongchang North Block in the Sichuan Basin; Changbei Project in cooperation with Shell continued to maintain high and stable production; Chuandongbei Project in partnership with Unocal has seen mechanical completion of the purification plant and Well Site A; and South Sulige Project in cooperation with Total was fully developed, hailed by Total as a “world-class project”. Throughout the year, our joint blocks in China yielded 9.20 million tons of oil equivalent, an increase of 11.2% over 2013.

## Promoting the Sound Development of the Industry Chain

As we are deeply rooted in the industry chain, we give priority to the sound and sustainable development of our industry chain. During production and operation, we integrate industry chain development into our business development plan, work to build a competitive, fair and responsible industry chain, and create and share value with our partners.

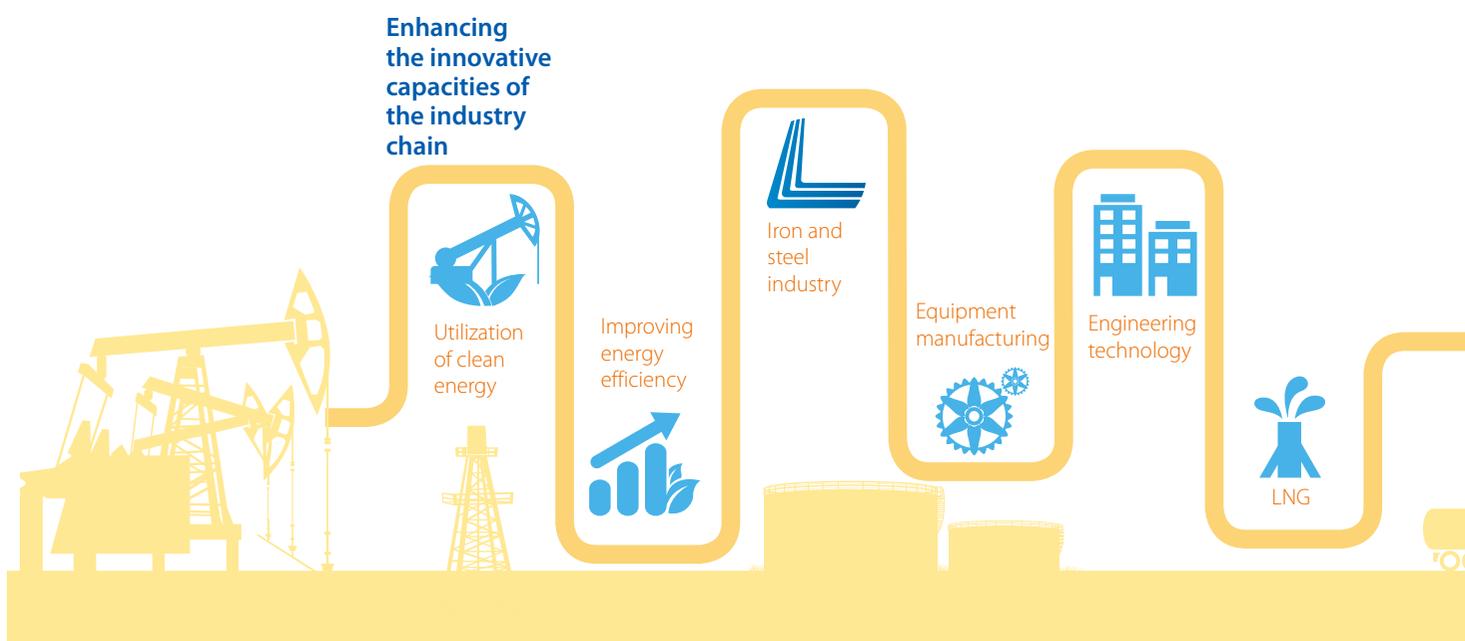
### Enhancing the Innovative Capacities of the Industry Chain

Actively adapting to the restructuring of the energy industry, we take the lead in promoting the energy production and consumption revolution, and give priority to the development of technologies and industries that use clean energy, produce energy in a clean manner, and increase energy efficiency, in order to ensure a sustainable future for the industry. For instance, we have made great efforts to promote natural gas utilization, and driven technological innovation in the industry chain covering the development of conventional and unconventional gas, R&D of gas gathering and transmission facilities, and the end use of natural gas. As a result, the competitiveness of related industries was improved. A series of advanced and applicable technologies have been formed for the development of tight gas, shale gas, and coalbed methane, laying a solid foundation for the sustainable development of China's natural gas industry. Remarkable progress has been made in tight gas development in the Changqing Oilfield, and construction of

the shale gas development demonstration area in Zhaotong in Yunnan Province and the CBM development demonstration area in Shanxi Province. Additionally, we focused on the development of intelligent long-distance pipelines to promote the use of CNG and LNG in the transportation industry. These efforts not only improved China's energy consumption mix, but also promoted the localization and innovation of technologies for pipelines, pipeline equipment, project construction and LNG. Furthermore, we also supported the development of relevant sectors, including steel, equipment manufacturing, engineering technology, natural gas power generation and LNG utilization.

### Maintaining Fair Competition in the Industry Chain

We build platforms for open cooperation to attract private and foreign capital and to jointly promote the prosperity and development of the industry. In response to the "36 New Articles"



## Practicing Business Ethics

We sincerely treat every business partner, and treat all customers, suppliers, contractors and competitors with respect and fairness. We are opposed to any form of commercial bribery, and require our partners (including contractors and suppliers) to comply with our policies on anti-corruption and anti-bribery. We strictly abide by the local laws and regulations on business competition wherever we operate, and commit ourselves to maintaining a fair and open order of competition.

proposed by the Chinese government, we are committed to domestic oil and gas exploration and development in cooperation with international partners, which include Shell, Total and other companies.

We cooperate with enterprises in the supply chain through "legal, open, competitive, selective and win-win" operation, and continuously promote fair competition in the industry chain by improving our procurement and tender management. Through centralized procurement at the headquarters and subsidiaries, and by public tendering, we provide suppliers with equal opportunities to participate. We disclose tender information and announce no-bid projects to ensure open and transparent tender management. Through the information system for materials procurement management, we exercise whole-process management of planning, procurement and tendering, with open materials procurement information and results that can be shared and traced back. In 2014, up to RMB 130 billion worth of materials were purchased through the system, accounting for 60% of the Company's total.

## Promoting Fulfillment of Social Responsibility Throughout the Supply Chain

We have integrated our social responsibility requirements in the admission and examination of suppliers and contractors. Through daily communication and training, we enhance the ability of the enterprises in the supply chain to fulfill their social responsibility.

We attach great importance to the suppliers' QHSE qualifications, business integrity and legal compliance records in the admission of suppliers. While selecting suppliers, those capable of offering new products, energy-saving and environment-friendly products, and products with independent intellectual property are preferred. Additionally, we focus on suppliers' contract performance, QHSE performance and business integrity in the supplier assessment. The assessment results are used as the basis of the graded management of suppliers and admission qualifications. We also provide our suppliers and contractors with QHSE training and advocate our partners to participate in community building and public welfare activities.

### Maintaining fair competition in the industry chain



Capital participation



Legal and open operation



Competition and selection



Win-win result



Daily communication and training

### Promoting CSR fulfillment throughout the supply chain



# 02

## Responsible Operation



- Strengthening HSE Management
- Improving Operational Safety
- Implementing Green Development
- Addressing Climate Change
- Improving Product, Engineering and Service Quality

We are always committed to the principle of “putting people, the environment, safety and quality first” and the goal of “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 product and service quality management, and promote safe, environmentally-friendly and resource-saving operations, in order to construct an ecological civilization and develop a resource-saving and environmentally-friendly enterprise.



## 1. Strengthening HSE Management

We constantly improve our health, safety and environment (HSE) management system. In 2014, we promoted our HSE management as we continued our efforts in HSE system construction, risk management and control, and performance assessment by assigning HSE responsibilities to each department and every employee.

### Improving HSE Management System

In 2014, we accelerated the building of the HSE management system and kept improving the HSE management level by focusing on risk management. We conducted the HSE system review and exercised closed-loop PDCA management. Regulations and standards were formulated and revised to enhance their operability. We provided refining enterprises with HSE counseling to strengthen management of weak processes, and promoted the HSE position matrix to regulate HSE training and further enhance training effectiveness.

### Strengthening Risk Control

We have established a risk management mechanism implementing “management and control by different levels”, and upgraded management for 14 categories of major HSE accidents. Risk management and control processes were streamlined, and key points and responsibilities for risk control at different levels were defined. In 2014, we upgraded the investigation and handling of the accidents without casualties listed in the 14 categories to the highest-level, with field investigation conducted by the headquarters, those held responsible are seriously punished, and accident-hit subsidiaries downgraded in performance evaluation. We strictly



Following the PDCA management model, our HSE management system is composed of seven key elements. Through the process of PLAN, DO, CHECK and ACTION, we keep enhancing our management skills and performance.

investigated accident responsibility, established effective channels for accident and incident reporting, and strengthened the investigation and handling of anyone who conceals, falsely reports or delays the reporting of any accident. Drawing lessons from accidents, we enhanced employees' awareness of the prevention and control of major risks.

### 14 categories of major HSE accidents under upgraded investigation

Eight categories of accidents involving operational safety: blowout, fire and explosions of refining unit, leakages and fires at hazardous chemical storage, fires and explosions of long-distance pipelines, fires and explosions of downstream gas operations, accidents at offshore oil and gas operation, major traffic accidents, and accidents caused by major natural disasters;

Six categories of environmental accidents: environmental disasters caused by production safety accidents, hazardous chemical spills and pollution, oil and gas spills and pollution, loss of radioactive sources and explosive products, environmental violations, and environmental accidents caused by illegal discharge and disposal of waste gas, waste water and waste residues.

## 2. Improving Operational Safety

In 2014, we studied the newly revised Work Safety Law of the People's Republic of China and the Environmental Protection Law of the People's Republic of China, carried out HSE performance assessment, and promoted pipeline hazard control. As a result, our overall HSE performance was stable in 2014.

### Fostering HSE Culture

We implemented the new Work Safety Law of the PRC and the Environmental Protection Law of PRC. We studied both laws, so that all our employees are familiar with the new requirements and changes to ensure production and operation in compliance with laws and regulations. In addition, we conducted compliance checks and supervised problem rectification to ensure operational safety.

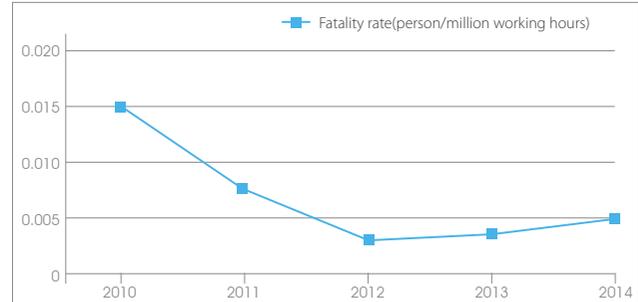
Through the "operational safety month" campaign, we promoted safety concepts, popularized safety knowledge and provided consultation on operational safety in 2014, in which more than 90,000 employees took part.

