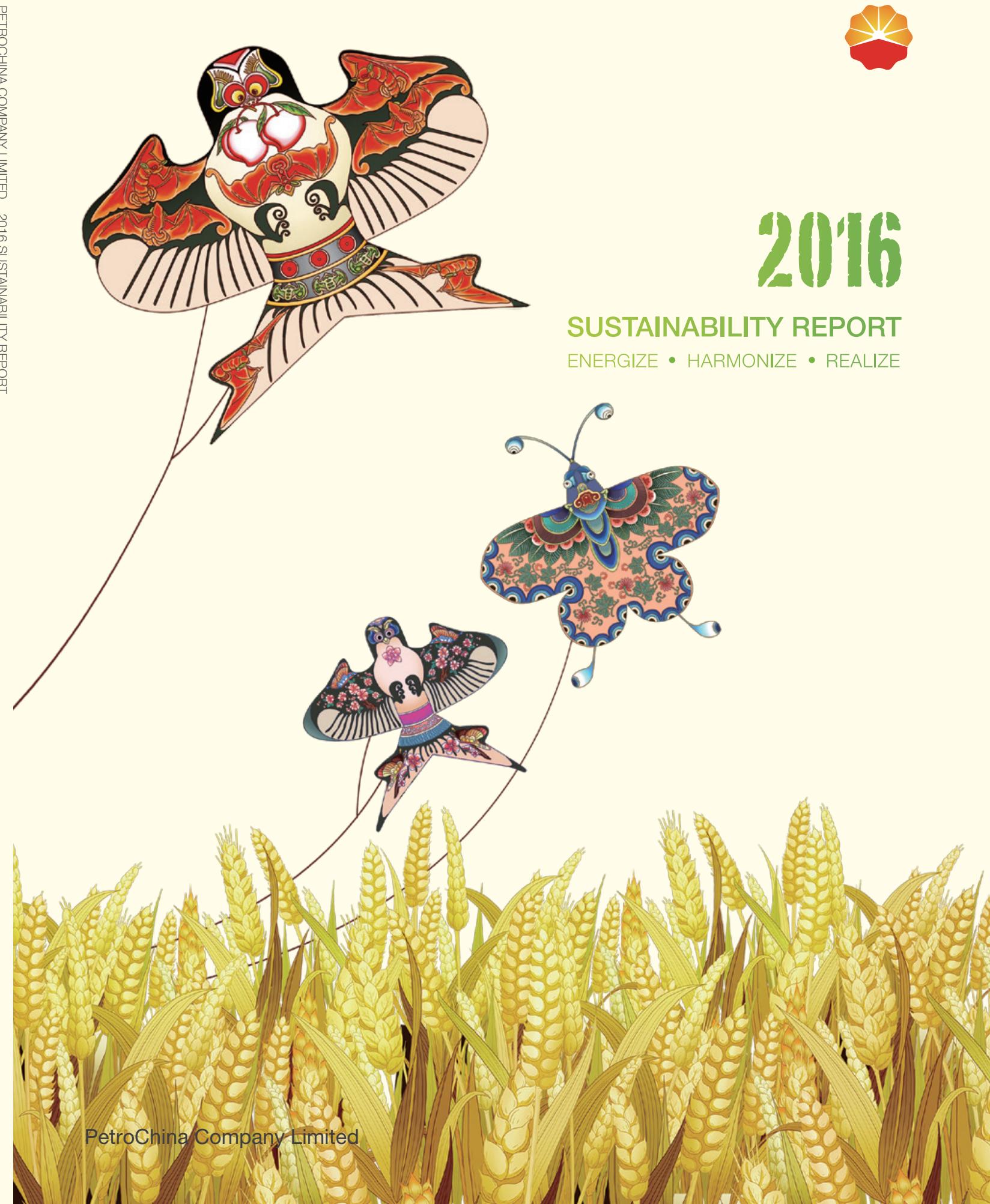




# 2016

## SUSTAINABILITY REPORT ENERGIZE • HARMONIZE • REALIZE



PETROCHINA COMPANY LIMITED 2016 SUSTAINABILITY REPORT



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PetroChina Company Limited

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# MATERIAL TOPICS

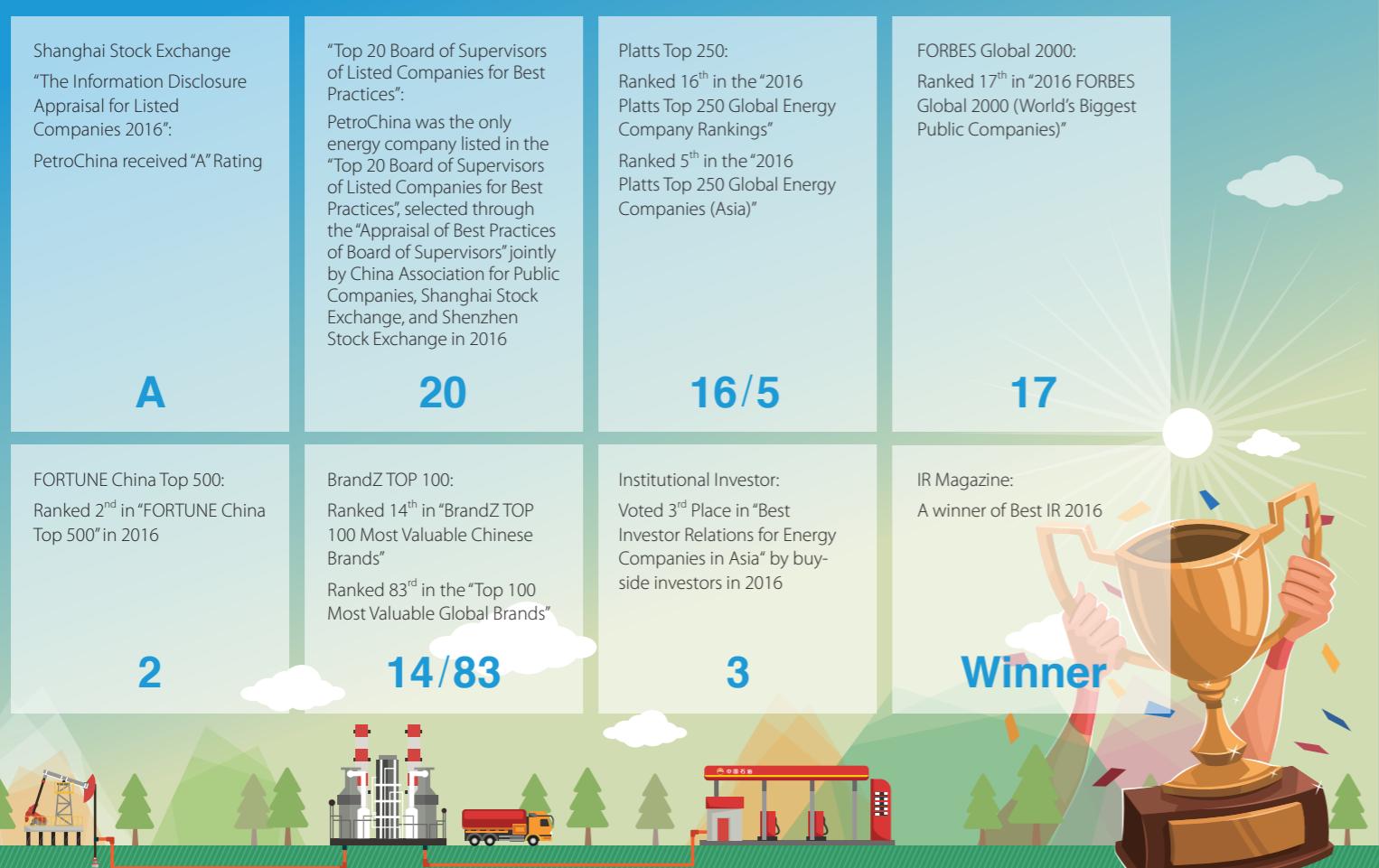
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## ABOUT PETROCHINA

PetroChina Company Limited (PetroChina, hereinafter also referred to as "the Company", "we" or "us") was established on 5 November, 1999, upon the restructuring of China National Petroleum Corporation (CNPC). PetroChina was listed on the NYSE (ADS code: PTR) and the HKEx (stock code: 857) in April 2000 and on the Shanghai Stock Exchange (stock code: 601857) in November 2007, respectively.

PetroChina is one of the major oil and gas producers and distributors in China, ranking among the leading international oil companies. It engages in a wide range of activities related to oil and natural gas and provides sustainable energy for economic and social development. We pursue harmonious relationships between energy, the environment and the society.

Our Mission	Energize, Harmonize, Realize
Our Vision	To be a world first-class international energy company
Business Strategy	Resources, Markets, Internationalization, Innovation
Guidelines of Development	Steady Development
Our Values	Honesty, Innovation, Safety and Distinction



## CORE BUSINESS



### Upstream

Our upstream business includes the exploration, development and production of crude oil and natural gas.

#### Oil and Gas Exploration, Development and Production

PetroChina takes a leading position in domestic oil and gas exploration and development business. We operate in a number of major oil and gas producing regions such as Daqing, Changqing, Xinjiang, Liaohe, Tarim and Sichuan. In 2016, we produced 763.8 million barrels of crude oil, 3,008.3 billion cubic feet of marketable natural gas, and 1,265.3 million barrels of oil and gas equivalent domestically.



### Mid-Downstream

Our midstream and downstream business includes refining, transportation, storage and marketing of crude oil and oil products, as well as production and marketing of basic, derivative and other chemical products; and transportation and marketing of natural gas.

#### Refining and Marketing of Crude Oil and Oil Products

We owned 8 ten-million-ton-level refining bases. In 2016 we processed 953.3 million barrels of crude oil, produced 86.022 million tons of oil products. We are operating more than 20,000 service (gas) stations, covering 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China, and undertook the supply of about 40% of China's oil products.

#### Production, Transportation and Marketing of Petrochemical Products

The Company is engaged in producing six categories of chemical products- synthetic resin, synthetic fiber and raw materials of synthetic fiber, synthetic rubber, urea, organic and inorganic compounds with thousands of trademarked products. Our production capabilities of products such as ethylene, synthetic resin and synthetic rubber ranked among the best in China. In 2016, we sold 23.15 million tons of chemical products, and produced 5.589 million tons of ethylene.

#### Transportation of Natural Gas, Crude Oil and Oil Products, and Distribution of Natural Gas

PetroChina is mainly responsible for transportation and marketing of natural gas, and storage and transportation of crude oil and oil products. The Company operated nearly 80,000 km of pipelines in China, covering 30 provinces (municipalities and autonomous regions) and the HongKong SAR in China.



### International Business

We are engaged in oil and gas exploration and production in more than 20 countries and have trade relations with more than 80 countries.

#### International Business

Currently, we have established five international oil and gas cooperation zones in the Middle East, the Central Asia, the Asia-Pacific, the Americas and Africa, and three oil and gas operation centers in Asia, Europe and the Americas. The expansion and growth of our international oil and gas cooperation has been substantial in terms of size and scope, with operational quality improving greatly. In 2016, overseas oil and gas equivalent production reached 201.3 million barrels.

## MESSAGE FROM THE CHAIRMAN



“

**Aspiring to play an important role in the process of energy transition, PetroChina participates in the R&D and use of low-carbon technologies, engages in discussions on climate and energy policies, advocates higher standards for safety and environmental management, and helps to build a more sustainable energy future.**

”

Thank you for reading this report and for your continued support of and concern for PetroChina.

As the global economy struggled with a recovery in 2016, the oil and gas market's way to rebalance amid considerable volatilities and changes. Energy transition and new global energy strategies have become the focus of the global oil and gas industry. At the 35<sup>th</sup> IHS Energy CERA Week, I delivered a keynote speech on the transition and development of energy enterprises under the "new normal" of China's economy, and discussed with our cooperation partners how to meet the challenges brought by low oil prices and the future direction of the market, investment, costs and technologies. I also described the actions PetroChina had taken in response to the environmental agenda of the 2015 UN Climate Change Conference held in Paris, and we worked with friends from the global oil industry to jointly promote low-carbon development. At the same time, we remain committed to the sustainable development of the company and society, proactively dealing with any kind of risks and challenges so as to keep improving our business performance.

**We actively responded to low oil prices and achieved steady development.** To tide us over the difficult period as international oil price dropped below USD 30 a barrel, we promoted the steady and systematic development of core businesses by consistently adhering to our strategy for resources, markets, internationalization and innovation. We deepened reform in key areas and crucial links, focused on innovation and benefits through science and technologies. We developed and implemented 36 measures in 12 categories to broaden our sources of income, reduce expenditure, control costs and enhance profitability. In 2016, our operating results were ahead of expectations. While the crude oil settlement price dropped by 21.4% and the natural gas realized price dropped by 25% year-on-year, the Company recorded RMB 1,616.9 billion in turnover, RMB 45.19 billion in total profit, and RMB 317.1 billion in taxes, and RMB 84.13 billion in free cash flow.

**We focused on safety and environmental protection, and promoted green development.** We worked hard to ensure safety, environmental protection and stability, strictly implemented the safety responsibility system, and spared no efforts to control major hazards with a focus on preventing and controlling risks at their sources. As a result, we avoided major and worse safety and environmental accidents. Committed to green development, we enhanced the development of clean technologies and promoted the clean use of fossil energy. We optimized our business structure, increased production of green and low-carbon energy, accelerated the cost-effective development of unconventional resources, and advanced natural gas development, resulting in the rapid growth of our natural gas business. In 2016, the contribution of domestic natural gas production to the Company's total oil equivalent output reached 39.6%, while our natural gas supply accounted for about 70% of the national total. Amid concerted global efforts to address climate change, we participated in the specific actions of the Oil and Gas Climate Initiative (OGCI).

**We strengthened legal compliance to build an enterprise firmly based on integrity.** We comprehensively promoting corporate governance, underlining the concept of legal compliance, continuously improving the corporate governance system, and ensuring that the integrity of our

operations complied with the industry best practices. Extensive efforts were made to provide compliance training to all staff, further advanced the system building and management system integration, and strengthened legal compliance for major projects. We reinforced and improved economic accountability auditing, established the overseas audit center, and expanded our audit coverage. We treat all business partners with integrity, respect and responsibility, fully respect our customers, suppliers, contractors and industry partners.

**We are committed and supportive of public welfare undertakings and work hard to be an excellent corporate citizen.** We pursued sustainable development between business and society and shared our developmental achievements with society. We built a targeted support system customized to local needs, and continued aid programs for the poor in underdeveloped regions, in order to improve local sustainability and contribute to global efforts in poverty alleviation. Our efforts in the implementation of initiative public welfare programs such as "Xuhang Educational Program" and "Hand in Hand with PetroChina for Public Welfare", and the funding of livelihood infrastructure projects to support communities, received full recognition in the local communities and society at large.

For the moment and foreseeable future, PetroChina is facing both opportunities and challenges in its development. On the one hand, its environment for development will increase in complexity as the global economy is experiencing twists and turns in its recovery fraught with more instability and uncertainties. Moreover, the changing policies in some host countries will pose more risks to our overseas operations. Although China's economy is developing steadily, there is some cause for concern. With profound changes in the landscape of the domestic oil and gas market, competition will be intensifying, while industry regulations and certain fiscal policies will become tighter. The fundamentals of international oil price rises remain relatively fragile, resulting in volatility in the price trend. On the other hand, we are blessed with opportunities and favorable conditions for development. The global energy industry is accelerating its transition to low-carbon and clean energy, the oil and gas dominated energy consumption mix is consolidating further, and the oil and gas market is striking a new balance between supply and demand, which will leave room for the international oil price to rise in the medium and long term. China's economy will maintain a medium to high rate of growth, resulting in a continuing solid growth in demand for total oil and gas. As natural gas is gradually becoming a main source of energy, the Company still enjoys enormous space for development. Over the years, we have developed our scale strengths and risk resistance capacities. PetroChina now ranks among the top industry counterparts in scale and strength, and takes a dominant position in local oil and gas production and supply, and thus still enjoys a prominent and advantageous foundation for further development.

Despite the difficult conditions and intensifying pressures, our opportunities outweigh our challenges and hope outweighs adversity. In 2017, we will establish and implement new development concepts, make targeted measures to carry out internal reform and adjust our structure, work hard to strengthen innovation-driven development and enhance quality and efficiency, keep optimizing our business chain and value chain, and continuously make our development more balanced, coordinated and sustainable. We will make every effort to maintain steady growth, optimize structure, strengthen weak areas, enhance efficiency, and guard against risks. We will earnestly enhance value-creation in our crude oil business chain, and work hard to implement projects of strategic value throughout the natural gas business chain, in order to achieve sustainable development.

Wang Yilin

Chairman of the Board

## INTERVIEW WITH THE PRESIDENT



To resolve observable conflicts and issues in our development and promote steady growth, we must consistently deepen reform and promote innovation with fortitude and a spirit of self-transformation.

What plans do you have to respond to the current slowdown in global economic growth, depressed international oil and gas prices, and sluggish demand for oil products in China?

As a result of the global political-economic situation and the market supply-demand of oil and gas, the international crude oil prices still fluctuated at a medium and low level, structural and seasonal contradictions are still outstanding in our domestic market, and uncertainties in safety and the environmental protection increase internationally. All these factors result in enormous pressure to the stable growth of PetroChina's business performance. In 2017, we will steadfastly continue to promote market-oriented and efficiency-centered development, focus on enhancing quality and efficiency, and strive to realize more coordinated and sustainable development. First, we will increase our resources and expand our market. We will intensify our efforts in resources and markets at home and abroad, obtain cost-effective, green and low-carbon energy resources, vigorously expand high-end and high-efficiency markets, make domestic and overseas resources and markets more complementary and coordinated, and enhance the competitive advantages of the entire industry chain. Second, we will carry out structural adjustment and optimization. We will make consistent efforts in structural adjustment and optimization, to further rationalize business structure and ensure a more coordinated and streamlined production and operation. Third, we will strengthen management and guard against risks. We will improve the risk prevention and control system, and promote the identification, assessment, early warning and response to significant risks. We will strengthen business operations in compliance with all legal requirements, keep our production and operation stable and under control, guard against major safety and environmental incidents and high-risk events, and strive for steady development.

The Chinese government has issued documents concerning the reform of state-owned enterprises and the reform of the oil and gas industry. What are your key areas of focus in your efforts to extend the reform?

In order to improve the modern enterprise system and promote a corporate governance structure and capacity-control of modern, international standards, we will advance reform by focusing on six areas: first, optimization of the corporate governance structure and control mode; second, adjustment and continuous restructuring of business structure; third, improvement of the operation mechanism; fourth, development of the mixed ownership economy; fifth, innovation in scientific and technological systems and mechanisms; and sixth, reform of our personnel, labor and income distribution system.

In 2016, we formulated our opinions on the comprehensive implementation of reform and the special plan for the "13<sup>th</sup> Five-Year Plan" reform. New breakthroughs were made in key reforms of management systems, and business restructure and integration in an effort to enhance business autonomy. New progress was also achieved in the reform of labor, personnel, and income distribution systems and other significant areas.

As the international political and economic situation becomes increasingly complex, how does PetroChina view international cooperation? How will the Company build energy cooperation communities?

Against a backdrop of rising complexity in international political and economic situation, traditional energy enterprises, especially oil and gas companies, face a series of challenges to their development, including loss of development space to non-fossil fuels, and greater requirements for clean and low-carbon development in response to global climate change. Meanwhile, it faces a major opportunity for the rapid development of the natural gas industry. Enhanced international cooperation is required to overcome the multiple challenges and promote transition and development.

As a major player in international energy cooperation, we will build energy cooperation communities to align ourselves with the market trend. First, we will broaden the fields of cooperation. Taking the opportunity of the global energy industrial restructuring and guided by government initiatives such as the "One Belt and One Road Initiative", we will establish new partnerships and expand all-round cooperation along the entire value chain. Second, we will strengthen the sharing and exchanges of technologies and expertise, by fostering open multilateral technical and skills exchanges, enhance joint development and the promotion and application of new technologies, and strengthen exchanges and joint training of our talents. Third, we will actively promote and participate in energy management, encourage governments to provide open resources and markets, participate actively in the construction of regional and global energy trading markets, support the democratization and institutionalization of global energy governance rules, and create more favorable investment environments. Fourth, we will take part in actions dealing with major risks, and establish platforms for information sharing and coordination mechanisms for risk prevention and control.

PetroChina will adhere to the spirit of openness and the concept of mutual benefits and win-win results, enhance cooperation with businesses in various countries, and play a constructive role in a responsible manner to become a preferred partner for its counterparts all over the world.

The implementation of the Paris Agreement will exert a significant impact on the global energy consumption mix. As a fossil fuel company, how does PetroChina view the risks and opportunities presented by it? What efforts did PetroChina make to address climate change?

Officially entering into force in 2016, the Paris Agreement marks a new starting point in the global response to climate change. It helps all participants, governments, industrial sectors and individuals to jointly invest in a future with lower emissions. Moreover, it has accelerated the development of sustainable industries and increased the choices of low-carbon consumption. This presents both risks and opportunities to the development of traditional fossil energy. In the future, the rapid development of clean technology will promote the clean use of fossil fuels, and advance the transition and upgrading of the oil and gas industry. As a clean fossil fuel, the importance of natural gas will become more pronounced in particular.

PetroChina is committed to low-carbon development, and actively promotes greenhouse gas control together with its peers and all sectors of society. As an energy company, we focus on promoting advances in energy production and consumption and improving the energy supply structure, in order to provide energy solutions to address climate change. We make consistent efforts to optimize our asset portfolio and products supply structure, and increase the proportion of natural gas and other clean fuels in our energy supply. Over the past five years, the proportion of natural gas in our domestic oil and gas production equivalent has increased by 6.9%, representing an increase in production of 31.7%. In addition, our domestic natural gas supply accounts for about 70% of the national total, making a positive contribution to the optimization of China's energy consumption mix. Also, we strengthen low-carbon production and carbon emissions management, promote the R&D and utilization of low-carbon technologies, and commit ourselves to exchanges and cooperation with our counterparts at home and abroad.

Wang Dongjin  
Vice Chairman of the Board and President



## INTEGRITY AND COMPLIANCE-BASED CORPORATE GOVERNANCE



Integrity and compliance are the foundation of an enterprise's sustainable development. At PetroChina, we always advocate rules of the laws, which call for the supremacy of the laws, responsibility commensurate with authority, procedural compliance, honesty and trustworthiness, and justice and impartiality. We regularize our corporate and employee behavior through compliance management. We are guided by rules of the laws and improve our capability of corporate management by the laws. We strive to achieve, mainly through institutional constraints, the modernization and internationalization of the corporate governance system and control system. We will make unremitting efforts to explore strengthening the scientific nature and operability of our corporate governance and will optimize the long-term mechanism for operating the company in compliance with all legal requirements.

### SUSTAINING STEADY DEVELOPMENT

We develop and implement an innovative, harmonized, green, open and mutual development concept, adhering to the policy of steady and sound development, and give top priority to capacity building in core businesses, reform and innovation, safety and environmental protection, and image reshaping. We make unremitting efforts to adjust our structure, strengthen weak areas, increase efficiency, and take integrated measures to guard against risks. Thanks to all these efforts, the Company has maintained promising stable operating results, kept all kinds of risks under control, reinforced a stable and harmonious environment for development, and steadily improved its corporate image. Its steadier, healthier and more sustainable development has made PetroChina into a globally respected company.

The top management pays attention to major issues in the Company's development through careful planning. It vigorously develops information channels. Through face-to-face meetings, site visits, special reports, etc, it engages in in-depth investigations and research, and widely absorbs suggestions from all related parties. In doing so, it establishes the strategic goal of building a world-class international energy company, and sets out the growth strategy of resources, market, internationalization and innovation. In addition, the Company has set up a committee tasked with compiling the sustainable growth report. This committee is made up of the main persons in charge of relevant departments, and matters concerning sustainable development are verified and externally disclosed by it.

Focusing on growth quality and efficiency, the Company links the compensation of persons-in-charge and employees to their environmental and safety performance, and exercises its veto right against persons-in-charge who have violated safety or environmental regulations. An assessment of enterprises that are advanced in terms of production safety and a comparative appraisal of advanced entities and individuals are carried out annually. The advanced enterprises and individuals are commended and receive an award. In 2016, we rigorously conducted performance assessments followed by reward and punishment, and set clear assessment indicators. We rewarded subsidiaries that achieved technological progress and published standards, and punished those with performance issues in safety, environmental protection, and investment control.

We issued regulations on the remuneration and business expenditure of leading management personnel. The remuneration of our senior executives is composed of the basic salary and performance-based annual salary. The annual remuneration is linked to performance and adjusted according to variables, such as the operating performance of the Company, the average wage level of the staff and the market labor price.



Promoting modern management through corporate governance according to the laws.

- Improving the corporate governance system and management systems and mechanisms through system building, in order to put in place a systematic, scientific and effective organization.

- Promoting scientific and standardized corporate management through standardized quality and metering measurement, and fully improving the quality of products, projects and services.

- Giving full play to the role of applying information technology in management innovation and business model innovation, enhancing operational efficiency, and thereby promoting modern management.



## SOLIDIFYING GOVERNANCE FRAMEWORK

Ever since its establishment, PetroChina set up a corporate governance framework in compliance with regulatory requirements and international rules, clearly outlining the authority and responsibilities of the annual general meetings of shareholders, of the board of directors and its expert committees, of the supervisory committee, and of management answerable to the president. Such management structures provide checks and balances to one another, cooperate closely and are highly effective. The Company's internal management and operations are further standardized and the management level keeps improving.

PetroChina keeps on optimizing the legal final decision-making mechanism, strengthening the evaluation for decision making, and maintaining a system that tracks the responsibility for decisions made and holds decision-makers lifelong accountable. The Company keeps improving the supervision and restriction mechanism for the exercising of power, and following the principle that responsibility is commensurate with authority, it clearly delineates the limits of each authority at different managerial levels with detailed requirements on their authority and responsibility. Moreover, by planning as a whole all resources for internal supervision such as legal affairs, internal control, auditing and supervision and inspection, PetroChina reinforces self-supervision, supervision by dedicated departments, and supervision between superior and subordinate departments, and accepts public supervision, in order to achieve well-grounded decision making, appropriate authorization, controlled exercise of power, and accountability for abuses of power.

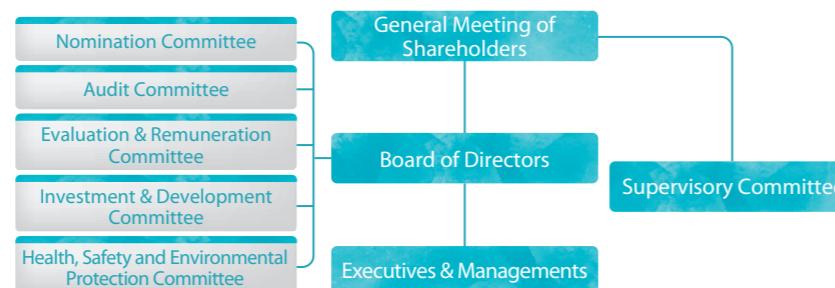
### Shareholders and Annual General Meeting (AGM)

The general meeting of shareholders is the top authority in the Company and it exercises its functions and powers in accordance with the law. PetroChina's general shareholders meetings are held annually and the Company ensures that all shareholders enjoy equal privileges to exercise their rights. In order to ensure fairness, as the controlling shareholder of PetroChina, CNPC will abstain from voting when a connected transaction is presented to the general meeting for consideration.

### Directors, Board of Directors and Affiliated Board Committees

The directors are elected by the general meeting of shareholders, and they are accountable to the general meeting. Under the board are several committees: the Nomination Committee, the Audit Committee, Evaluation & Remuneration Committee, Investment & Development Committee, the Health, Safety and Environmental Protection (HSE) Committee, all of which advise the board on its decisions. We never cease formulating, improving and effectively implementing the work systems and work procedures of the Board of Directors and affiliated board committees. We have formulated the *Board Diversity Policy*, so that members of the board are considered based on the actual situation of the Company, its own operational model and the specific work requirements, while taking into account the candidate's age, educational background and professional experience. There are four non-executive independent directors in the board of directors. These independent directors are experts and talents from different countries and technical backgrounds, including petroleum and petrochemicals, accounting, finance, international investment and financing management. In 2016, we set out specifications for the operation of the Board of Directors, and followed the procedure for "decisions on major issues, appointment and dismissal of leading officials, decisions on major project investment, and use of large sums of money". The Board strengthened investment decision-making management and increased the number of site investigations and research at

#### Corporate Governance Structure



We constantly supplemented and perfected our basic system of corporate governance. In accordance with capital market regulations, we set up the Nomination Committee of the Board of Directors, and developed rules of procedure for the committee. In 2016, in strict accordance with the rules of procedure for the Nomination Committee of the Board of Directors, we deliberated on the candidates for director, top management changes and adjustments to the board committees, giving full play to the role of the Nomination Committee.



grassroots units and overseas oil and gas cooperation projects conducted by independent directors. In 2016, the Company organized on-site investigations and research by independent directors. We informed independent directors of important production and operational decisions in a timely and regular manner, and put their recommendations into practice, achieving a positive result for the Company.

### Supervisors and Supervisory Committee

The Supervisory Committee is accountable to the Shareholders Meeting. In accordance with the *Company Law of the PRC* and the *Articles of Association*, the Supervisors present at the Supervisory Committee meetings, attend Board Meetings as observers, report back to the Shareholders Meeting and submit the Supervisory Committee reports and related matters. The Supervisory Committee formulated the *Organization and Rules of Procedures for the Supervisory Committee and the Regulations on Supervisors' Performance of Duties*, laying down the methods and contents of performing the duties of the Company's Supervisors, and the requirements and evaluation criteria for performing such duties. All Supervisors are urged to supervise the Company's finances and monitor the legality and compliance of the manner in which directors and senior management of the Company perform their duties, in line with their responsibility to all shareholders. By the end of 2016, the Company's Supervisory Committee had nine members, four of which were employees of the Company.