### Consolidating Safety and Environmental Protection

In 2014, we strengthened the implementation of our safety responsibility system, and defined safety responsibilities for each position. We further improved our assessment system by using both process and accident indicators and linking employees' performance with their remuneration. The top managers were held accountable for accidents with a one-vote veto for any misconduct in HSE performance.

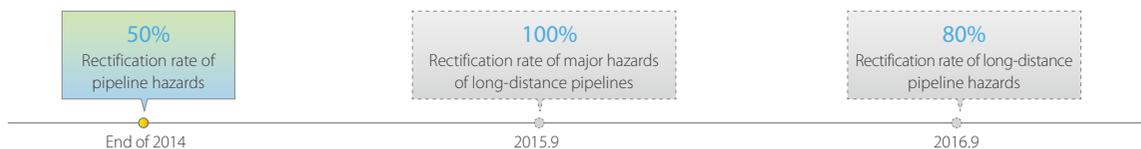
With the rapid urbanization and the aging of pipeline facilities, pipeline hazard control has become a priority in our safety work. In 2014, we developed a platform to identify pipeline safety hazards and listed major hazards among the top tasks of the senior managers of our subsidiaries in order to supervise and promote hazard control. To enhance intrinsic safety, we continuously promoted pipeline integrity management, and strengthened testing of the shutdown and scrapping of old pipelines. By the end of 2014, 50% of our pipeline hazards were rectified, with the rectification rate in 19 affiliates reaching 100%.

Fatality rate



We have established five emergency rescue centers for hazardous chemicals, long-distance pipelines, blowouts, offshore oil spill, etc., and improved the joint defense mechanism for fire control to ensure the Company's production and provide rescue in the event of a public emergency. In 2014, the emergency rescue centers of five subsidiaries including Daqing Petrochemical Company were designated as national bases for hazardous material rescue. The emergency rescue centers of Daqing Oilfield and Chuanqing Drilling Engineering Company were designated as national bases for oil and gas field rescue.

In 2014, 50% of our pipeline hazards were rectified; by September 2015, all the major hazards of long-distance pipelines will be addressed; by September 2016, the overall rectification rate of long-distance pipeline hazards will reach 80%.



Progress of Pipeline Hazard Rectification

## Supply Chain Safety

Our cooperative partners are direct participants or operators in our production and operation. We attach great importance to supply chain safety, and have incorporated management of suppliers and contractors into our HSE management system. In 2014, we strengthened supervision over the operational safety of suppliers and contractors. Specifically, we carried out special inspection of their current operational safety, and urged them to correct problems and announce their results.

## Overseas Security and HSE Management

In 2014, facing a complex and volatile external environment with severe challenges, we put employees' lives above everything and kept enhancing overseas security, HSE and emergency response capabilities. We have effectively overcome the impact of the South Sudanese Civil War, the deteriorating security situation in Iraq, and the Ebola outbreak on our operational safety. We have also avoided traffic fatalities, environmental pollution accidents and industrial accidents at or above the serious level in our overseas projects.

We implemented standardized management of security risks to realize whole-process risk prevention. Based on risk warning and prevention, we carried out risk evaluation and anti-terrorism training, and strengthened the development and implementation of security programs for new projects. In high-risk countries, we implemented coordinated management of the environment, security and logistics, and ensured the security of our operational sites by utilizing manpower, equipment and techniques.

In order to enhance the operation efficiency of our HSE management system, we conducted a total-factor audit on the HSE system through advanced management tools and techniques. We strictly implemented local laws and regulations and adopted more stringent environmental standards to protect the local environment. We saw improved medical conditions at workplaces, enhanced emergency response capabilities, and greater health guarantee against endemics and epidemics for our employees overseas. Furthermore, we

continued to launch Employee Assistance Programs (EAPs) to provide employees with mental health counseling and guidance (see Page 40).

## 3. Implementing Green Development

Through innovations in concepts, technologies, management and mechanisms for energy conservation and emission reduction, we further improved energy efficiency and reduced pollution. We continued to carry out the 10 Energy Saving Projects and the 10 Pollutant Reduction Projects, in an effort to minimize the environmental impact of our operations. Throughout the year, there were no major accidents resulting in environmental pollution or ecological damage. The emissions of all the major pollutants were reduced on a year-on-year basis. We saved energy equivalent to 1.26 million tons of standard coal and 24.62 million cubic meters of water.

# 56

Number of key energy-saving projects in 2014

## Energy Efficiency

Promoting new energy-saving technology. In 2014, we strengthened development of demonstration projects for energy-saving technologies, intensified energy efficiency evaluation and standardization, and invested in 56 key energy-saving projects with remarkable results. We have completed the tasks assigned by the national Energy-saving and Low-carbon Program for 10,000 Enterprises. Thirteen system optimization programs were implemented, including the 2.6 Mt/a RFCC CO-firing boiler upgrading project at Ningxia Petrochemical. Six training sessions on technologies for process simulation and system optimization of key equipment were held for nearly 400 people from 26 refining enterprises.



Strengthening overseas security

In 2014, we launched the energy-saving publicity week campaign through the Internet, television, and billboards, in order to popularize concepts and knowledge on energy conservation and low carbon, boost communication about energy conservation technologies, and enhance the energy-saving awareness of all the employees.



### Pollution and Emission Reduction

We intensified our efforts in pollution reduction and structural emission reduction. To this end, the thermal power plant in Liaohe Oilfield and the urea production equipment of Taxinan Petrochemical Plant in Tarim Oilfield were shut down; key emission reduction projects were integrated into the HSE information system for scheduling and enhanced monitoring; and the assessment of pollution reduction was reinforced. In 2014, all 10 FCC flue gas desulfurization projects and three refinery wastewater treatment projects assigned by the State have been completed and put into operation.

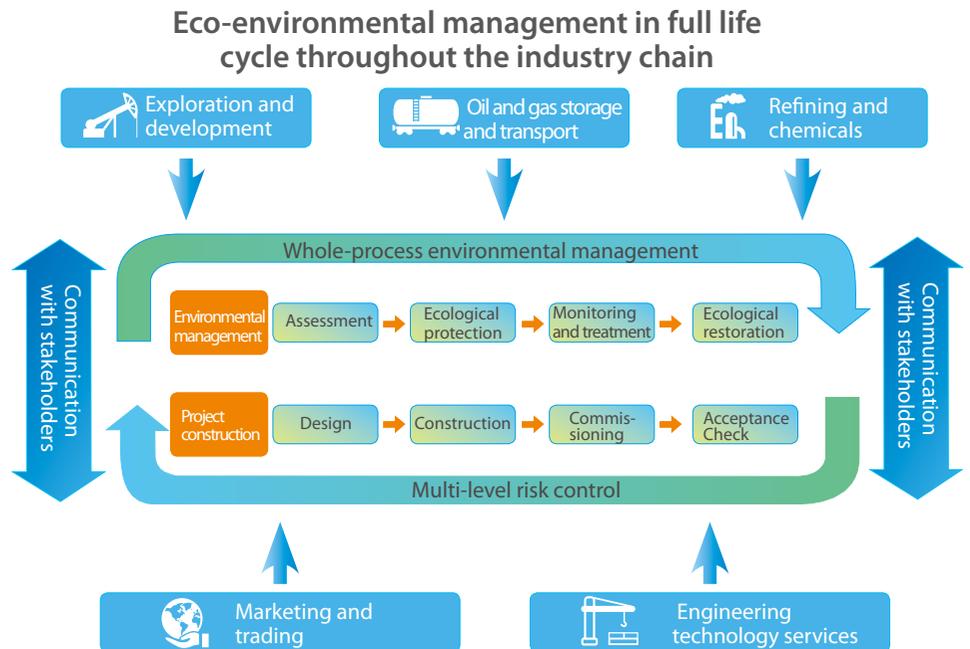
#### Case Study

### Sustainable Utilization of Water Resources with Heavy Oil Wastewater Treatment Technology

Liaohe Petrochemical Company is mainly engaged in heavy oil processing. By virtue of its heavy oil wastewater treatment technology, it has effectively solved problems during processing, such as the high organic content of wastewater and poor biodegradation. As a result, the efficiency of resource utilization was improved, with a wastewater recycling rate of up to 70%. By the end of 2014, Liaohe Petrochemical had treated more than three million tons of wastewater, and recycled more than 110,000 tons of waste oil.

### Ecological Protection

We implement ecological management throughout the industry chain and in the full life cycle. We analyze and assess the environmental risks in the upstream, midstream and downstream business chains, to adjust and optimize our process, technology and equipment accordingly. Environmental management is implemented in the whole process of construction projects, and preliminary environmental assessments are required in experimental pre-EIA projects. Environmental protection facilities are designed, built and commissioned together with the main project.



## Case Study

## Protection of Red Beaches

There are two red beaches in Panjin, the city where Liaohe Oilfield is located. The red beach is a natural landscape featuring the red plant of *Suaeda salsa* which grows in a high quality environment. Attaching equal importance to oilfield development and environment protection, Liaohe Oilfield has built breakwaters and impermeable cement platforms, rebuilt toilets and garbage chambers, cleaned up garbage on time, and took other measures to protect the beautiful red beaches.



## Case Study

## Excellent Project Construction and Environmental Protection in Mohe-Daqing Section of Russia-China Oil Pipeline

The Mohe-Daqing Section of the Russia-China Oil Pipeline stretches from the Heilongjiang boundary river in Mohe County to the Daqing Terminal in Daqing City, Heilongjiang Province. Running across cold frozen areas, virgin forests, nature reserves and environmentally sensitive rivers including Heilongjiang River and Nenjiang River, the project has extremely high requirements for environmental protection.

In May 2014, the Mohe-Daqing Section passed the onsite inspection by the Ministry of Environmental Protection. The survey conducted by the Appraisal Center for Environment and Engineering of the Ministry of Environmental Protection shows that all the respondents including companies and residents were satisfied with environmental protection in the project.

During construction, great importance was attached to soil and vegetation protection. We actively restored the landscape, strengthened the protection of wild animals, and developed specific measures for ecological protection. Specifically, to reduce the occupation of the virgin forest, we cut the width of our operational area from 28m to 18-20m, saving 547.33 hectares of land; to protect virgin forests, we invested RMB 100 million for soil and water conservation, and have reclaimed 816 hectares of arable land, remedied 680,000 cubic meters of soil covering, and built a green area of 1126.67 hectares, with a forestry and grass recovery percentage of 97.6%; to protect wildlife habitats, we reduced our operations at night and avoided construction in the breeding season; to protect the ecological diversity of the water area, we provided RMB 19.1 million to build fish breeding stations, conduct technology research on the artificial reproduction of burbot, and monitor water quality and aquatic life along the pipeline. 200,000-500,000 cold-water fish are released into the river every year.