### Executive Body

The Company's executive management body consists of a Vice President and a CFO presided over by the President. They are appointed by and accountable to the Board of Directors. They carry out the Boards resolutions and organize the day-to-day production and business operations of the Company in accordance with the *Company Law of the PRC* and the *Articles of Association* and as authorized by the Board of Directors. The Company has a two-tier executive governance organization for the headquarters and regional offices, and a three-tier business structure consisting of the headquarters, subsidiaries and regional operations. The Company has four core business segments that are run by four dedicated subsidiaries, namely: PetroChina Exploration & Production Company, PetroChina Refining & Chemicals Company, PetroChina Marketing Company and PetroChina Natural Gas & Pipeline Company.

## OPTIMIZING MANAGEMENT SYSTEM

The Company stresses intensification, specialization and integration and has established a management system where responsibility is commensurate with authority, and that is scientifically sound, lean, efficient, and vibrant, so as to strengthen the restrictions on and the supervision of the exercise of power. The Company aims to have clear control objectives, effective integration of resources and optimal efficiency and effectiveness, in order to improve corporate social responsibility performance and achieve sustainable growth. We actively boosted the integration and innovation of the management system, and promoted pilot programs for system construction and integration. We consolidated management systems on quality, HSE, measurement, energy, internal control, legal risk prevention and control with other management documents, in order to promote management system reform and optimize resource configuration.

## Compliance Management System

Integrity and compliance are the bottom line of our business operation and the cornerstone of the Company's development, and take precedence to business systems and economic interests. We integrate compliance management into our strategy, and have a zero tolerance attitude to rule violations and strictly comply with applicable laws, regulations and procedures in operational activities. The growth of the Company hinges on compliance management, which is incorporated into the whole process of our production, construction and operations management assessment. We enhance process control while focusing on prevention, and have designated persons-in-charge of the headquarters and affiliates as the first persons responsible for compliance management. We endeavor to build a compliance management system with complete regulations, scientific procedures and proper execution to cover all staff, the entire process and all positions.

We adhere to the value of honesty and integrity, implementing the same compliance policy and guidelines as CNPC. The *Integrity and Compliance Guidelines* issued by CNPC clearly regulating the basic requirements, codes of conduct and prohibited matters in external relations, professional ethics, handling internal relations, safeguarding the interests of the Company, taking social responsibility, etc. In 2016, our employees signed a written commitment pledging to abide by the manual.

In 2016, we promote the application of the Compliance Management Information Platform, organized staff to attend compliance training and testing through the platform. We strengthened the management and maintenance of staff compliance archives, further defined the scope of personnel subject to compliance registration and reporting, strengthened the supervision of trading process and registered and reported issues involving conflicts of interest. For suppliers and contractors, we carried out compliance review and evaluation, and removed those who breached relevant laws and regulations from the qualification list. We strictly carried out due diligence to check the compliance of our trading partners in major joint ventures and cooperation, mergers and acquisitions, and other major transactions, and specified compliance requirements in contract terms and conditions.

## Internal Control and Risk Management System

We continued to improve our internal control system and ensured its continual effectiveness. To ensure effective risk control, we strengthened the evaluation, reporting and control of major risks, improved risk event management, and intensified special risk control. We kept optimizing and simplifying our business processes, and developed scientific standards for process management. We focused on the testing of managerial personnel with an increase in depth of the test to identify management weaknesses, and systemic and institutional problems. We endeavored to identify and prevent major risks, in order to further enhance the overall quality and effectiveness of the management testing, and ensure the effective operation of our systems. We intensified internal control and rectification, improved the coordination mechanism between the lower and higher levels, announced within the Company recurring events and exceptions which were not rectified within the prescribed period, reinforced warnings and assessment efforts, supervised implementation and rectification activities, and improved the management and control skills. In 2016, the Company's internal control and risk management system successfully passed an external audit for the 11<sup>th</sup> consecutive year.

## Corruption Punishment and Prevention System

We treat our business partners, customers, suppliers, contractors and counterparts with integrity, respect and equality. We require our employees not to abuse one's position in signing business contracts for one's own personal gain, or for the benefit of friends or family or to obtain personal benefits. We abide by the relevant national laws and regulations, developed the *Punishment Regulations for Managements Violations and Non-compliance, Compliance Management Measures, Material Supplier Management Measures*, etc, to regulate behaviors of employees and the Company.

We verified all complaint letters and punished all corrupt officials, and always make unremitting efforts to combat corruption. The Company identified hazards and strengthened the building of the anti-corruption system, and gradually improved its corruption risk prevention mechanism. We sought to prevent corruption from small matters forming at the early stage through measures targeted at different levels, and conducted early warnings, monitoring and inspection on a regular basis. We promoted special audits and supervision of major investment projects and online real-time supervision of major business areas, and urged the departments to fulfill their regulatory responsibilities.

We have set up a telephone hotline and an email address to receive reports of irregularities. Employees can report cases by using their real names or anonymously. We will seriously investigate and give feed back to the one who reports, and keep their identities confidential.

Hotline: 86-10-62094741  
Email: jcbjb@petrochina.com.cn



### Anti-Commercial Bribery

Commercial bribery is an act of using devious means to obtain business opportunities or other economic benefits. Commercial bribery seriously disrupts the market order of fair competition and is prohibited by law in each jurisdiction. The Company firmly opposes commercial bribery, and strictly prohibits the giving of benefits to others to obtain business opportunities or other advantages. We also prohibit employees from receiving or soliciting benefits from others in our business activities. The prohibited behaviors mentioned above not only refer to the direct giving and receiving of benefits, but also to the sort of behaviors via a third party. The benefits hereby include, but are not limited to: cash, gifts, marketable securities, physical assets, kickbacks, free traveling and entertainment, and also non-property benefits such as employment opportunities.

## UPHOLDING BUSINESS ETHICS

We abide by business ethics and adhere to the principle of honesty and credibility, in order to promote transparent trading and maintain fair and impartial competition. We strictly complied with applicable laws and regulations on commercial bribery, extortion and fraud. For this, we established specific management regulations and implementation rules covering all production units, staff and processes relevant to the Company. We oppose monopolies and do not abuse our dominant market position. We fight against unfair competition in any form and comply with trade restrictions. We never conduct, participate in or support any forms of money laundering. We conduct faithful, honest and legal external transactions.

## COMMUNICATING WITH STAKEHOLDERS

Gaining our stakeholders' trust and support is fundamental to the building of a sustainable business. We worked hard to enhance quality and efficiency of our development to maximize returns to our shareholders and value for our stakeholders, and to achieve our common goal of harmonious development and mutually beneficial maximization.

We actively performed our obligation to disclose information. In accordance with the laws, regulations and regulatory requirements of the place where the Company is listed and in accordance with the *Articles of Association*, we built a multi-level and multi-form mechanism to communicate with stakeholders, through periodic reports, interim reports, media communications, interviews and visits, and interactive communication. We amplified and perfected the management and related systems for the disclosure of major events so as to report the Company's situation in full and on time to the public. We also organized non-deal roadshows, reverse roadshows, and site inspections for investors, met visiting investors, and invited individual shareholders to attend the AGM, etc. The top managerial personnel of the Company frequently attended high-level conferences and forums and delivered speeches, in order to improve mutual trust between stakeholders and the Company. The Company kept improving its website and developing new media communication channels such as teleconferences, Emails and fax to provide more information, understand and respond to investors' questions in a timely fashion. It collected and organized every opinion and suggestion, and channeled them to relevant departments, so that the Company was aware of the needs of the stakeholders.

To address investors concerns, we deeply communicated with investors and listen to their views on the development of the Company. Through the Open to Public Day, Gas Station Open Day, news conferences, customer meetings, customer visits, questionnaires, advice boxes and other means, we solicited criticism and opinions from all walks of life, followed the implementation of the opinions, and took the initiative to accept supervision from all parties. By doing so, we further enhanced the understanding by the media and public of the Company.

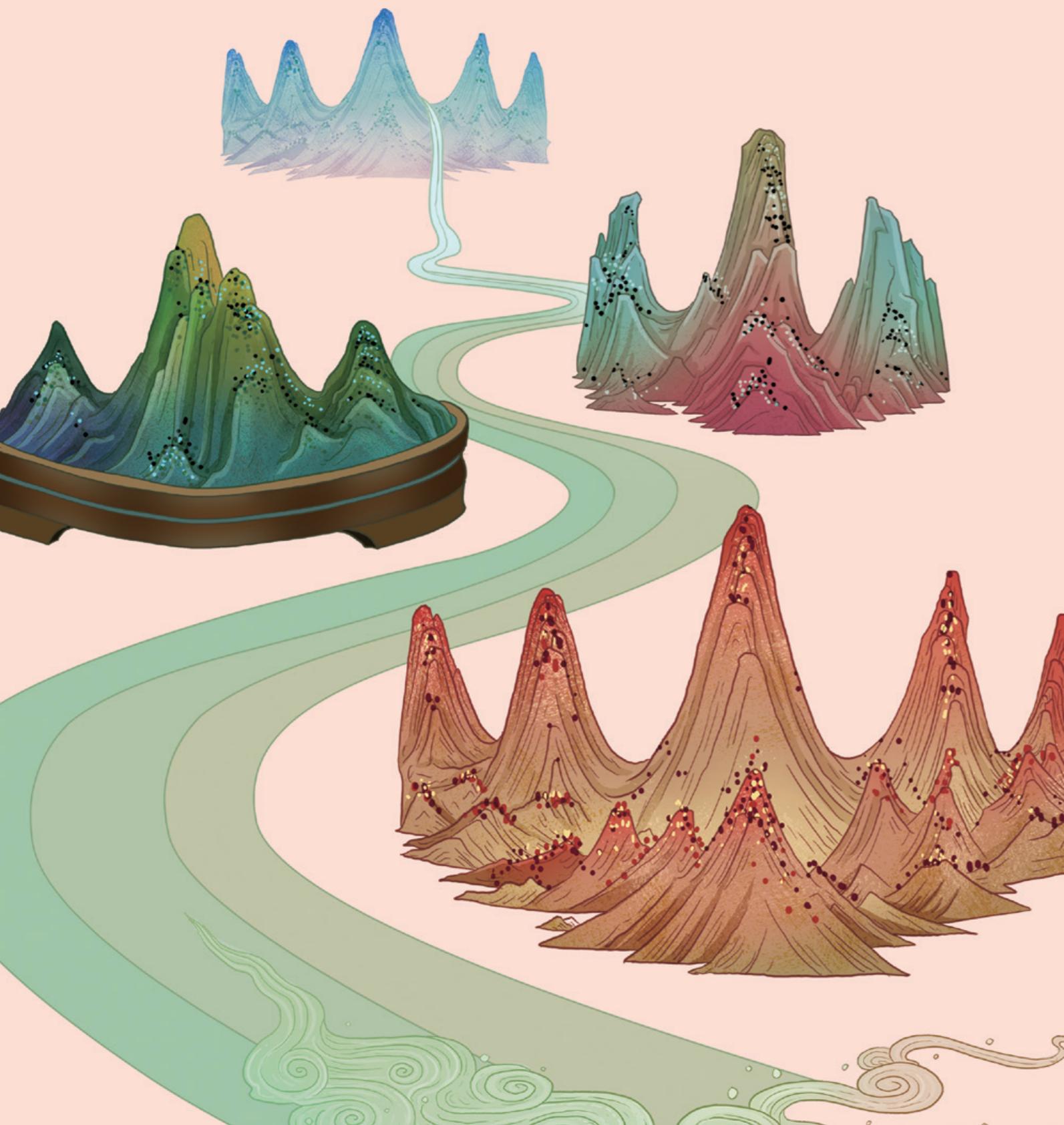
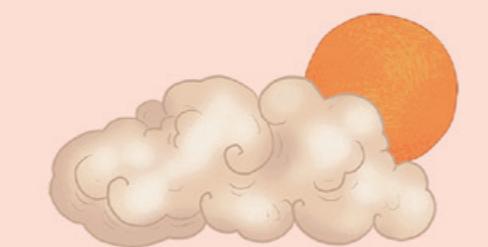
For the refinery project in Yunnan, PetroChina invited the public to participate in the project environmental impact assessment, and set up the "Yunnan Petrochemical Green Construction Advisory Committee" composed of representatives from local communities, enterprises, social organizations and the local government, and organized dialogues. Through these dialogues, Yunnan Petrochemical responded to issues including residents' relocation and resettlement, local employment, the impact on surrounding safety and the environment, project information disclosure, communication with the general public, promotion of refinery knowledge and government supervision.



Stakeholder	Expectations	Communication Approach	Key Actions
 Governments	<ul style="list-style-type: none"> <li>• Stable energy supply</li> <li>• Harmonious economic and social development</li> <li>• Leading role of brand and technology</li> <li>• Tax payment according to law</li> </ul>	<ul style="list-style-type: none"> <li>• Offer company expertise</li> <li>• Attend to public concerns and improve corporate behavior</li> <li>• Launch strategic cooperation with relevant departments</li> <li>• Attend seminars and forums</li> </ul>	<ul style="list-style-type: none"> <li>• Behave legally and ethically, and abide by the applicable laws and regulations in the jurisdictions where we operate</li> <li>• Stabilize oil and gas supplies</li> <li>• Participate in discussions organized by the government on climate change, energy conservation and emission reduction</li> <li>• Promote local employment and cultivate local talents</li> <li>• Pay taxes according to law</li> </ul>
 Shareholders	<ul style="list-style-type: none"> <li>• Standardized corporate governance</li> <li>• Stable business growth</li> <li>• Sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>• Fulfill requirements on statutory information disclosure</li> <li>• Organize roadshow and reverse roadshow activities, such as field visits</li> <li>• Issue reports and announce results performance on a regular basis</li> <li>• Launched an Investor FAQs mailbox to receive public opinions</li> <li>• Reverse roadshows and site inspections</li> </ul>	<ul style="list-style-type: none"> <li>• Operate in a responsible manner to maintain a good reputation</li> <li>• Convene annual general meetings</li> <li>• Equal treatment of shareholders, and value opinions of both small and medium-sized shareholders</li> <li>• Hold dialogues with investors and shareholders in various ways</li> </ul>
 Employees	<ul style="list-style-type: none"> <li>• Basic rights guaranteed</li> <li>• Professional development</li> <li>• Growth in wages and benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Elect employee representatives to join the Supervisory Committee</li> <li>• Establishment of trade unions at all levels</li> <li>• Convene employee representatives meetings and make reports</li> <li>• Organize employee training programs</li> <li>• Set up a complaints and feedback system</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance employee training and skills development</li> <li>• Organize vocational skill competitions</li> <li>• Conduct occupational health checks</li> <li>• Promote local employment in overseas operations</li> <li>• Provide a career development platform for employees</li> <li>• Protect employee safety in overseas operations</li> </ul>
 Consumers	<ul style="list-style-type: none"> <li>• Provide safe, environmentally friendly, high-quality products and services</li> <li>• Constantly improve the quality and variety of services</li> <li>• Operate with integrity</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out activities to protect consumers interests</li> <li>• Publicize commitment to quality services</li> <li>• Provide hotline services</li> <li>• Conduct customer satisfaction surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance quality management</li> <li>• Improve service quality at refueling stations</li> <li>• Increase the supply of clean fuel, such as natural gas, high-standard gasoline and diesel</li> <li>• Secure oil supplies for disaster relief and agricultural production</li> <li>• Organize Refueling Station Open Day activity</li> </ul>
 Business partners	<ul style="list-style-type: none"> <li>• Fair and transparent procurement</li> <li>• Win-win cooperation</li> </ul>	<ul style="list-style-type: none"> <li>• Hold tendering meetings</li> <li>• Hold large cross-border business negotiations and technical exchange meetings</li> <li>• Use the electronic trading platform</li> <li>• Engage in sharing managerial practices and technical standards</li> <li>• Conduct contract negotiations and routine meetings</li> <li>• Hold training for business partners</li> <li>• Conduct daily operation meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen centralized procurement management to provide suppliers with equal opportunities</li> <li>• Enhance communication and coordination with contractors and strengthen the HSE management of contractors by creating a safe and healthy working environment</li> <li>• Improve security measures and the emergency response network</li> <li>• Open the investment field</li> <li>• Organize PetroChina-Siemens Strategic Cooperation Summit</li> </ul>
 NGOs	<ul style="list-style-type: none"> <li>• Improve sustainable management</li> <li>• Perform social responsibilities such as poverty alleviation and environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>• Share the Company's experiences</li> <li>• Participate in NGO activities</li> <li>• Promote international communication</li> </ul>	<ul style="list-style-type: none"> <li>• Submit a progress report to the UN Global Compact</li> <li>• Attend to external concerns through various forms of communication</li> <li>• Play an active role in participating in and supporting international environment and standardization initiatives</li> <li>• Participate in a wide range of forums and conferences</li> </ul>
 Communities	<ul style="list-style-type: none"> <li>• Promote employment growth</li> <li>• Protect community environment</li> <li>• Promote economic development in the community</li> <li>• Respect cultural traditions of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Hold dialogues with local communities</li> <li>• Organize community visits</li> <li>• Conduct social and environmental impact assessments of projects</li> <li>• Promotion of education</li> <li>• Increase information disclosure</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in disaster relief and reconstruction, and provide financial support for education and poverty alleviation</li> <li>• Support and drive local economic growth through large projects</li> <li>• Supply clean energy, e.g. natural gas, to remote Regions</li> <li>• Hold volunteering activities among employees</li> <li>• Procure locally, where the business is carried out</li> <li>• Provide job opportunities and training for the local community</li> </ul>



## SUSTAINED ENERGY SUPPLY



Energy is essential to socio-economic development. Our mission is to develop a safe, stable, diversified and clean energy supply system, thereby promoting sustainable economic growth and social progress.

At PetroChina, we proactively change the ways to produce energy, so as to constantly adapt to energy reform. With an innovative, harmonized, green, open and mutual development concept, we make sustained efforts to build a safe, stable, diversified and clean energy supply system. We never cease consolidating our resource base through technological and managerial innovations. With an eye on sustainable energy supply in the future, we are accelerating natural gas development, exploring unconventional energy, deploying new energies, and supplying more clean energy. In addition, we are expanding international cooperation and optimizing our global businesses in order to play a leading role in supplying cleaner and greener energy and to provide sustained momentum to socio-economic development.

### CONSOLIDATING OUR RESOURCE BASE

Oil and gas resources are the foundation of our development and the basis for securing stable oil and gas supply. In recent years, it has become more difficult and expensive to explore and develop the remaining oil and gas resources, and oil prices have continued to decline. Under such unfavorable circumstances, we have achieved exploration breakthroughs, made new oil and gas discoveries, and consolidated our resource base through management innovation and technological progress, enhancing our capacity to provide society with economical, stable and sustainable energy.

#### Fine Potential Tapping and Obtaining Reserves with Economics of Scale

In 2016, we continued to adhere to our resource strategy, optimized exploration deployment, focused on concentrated exploration, fine exploration and cost-efficient exploration of key basins and favorable zones, and strengthened comprehensive geological research, resulting in the discovery of a number of large-scale, high-quality recoverable reserves. In the Changqing Oilfield in particular, we made outstanding achievements in the multi-layer, three-dimensional exploration of lithologic reservoirs, with 370 million tons of proven reserves added. Changqing Oilfield overcame technological obstacles by focusing on increasing the output of individual wells, improving the recovery ratio and cutting development costs, and enabled oil and gas production of over 50 million tons for the fourth consecutive year in 2016. Daqing Oilfield's fine water flooding technology improved its recovery ratio by 1% to 3%, and provided strong support for the sustainable development of the oilfield. In 2016, PetroChina's newly added proven oil in place exceeded 600 million tons for the 11<sup>th</sup> consecutive year, and newly added proven gas in place exceeded 400 billion cubic meters for the 10<sup>th</sup> consecutive year, with the total proven oil and gas geological reserves equivalent exceeded 1 billion tons of oil equivalent for the 10<sup>th</sup> consecutive year. In 2016, in newly-added oil and gas reserves, natural gas accounted for 40%, an increase of 9% year-on-year.



**600** million tons

In 2016, PetroChina's newly added proven oil in place exceeded 600 million tons for the 11<sup>th</sup> consecutive year

**1** billion tons

In 2016, PetroChina's total proven oil and gas geological reserves equivalent exceeded 1 billion tons of oil equivalent for the 10<sup>th</sup> consecutive year



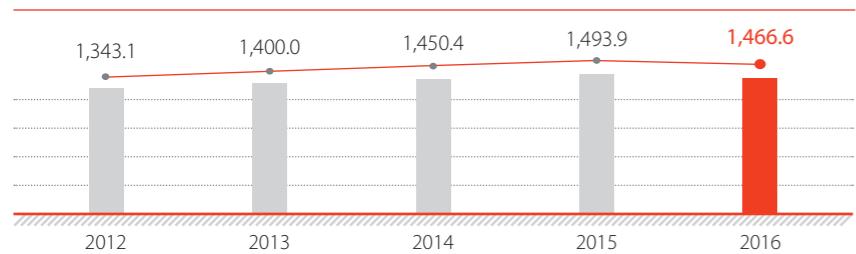
## Steady and Moderate Rise in Oil and Gas Production, with Increased Efficiency and Production

In oil and gas field development, we prioritized profitability refocusing our efforts from production scale to quality and efficiency. We adjusted and optimized our yield structure according to oil prices and market changes. In 2016, we produced 1,466.6 million barrels of oil equivalent, while oil and gas operation costs dropped 10.1% from 2015.

### PetroChina's Innovative Technologies Winning National Awards in 2016

Technology	Award
Paleo-marine carbonate exploration theory and technology innovation, and discovery of the giant Anyue Gas Field	Second-class National Science and Technology Progress Award
Large-scale ethane process technology package, key equipment and industrial application	Second-class National Science and Technology Progress Award
Special drilling liquid for complex well and industrial application	Second-class National Technical Invention Award
Quantitative calculating method of oil saturation in fractured reservoirs	Gold Medal of China Patent Award

### 2012 – 2016 Oil Equivalent Production of PetroChina (10<sup>6</sup> barrels)



## DEVELOPING CLEAN ENERGY

Fossil fuel will remain the driving force of global economic development in the near future, whereas clean and low-carbon energy will chart the course for future energy development. As a practical and effective low-carbon energy currently, natural gas plays an important role in meeting the needs of socio-economic development and protecting the environment. PetroChina focuses on the sustainable supply of clean energy, and will continue to regard natural gas as a strategic and growing business. The Company is increasing investment in natural gas exploration and development, accelerating the construction of cross-border gas pipelines and domestic gas pipeline backbone network facilities, advancing development of unconventional gases such as tight gas, coal bed methane and shale gas. It is also pushing forward the development and use of natural gas, studying and promoting the development and use of new energy, in order to meet the demand for clean energy.

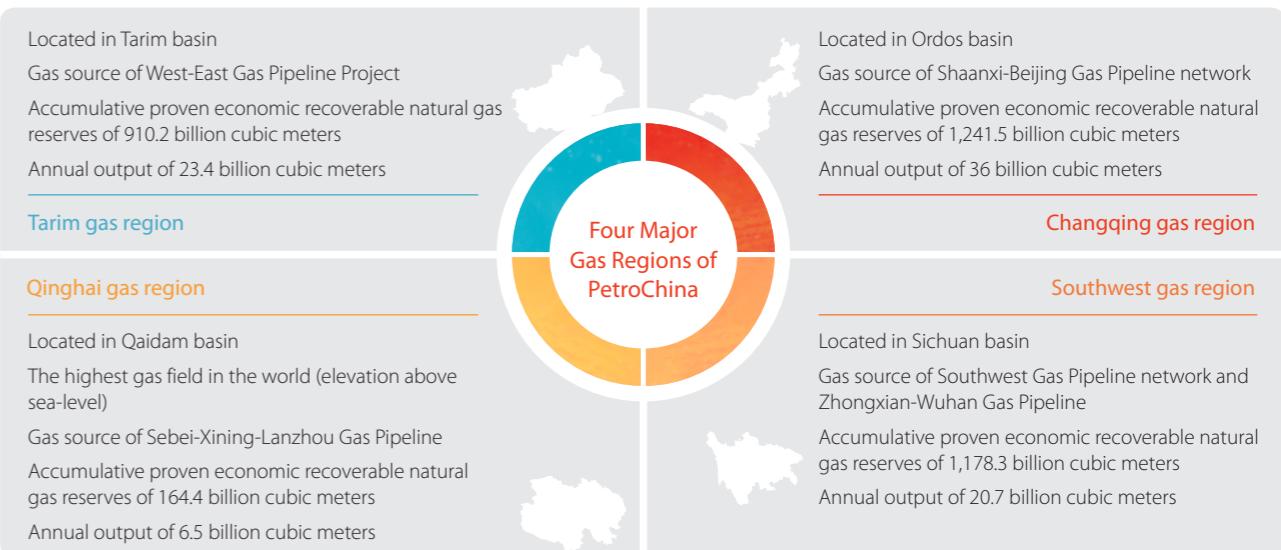
### Increasing Natural Gas Exploration and Development

In 2016, the Company strengthened production management in major gas areas, hub gas fields and key gas fields, and continued to reinforce the development and construction of natural gas fields, with an emphasis on capacity building in mature fields including four gas provinces in Changqing, Tarim, Southwest, and Qinghai. We intensified the use of the "large-cluster, factory-like, and comprehensive" capacity building mode in natural gas development, providing a guarantee for stable production growth. The contribution of natural gas to our total domestic oil equivalent output reached 39.6%, and our domestic production of marketable natural gas was 3,008.3 billion cubic feet.



**Question:** As the energy consumption mix is getting more diverse with lower carbon emissions, has PetroChina made any adjustment to the development of traditional oil and gas and new energy?

**Answer:** Fossil fuels will remain the main energy for consumption until 2030. As energy consumption growth gradually slows in China and the energy structure is constantly being optimized, we are going to enter a new stage where overcapacity in traditional energy will coexist with the rapid growth of clean and low-carbon energy. Under such circumstances, PetroChina will stabilize oil production and increase the output of natural gas while highlighting development quality and benefits. It will push forward the development of new energy, by focusing on alternative energy resources, including geothermal and natural gas hydrate in oil and gas basins.

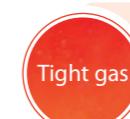


### Promoting the Effective Connection between Resources and Demand and Stable Supply in the Market

While consolidating our resource base, we actively promoted the connection of multiple gas sources. As a result, we have put in place a configuration of gas transportation and allocation in which long-distance natural gas pipeline networks play a leading role, and LNG and gas storage play a supplementary role, in order to meet the needs for gas supply in different periods (for details, refer to P20 "Pushing Forward Pipeline Network Construction").

### Promoting the Development of Unconventional Gas

In 2016, the Company steadily promoted the exploration and development of tight gas, shale gas, coal-bed methane and other unconventional natural gas resources.



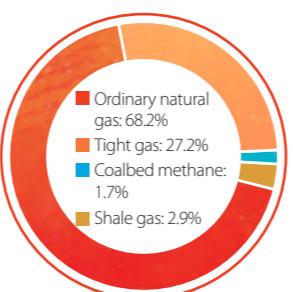
We set up the National Energy R&D Center for Tight Oil and Gas to improve tight gas development efficiency.



We accelerated construction of coalbed methane production bases, promoted extensive development, and set up the most advanced CBM laboratory in China. Baode Gasfield, China's largest low rank coal methane field was completed and put into operation. Two coalbed methane production bases in Qinshui and Edong realized reserve growth and large-scale development.



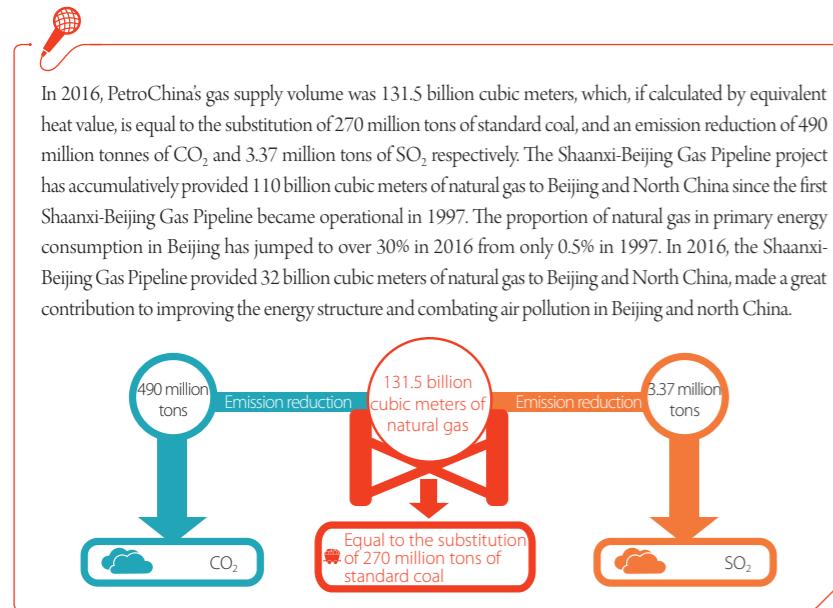
PetroChina chose favorable development zones and formed six major technology series with platform horizontal well fracturing as the core technology and matching domestically-produced toolkits, realizing large-scale production and efficient development. By the end of 2016, two state-level shale gas demonstration zones at Changning-Weiyuan and Zhaotong achieved production capacity of 3 billion cubic meters.



Components of PetroChina's domestic natural gas production in 2016

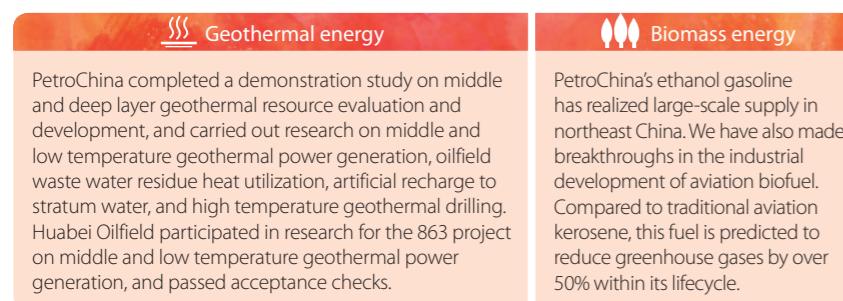
## Facilitating the Utilization of Natural Gas and Alternative Fuels

We actively cooperated with the government and industry companies to promote the application of natural gas in electric power, the chemical industry, transportation and shipping. In 2016, in the promotion of "coal-to-gas" projects in North China, Sichuan and Chongqing, we supplied stable sources of gas, promoting the smooth implementation of "coal-to-gas" projects in these regions and effectively improving the local environment.