In 2014, we focused on whole-process environmental management in our major construction projects. Six projects, including the Mohe-Daqing Section of Russia-China Oil Pipeline, passed the acceptance inspection of the Ministry of Environmental Protection of the People's Republic of China. The water and soil conservation projects of Changqing-Hohhot Crude Oil Pipeline (Changqing Oilfield - Hohhot Petrochemical Company), the Yulin-Liangxiang Section of the third Shaanxi-Beijing Gas Pipeline, and Dalian-Shenyang Gas Pipeline passed the acceptance inspection of the Ministry of Water Resources of the People's Republic of China. The inspection result shows that:

In the Changqing-Hohhot Crude Oil Pipeline project, with land control rate of 97.06%, total controlled percentage of erosion area of 97.02%, controlled ratio of soil erosion modulus of 0.97, percentage of dammed slag or ashes of 99%, and recovery percentage of forestry and grass of 97.68%, all indicators are above the standard. In particular, the four million square meters of grass grid in the sand area have played an important role in wind prevention and sand fixation.

In the Yulin-Liangxiang Section of the third Shaanxi-Beijing Gas Pipeline, the green area has reached 714.75 hectares, covering 23,100 trees, 985,800 shrubs and 344.77 hectares of grass. That is to say, 7,900 square meters of vegetation was recovered for each square meter of pipeline built. In the project area, the vegetation coverage rate was 27.4%, far beyond the target set by the Ministry of Water Resources.

In the Dalian-Shenyang Gas Pipeline project, the overall construction quality is characterized by the rational layout of water conservation facilities, with erosion control indicators above the standard. In particular the treatment percentage of disturbed land is 96.5%, the controlled percentage of erosion area is 97.8%, and the recovery percentage of forestry and grass is 98.5%.



## 4. Addressing Climate Change

We are proactively adapting to global low-carbon trends. In an effort to cut greenhouse gas emissions and make our due contribution to slowing down global warming, we have taken a number of measures, such as restructuring businesses, developing clean energy, improving energy efficiency, strengthening R&D of low-carbon technologies and promoting carbon sequestration.

### Accelerating the Use of Clean Energy

Development of low-carbon and clean energy in substitution for oil and coal is a major way to address the climate change. In 2014, we kept strengthening the construction of facilities for gas exploration and development, and storage and transmission (see Page 16); and worked hard to promote the development and utilization of both conventional and unconventional gas. We continued to facilitate the substitution of natural gas for oil and coal in urban domestic use, power generation, chemical production, buses and taxis, in order to control emissions of greenhouse gases at the source (see Page 19).

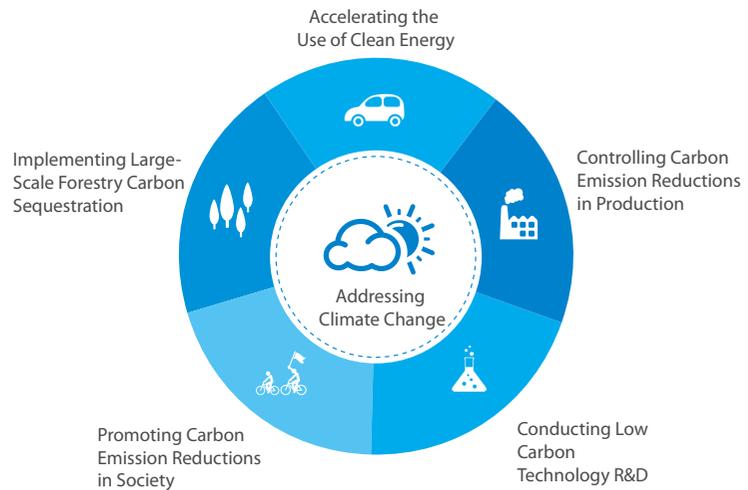
### Controlling Carbon Emissions from Production

In 2014, we worked hard to promote clean production and operation. In Huabei Oilfield, Tarim Oilfield and other areas, we used renewable energy such as geothermal energy and solar energy to cut carbon emissions during our production.

### Low Carbon Technology R&D

Focusing on the important role technological innovation plays in addressing climate change, we keep strengthening the R&D of low-carbon technologies. In 2014, new progress was made in our research on key low-carbon technology. In the area of carbon emission reduction, we have enriched and improved a series of technology for CO<sub>2</sub> capture, and techniques for site selection and potential evaluation of geological sequestration. As a result, we have successfully evaluated the CO<sub>2</sub> sequestration potential in five oilfields including Changqing Oilfield and Liaohe Oilfield.

In response to the goal set by the Chinese government to reach a peak in CO<sub>2</sub> emissions by 2030 or earlier, we take pollution reduction measures in every aspect of our production and operation to reduce carbon emissions.



## CNPC Research on Key Low-carbon Technologies

 Energy conservation and efficiency improvement	 Emission reduction and waste recycling	 Low carbon strategies and standards
<ul style="list-style-type: none"> <li>Research on key energy and water conservation technologies for high water-cut oilfield</li> <li>Research on key energy and water conservation technologies for low-permeability oil and gas field</li> <li>Research on key energy and water conservation technologies for thermal recovery</li> <li>Research and demonstration of key energy conservation technologies for refining and chemicals</li> <li>Research on key energy conservation technologies for long-distance pipelines</li> </ul>	<ul style="list-style-type: none"> <li>Research on key technologies for energy conservation and waste heat utilization in drilling operations</li> <li>Technological integration for the recycling of oil sludge</li> <li>Research on key technologies for efficient treatment and recycling of oil refining wastewater</li> <li>Research on key technologies for greenhouse gas capture and utilization</li> </ul>	<ul style="list-style-type: none"> <li>Research on evaluation indexes and systems of energy conservation</li> <li>Research on low-carbon development strategies, standards and policies</li> </ul> 

## Promoting Carbon Emission Reduction in Society

Carbon transaction is an important way to reduce carbon emissions through a market-based mechanism. As the first Chinese enterprise to participate in international emissions trading, and relying on our

operational experience in the European market, we actively participate in the establishment of a market-based mechanism for carbon transactions in China to promote energy conservation.

Since completing the first international emissions trading in London in 2010, our affiliated company PetroChina International Co., Ltd. has made positive progress in its participation in building China's carbon transaction market. It has successively completed China's first carbon emission trading and the Chinese Certified Emission Reduction (CCER) transaction at Shenzhen-based China Emissions Exchange and China Beijing Environment Exchange. In April 2014, the company purchased 10,000 tons of carbon emission quota at Hubei Environmental Resource Exchange Center, the third largest carbon transaction market in the world. By the end of 2014, a total of 16.53 million tons of carbon emission were reduced.

Carbon transaction is a market-based mechanism designed to cut the global emissions of greenhouse gas and carbon dioxide. Through the mechanism, party A of the contract purchases party B's certain quota for greenhouse gas emission, in order to fulfill party A's emission reduction obligations. The amount of trading is expressed as tons of carbon dioxide equivalent (tCO<sub>2</sub>e).



## Implementing Large-Scale Forestry Carbon Sequestration

Promoting afforestation, and protecting and improving the ecological environment are important aspects of our social responsibility practice. We continue our efforts in afforestation and forestry carbon sequestration activities. In 2014, we invested RMB 58.23 million in

afforestation for public welfare, and planted 4.87 million trees. Since 2001, we have implemented the carbon sequestration forest project in Xinjiang Oilfield. By the end of 2014, 48 million trees had been planted in the desert, covering an area of 986.67 hectares.

### Case Study

#### Building Carbon Emission Reduction Base to Promote Desert Control and Reduce Carbon Emissions in Zhongwei City

Located on the edge of the Tengger Desert, Zhongwei City in Ningxia is one of the most disaster-prone areas for sandstorms in China. Since 2008, Ningxia Petrochemical Company has worked with the local government to transform the 200 hectares of desertified land on the edge of the Tengger Desert. The "Ningxia Petrochemical Carbon Emission Reduction Base in Zhongwei" was established for sand control, forestation and ecological construction. Through six years of efforts, we have seen the desert retreat nearly 1,000 meters in the Xifengkou area, which has helped improve the local environment.

Over the past six years, according to local climate characteristics, we have planted 145,000 plants including Xinjiang poplars, locusts, date trees, populus, oleaster, eucommia, and sorbifolia, 730,000 desert shrubs, and 385,000 square meters of grass grids. In addition, we have ensured a 92% survival rate for windbreaks through drip irrigation.

In 2014, the windbreaks in the base absorbed a total of 2,465 tons of carbon dioxide and controlled 12 hectares of deserts, effectively improving the environment in the west of Zhongwei City.



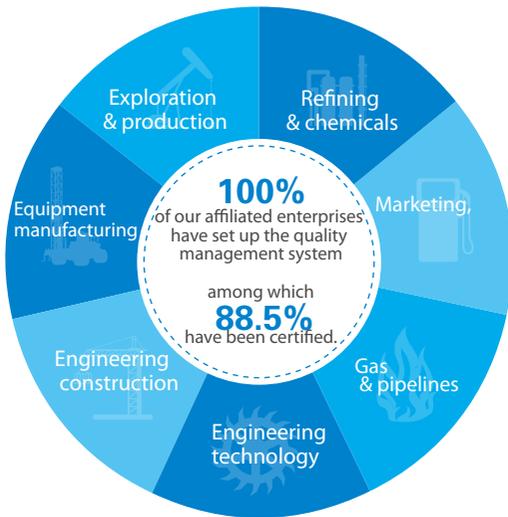
## 5. Improving Product, Engineering and Service Quality

Following the principle of putting quality and people first, we strengthened the quality management system and improved process quality control to create brand products. In addition, we continued to improve product, project and service quality.

### Strengthening Quality Control and Management

In order to strengthen quality management, we assessed the quality performance of 115 subsidiaries. We pressed ahead with the formation and certification of a quality management system, and carried out a review of the quality management system. By the end of 2014, 97.66% of all affiliated units had set up the quality management system, among which 87.90% had been certified. We also started the second round of review of the quality management system.

By the end of 2014, all of our seven specialized subsidiaries, including the Exploration and Production Company, have established the quality management system, among which 88.5% have been certified by the third-party agency.



In 2014, we carried out a series of activities during the Quality Month Campaign, including quality publicity and training, quality system building, quality hazard identification and special activities. Approximately 550,000 employees from 140 affiliated units were involved.

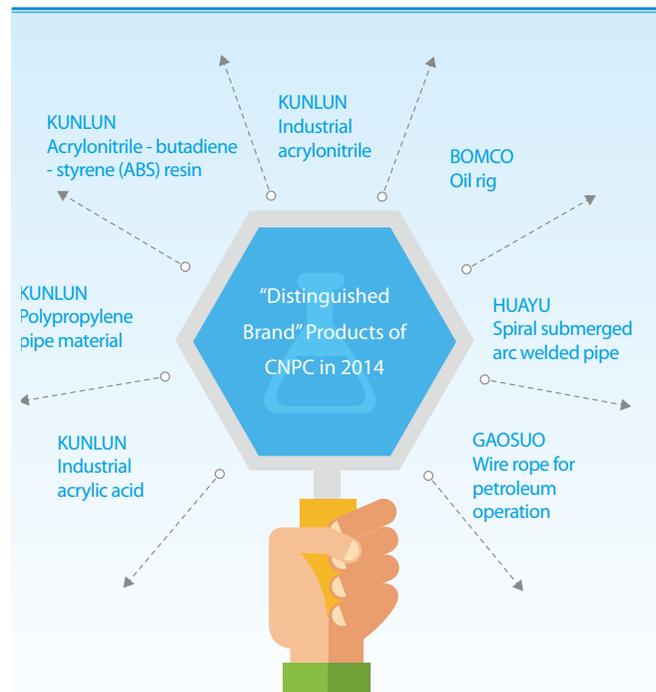
In 2014, we implemented the metering development plan, and formulated the standards concerning measuring instruments for pipeline transportation and equipment manufacturing, and the standards for oil product delivery and static measurement of liquid chemical products. We promoted the building of the quality transmission and traceability system, and saw the Company's calibration capability greatly enhanced

as the new calibration device for Chengdu branch of the national oil and gas mass flow metering station was put into use, and the Guangzhou Branch was completed and put into trial operation. We further optimized our procedures for product quality supervision and handling, and improved product quality monitoring processes. Furthermore, we strengthened project quality supervision, and implemented remote supervision of 81 construction projects including the 10 Mt/a oil refining project of Yunnan Petrochemical. Sampling and patrolling inspection was carried out at over 20 key projects, including the third West-East Gas Pipeline. We also implemented the whole-lifecycle quality responsibility system. As a result, our project quality has been continuously enhanced.

### Providing Quality Products and Services

We strengthened the upgrading of products and the optimization of the product mix, to provide society with high-quality and environmentally-friendly products. In 2014, we steadily promoted the oil product upgrading project, with our motor diesel reaching the National IV Standard. Furthermore, we saw an increase of 22% in the sales of 97#

100% of gasoline products and diesel products meet National V Standard in Dalian Petrochemical.



gasoline and an increase of 4% in the sales of aviation kerosene. In addition, we actively fostered and built brand-name products, and seven products were named the distinguished brands in 2014 by China Petroleum and Chemical Industry Federation.

In order to provide consumers with more convenient service, 465 new fueling stations were built, which has increased the total number of CNPC's fueling stations to more than 20,000, covering 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR. Supporting services were promoted, focusing on the fuel card business.

By taking measures such as surveying customer satisfaction and launching the "Customer Experience Day Campaign", we solicited customer opinions in a timely manner and constantly improved service quality. We provided considerate services for customers in sales and after-sales service. According to the Chinese Customer Satisfaction Manual jointly issued by the Customer Satisfaction Measurement Center under China National Institute of Standardization and the Chinese State-owned Enterprise Research Center under Tsinghua University, the satisfaction level for the Company's service stations ranked the first for the second consecutive year in 2014 in the industry in China.



The satisfaction level for the Company's service stations ranked first for the second consecutive year in 2014 in the industry in China.

<http://www.cnpc.com.cn/cnpc/wyjtyrhdc/wyjtyrhdc.shtml>

"Refueling Experience Day" Campaign for Netizens

## Case Study

### The micro-blog and the service station

Medog County sits at an elevation of 1,200m above sea level, nestled in the south side of the eastern end of the Himalayas and downstream of the YarlungZangbo river in the Tibet Autonomous Region. Its first highway opened to traffic as late as 2013. Local Tibetan Jiduo runs a gravel plant in Medog, but has faced difficulties as there was no accessible road or service station. Before the highway opened, he wrote to CNPC via his micro blog: "In Medog County, there are a great number of gasoline and diesel users apart from government agencies and the military, including businesses like Huaneng Group and gravel plants owned by a dozen farmers and herdsmen, as well as 170 trucks and 30 passenger cars. However, there is only one service station in the whole county. It offers poor quality products at high prices, and it often runs out of fuel". He said that he hoped CNPC would build a service station in his county.



CNPC therefore took the initiative to coordinate with the local government and established the CNPC Medog Lotus Service Station in 2014, extending our service station network to Medog, the last county in China to gain road access to the outside world. Close to the county's main road, the service station is equipped with an oil and gas recovery system and safety measures featuring energy conservation, consumption reduction, explosion protection, fire retardancy, corrosion protection, anti-static protection, surge elimination and oil and gas volatilization inhibition. The oil and gas recovery rate can reach 90%-97%.

Villager Lobsang Rabten said, "We used to go to Bomê County for fuel oil. It's far away and very costly. Now that we have the CNPC service station we can refuel in our own county, which is great!"



Service station in Medog County in Tibet, the last county in China to gain road access to the outside world.

## Strengthening Water Management

Water shortage is a global issue. The UN estimates that by 2050, water demand for human activities will exceed 30% of the global water supply. China is in a particularly prominent and urgent situation. As a member of society, CNPC attaches great importance to the protection and rational utilization of water resources. To this end, we strengthen standardized and whole-process management, control and reduce water pollution in production and operations, promote sewage treatment and recycling, cut the use of fresh water, and strive to increase the utilization efficiency of water resources.

### Strengthening System Building to Promote Standardized Management of Water Resources

In order to enhance efficient and sustainable water utilization, we have established professional management organizations at all levels to evaluate, review, supervise and assess water conservation, water pollution prevention and control. We have put in place instruments to monitor and measure water consumption, and exercise indicator-based quota management of water consumption for major devices, equipment and products. We conduct water-saving inspections of major investment projects, and the unit freshwater consumption of new projects is comparably advanced in the industry. In addition, we promote progress in water-saving technologies by implementing major water-saving research projects, water-saving demonstration projects and water-saving projects, while also speeding up the elimination of backward technologies, techniques and equipment with low efficiency and high water consumption. We encourage

using seawater and brackish water in those areas with convenient conditions, and using reclaimed water and treated sewage as industrial circulating water and boiler feed water.

### Implementing Water Management throughout Production and Operation

We exercise water management throughout our business chain covering upstream, midstream and downstream, and in the office and in living areas, in order to increase water utilization efficiency among all employees and in the whole process.

During oil and gas development, we pay equal attention to both water pollution prevention and control and water recycling. We recycle and treat residue oil, oily wastewater from well washing, and sewage from oil recovery. Through oil-water separation and filtration, oil is recycled and water is treated to reach the standard and is then



Water quality of treated wastewater has reached national standard

re-injected into the ground, preventing the pollution of groundwater and surface water. By the end of 2014, over 97.7% of sewage from oil recovery was treated in our oil and gas fields, with a reinjection rate of more than 93.8%. Liaohe Oilfield has realized zero discharge as the wastewater from heavy oil recovery was completely recycled through the heavy oil wastewater recycling system, and the six heavy oil wastewater deep-treatment stations which can treat 78,000 cubic meters of wastewater daily. All the treated hot wastewater is used for thermal recovery boilers. In Block1/2/4 in Sudan, we have built the world's largest biodegradation sewage treatment project together with our partners. It has enabled zero discharge of production wastewater, irrigated the local forests, and improved the local environment. Therefore, the project was highly appraised by DNV, and was granted the Environmental Excellence Award 2007 by the Sudanese Ministry of Energy and Mining.

During oil and gas pipeline construction and operation, we attached priority to controlling the impact of project construction on water resources and the risk of oil spills during operation. We carry out

environmental impact assessment (EIA) including water environment assessment, and integrate the concept of water conservation and water protection into our construction. In operation, we exercise pipeline integrity management, and establish shut-off valve chambers on both sides of the rivers near the water protection zones and in environmentally sensitive areas. Pipeline transmission is suspended immediately once an oil leak occurs.

Downstream refining business is also a priority in our water management. Applying technologies such as sewage treatment, reclaimed-water recycling and seawater utilization, we have achieved the sustainable utilization of water resources. Dalian Petrochemical Company has carried out an independent innovation project in water development and utilization, and has invested in the construction of a 5,500 ton-per-day desalination unit and a 30,000 ton-per-day reclaimed-water reuse unit, the largest of their kind in China. By the end of 2014, Dalian Petrochemical Company could produce 15,500 tons of industrial freshwater with seawater and reclaimed water, alleviating the water shortage in the petrochemical industry. The ethylene plant of Dushanzi Petrochemical Company reused the reclaimed water and condensate water, and treated and recycled wastewater, with treated water reaching the standard for potable pure water. We have recycled all the wastewater and achieved "zero discharge" of sewage at Dushanzi Petrochemical, and the water consumption of a major device is the same as that of an ordinary family.

We also strengthen water conservation management in our office areas and staff communities. By utilizing and replacing water-saving equipment, and strengthening the routine maintenance of water facilities, we strive to avoid any waste of water and increase water utilization efficiency. We have also launched the Waterworks Open Day and other campaigns, in order to enhance the water conservation awareness of our employees and their family members.

### Utilization of Water Resources in Shale Gas Development

During shale gas development in the Changning-Weiyuan National Shale Gas Demonstration Zone, we adopted centralized water management for unified water scheduling. Through technologies for fracturing flowback recycling and custody transfer, over 90% of the precipitated and filtered fracturing fluids were recycled. In addition, we also strived to reduce water consumption in hydraulic fracturing and explore research and development of "water-free" fracturing technologies.

### Three-level Pollution Prevention and Control System to Reduce the Risk of Water Body Contamination

We have established a safe, timely and effective integrated pollution prevention and control system, carried out environmental risk assessment, and taken necessary preventive and control measures, in order to effectively control the risks of water body contamination, and prevent oil spills. We carried out comprehensive surveys and implemented the three-level water pollution prevention and control project in subsidiaries operating close to rivers and lakes, or those which may cause pollution to the public water environment.

#### Three-level prevention and control system

First level prevention and control system	Prevent minor risks of environmental pollution by setting up cofferdam, fire bank at the tank farm and ancillary facilities
Second level prevention and control system	Prevent moderate risks of environmental pollution by setting up rainwater protection system, trash holding dam, overflow prevention and diversion facilities, accident buffer facilities and ancillary facilities
Third level prevention and control system	Prevent major risks of environmental pollution by setting up accident buffer facilities and ancillary facilities

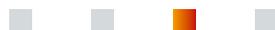
# 03

## Employee Development



- Employees' Rights and Interests
- Development Platforms
- Localization and Diversity
- Occupational Health
- Caring for Employees

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



## 1. Employees' Rights and Interests

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

### Employment Policies

We strictly follow relevant international conventions, laws and regulations and abide by the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Trade Union Law of the People's Republic of China, and relevant laws and regulations of the host countries. We have established and continue to improve the employment management regulation system, promote the employment policy of equality and nondiscrimination, and provide equal opportunities and fair treatment to all employees regardless of nationality, race, gender, religion or cultural background. We strictly prohibit child labor and oppose all forms of forced labor. In addition, we always aim to promote the employment of women and ethnic minorities. By the end of 2014, we had 56 female senior executives and 1,943 female middle-level managers.