## New Energy

With an eye on the future, we promoted the development of renewable energy including geothermal energy and solar energy, and researched the exploitation and utilization of natural gas hydrate resources, to play a positive role in implementing the nation's new energy strategy and improving China's energy structure.



## PUSHING FORWARD PIPELINE NETWORK CONSTRUCTION

We continuously expanded the building of the oil and gas pipeline network, boosted our transportation and allocation capacity, and optimized the market distribution of resources. By the end of 2016, our oil and gas pipelines in service reached a total length close to 80,000 kilometers and passed through 30 provinces (municipalities and autonomous regions) and the Hong Kong Special Administrative Region, forming an oil and gas network crisscrossing the country and internationally connected.



## Improving Domestic Pipeline Backbone Network

In 2016, the Guigang-Yulin Section and the Jintan-Liyang Section of West-East Gas Pipeline were completed and put into operation, which will effectively enhance resource allocation efficiency and market supply capacity in Guangxi and Jiangsu. The eastern section of the Third West-East Gas Pipeline was completed and put into operation, opening the channel of gas supply to Fujian Province. The construction of Yunnan Oil Products Pipeline, Jinzhou-Zhengzhou Oil Products Pipeline, Anshan-Dalian Pipeline and some other projects made continuous progress. In addition, construction was started on the Fourth Shaanxi-Beijing Gas Pipeline, the Zhongwei-Jingbian Pipeline, and the Second Russia-China Crude Pipeline, further enhancing our oil and gas supply and distribution capacity.

### Case study: West-East Gas Pipeline Project Delivering Clean Energy and Facilitating Low-carbon Transition

In December 2016, the eastern section of the Third West-East Gas Pipeline (Line Three) was opened for gas transmission. After Line Two, Line Three is another pipeline running from the west to the east of China and linked to the Central Asia-China Gas Pipeline. The eastern section of Line Three will help eastern China realize the transition to low-carbon energy and turn the advantages of the resources in Central Asia and Western China into economic and environmental advantages.

The sketch map of the West-East Gas Pipelines



## Expanding Transnational Oil and Gas Transportation Channels

In 2016, PetroChina continued to expand its transnational oil and gas pipelines and promoted the effective integration of resources and the market. Construction of the Second Russia-China Crude Pipeline and the Eastern Route of Russia-China Gas Pipeline has progressed according to schedule.

## ENHANCING INTERNATIONAL COOPERATION

We are actively committed to international oil and gas cooperation, adhering to the international cooperation principles of "mutual benefit and joint development" and complying with the laws, regulations and energy policies of the host countries. Due to our advantages in funding, technology and management, we contributed to the global oil and gas market.

### Overseas Energy Development

Thanks to China's *One Belt and One Road Initiative*, we made new progress in oil and gas cooperation in regions such as Central Asia- Russia and the Middle East. By the end of 2016, the equity delivery of the joint venture and cooperation of the Central Asia-China Gas Pipeline was completed. Our cooperation in the upstream sector in Niger helped the country build a complete modern oil industry system. The cooperation projects not only met local energy demand, but also achieved export sales of refined oil in 2016. We achieved a net overseas oil and gas equivalent output of 201.3 million barrels in 2016.

### Promoting Oil and Gas Cooperation with International Partners

We continue to make steady progress in cooperation with international partners in developing oil and gas resources in China. In 2016, we entered into production sharing contracts with BP in the Neijiang-Dazu and Rongchangbei shale gas blocks of the Sichuan Basin. The Luojiazhai High-Sulfur Gas Field of Chuandongbei Gas Project jointly developed by PetroChina and Chevron was put into operation, which can supply more abundant natural gas to regions including Sichuan and Chongqing. The Changbei Project in Changqing Oilfield in cooperation



**201.3** million barrels

In 2016, the Company achieved a net overseas oil and gas equivalent output of 201.3 million barrels

**5.525** million tons

In 2016, the Company's domestic oil and gas production equivalent in cooperation with international partners amounted to 5.525 million tons

with Shell continued to maintain stable production. Our domestic oil and gas production equivalent in cooperation with international partners amounted to 5.525 million tons.

## Vigorously Expanding International Trade

Supported by our overseas operation centers and trade networks in Asia, Europe and the Americas, we conducted international trading through cooperation and joint ventures in more than 80 countries and regions around the world, further improved our resource deployment capability. In 2016, we reported 360 million tons of international marketing volume, and witnessed improvements in both the scale of our trading and quality of operations.

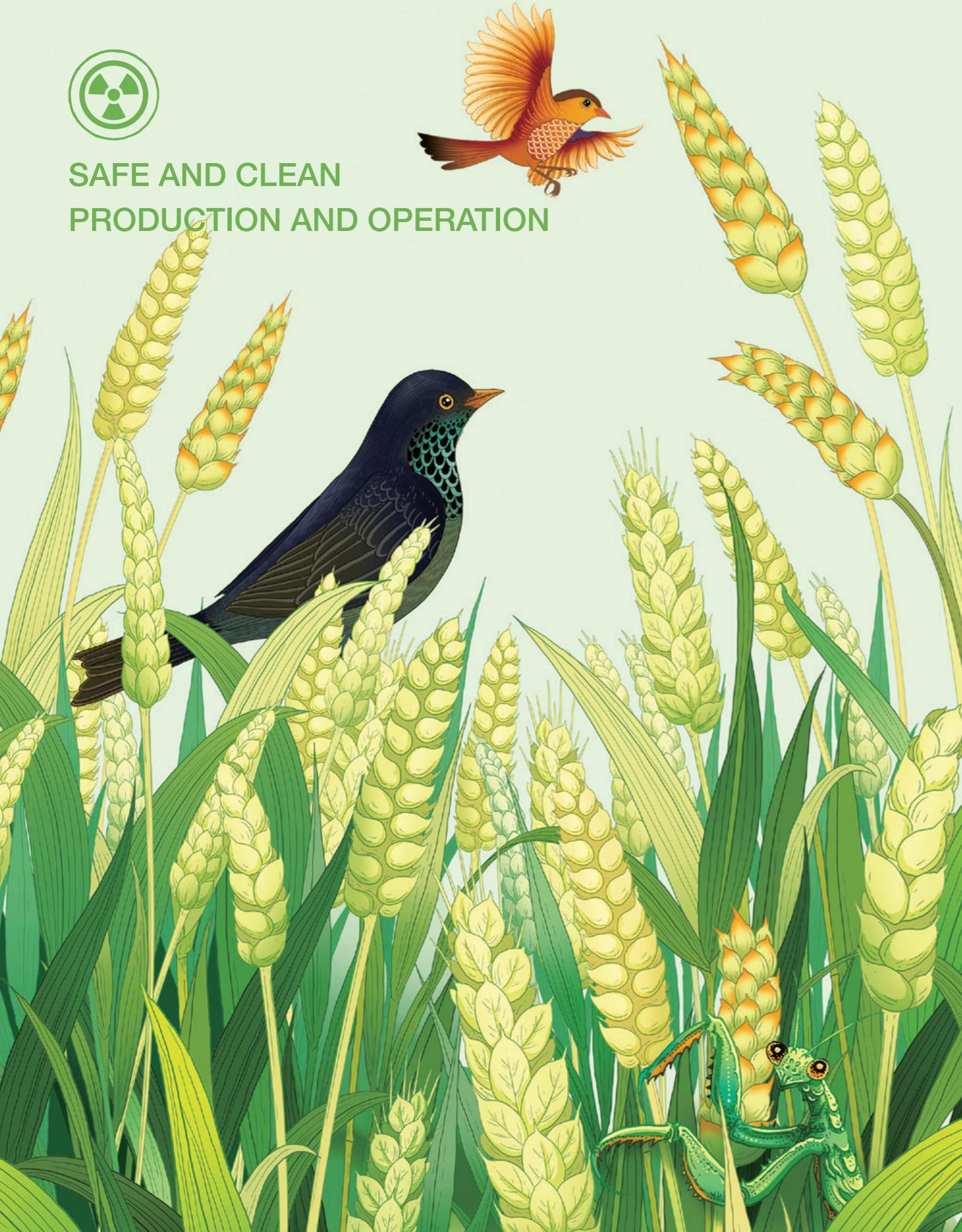
## ENSURING STABLE SUPPLY

Ensuring stable supply is an important social responsibility to PetroChina. To this end, we are strengthening coordination and organizational efforts to establish a sustainable mechanism and give back to society. During peak agricultural periods in the spring, summer and autumn (at the time of spring plowing, summer planting, summer harvesting, summer field management, fall harvesting, fall plowing and fall sowing), during critical moments when natural disasters strike such as earthquakes, heavy rainfall and snowfall, important periods when events are held, and during winter months when gas consumption peaks, we actively mobilize our resources, optimize transport capacity, strengthen on-site services, and ensure a continuous oil and gas supply at our service stations at critical moments and in key areas. In 2016, our refined oil and natural gas supply accounted for about 40% and 70% of the national market share respectively.





## SAFE AND CLEAN PRODUCTION AND OPERATION



The natural environment is essential for humans. Therefore, we incorporate care for people's lives and environmental protection into our corporate mission. Upholding the principles of people-centred, prevention-driven, full staff participation and continuous improvements, we endeavor to build ourselves as a resource-conserving, environmentally friendly and safely producing business with the goals of zero injuries, no pollution and zero accidents.

### IMPROVING HSE MANAGEMENT

Work safety and environmental protection is a prerequisite which secures our steady development. In 2016, we attached great importance to health, safety and the environment (HSE), gave top priority to safety and environment in our operations, and reinforced our HSE system. By improving the management system and implementing stricter inspection of responsibility fulfillment, PetroChina closely monitored workplace safety results, strengthened hazard control, and endeavored to enhance HSE management performance. As a result, our overall HSE performance was stable and improved in 2016.

#### Improving HSE Management System

The Company carries out system audits covering all units twice a year. In 2016, we further improved the "Criteria for Quantification Review and Assessment of the HSE Management System" and conducted comprehensive HSE quantification review in the whole system, and strengthened auditing of leadership competency and process control. We selected 2,282 experts to conduct systematic auditing in 114 subsidiaries, and conducted quantification review to 93 production enterprises at 1,936 operation sites.

#### Conducting HSE Standardization at Grassroots Level

To ensure HSE management keeps pace with our daily production and operations, we carried out HSE standardization at the grassroots level. We promote HSE standardization at grassroots level to provide conventional operations with guidelines and unconventional operations with binding regulations. All operations at grassroots level are regulated and guided by standards, including post operation, field management and equipment management, so as to ensure all risks are under control.

#### Promoting HSE Training

We vigorously promoted the grassroots level HSE training matrix and organized and developed the compilation of the HSE training matrix and its applications manual for high-risk grassroots posts of main force professionals. We explored the use of the HSE training matrix model for the grassroots-level posts and endeavored to enhance the effect of training through effective training methods such as multiple-way approaches, small scopes and short classes.

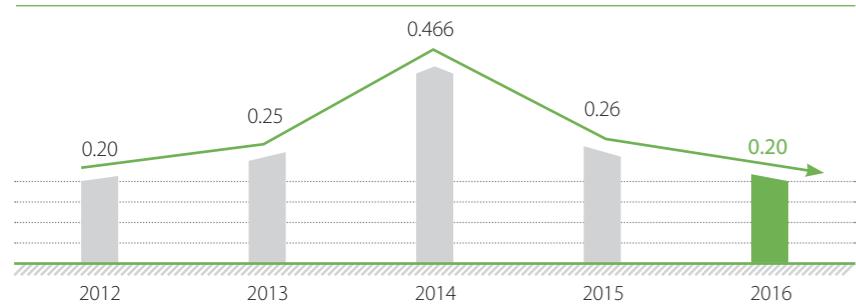




## ENHANCING OPERATIONAL SAFETY

PetroChina sticks to the principles of people-oriented safety management, and believes that safety comes from accountability, design, quality and prevention. We actively promote the building of a long-acting work safety system and raise the entire work safety management level. We have adopted production safety as one of our core values, and implemented this concept in all our sectors and all our production and operation processes. All key work items progressed steadily according to the plan. In 2016, PetroChina saw a stable improvement in its work safety performance, with a continuous decline in the number of production accidents and fatalities. The Company reported no major safety or environmental pollution accidents in the year.

Death rate caused by accidents (person/100 million working hours)



We strive to build a dual-prevention mechanism covering risk prevention and potential hazard control, while improving classified risk control and close-loop hazard management, in order to eliminate risks and potential hazards before they occur. We emphasize management of key links and areas including high-risk operations. Safety and environmental protection technology diagnosis and management assessment are carried out on key subsidiaries, key projects and high-risk areas to ensure that major risks are under control.

### Pipeline Hazard Control

We attach great importance to hazard prevention and control to effectively improve the intrinsic safety of the Company. In 2016, we continuously carried out special investigation and rectification activities on pipeline hazard control and accomplished the target of rectifying potential hazards on long-distance pipelines.

### Hazardous Chemicals Management

The Company continues to strengthen safety supervision of hazardous chemicals. Besides reinforcing safety education and training regarding hazardous chemicals, we set up a hazardous chemicals safety technology center, and pushed the construction of an information platform on hazardous chemicals safety supervision. Inspection and treatment of potential hazards were carried out at chemical tank farms, with the rectification rate of key potential hazards in tank farms reaching 98%.

20%

The number of fatalities in production accidents dropped by 20%

The Company reported no major safety accidents in the year

12

Safety and environmental technology diagnosis and management assessment were conducted at 12 key subsidiaries and projects, and significant problems and major hazards were handled with follow-up measures.

100%

In 2016, rectification rate of long-distance pipeline hazards reached 100%

98%

In 2016, rectification rate of chemical tank field hazards reached 98%

## Emergency Management

In 2016, we revised and improved our emergency plan system at the headquarters level, carried out emergency drills through "scenario construction", and intensified our efforts in emergency training. On-site emergency handling plans and emergency handling work cards were implemented at all subsidiaries, and substantial progress was made in joint regional emergency response and emergency materials allocation.



**Case study: Oil Spill Emergency Response System Covering All Lands and Waters in China**

PetroChina Offshore Emergency Response Center has set up an oil spill emergency response system covering all lands and waters of the country, which is capable of providing emergency rescue in case of oil spills in different environments including rivers, lakes, shallow seas and gulf areas. The Company constantly improves its oil spill emergency plan system in terms of emergency preparedness, warning and monitoring, emergency handling and joint emergency response, in order to ensure that the system is more scientific, targeted and operable.



## Supply Chain Safety

We included suppliers and contractors in our safety management, and conducted whole-process management on their access, selection, training, use, evaluation and assessment. We guided our suppliers to operate in compliance with the law, quality standards and safety regulations. HSE assessment was conducted regularly to prevent and reduce accidents caused by suppliers and contractors. We strengthened contractor training by putting in place unified standards, requirements, and rewards and punishments, in order to build a competent and trustworthy contractor team with standard management and outstanding performance. We regularly assess their HSE performance. Contractors with a record of major accidents were removed from the qualification list.

### Strict screening process

Implement safety qualification screening system for contractors and suppliers  
Establish safety performance records  
Regularly publish the list of qualified contractors, and remove unqualified contractors from it

### Evaluation and assessment

Establish safety performance evaluation system  
Carry out safety capability assessment, daily safety performance evaluation, and comprehensive safety performance assessment  
Strictly hold accountable for those who violate national workplace safety laws, regulations and contracts  
Contractors with major accidents will no longer be engaged



### Capacity building

Promote the holding of dual certificates by contractors' management personnel  
Provide training on HSE system development, audits, management and emergency processing

### Process control

Strictly implement the safety supervision responsibility of contractors, based on the principle that those who undertaking, supervising and implementing the project are held responsible.  
Conduct targeted safety inspection of contractors' oversight

## Offshore Oil Production Safety

The Company strengthened supervision of offshore oil production safety. We carried out special inspections on project commencement in spring, typhoon prevention, offshore operations in winter, and wharf workplace safety. We implemented follow-up measures for major potential hazards. Additionally, emergency response drills were carried out for fire and explosions at offshore oil and gas production facilities, oil spill and pollution, and man overboard. In 2016, we realized stable and orderly operation at our offshore oil production facilities.

## ECOLOGICAL PROTECTION

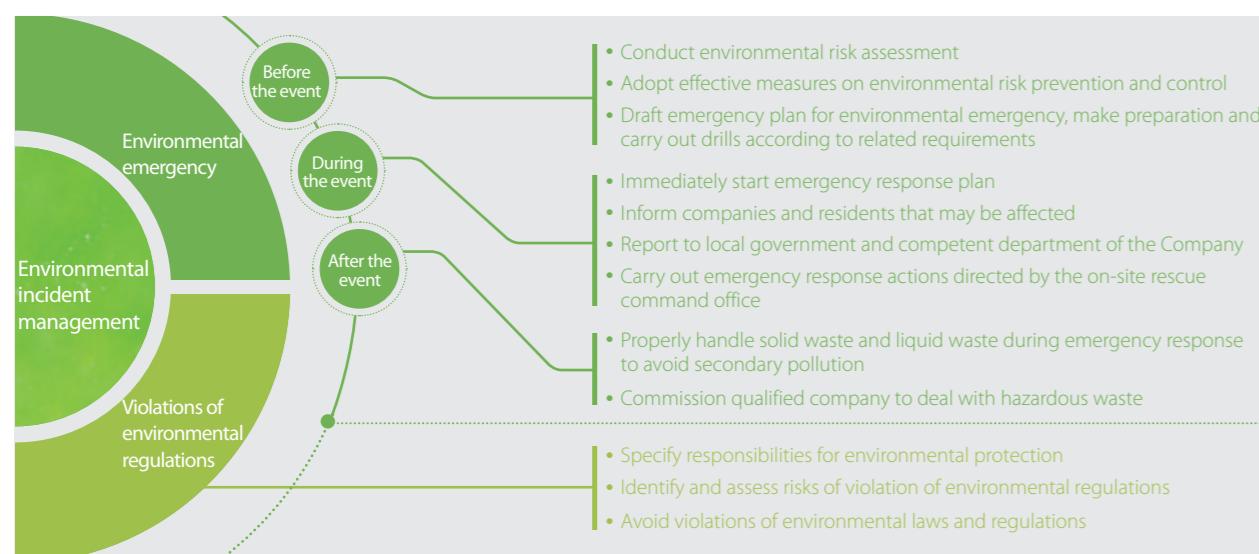
PetroChina respects and protects the environment and strictly complies with relevant international and domestic laws and regulations. We take the initiative to evaluate the environmental impact of our decisions and activities, step up efforts in hazard control and environmental protection during production in order to safeguard our land, water and biodiversity, and reinforce ecological restoration of the environment. By doing so, we endeavor to grow in harmony with the environment.

### Environmental Risk Management

We assess and identify environment risks, implementing a risk prevention and control management model focusing on environmental forecasting, early warning and monitoring. We began the environmental risk management at an earlier stage, and established a sound risk management mechanism featuring "management in tiers, prevention and control by level". In 2016, no major or worse environmental accidents were reported.

We carried out classified management of "six major environmental risks", drafted a targeted control plan, and organized major production subsidiaries to identify potential risks at enterprise-level and implemented risk control measures, so that risk management measures can be implemented at every level.

In 2016, we released administrative measures such as *PetroChina's Administrative Measures on Environmental Incidents* and *PetroChina's Regulations on Oil Pipeline Environmental Risk Prevention and Control* to strengthen the management of environmental emergencies and environmental risks, and to control, reduce and eliminate the danger caused by environmental incidents.



Farming besides the oil well

We constantly reinforce our environmental monitoring capabilities. The Company completed the installation and data networking of online monitoring equipment for waste water and waste gas, and performed real-time monitoring and early warning of discharges from major pollution sources. To strengthen supervision and evaluation of subsidiaries, we set up the environmental monitoring network featuring "three-level environmental monitoring, environmental emergency monitoring and online monitoring of pollutants", which ensured treatment at the source, and control over the production process.

### Case study: Real-time Environmental Risk Management by Using Internet Technology

We actively integrate internet technology with our ecological conservation practices. The Pollution Sources Online Monitoring System was set up, realizing networking and sharing of ecological data. With 45 functions divided into six modules, the system can accurately monitor, calculate and analyze the emission data of each monitoring point in real time; monitor emissions from key sources in real time and assess the operating results of environmental protection facilities; and collect and analyze the alarm data.

In case of an environmental accident, the Pollution Sources Online Monitoring System can be used as the environmental emergency monitoring and decision-making platform. It can receive, analyze and process the emergency monitoring data, video images of the accident and weather conditions, and integrate the functions of GIS space analysis, pollutants migration simulation, environmental alert and consultation on final decisions.

By the end of 2016, 304 key monitoring points of PetroChina had completed data networking, covering 87 waste water and 217 waste gas discharge outlets in the national monitoring list of key enterprises. These monitoring points are located in oil and gas fields and refining & chemical enterprises in 13 provinces (municipalities and autonomous regions).

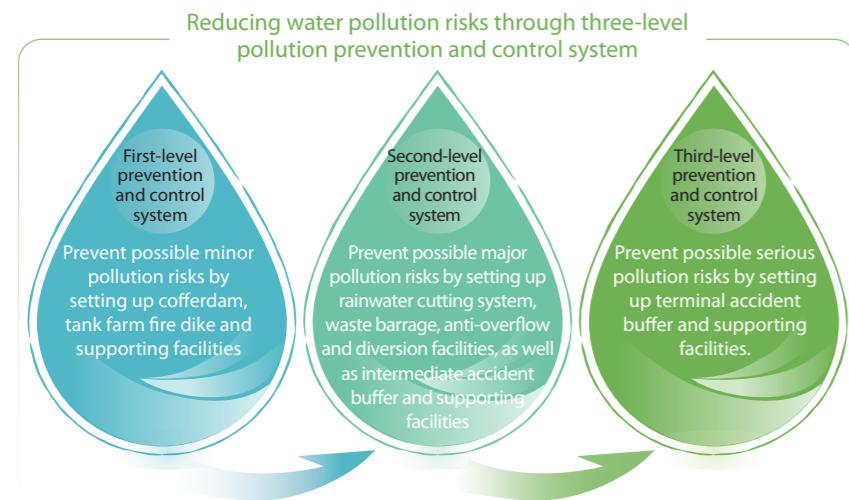
## Water Management

We strictly complied with applicable laws and regulations protection of water and other resources. For this, we established specific management regulations and implementation rules covering all production units, staff and processes relevant to the Company. PetroChina endeavors to improve water utilization efficiency throughout its production and operation activities. Through measures including strengthening water conservation management and water-saving technological transformation, we reduced our use of fresh water and enhanced water efficiency.

1.31%  
In 2016, the Company reduced overall freshwater consumption by 1.31% year-on-year.

### Water Resource Management Covering the Entire Industrial Chain

 Exploration and Development	 Pipeline Operations	 Refining & Chemicals
<p>In our oil and gas development activities, equal importance is given to water pollution prevention &amp; control and water recycling. After the oil-water separation and filtration treatment of the recycled wastewater, oil recovery and water reinjection were realized, preventing groundwater and surface water contamination. By the end of 2016, 100% of oil extraction wastewater in all oil and gas fields was treated, with a reinjection rate of 95%.</p> <p>We carried out water system maintenance and reconstruction, improved the water qualification rate, optimized operation programs, and upgraded waste water discharge and treatment processes to reduce production water discharge, and promoted the application of new technologies for water treatment to maximize water conservation. In 2016, the comprehensive water qualification rate of the Company's oilfield wastewater reached 100%, and water discharges were reduced by 10% year-on-year.</p>	<p>We focused on managing the impact on water resources of construction projects and the risk of leakage accidents during pipeline operations. Environmental impact assessments (involving water environment) were conducted, and water conservation and protection concepts were assimilated into construction activities.</p>	<p>We improved water use efficiency by promoting clean production processes, saving water from the source, and optimizing water systems. We increased the concentration ratio of circulating water to reduce water supplement; and strengthened steam condensate water recovery to realize water saving. In addition, we emphasized wastewater treatment and reuse to reduce sewage discharge and improve the industrial water recycling rate; and enhanced plugging of underground pipelines to get lower groundwater loss rate.</p>



We set up a safe, timely and effective pollution prevention and control system, conduct environmental risk assessment, and adopt necessary prevention measures to control water pollution risks and prevent oil spill accidents. Comprehensive inspection is carried out within the Company, and a three-level prevention and control mechanism against water pollution accidents is implemented at enterprises located close to rivers and lakes or near where public water pollution is possible.

### Decommissioning and Land Restoration

The Company attaches great importance to the protection of land resources. We formulated *Measures for Land Management*, make careful and intensive use of land during production, strictly controlling land use growth, and optimize use of land through various ways such as active reclamation, and carrying out environmental treatment and recovery in mining areas. Changqing Oilfield managed to save 15,000 mu of land in 2016, thanks to a number of measures, such as the extensive use of cluster well and horizontal well technologies, optimizing well pattern arrangement, and integrative planning of terminals and station.

1,135 hectares

In 2016, the Company saved land of 1,135 hectares.



In 2016, comprehensive control of VOCs emission was conducted, the VOCs comprehensive control information platform for refining enterprises was set up.

Feasibility study	Construction and operation	End of project
<p>Compile land reclamation plan to be reviewed by local land resources department</p> <p>List land reclamation expenses in the total investment of the project</p>	<p>Apply technologies including cluster well groups, horizontal wells, combined station construction, and multi-layer development</p>	<p>Choose contractors for land reclamation and conduct construction process supervision</p> <p>Acceptance check and handover of reclaimed land</p>

Southwest Oil and Gas Field implemented land reclamation management through the entire life cycle of the projects. From 2011 to 2016, a total of 191.22 hectares of land were reclaimed at the oilfield, and 100% of the reclaimed land was turned into grassland or forest.

### Waste and Emission Management

At PetroChina, environmental protection has always been a top priority. Therefore, we strictly implement national and local environmental laws and regulations. We issued the *Opinions on Strengthening Environmental Protection*, and focused on water pollutant prevention and control, air pollutant prevention and control, and solid waste pollution prevention and control in our environmental efforts. Through total emissions control, we ensured emissions in compliance with the established standard. We developed and implemented the *Regulations on Environmental Protection, Measures for Environmental Event Management* and other provisions, promulgated the *Guidance on Waste Gas Emission Management, Guidance on Waste Water Emission Management, and Guidance on Solid Waste Management*, put forward the requirements for whole-process pollution control featuring "prevention, recycling, treatment and disposal", and incorporated prevention of pollution at source, process control and end-of-pipe treatment into the whole process of production. We also implemented classified and hierarchical management, and strictly assessed the process of pollution sources.

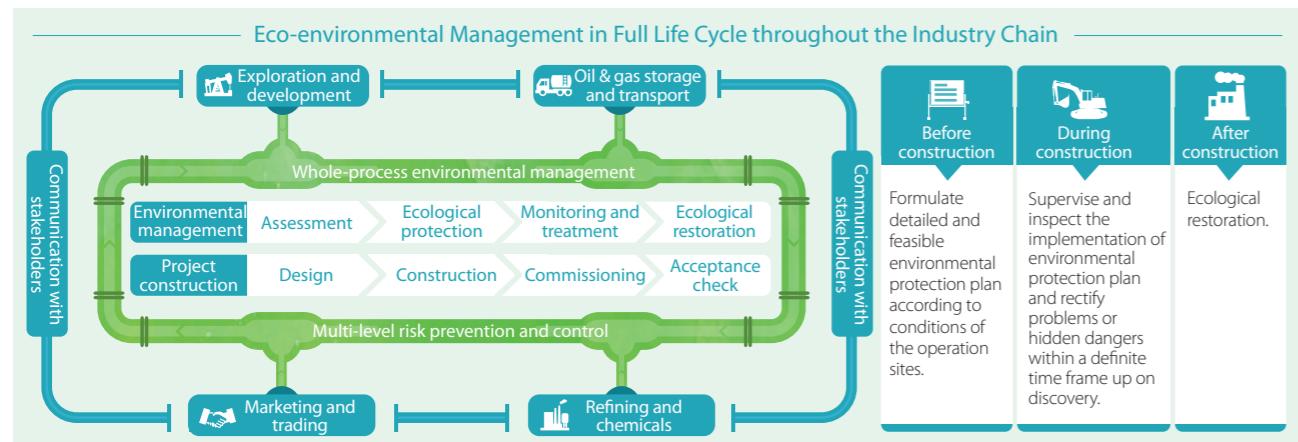
In 2016, we implemented 58 projects to reduce emissions, including 49 on waste gas emission reduction, and nine on waste water discharge reduction. Emissions of sulfur dioxide, ammonia nitrogen, COD and nitrogen oxides dropped year-on-year respectively.

### Key State Laboratory for Pollution Control and Treatment of Petroleum and Petrochemicals

Key areas	Petroleum and petrochemical wastewater treatment and reuse	Solid waste recycling	VOCs detection and recycling	Field pollution risk prevention and restoration
Research achievements	Packaged technology for upgraded processing of refinery waste water based on advanced oxidation pretreatment - in-situ upgrading - in-depth processing	Packaged technology for resource treatment of drilling waste while drilling	Packaged technology for wet desulfurization and low-temperature denitrification of catalyst regeneration flue gas for catalytic cracking units	Packaged technology for restoration of petroleum hydrocarbon contaminated sites
Application effect	Solved difficulties such as biological inhibition and poor biodegradability of point source wastewater Met requirements of new standard for Chemical Oxygen Demand (COD) and ammonia nitrogen Applied in the upgrading of wastewater treatment in subsidiaries such as Lanzhou Petrochemical	Realized drilling waste recycling rate of 100%, and clean drilling operation with zero solid or liquid waste emissions Promoted in natural gas wells in Sichuan-Chongqing Region, generating RMB 80 million in economic benefits	Emitted SO <sub>2</sub> and NO <sub>x</sub> with concentration lower than 50ppm which met ultra-clean emission standards, and denitrification catalyst reached international advanced level Completed desulfurization and denitrification projects at 20 plants, saving RMB 130 million for technology introduction and catalyst costs	Applied in waste storage locations in Jilin, and several service stations and oil-contaminated coastlines in Hebei, providing technical support for site pollution prevention and control for oil enterprises Obtained four invention patents, two utility model patents and one software copyright

### Conservation of Biodiversity and Natural Habitats

We are devoted to reducing the potential influence on ecological environment and biodiversity during production and operation, and take full precautions to avoid environmental impact and work hard to restore the environment to its original state in case of any adverse impact. Environmental management is implemented in full life cycle throughout the industry chain. In 2016, we comprehensively checked and rectified environmental pollution and ecological damages, and reduced the impact on the ecological environment through noise reduction, emission reduction and other means. We endeavored to reduce the occupation of arable land, and put a lot of efforts in the conservation of soil and water and in restoring the vegetation, working hard to restore the ecological environment and protect the biodiversity of our operation areas.