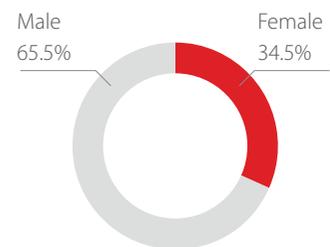
### Democratic Participation

We actively communicate with our employees through the democratic management system, workers' congresses, and the "mass

line" campaign, in order to protect their rights to know, participate, vote and supervise. In 2014, we held interactive forums and established network platforms, and ensured that employees can present their comments and suggestions freely and conveniently. Southwest Pipeline Company set up forums for team leaders and newly recruited college students, and held staff symposiums, which have promoted employees' democratic participation in company affairs and enhanced their cohesion and solidarity.



Channels to convey employees' comments or suggestions to management



Gender composition of the workforce by the end of 2014

### Compensation and Benefits

The Company steadily reforms and improves the compensation and benefits system covering wages, subsidies and material benefits. Linking employees' wages with their performance, we have upgraded rewards and disciplinary measures based on enhanced performance evaluation. A remuneration system tailored to job characteristics was adopted, which discriminates in favor of staff in grassroots units and talents in key positions working in harsh environments in terms of remuneration.

In 2014, we continued to improve the recruitment of college graduates. We launched the recruitment platform for college graduates (<http://zhaopin.cnpc.com.cn/>), and made public information such as recruitment procedures and standards, remuneration and benefits, and requirements for employment. We announce results to the public and do not set restrictions on applicants in terms of ethnicity, gender or religion.



## 2. Development Platforms

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 advocate and foster a culture of learning throughout the Company. In 2014, 163 training programs were carried out at the headquarters level, with emphasis given to professional training, specific training, online training and external training for our managers, technicians, skilled workers, and international operation staff.

Specifically, we organized training classes for enterprise managers, business administrative staff, and chief accountants to enhance their capability in scientific decision-making. We sent 40 technical experts to Tsinghua University and China University of Petroleum (Beijing) for advanced studies in order to inspire their innovative competence. We held training courses on cutting-edge technologies such as unconventional hydrocarbon development and 19 special training programs including oil products analysis. To improve the comprehensive skills of the staff we send abroad, we sent some selected managers and technicians to renowned universities and training institutions at home and abroad for professional training on international business, business administration, law and other specialties.

We continue to promote large-scale vocational skill training by holding skill contests, in order to enhance the operational skills of frontline employees. In 2014, our employees won the top three prizes for individual competition of youth team in the third "ARC Cup" International Welding Competition. We also won the individual championship and the top three team prizes in the first vocational skill competition of China's petroleum and petrochemical industry.



The E-Learning Platform of CNPC was launched in August 2006 to provide employees with course material and resources for continuing education, job training, as well as on-the-job, graduate, undergraduate and junior college education, and tailored training packages. The E-Learning Platform has been improved through the years with enriched course materials. In 2014, the number of employees using this platform for self-directed learning reached 670,000 person-times.



### Case Study

#### "Four-tier Personnel Training System" to Facilitate Career Development

Tarim Oilfield Company established a "four-tier personnel training system" in 2010 to cultivate storage and transportation talents at different levels. Over the years, the storage and transportation staff of the company has been well trained and achieved remarkable progress under the system. Ma Xiaoliang, an employee who has worked for the company for less than five years, has obtained six national patents. By the end of 2014, 53% of the young employees with more than three years of working experience in oil and gas storage and transportation teams have been promoted, and the proportion of senior workers increased from 16% to 87%, laying a solid foundation for the development of the company's oil and gas storage and transportation business.

## Career Development

In 2014, we continued to improve career development channels, and promoted the reform of the “double routes” system for management and technical personnel, to ensure equal opportunities for career development and corresponding remuneration. Three subsidiaries, including the Research Institute of Petroleum Exploration and Development (RIPED), were the first to adopt the system. We exercised dynamic management of technical experts and carried out online competency assessment, to provide promotion opportunities to employees with great potential and expertise. We also expanded staff rotation and transfer within the Company, and promoted exchanges among management personnel and dispatched some of them to overseas projects to further foster their managerial experience and capabilities.

## Rewards and Incentives

Oriented by work ethics, ability and performance, CNPC continues to improve the mechanisms for personnel evaluation, selection, appraisal, management and incentives. A two-tier system for rewards and incentives has come into being at the headquarters level and subsidiary level. We have sought to establish mechanisms such as

setting up funds for technological innovation and providing incentives for the synergy effect of technology application. We promote the establishment of laboratory for skilled experts, and gave full play to the role of skilled experts, frontline technicians and technical workers in technological innovation. We attach great importance to the career development of technical staff, and select young researchers to take national and CNPC-level R&D programs based on their achievements in domestic and overseas key projects and research bases. In 2014, two of our employees were granted the “Incentive Award for Outstanding Engineers”

by the International Scientific Exchange Foundation of China, and eight were granted awards from the Sun Yueqi Science and Technology Education Fund.

### Employees and Collectives Granted National Awards in 2014

Award	Awarded Employees and Collectives (Number)
National May 1st Labor Medal	44
National May 1st Labor Certificate	18
National Worker Pioneer	52
National March 8th Red-Banner Pacesetter	5
National March 8th Red-Banner Collective	6

## 3. Localization and Diversity

CNPC endeavors to attract and retain excellent local talents to build an international talent pool of high quality. We have been robustly promoting training for local employees, in order for them to become key technical and management staff. Training centers for overseas employees have been built in Sudan, Kazakhstan, Turkmenistan and Iraq, cultivating more than 10 thousand professional workers for the host countries, and effectively improving local employees' skills. By the end of 2014, the localization rate of our overseas employees exceeded 91%.

### Case Study

#### BHDC Commends Outstanding Local Employees

CNPC Bohai Drilling Engineering Company Limited (BHDC) provides its local employees with various forms of incentives. Every year, the company selects a number of outstanding local employees and sends them to China for studies and visits, so that they can feel the recognition of their personal value and the corporate culture of CNPC.

On June 16, 2014, 21 employees from Venezuela, Indonesia and Iraq were named “Outstanding Local Employees of BHDC”. “I am very grateful to BHDC and my

colleagues for providing me with such a good working environment and helping me to improve my work skills over the past five years. You have helped me fulfill my value”, said a Venezuelan employee.

By the end of 2014, BHDC had locally hired over 3,000 employees, accounting for nearly 90% of its total staff in overseas projects. Remarkable achievements have been made in the localized management of overseas markets, and local employees are playing an increasingly important role in the company.

## 4. Occupational Health

CNPC has always paid great attention to employees' occupational health, and regulated the management of occupational health focusing on disease prevention and control. In 2014, the occupational health examination rate remained at more than 97%. We also made efforts to improve the working environment and mental health management, and took effective measures to protect employees' occupational health.

### Strengthening Occupational Health Management

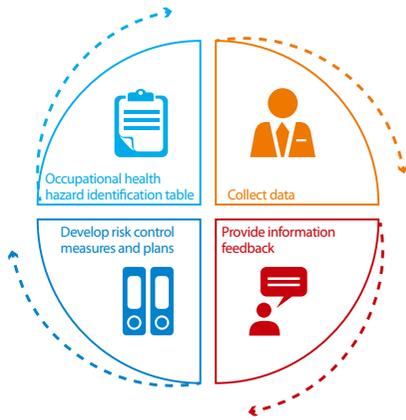
We have improved the occupational health infrastructure, strengthened prevention and control of major occupational hazards, and enhanced occupational health management. In 2014, we strived to ensure that occupational protection facilities in a construction project designed, constructed and put into use at the same time as the main works. We regulated the management of occupational health facilities for new construction, renovation and expansion projects. Protective facilities were provided at more than 60,000 projects to protect our employees from occupational hazards such as toxin, dust, and noise. Inspection and maintenance of such facilities have been included into routine safety and environmental hazard control.

To prevent and treat endemic and epidemic diseases, our employees at overseas projects

are all equipped with mosquito nets, anti-malarial drugs and malaria detection reagents. In response to the Ebola outbreak in Africa, we issued warnings in advance, promptly invited experts from China's national disease control agencies to provide our employees in Africa with specific training on prevention practices, and conducted body temperature monitoring and psychological counseling.

### Providing Psychological Counseling

CNPC has included employees' mental health management into its daily management package. We send experts to our projects in Venezuela, Ecuador, Algeria, Iran and other countries, and continue with the Employee Assistance Program (EAP) in overseas projects, to provide mental health counseling and deal with employees' psychological pressures. In September 2014, we launched the CNPC EAP networking platform, to provide overseas employees with online mental health counseling.



Implementation procedures for occupational health management



Psychological counseling session

## 5. Caring for Employees

The Company makes great efforts to create a healthy and comfortable living environment for our employees. We make full use of our own advantages as well as social resources, implement government's social benefit policies, push forward livelihood projects, and provide aid to employees in need, in order to improve the quality of life of our employees.

### Building Harmonious Staff Communities

Our staff communities are scattered over 10 provinces, municipalities and autonomous regions in China, providing services for nearly 4 million citizens in 1.2 million households. We continue to improve community management and daily services, striving to build safe, happy and harmonious staff communities.

We have further promoted the social governance of staff communities, and coordinated with local governments to integrate socially benefiting policies that are under the national fundamental public service system into our staff community management, to cover education, medical care, poverty alleviation, and service for the disabled. We also introduced social services in catering, supermarket, and banking into the staff communities, making residents' lives more convenient. In addition, the healthcare service system and medical services in the staff communities have been constantly upgraded and improved. We have launched the long-distance diagnosis and treatment system, and ensured our employees were provided with more reliable medical services.

Utilizing government policies and social resources, we strived to improve the elderly care service system in the staff communities. Some of our subsidiaries, such as Jilin Oilfield Company and Urumqi Petrochemical Company, have introduced the home-based elderly care platform of the local government. Lanzhou Petrochemical Company, Liaohe Oilfield Company and Dagang Oilfield Company have improved daytime elderly care centers with the support of local governments, to let the retired employees and their spouses be well cared for and enjoy themselves there. We also encouraged residents to volunteer in community management, neighborhood services, poverty alleviation, and cultural



Enriching overseas employees' lives

activities.

### Helping Employees

At CNPC, an employee help and support system has been established, featuring comprehensive coverage, effective guarantee, multi-participation and sustainable operation. Under the system, we help employees in need solve difficulties in their life and maintain a decent standard of living. In 2014, we

continued the campaign of "donating tuition fees for the new semester", providing student subsidies for more than 1,000 children from employees' families with financial difficulties to help them get further education.

### Recreational Activities

In 2014, we held sports meetings, badminton matches, photography competitions, singles' clubs and other activities to enrich employees' spare time and help them maintain a balance between work and life. We have held a major photography competition for three consecutive years, providing a communication platform for employees interested in the arts.

- ♥ Helping needy employees
- ♥ Serious illness subsidies
- ♥ Donation to students
- ♥ Emergency relief
- ♥ Mutual help

EAP networking platform

A lecture on "Caring for women and their health" for our female employees

# 04

## Public Welfare



Poverty Alleviation  Supporting Education  Driving Local Development  Fostering Civilized Values  Serving Overseas Communities

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.



## 1. Poverty Alleviation

We take part in international efforts to achieve the UN Millennium Development Goals, and make contributions to domestic poverty alleviation by actively advocating the Chinese Government's goal of eradicating poverty, improving people's livelihoods and achieving common prosperity. We continuously assist poverty-stricken areas by carrying out dedicated poverty alleviation and aid programs under the national plan, and other assistance initiatives where we operate. To enhance the sustainable development capabilities of such areas, we implement poverty-alleviation projects through cooperation to improve the intellectual level, industrial development and livelihood of local people. In 2014, RMB 200 million was invested in over 26 projects in 19 provinces and cities (autonomous regions), yielding significant social benefits.

infrastructure. In Jiangxi's Hengfeng County, we funded and helped to build the Sipu Waterworks, providing over 20,000 local residents with safe water. In Guizhou's Xishui County, we rebuilt roads for nearly 30,000 local people and facilitated the transportation of agricultural and sideline products. Furthermore, in Qiantai County of Henan Province, we helped renovate 12 boarding schools, improving the accommodation conditions and teaching environment for nearly 10,000 students and teachers.

Combining the Company's business development with local resources and market advantages, we help build local industry chains, boosting local employment and economic development. In Hengfeng County of Jiangxi Province and Xishui County of Guizhou Province, we promoted gas utilization, advocated local procurement, and adjusted the service station network in the light of regional economic characteristics, thereby promoting local economic growth and employment.



### Support for better livelihood

Helping people in poverty-stricken areas improve their basic production and living conditions, we select projects of vital interest and great need to local people, such as drinking water, housing, education, travel, medical care and natural gas use.



### Intelligent support

Helping poverty-stricken people enhance their capabilities for self-development and their endogenous power for poverty relief and income growth, we provide skill training for young workforce, operational and management training for entrepreneurs, and quality training for township officials based on local conditions and local needs.



### Industrial support

Relying on the resource and market advantages of the poverty-stricken areas, we are committed to meeting local oil and gas demand and giving full play to the role of the energy and resources business to promote local economic development.

### Dedicated Poverty Alleviation

In 2014, we continued to carry out dedicated poverty alleviation programs in 10 counties in Xinjiang, Henan, Guizhou, and Jiangxi, and invested RMB 12 million in public welfare projects to improve drinking water, transportation, education and other local

### CNPC Public Welfare Investment in 2014

Currency (RMB million)

Category	Projects	Investment	Total
Poverty alleviation	<ul style="list-style-type: none"> <li>Poverty alleviation programs in Xinjiang, Henan, Guizhou and Jiangxi</li> <li>Aid programs in Tibet, Qinghai and Chongqing</li> <li>Others</li> </ul>	206.87	206.87
Supporting education	<ul style="list-style-type: none"> <li>Construction of schools</li> </ul>	98.89	128.17
	<ul style="list-style-type: none"> <li>Student grants</li> </ul>	7.94	
	<ul style="list-style-type: none"> <li>Scholarships</li> </ul>	0.16	
	<ul style="list-style-type: none"> <li>R&amp;D</li> </ul>	21.18	
Disaster relief	<ul style="list-style-type: none"> <li>Donations to areas suffering from floods, earthquakes and other natural disasters</li> </ul>	168.66	168.66
Public donations	<ul style="list-style-type: none"> <li>Construction of public infrastructure</li> </ul>	371.58	395.26
	<ul style="list-style-type: none"> <li>Facilities Healthcare</li> </ul>	12.31	
	<ul style="list-style-type: none"> <li>Culture</li> </ul>	3.68	
	<ul style="list-style-type: none"> <li>Sports</li> </ul>	7.69	
Environmental protection	<ul style="list-style-type: none"> <li>Afforestation</li> </ul>	58.23	108.64
	<ul style="list-style-type: none"> <li>Others</li> </ul>	50.41	
Total		1007.60	

To help the people in need improve their self-development abilities, we provide intellectual assistance to enhance their workforce skills, operational and management skills, and improve the quality of grassroots officials and the condition of basic education. In Xinjiang, we provided technical training for 195 farmers and herdsmen in six poverty-stricken counties. In addition, we run training programs for managers in poverty-stricken counties at the CNPC Managers Training Institute every year to improve their cultural quality and management capability.

### Aid Programs

We made remarkable progress in our aid programs for Tibet, Chongqing and Fujian in 2014. In Tibet's Shuanghu County, we invested RMB 20 million in five livelihood projects, including the renovation of central primary schools. In particular, construction of the Suoga Street Market (Phase II) was completed. In Wenquan and Zishui of Kaixian County, Chongqing, we implemented two road construction projects, benefiting more than 8,000 local residents.

In Changting County, Fujian Province, relying on our own production technology and engineering technology, we carried out an aid program to cooperate with the local mining sector in our 50kt/a catalytic cracking catalyst project, turning local resources into economic benefits. In Kaixian County, Chongqing, we gave priority to supplying gas to three industrial parks including Zhaojia Food and Light Industrial Park, and provided jobs for more than 50 resettled villagers from the Three Gorges Project.

### Other Poverty Alleviation Initiatives

In 2014, CNPC's affiliates invested RMB 47.58million in building new residential quarters, roads and water channels, helping vulnerable groups, supporting schools and students, and setting up cultural and sports facilities in poverty-stricken areas in Sichuan, Inner Mongolia, Chongqing, Hebei and other provinces (municipalities and autonomous regions), to help improve local people's living conditions.

## 2. Supporting Education

In 2014, we invested RMB 128.17 million in domestic education, through providing scholarships and subsidies, and funding the construction of primary schools, etc. In Sheqi County of Henan Province, we helped improve the teaching and living conditions of more than 20 rural primary and secondary schools, providing students with multimedia classrooms and new beds. Liaoyang Petrochemical has provided "one-on-one" educational assistance in Zhangwu County of Liaoning Province for

the third year in a row, providing grants and school supplies to 47 poor students.

In addition, we also sponsored a number of Chinese and international competitions including the 4th National Petroleum Engineering Design Competition and Kunlun Lubricant Formula Student China 2014, in order to support educational innovation and the development of college students.

### Case Study

#### Providing Educational Support in Gansu Province

In July 2005, CNPC launched an educational support campaign together with the Gansu Provincial Committee of the Communist Youth League and the Student Union of Gansu Province, to help children in poverty-stricken and remote mountainous areas complete their studies. Over the past decade, we have granted a total of RMB 10 million of scholarships to 7,000 poor students in 13 counties in Gansu, 3000 of them were admitted to universities and colleges.

Gao Hongqian was one of the recipients. In 2009, he was admitted to Tianshui Normal University. However, his family was

poor due to the health condition of his parents, so he hid his admission notice and intended to drop out of school and work to support his younger brother's education. CNCP promptly provided the two brothers with scholarships through the campaign, and helped them continue their education. In October 2014, he sent a letter to CNPC, saying that "I have graduated from college and now work as a secondary school teacher in my hometown. As a beneficiary of the scholarships, I will do my best to give back to society and pass on the goodness to more people."



### 3. Driving Local Development

Our development is inseparable from the support of the government, communities and the public. In turn, we aim to serve as a driving force of local socioeconomic development based on the principle of "open cooperation for mutual benefit". We support the development of the mixed-ownership economy and maintain close cooperation with multiple investment bodies. In 2014, we enhanced cooperation with social capital and private capital in the upstream, midstream and downstream sectors. We operated many joint venture and cooperation projects involving shale gas development,

conventional oil and gas development, pipeline construction and other operations. Additionally, we continued to cultivate local suppliers and contractors, in order to drive the development of related industries, and created jobs for local people. For example, Changqing Oilfield has promoted the development of the oil & gas and chemical, engineering construction and logistics industries, accelerated the process of industrialization, and created over 100,000 jobs in the Shaanxi-Gansu-Ningxia Region and Inner Mongolia.



**Question:** How does the Company view and plan for the situation where Chinese oil companies introduce social and private capital into oil product marketing?



**Answer:** We actively promote joint ventures and cooperation with an open mind. The cooperation can be carried out in various modes, i.e., between CNPC and the government, the private enterprise, the foreign enterprise, and the state-owned enterprise; and in different forms, as CNPC can take the role of both the controlling party and the participating party. Currently, our cooperation projects include the locally registered joint venture between CNPC, the local government and a local enterprise in Xinjiang, the joint venture between CNPC and China National Offshore Oil Corporation (CNOOC) in Hainan Province, and CNPC Yanchang Oil Marketing Co., Ltd. between CNPC, Shaanxi Yanchang Petroleum (Group) Co., Ltd. and Xi'an Zhongli Petrochemical New Technology Co., Ltd. Additionally, we have been exploring cooperation with other sectors including banking, automotive, insurance, telecommunications, and civil aviation, in order to utilize and enhance the complementary resources of all sides.

#### Case Study

##### South Xinjiang Gasification Project Improves Local People's Living Standard

The South Xinjiang Gasification Project has ushered in an era of natural gas for millions of people in South Xinjiang. By the end of 2014, we had delivered a total of 13.76 billion cubic meters of natural gas, benefitting over 4 million local people of all ethnic groups.

In the winter of 2014, the city of Kashgar located in South Xinjiang became extremely cold after several snow falls. However, in Patiguli Mijiti's house, it was tidy and warm, thanks to the natural gas supply. Mijiti, now 40 years old, talked about natural gas with a smile on her face, "we used to use coal for cooking and heating, which blackens the walls and covers our clothes and hair with soot and the smell of it. Now with natural gas, we can keep warm and cook in a clean way".

### 4. Fostering Civilized Values

In CNPC, we attach great importance to public welfare. Therefore, we advocate civilized practices, and contribute to cultural progress.

#### Case Study

##### A warm winter with CNPC's help

Nanping is the city at the highest altitude in Fujian Province. In winter, its temperature is nearly 10 degrees Celsius lower than the surrounding cities. In December 2014, Fujian Marketing Company learned through an investigation that children in the mountainous areas in Nanping suffered from diseases including frostbite due to the cold weather and a lack of adequate clothing. Therefore, the company launched a campaign to donate down jackets, gloves, cotton-padded caps and scarves to children in the northern mountainous areas. By the end of December 2014, this campaign had benefited 2,910 students of 86 primary schools in nine counties in Nanping and Longyan cities of Fujian.