### Case study: Green Drilling to Protect the Environment

PetroChina integrates environmental protection into the whole well-drilling cycle and takes all kinds of measures to protect surface and underground water. During the drilling process, we use eco-friendly mud, strengthen recycling of drilling waste, and conduct standard treatment of waste liquid. By the end of 2016, PetroChina recycled 1.05 million tons of drilling waste and the reuse rate of waste liquid reached 80%.

Eco-friendly mud	Recycling of drilling waste
<ul style="list-style-type: none"> <li>Conduct R&amp;D and upgrading of eco-friendly mud: oil-based mud – water-based mud – eco-friendly mud</li> </ul>	<ul style="list-style-type: none"> <li>Use bio-safety treatment technology for drilling waste</li> <li>Adopt solidified disposal and bio-safety treatment to drilling detritus and waste mud, which become useful building materials reaching environmental and building material strength standards</li> </ul>

The green drilling philosophy and technology is widely applied in PetroChina's global operation. For example, in Chad, the Company uses a close-loop treatment system to separate, treat and reuse waste mud, and turn it into mud plate and clean water to be used in well station construction and mud mixing.

### PROMOTING ENERGY CONSERVATION

The Company endeavors to reduce the consumption of fossil fuels and increase energy efficiency by reducing energy intensity. We pay attention to energy conservation at the source, and carry out energy-saving assessments of newly-developed, revamped and extended projects. We promote the application of energy-saving technologies and equipment to boost the efficiency of heating furnaces in oil and gas fields and optimize refining and chemical energy systems. We reinforce energy use management in the production process, and conduct monitoring and evaluation of energy and water-intensive devices and equipment.

- Five oil and gas subsidiaries including Daqing Oilfield and seven refining companies including Jilin Petrochemical received the award of the "National Advanced Unit in Petrochemical Industry in the 12<sup>th</sup> Five-Year Plan".
- Dushanzi Petrochemical was selected as the energy efficiency leader of the ethylene industry by the Ministry of Industry and Information Technology, the National Development and Reform Commission, and the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China in 2016.

133%

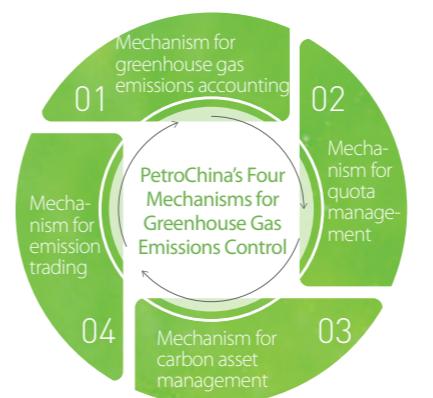
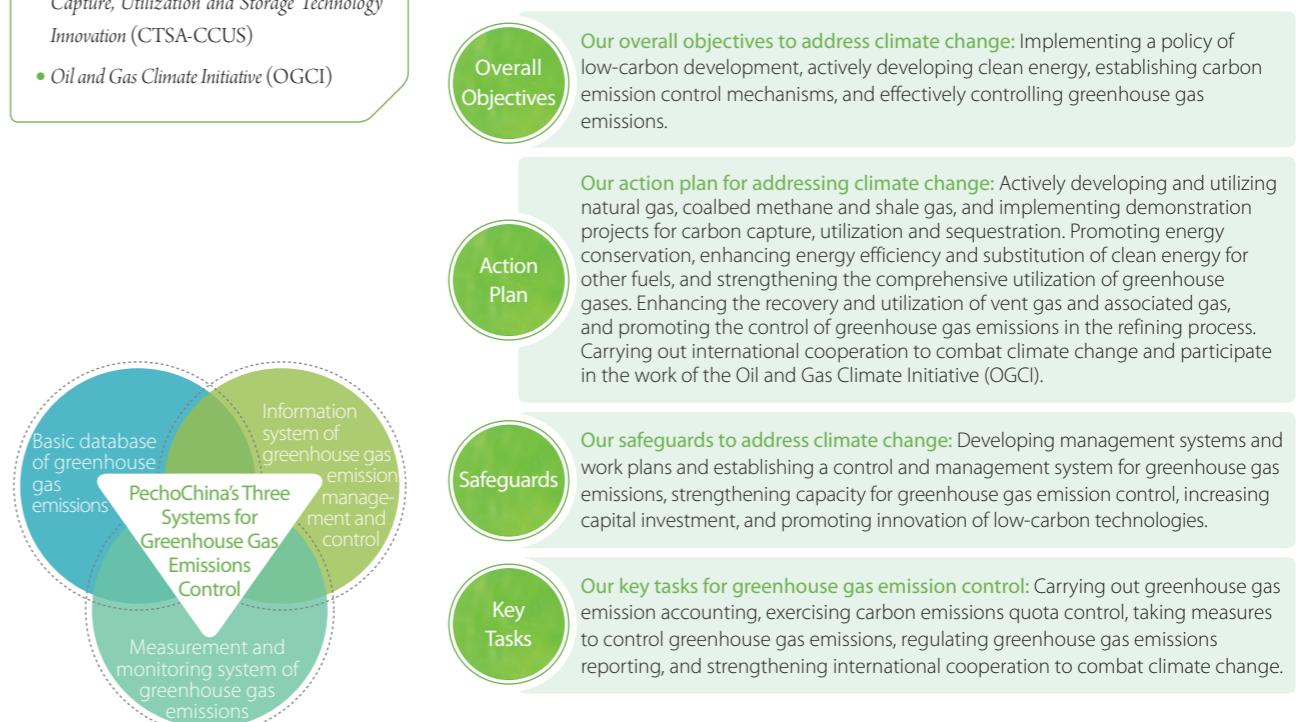
In 2016, the Company realized energy saving of 870,000 tons of standard coal, which is 133% of our annual plan

### RESPONSE TO CLIMATE CHANGE

At PetroChina, we support the goal of limiting global warming to less than 2 degrees Celsius by the end of this century. To this end, we actively respond to climate change, devote ourselves to low-carbon development, and share the practice of greenhouse gas control with industry peers and all segments of society.

#### Carbon Emission Management

We pay close attention to greenhouse gas emissions and have addressed climate change in our development plan. In 2016, we specified our objectives, action plans, safeguard measures and key tasks to address climate change. We focused on carbon footprint verification and built basic management databases, in order to lay the foundation for carbon emissions accounting and reporting.



#### Development of Low-Carbon Energy

As an advocate and practitioner of the low-carbon economy, we actively developed natural gas, coal bed methane (CBM), shale gas, biomass and other low-carbon energy, produced and supplied clean products, and worked hard to achieve clean production of the products and the consumption process (see P17 Chapter 2: Sustained Energy Supply for details).

#### Development and Application of Low-Carbon Technologies

As the application of science and technology plays a significant role in controlling greenhouse gas emissions and addressing climate change, we carried out special low-carbon studies and conducted R&D of low-carbon technologies, established major projects in key technologies for low-carbon and clean development, and engaged in scientific and technical research on CO<sub>2</sub> flooding and storage, aviation bio-fuel production, refining energy system optimization and other areas.

## PetroChina's Achievements in Low-Carbon Research

	Achievements	Application Effect/Prospects
Strategies and policies	Research on policies, standards and strategies for low-carbon development	We established the low-carbon data management platform and comprehensive low-carbon evaluation index system, and the statistical and accounting standard for greenhouse gases from upstream and downstream enterprises, providing technical support for greenhouse gas emissions accounting and reporting, as well as carbon emission benchmark value accounting of the Company.
	Research on evaluation index systems for energy saving and emissions reduction	We developed evaluation index systems, energy efficiency benchmarking and pollutant emissions reduction benchmarking techniques for energy saving and emissions reduction. We also established index database framework for energy efficiency benchmarking and pollutant emissions reduction benchmarking. As demonstrated by pilot applications, the index systems have high practicality and can provide strong support for the implementation of our energy saving and emissions reduction projects.
Technologies	Carbon dioxide flooding technology	The technology was deployed in industrial tests at Jilin and Daqing oilfields. By the end of 2016, nearly 2 million tons of carbon dioxide was injected, and a total of nearly 700,000 tons of oil was produced.
	Biomass energy development technology	Significant progress was made in core technologies for aviation biofuel production, and key technical and economic indicators reached an internationally advanced level. The packaged technology for aviation biofuel production with independent intellectual property rights has great significance to the partial replacement of petroleum resources, the reduction of greenhouse gas emissions and the improvement of the environment.
	Energy system optimization technology	The technology has been comprehensively promoted and applied in the Company, saving at least 200,000 tons of standard coal per year. It features increased refining and chemical integration, and is deeply integrated with information technology, playing an important role in the highly automated and intelligent development of the refining and production process.
	Vent gas (associated gas) recycling technology	The technology enabled the closed gathering, transportation and treatment of associated gas throughout the production process, and was applied in Changqing and other oilfields. It is expected to recover 200 million cubic meters of natural gas each year.
	CBM development technology	We innovated and developed a series of CBM development technologies focusing on high-efficiency drainage and stimulation. In 2016, we produced 1.68 bcm of marketable gas (totaling 7 billion cubic meters), equivalent to reduction of 25.2 million tons of carbon dioxide emissions (totaling 105 million tons).
	Geothermal energy utilization technology	We improved standards for the evaluation of geothermal resources in oil regions, established the geological model for geothermal field development, and developed geothermal resources evaluation software. We optimized abandoned exploration wells, prepared scheme design for underground direct heat transfer, and evaluated the economic efficiency of absorption heat pump technologies.

## Carbon Emission Reduction During Production

While supplying society with clean oil products, we pay significant attention to optimizing the energy utilization structure within the Company. We also care about carbon emissions and the carbon footprint during production and operation. In Huabei Oilfield, Tarim Oilfield and other areas, we used renewable energies, such as geothermal energy and solar energy, to reduce carbon emissions during production.

## Forest Carbon Sequestration

We actively support carbon sink forest construction and forestation activities in China. We participated activities of China Green Carbon Foundation, which is jointly set up by CNPC and the State Forestry Administration. Together with the State Forestry Administration, China Green Carbon Foundation built an accumulative total of 331 million mus of carbon sink forests. In addition, we set up the Forestation Committee to ensure forestation in our factory districts, staff communities and living areas.



**331** million mus

In 2016, the China Green Carbon Foundation together with the State Forestry Administration, building an accumulative total of 331 million mus of carbon sink forests, equivalent to the area of 3,090 football fields

## Carbon Sink Forest Construction Projects Participated/Operated by PetroChina through China Green Carbon Foundation

	Location	Area
Forestation projects supported by China Green Carbon Foundation	Shaanxi	100,000 mus
	Inner Mongolia	100,000 mus
	Hebei	50,000 mus
	Anhui	50,000 mus
	Hunan	100,000 mus
	Yunnan	400,000 mus
Forestation projects operated by PetroChina through China Green Carbon Foundation	Sichuan	200,000 mus
	Dingxi, Gansu	20 million mus
	Qingyang, Gansu	20 million mus
	Zezeng, Heilongjiang	80 million mus
	Beijing	23 million mus
	Dingzhou, Hebei	20 million mus
	Wuhan, Hubei	100 million mus
	Lin'an, Zhejiang	7 million mus
	Longzhou, Guangdong	30 million mus
	Shantou, Guangdong	30 million mus

 **Case study: Supporting the Paris Agreement and Promoting Carbon Emission Reduction in the Oil and Gas Industry**

As a responsible energy company, PetroChina acts in strict compliance with the Chinese government's requirements on greenhouse gas emission reduction, and actively supports and participates in the international communities' efforts to address climate change. Robust international cooperation is required to combat climate change. In 2015, CNPC joined the Oil and Gas Climate Initiative (OGCI). Together with CNPC, PetroChina takes the initiative in carbon reduction and sequestration, and pledges to help all participants, governments, industrial sectors and individuals to jointly invest in a future of lower carbon, in order to play a leading role in emissions reduction in the oil and gas industry.



Since becoming a member of the OGCI, CNPC has been actively involved in all types of activities within the OGCI framework, and has worked closely with member companies such as BP, Total and Shell.

Established the OGCI work leading group to ensure the execution of various endeavors. The OGCI work leading group is composed of three working groups: Carbon Capture, Utilization and Storage; Low Emissions Roadmap; and Managing Methane Emissions. The working groups carry out joint research with their respective member companies, and released phased research reports at the CEO Summit in early November 2016.

Actively participated in the preparation of OGCI's new management regulations. Through respective teleconferences with the executive committee members from BP, Total, Shell, Saudi Aramco and other member companies, CNPC appreciated the cooperative relations among these companies, coordinated their opinions on important issues, and ensured that the Company's viewpoints were fully understood and addressed.

Actively participated in the Climate Investments (CI). CNPC took part in the work of the OGCI Climate Investments preparatory group, followed the work in progress, and invested in demonstration projects in low-carbon areas jointly with member companies. The member companies will invest USD1 billion over the next 10 years to accelerate development of innovative technologies, and the investment will be made mainly in technologies development, demonstration projects and emerging projects.



## CUSTOMER-FIRST MARKET SERVICE



At PetroChina, quality is our lifeline and the foundation of our corporate value, brand and image. It integrates technological innovation, resource allocation and human resources, and wholly reflects our systems, culture and integrity. As a leading producer and supplier of petrochemical products in China, PetroChina continues to optimize its product structure, while attaching paramount importance to the environment, safety and quality, and people. We endeavor to enhance quality management by focusing on the development and revision of standards, supervision and inspection, and nurturing a culture of quality, in order to provide customers with clean, high-quality and diversified products as well as excellent services.

### ENHANCING QUALITY MANAGEMENT SYSTEM

We strictly complied with applicable laws and regulations on quality management. For this, we established specific management regulations and implementation rules covering all production units, staff and processes relevant to the Company. Giving top priority to quality, we intensified quality management and control, and put into practice the State Council's *Quality Development Program 2011-2020*. We continually improved our quality management system, enhancing quality measurement and standardize quality management, and honoring our quality commitments. This is to ensure the safety and environmental quality of our products, and to achieve high-efficiency and stable development. In 2016, we focused on improving quality supervision, enhancing metrological verification capacities, and developing and revising quality standards. As a result, we saw continuous improvements in our quality management.