## Case Study

## Helping migrant workers on their way home

2015 marks the fourth year for CNPC to provide help at the service stations to migrant workers going home on motorcycles for the Spring Festival. With our help, 3,422 migrant workers had returned home safe and sound to reunite with their families in 2015.

CNPC does not organize the migrant workers to go home by motorcycle, nor does the Company advocate doing so. However, as train tickets are hard to buy before the Spring Festival, CNPC has built a volunteer service network consisting of 851 service stations and covering all the national and provincial highways in Fujian and Jiangxi provinces. There the migrant workers are provided with food, protection, and services including contacting motorcycle repair shops and refueling free of charge.

10+2

Service Time

## 10 days before Spring Festival (February 9-18)

Upon confirmation at any service station on February 7, all migrant workers travelling home from other provinces by motorcycle will be provided with scarves, reflective vests and other help.

## Peak Time (February 9-10)

During the peak time for migrant workers to travel back home, refueling and fast food will be provided free of charge.

8+2

Free Help and Services

## February 9-18:

- ◆ A reflective vest
- ◆ A pair of knee pads
- ◆ A scarf
- ◆ A RMB 300,000 traffic accident insurance policy
- ◆ A map of CNPC service stations
- ◆ Replacement of engine oil
- ◆ Soup and hot tea
- ◆ Contacting motorcycle repair shops

## February 9-10:

- ◆ Refueling
- ◆ Fast food



851

CNPC Service stations

All service stations in Fujian and Jiangxi will provide migrant workers with soup, hot tea, a rest area and other assistance free of charge.

Refueling and fast food will be provided at 51 service stations free of charge.

## Comments from Motorcyclists and Netizens

## Motorcyclists



Mr. Liu

It warms my heart to get help and I feel I am being valued. I was so excited that I couldn't fall asleep the whole night!



Zhang Jizhong

I didn't expect to be served with a hot meal at one o'clock in the morning.



Mr. Kang

I am home safe and sound. Thank you and happy new year!



Liu Hesheng

We have got home safely. We are grateful for the media's concern, and the help we got from CNPC. Soon it will be the Spring Festival, so happy Chinese New Year in advance, and I wish those still on the road a safe trip!



Kang Hui

We are home safe and sound. CNPC, thank you!

## Netizens



Netizens

Go home early. Many thanks to CNPC for such dedicated service.



Henan\_Ocean

We are very satisfied with CNPC's service, which is quite people-oriented.



Luobaobaoshiwode

I hope everyone would applaud this activity.



Jinshahemianfen

CNPC, thank you for such personalized service.



Free\_Star

Very considerate service! We are deeply touched.



Xushengqiang No.1

This is a great activity! We support CNPC!



Yangshishu

CNPC's sincere service has won a lot of affection.



**169,000**

Number of young volunteers

**2.09** million

Person-times

### Selecting National Hero Drivers

In 2014, upholding heroic behavior and advocating social justice, the 11th "Kunlun Lubricant Award" was held jointly by CNPC and the China Foundation for Justice and Courage to award 67 hero drivers in China, among whom 10 were named "China's Top 10 Hero Drivers".

### Staff Voluntary Activities

CNPC's employees are actively committed to various public welfare activities to assist the disabled, care for the elderly with no family, support education, and carry out voluntary tree planting. In 2014, we had over 169,000 young volunteers in 6,359 teams, benefiting more than 2.09 million person-times.

Lanzhou Petrochemical launched a campaign, in which 112 youth volunteers provided regular home services to the elderly in the community. Dalian Petrochemical carried out a one-month voluntary activity for youth volunteers to recycle and clean up garbage along the coast and on the sea.



Volunteers in the overseas community



Volunteers bringing safety education to school

## 5. Serving Overseas Communities

CNPC strives to become an excellent corporate citizen wherever we operate, and endeavors to promote the prosperity of local communities by becoming a part of the local strength for social and economic development. The socioeconomic value we created has won recognition from the local communities. In 2014, our MMG Project in Kazakhstan was granted the title of the “Most Respected Company” by the government of Mangystau Province. In Indonesia, we were granted the “Special Contribution Award 2014” by the Indonesian Ministry of Energy and Mineral Resources.

We have set up local departments for environmental protection and community relations coordination, to promote communication with local governments, NGOs, and community representatives by holding conferences, issuing reports and paying visits, etc. For instance, in Iraq, we have established the Community Contribution Committee for Ahdeb Oilfield Communities, which is composed of representatives from Midland Oil Company, and the local government and parliament. We provide public welfare and assistance to community residents through the committee, and supervise the implementation of such welfare projects. In 2014, we completed construction of schools, clinics and other projects in Ahrar County, Kut City, Wasit Province of Iraq, and these projects were well received by local residents.

Giving priority to local products and services in our procurement, we strengthen cooperation with local enterprises in technical services, logistical support, catering and logistics, in order to boost the development of local SMEs and create more economic income and job opportunities for the local community. Through our oil and gas cooperation projects, we have created a total of USD 400 million worth of business opportunities and more than 20,000 jobs for the local community in Iraq, and nearly 10,000 jobs for local communities in Africa.

We aim to boost local development capabilities by providing funds and support for education, and training on techniques and skills. For instance, in support of the personnel training program for the oil industry of the host countries, we entered into an agreement with the Ministry of Education, Science, and Technology of South Sudan in Juba in 2014, to donate 15,000 textbooks to the schools near Block 3/7 to improve the local teaching conditions. This campaign was praised by the Acting Minister of Education, Science, and Technology of South Sudan, as it has provided more students with opportunities to acquire knowledge, laying a solid foundation for the country to grow into a powerful nation in the future.

In 2014, we made donations to build libraries and other infrastructures for primary schools in Songo Songo Island and Msijute Village of Mtwara City in Tanzania. We also organized recreational activities and donated stationery. The school headmaster from Msijute Village said: “CNPC has donated sportswear and stationery, and taught our students Chinese paper cutting and Chinese songs. Now, it helps us build libraries and sports grounds. As more children enjoy coming to school, we are more confident in running the school.”

### External Evaluation:

“The donation of textbooks has set a good example to major Chinese state-owned enterprises in supporting education in South Sudan and CNPC has fulfilled its corporate social responsibility”, said Counselor Zhang Yi from the Economic and Commercial Counsellor's Office of the Embassy of the People's Republic of China in South Sudan.

According to a representative of the Ministry of Petroleum and Mining of South Sudan, the textbooks donated by CNPC will benefit many students in the nation.



Donating to a state-run orphanage in Tanzania

## Case Study

### Helping to build shelters for civilians in South Sudan

After the armed conflict in South Sudan on December 15, 2013, some 30,000 civilians were stranded in the United Nations camp in Juba, which is far beyond its normal capacity. In coordination with the United Nations, the Government of South Sudan and the Embassy of the People's Republic of China in South Sudan, we donated USD 1.6 million to build 600,000 square meters of shelters for the displaced refugees. The project, capable of holding about 15,000 to 20,000 civilians, was completed in May 2014, easing the pressure on the UN camps and improving the living conditions of the civilians during the rainy season.



## Case Study

### Improving Drinking Water Safety in Mekan Village

Mekan Village is located in the most water-deficient area of Lebap Region, Turkmenistan. Due to the lack of water facilities, the villagers used to drink unpurified river water. As a result, they suffered from hepatitis, fluorosis and other diseases.

In view of the situation, CNPC invested approximately USD 4 million in building a water treatment plant, which was put into operation in May 2014. It was selected as a demonstration project under the 10-year program for construction of residential drinking water system in Lebap Region. The plant delivers 1,500 cubic meters of quality domestic water to over 6,000 local residents every day, effectively improving drinking water safety for local residents.



## Case Study

### Visiting Halfaya Oilfield in Iraq

In order to enhance communication with local communities, we invited local students from primary schools, middle schools as well as colleges and universities to visit Halfaya Oilfield. Halfaya Oilfield has become a base for education and practice where students could better understand the development of the oilfield and the local changes brought about by it. By the end of 2014, nearly 1,000 students had visited the oilfield.



## Social Recognition

<h3>January</h3>	<ul style="list-style-type: none"> <li>◆ On January 6, the Kelasu Gas Field Pipeline Project (Kela 2-Lunnan Section) of Tarim Oilfield was rated as a “5-Star Site for Site Management in the Construction Industry 2013 in China” by the China Association for Quality (CAQ).</li> <li>◆ In January, the trunk line (second section) of the ground construction project in Yingmaili Gas Field undertaken by Xinjiang Oilfield Construction Company was awarded the honorary title of “National Quality Project Award 2012-2013” by the China Association of Construction Enterprise Management (CACEM).</li> </ul>
<h3>February</h3>	<ul style="list-style-type: none"> <li>◆ In February, the liquefied gas processing unit built by Northeast Refining &amp; Chemical Engineering Company in Algeria won the China Construction Engineering Luban Prize 2012-2013 (for Overseas Projects).</li> </ul>
<h3>March</h3>	<ul style="list-style-type: none"> <li>◆ On March 21, the Total Optimal Management centering on Efficiency and Benefits compiled by Huabei Oilfield Company was awarded the Second Prize of National Business Administration Modern Innovation Achievement 2014.</li> </ul>
<h3>April</h3>	<ul style="list-style-type: none"> <li>◆ In April, 44 CNPC employees were granted the National May 1st Labor Medal, 19 affiliated enterprises and institutions were granted the National May 1st Labor Certificate, and 52 grassroots units were named National Workers Pioneer by the All-China Federation of Trade Unions.</li> <li>◆ In April, the Ansai Oilfield of Changqing Oilfield Company was awarded the honorary title of “National Green Mining Zone”.</li> </ul>
<h3>May</h3>	<ul style="list-style-type: none"> <li>◆ On May 27, CNPC Northeast Refining &amp; Chemical Engineering Company was honored with the title of “Quality Control Benchmark for Industrial Enterprises” by the Chinese Ministry of Industry and Information Technology.</li> </ul>
<h3>June</h3>	<ul style="list-style-type: none"> <li>◆ On June 11, Academician of the Chinese Academy of Engineering Li Helin and Professor Liu He were awarded the “Engineering Prize”, and Dr. Zhu Guangyou was awarded the “Youth Prize” of China Guanghua Engineering Science and Technology Award.</li> <li>◆ On June 19, CNPC Kunlun Fuel Card was granted the Most Influential Brand Award at the 5th Prepaid Card Industry Summit.</li> <li>◆ On June 26, CNPC was honored as the “China Low-Carbon Model” for the fourth year in a row at the “Low-carbon Development, Green Livelihood” Philanthropic Exhibition sponsored by China News Service and China Newsweek.</li> </ul>

July	<ul style="list-style-type: none"> <li>◆ On July 5, Northeast Refining &amp; Chemical Engineering Company obtained the certificate of Engineering Design Integrated Qualification Class-A, the highest qualification in the survey and design industry in China.</li> </ul>
August	<ul style="list-style-type: none"> <li>◆ On August 15, the Central Asia–China Gas Pipeline Project designed by China Petroleum Pipeline Bureau (CPP) was awarded the first prize of “Outstanding Design Achievement in Construction Projects in China” by China Association of Construction Enterprise Management.</li> <li>◆ On August 27, CPP ranked 63rd in the ENR 250 international contractors 2014 ranking released by the Engineering News-Record (ENR).</li> </ul>
September	<ul style="list-style-type: none"> <li>◆ On September 10, six subsidiaries of Changqing Oilfield Company were granted the title of “Class-A Enterprise for Standardization of Operational Safety in Petroleum Industry” by the State Administration of Work Safety.</li> <li>◆ On September 20, the “South Xinjiang Gasification Project” of Tarim Oilfield Company won the Outstanding Project Award at the 5th PMI (China) Project Management Congress.</li> </ul>
October	<ul style="list-style-type: none"> <li>◆ On October 15, the Volunteer Public Service Center of Changqing Oilfield Company was named as an “Advanced Unit for Poverty Alleviation” by the State Council Leading Group Office of Poverty Alleviation and Development.</li> <li>◆ On October 16, Sun Jinsheng from CNPC Drilling Research Institute won the Grand Energy Prize, five employees including Zou Jianlong from CNPC Offshore Engineering Company won the Excellent Youth Science and Technology Prize, and Cui Dong and Shi Lanxiang from the Research Institute of Petroleum Exploration &amp; Development won the “Outstanding Student Prize” at the Sun Yueqi Science and Education Foundation’s 23rd Awards Ceremony.</li> <li>◆ On October 28, Rouzimaimaiti Bake from Xinjiang Oilfield Company was awarded the title of “Model Individual for Ethnic Unity and Progress”, and the No. 1 Oil Production Plant of Xinjiang Oilfield Company was awarded the title of “Model Unit for Ethnic Unity and Progress” at the State Council’s Sixth National Awards Ceremony for Ethnic Unity and Progress.</li> </ul>
November	<ul style="list-style-type: none"> <li>◆ In November, the First West-East Gas Pipeline Project was granted the “FIDIC Engineering Excellence Award”, which is hailed as the “Nobel Prize” in the world’s engineering consulting industry.</li> </ul>
December	<ul style="list-style-type: none"> <li>◆ In December, the Dalian LNG Project was awarded the Gold Medal of the National Quality Project Award 2013-2014, the first LNG project to win the award in China.</li> </ul>

## Performance Data

Performance indicators	2010	2011	2012	2013	2014
<b>Finances and operations</b>					
Total assets (RMB billion)	2,629.9	3,027.9	3,409.4	3,757.4	3,938.4
Owner's equity attributable to parent company (RMB billion)	1,395.6	1,513.9	1,636.2	1,787.5	1,978.4
Operating revenues (RMB billion)	1,720.9	2,381.3	2,683.5	2,759.3	2,730
Taxes and fees payable (RMB billion)	313.2	401.5	393.0	407.8	407.0
Newly-added proved oil reserves (million tons)	128.78	109.63	111.206	115.629	99.543
Newly-added proved gas reserves (billion cubic meters)	168.1	121.7	176.06	310.32	212.69
Crude oil production (including overseas equity output) (million tons)	141.44	149.27	151.88	159.81	164.17
Natural gas production (including overseas equity output) (billion cubic meters)	82.9	88.19	93.5	103.9	113.9
Crude runs (including overseas) (million tons)	160.08	179.62	191.45	188.55	196.98
Refined products output (million tons)	101.85	117.18	127.30	128.09	131.04
Ethylene output (million tons)	3.61	3.47	3.69	3.98	4.98
Lubricant output (million tons)	1.61	1.57	1.84	1.89	1.58
Sales volume of refined products (domestic) (million tons)	102.47	114.98	116.62	118.33	117.02
Number of service stations (domestic)	17,996	19,323	19,840	20,272	20,386
Length of crude pipelines (km)	14,807	14,807	16,369	17,640	18,132
Length of refined products pipelines (km)	9,257	9,334	9,437	9,534	10,086
Length of natural gas pipelines (km)	32,801	36,116	40,995	45,704	50,836
<b>Safety</b>					
Total number of accidents	98	124	148	197	215
Fatality rate (person/million working hours)	0.015	0.007	0.003	0.0047	0.005
Fatality rate per thousand vehicles in traffic accidents (‰)	0.2214	0.0460	0.085	0.046	0.103
<b>Environment</b>					
Oil pollutants in wastewater (metric tons)	778	721	650	624	507
COD emissions in wastewater (metric tons)					*
SO <sub>2</sub> emissions in waste gas (metric tons)					*
Energy saved (million tons of TCE)	1.87	1.22	1.31	1.18	1.26
Water saved (million cubic meters)	38.21	23.53	24.35	24.40	24.62
Land saved (hectares)	963	1,080	1,200	1,225	1,232
<b>Staff</b>					
Number of employees in service	1,587,900	1,574,500	1,539,300	1,534,000	1,500,200
Occupational health examination ratio (%)	93	92	93.5	94	97
<b>Investment in Public welfare</b>					
Total contribution (RMB million)	1,295.13	1,006.48	936.45	850.89	1,007.60
Poverty alleviation (RMB million)	115.63	239.63	263.41	227.44	206.87
Disaster-relief (RMB million)	177.84	184.81	24.87	74.87	168.66
Education (RMB million)	182.40	190.08	196.48	253.65	128.17

\*As of the date the report released, the statistics of COD in wastewater and SO<sub>2</sub> emissions in waste gas of the company in 2014 are under review of the Ministry of Environmental Protection of PRC (MEP), which will be publicized once verified. The verified statistics for the year 2014 shall be published in this report next year.

## Outlook for 2015



The global economy has shown signs of slow recovery in 2015, with no apparent improvement in the economic environment. As the world's largest emerging economy, China has entered a "new normal" phase of economic development and will maintain a moderately rapid growth rate in the foreseeable future. Facing both opportunities and challenges, we will further enhance our risk awareness and sense of responsibility, and strengthen corporate governance and lawful operation. We will not waver in pursuing sustainable development by reinforcing our performance in quality and efficiency, technological and management innovation, safety and environmental protection, and guaranteeing and improving people's livelihoods.

Oil and gas operations will remain the core of our business. Through coordinated development of the upstream and downstream sectors, domestic and international operations, and integrated business covering production, refining, marketing, storage and trading, we will build a more distinctive and competitive business chain and value chain, and maintain steady, orderly and effective production and operation.

We will continue to promote the audit of the HSE system and regulate its operation. Great efforts will be made in the publicity and implementation of the Work Safety Law of the People's Republic of China and the Environmental Protection Law of the People's Republic of China, supervision and regulation of HSE management in key areas, risk prevention and control in production safety, and the building of emergency

response capabilities. We will also push ahead with energy conservation and pollution reduction, in order to improve our HSE performance.

Upholding the "people-oriented" concept, we will keep enhancing our staff quality, protect the legitimate rights and interests of employees, and set up platforms for their career development. We will take the initiative to improve employees' working and living conditions, care for their physical and mental well-being, and strive to make all employees benefit from our achievements.

Continuous efforts will be made in public welfare programs including educational donations, poverty alleviation, and staff voluntary activities. Through our industrial projects, we will help drive local employment and industrial development, and achieve harmonious development of the Company and the society.

2015 is the final year of the "12th Five-Year Plan". It is also a crucial year for our overall planning for the "13th Five-Year Plan". In 2015, we will continue to uphold the development guideline that pursues soundness, cost-efficiency and sustainability, further implement our strategies in resources, markets and international operations, and make special efforts in safety and environmental protection, harmony and stability, and anti-corruption measures. Furthermore, we will fulfill our economic, environmental and social responsibilities, and intensify our efforts to build a world-class integrated international energy company that is more open, dynamic, and sustainable, in order to contribute more to global economic development.



## 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 <sub>2</sub> , and most refrigerants. Their effect is making the Earth's surface warmer, as the "greenhouse effect" sequesters solar radiation and increases the temperature of the air. Greenhouse gases in the Earth's atmosphere mainly include CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCS, PFCS and SF <sub>6</sub> .
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.

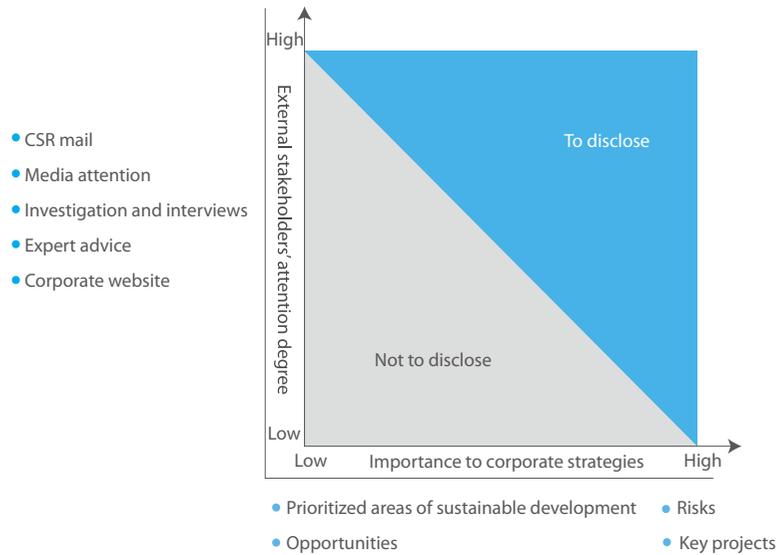
HSE management system	HSE is the acronym of the health, safety and environment management system. The HSE management system is an integration of various elements such as organizational structures, mandates, practices, procedures, processes and resources used for health, safety and environment management. 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.
Energy Performance Contracting	Energy performance contracting is a market-based energy-saving model under which the investment is recovered by the cost saved from energy consumption.
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 Items and Frequencies of Occupational Health Checks. 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 specifics 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.

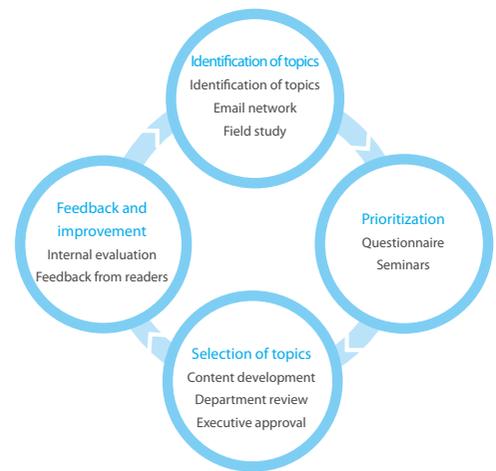


1. The Company pays close attention to the views of its stakeholders, and collects their comments through community visits, periodical reports, field study and online communication. It makes suggestions on the topics of the report by taking into account stakeholders' major concerns.

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 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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