Main Work	Content
System construction and integration	<p>Promoted management system integration and quality management system certification.</p> <ul style="list-style-type: none"> <li>System integration was tested and put into trial operation at five subsidiaries.</li> <li>100% of our production and operation subsidiaries passed quality management system certification by a third party.</li> </ul>
Quality supervision and inspection	<p>We carried out supervision and spot-checks on the quality of the products we produced, sold, procured and used, as well as the quality of construction projects in progress. We regularly reported quality hazards and announced quality risks of major projects, and adopted "zero tolerance" against unqualified products.</p> <ul style="list-style-type: none"> <li>Promoted business management innovation, and investigated and punished suppliers of non-conforming products.</li> <li>We shifted our focus of supervision and inspection from the product qualification rate to the problem identification rate.</li> <li>We carried out spot checks on the product warehouses of our subsidiaries, increased the coverage of supervision and inspection, and released the results from the spot check in a timely manner.</li> <li>We attach equal importance to project quality and quality behavior. Focusing on identifying major potential quality hazards, we realized the full coverage of supervision and inspection of projects under construction.</li> <li>By combining "daily supervision and expert inspection and supervision", we strengthened quality supervision of major projects under construction including the fourth Shaanxi-Beijing Gas Pipeline and the Second China-Russia Crude Pipeline.</li> </ul>
Formulation and revision of standards	<p>We strictly implemented mandatory standards, actively upgraded corporate standards, participated in the formulation and revision of national and industry standards with the establishment of a complete, consistent, advanced, and internationally recognized standard system, and accelerated the internationalization process of standards.</p> <ul style="list-style-type: none"> <li>We formulated and implemented self-declaration and disclosure plan for product and service standards to ensure compliance and effective adoption of standards.</li> <li>32 experts took part in international standardization conferences, and newly led to the formulation and revision of three international standards.</li> </ul>
Metering infrastructure construction	<ul style="list-style-type: none"> <li>Primary standard device of Chengdu branch of the National Oil and Gas Large Flow Metering Station passed construction standard test.</li> <li>Guangzhou branch received national authorization and started verification.</li> <li>Urumqi branch completed operational test and started construction standard test.</li> <li>Oil metering standard device construction moved forward stably, and precision development was carried forward in major oil and gas fields.</li> </ul>
Nurturing quality culture	<ul style="list-style-type: none"> <li>We carried out the Marth 15<sup>th</sup> activity and Quality Month Campaign, released the achievements of Excellent Quality Management Activities, and conducted supervision of product and project quality.</li> <li>62 groups won the National Award on Excellent Quality Management, 22 teams won the Award of National Trustworthy Quality, and four subsidiaries won the title of Excellent Enterprises in Quality Management Team Activity.</li> </ul>



## PROVIDING HIGH-QUALITY PRODUCTS

The Company has set up standards for using our brand identity. We comply with the *Advertisement Law of the People's Republic of China* and other laws and regulations in the advertising campaigns for the company's products and services. The Company established customer data management provisions, and in strict accordance with the provisions as for customer data management and use.

### Focusing on Product Innovation

We optimized the product structure, giving full play to the supporting role of the innovation-driven strategy, actively upgrading corporate standards to enhance in-house scientific management proficiency, and further extending scientific and technological exchanges and cooperation. To meet market demand, we researched, developed and applied new technologies, new equipment and new techniques, and spared no effort in implementing major technical projects at PetroChina and national levels, and sufficient research funding, thereby providing consumers with diverse and high-quality products. In 2016, we developed 1.033 million tons of petrochemical products of 84 new brands.

### Providing High-Quality and Environmentally-friendly Chemical Products

We cultivate high-quality brand products, and provide consumers with environmentally friendly and diversified product solutions.



#### Refining products

- Developed 1.033 million tons of petrochemical products of 84 new brands.
- Important progress was made in automotive fuel tank materials, IBC container materials, special medical materials, and Goodyear materials.
- Mass production was realized for ethylene propylene, NdBR and eco-friendly NBR products.
- Developed production technologies for many chemical characteristic products such as Hexene-1 and highnitrile SAN.
- Major progress was made in the development technologies for olefin polymerization monomer, methanol conversion to olefin, alkylation of benzyl alcohol and high-grade lube base oil, providing technical support for efficient resources utilization, low-cost chemical material production and material production of high-end polyolefin copolymer.



Lanzhou Petrochemical won the award of "2016 Model Enterprise for Industrial Brand Nurturing" from China Petroleum and Chemical Industry Federation.



- As of December 31, 2016, PetroChina completed upgrading to the National V standard at its oil depots and service stations in 31 provinces (municipalities and autonomous regions) (excluding Hong Kong, Macao and Taiwan), supplying the regions with qualified gasoline and diesel of the National V standard.
- National V and above standards of motor gasoline accounts for 45.7% of PetroChina's gasoline sales volume.
- National V and above standards of motor diesel accounts for 21.1% of PetroChina's diesel sales volume.
- At the Ceremony for the 18<sup>th</sup> WIPO-SIPO Award for Chinese Outstanding Patented Invention & Industrial Design jointly organized by China's State Intellectual Property Office and the World Intellectual Property Organization, PetroChina was granted one gold award and five awards of excellence of Chinese Patent.
- In 2016, the Company won 2,315 patents in China.
- As of December 31, 2016, the Company possesses a total of about 11,500 patents home and abroad.

## Continuous Upgrading of Oil Product Quality

With the increasingly strict environmental protection, the demand for oil quality upgrading has grown, and many local governments have called for the earlier completion of oil quality upgrading projects. PetroChina actively responded to the *National Program for Accelerating the Quality Upgrading of Oil Products*. Through increased investment and accelerated R&D and application of new technologies, we promoted the upgrading of gasoline and diesel quality, and continuously improved our capacity to inspect and test product quality. We developed programs for oil quality replacement and upgrading in advance, while our subsidiary companies in sales and refinery operations implemented initiatives promoting production capacity and output. We facilitated several of our subsidiary refineries to deliver oil products of National V standard ahead of schedule, and coordinated and optimized oil products of both the National IV and National V standards.

To ensure the quality of oil replacements, PetroChina strengthened quality testing with a focus on sulfur content indicators. We accelerated the clean-up of remaining oil of the National IV standard at our oil depots and service stations, and all oil products were tested to be qualified before being marked with the National V standard for sale, in order to provide consumers with qualified oil. Several rounds of full-coverage spot checks were conducted to ensure the upgrading of oil products. During the National-V standard oil product upgrading in 11 provinces and cities in eastern China and then nationwide, and for special sources such as imported oil and special periods like the Quality Month, we carried out four rounds of oil quality spot checks, which covered all oil depots of the enterprises checked, as well as all service stations of subsidiaries at prefecture and city level, effectively preventing unqualified oil from entering the market. We carried out installation and transformation of oil and gas recovery units in our oil depots and service stations, and increased investment in the 11 provinces and cities in eastern China implementing the National-V standard.



#### Question: Why does oil quality need to be upgraded?

Answer: Compared with the National IV standard, the sulfur content of gasoline and diesel of the National V standard is 80% lower (down from 50ppm to no more than 10ppm). Based on vehicles with the same displacement, sulfur dioxide emitted by five cars fueled by National V standard gasoline or diesel is equivalent to the sulfur dioxide emitted by one car fueled by National IV standard gasoline and diesel. Once gasoline and diesel are upgraded to the National V standard, nitrogen oxide emissions will be reduced by at least 10% and 7% respectively for gasoline and diesel products, the emissions of hydrocarbons, carbon monoxide and particulate matter will be effectively controlled, and PM2.5 emissions in the tail gas will be directly reduced. In addition, the upgrading can also help to enhance the combustion performance of oil and the stable operation of the engine. Therefore, promotion of the use of gasoline and diesel of a higher standard will be of great significance to the reduction of tail gas pollution and the improvement of urban air quality.

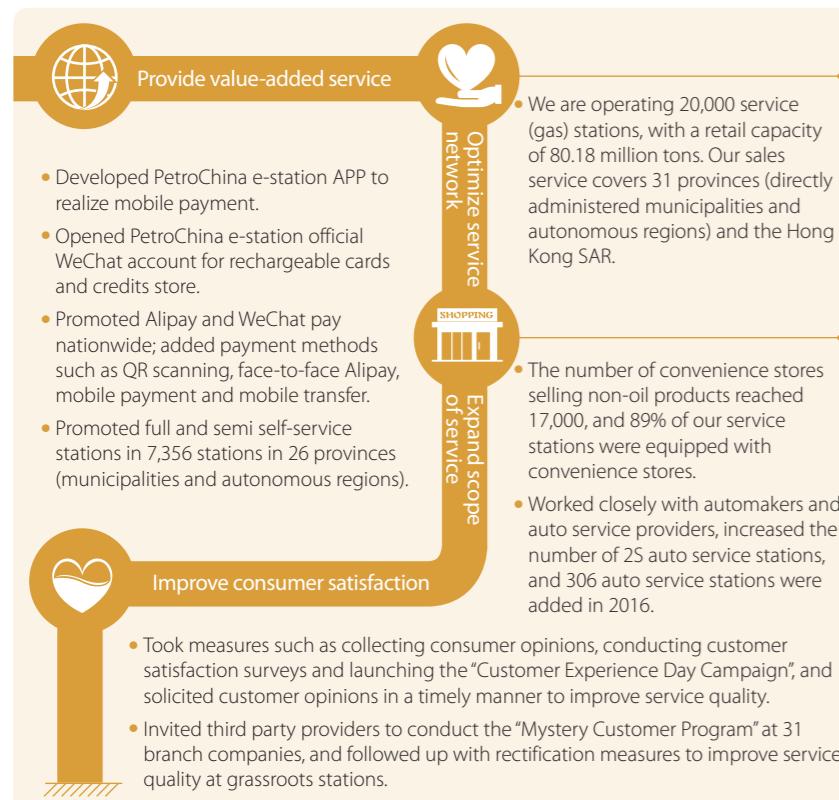
"Living near the service station, we didn't feel very safe in the past as the area used to have a smell of gasoline. But now, as PetroChina is building green service stations, the smell is gone, and we are no longer worried."

—Yan Yanping, resident of a community in Pudong District, Shanghai

## DELIVERING CONSIDERATE SERVICES

We strictly complied with applicable laws and regulations on advertising, labelling and privacy of products and services. For this, we established specific management regulations and implementation rules covering all production units, staff and processes relevant to the Company.

Committed to our pledge on customer satisfaction and upholding our principle of customer focus, we work hard to expand the coverage and functionality of our service network and to enhance our brand value, in order to meet customers' demand for high quality.



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 our company's service stations ranked first in 2016 in the petroleum industry in China.



**"Travel with PetroChina on the Silk Road"**

In 2016, the Company invited 69 customers and journalists, through PetroChina E-station, online and offline recruitment, to take part in the self-driving tour themed "Travel with PetroChina on the Silk Road". Through the activity, participants became familiar with our work at oilfields and refineries, experienced the integrated sales model covering refined oil, fuel cards, convenience stores and lubricants, and enjoyed the "smart lifestyle" at our service stations.



100%

100% of our subsidies passed quality management systems certification by a third party.

100%

Inspection rate of materials before putting in storage reached 100%

98%

First-pass rate of materials inspected before putting in storage is over 98%

## SUPPLY CHAIN MANAGEMENT

At PetroChina, we actively promote the sustainable development of the industry chain, encourage our partners to jointly fulfill our social responsibilities, and provide society with high-quality products and services in a respectful, communicative, honest and cooperative manner.

We have set up a supplier review committee, which includes 54 materials working groups composed of representatives from the relevant departments and subsidiaries of PetroChina. They are authorized to exercise supplier management for relevant materials on behalf of headquarters. Through open tenders, a unified supplier base and online transaction, we provide suppliers with equal opportunities and implement "open business, controlled processes, whole-process documentation, and permanently traceable records" to ensure the quality of the procured products and services. We have also established a complete supplier quality management mechanism which covers quality approval, inspection, supervision and spot-checking, and on-site supervision of the manufacturing of major products. Through the application of information technology and internet, we implemented targeted and comprehensive supervision and inspection to minimize dishonest behaviors. Moreover, at various stages such as the supplier admission, supplier assessment, strategic supplier development, materials and service procurement, tender invitations and tender evaluations, we make clear supplier requirements in terms of business ethics, human rights, HSE, quality standards and public responsibility, so as to build a responsible supply chain in the petrochemical industry.

In 2016, we revised administrative measures on material suppliers, unified requirements on supplier qualification management, and carried out onsite inspections, in an effort to strengthen source management of suppliers and improve the quality of procured materials. We constantly optimized our supplier base and selected suppliers around the world through public bidding and qualification review, and provided suppliers with equal opportunities under public scrutiny. Through the fostering a relationship in a respectful, communicative, honest and cooperative manner and increased cooperation with suppliers, we endeavored to build a global supply resources network, promote the sustainable development of the supply chain and provide the public with high quality products.

### Supplier Management Principles, Systems and Mechanisms

#### Management principles

Open and voluntary, competition and selection; small quantity but high quality, mutual benefits and win-win; dynamic management and resource sharing

#### Management mechanism

Unified management; layered responsibility; authorized procurement; separation of supervision and execution

#### Operating mechanism

Centralized procurement, separate operation, joint participation and effective supervision

#### ① Centralized, two-level management

The headquarters is responsible for management of suppliers of materials within the Class-I materials directory. The supplier management departments of affiliates are in charge of the rest



#### ② System construction

Build a supplier management system framework to regulate supplier evaluation, graded and classified management, and supplier evaluation management. Formulating supplier Management Measures and other regulations



#### ③ Strict access, dynamic management

Establish performance appraisal system, implement survival of the fittest and dynamic management to weed out unqualified suppliers



#### ④ Establish a unified shared resource library

Apply materials procurement management information system, to realize supplier resource sharing and computer-based whole-process management





## PEOPLE-ORIENTED EMPLOYEE DEVELOPMENT



At PetroChina, employees are our most valuable asset. The all-round development of employees is one of our important development targets. We protect employees' rights, care for their health and well-being, and create a platform for their development. We continue to promote the hiring of local staff, and have been strengthening security at our overseas operations. We endeavor to create an inclusive, equal, mutually trusting and cooperative working environment, and to ensure value is aligned to benefit both employees and the Company.

### PROTECTION OF EMPLOYEE RIGHTS

We remain committed to a people-first philosophy in treating our employees with respect and equality while protecting their legal rights. We endeavor to resolve the practical issues that most of our employees concern and make sure that all employees can equally share in the fruits of our development.

#### Fair Treatment of Employees

We strictly abide by international conventions approved by the Chinese government including the International Covenant on Economic, Social and Cultural Rights and Discrimination (Employment and Occupation) Convention, domestic laws including the Labor Law of the Peoples Republic of China and the Labor Contract Law of the People's Republic of China, and relevant laws, rules and regulations of the host countries. We have established a fairly complete employment management and policy system to regulate employment practices according to the law. The system incorporates employment contract management, remuneration insurance and benefits, leave, performance appraisals and vocational training. Through self-inspection of our employment practices in compliance with the law, we regulate recruitment, promotion and termination of employee contracts, and provide effective protection of the legal rights of employees.

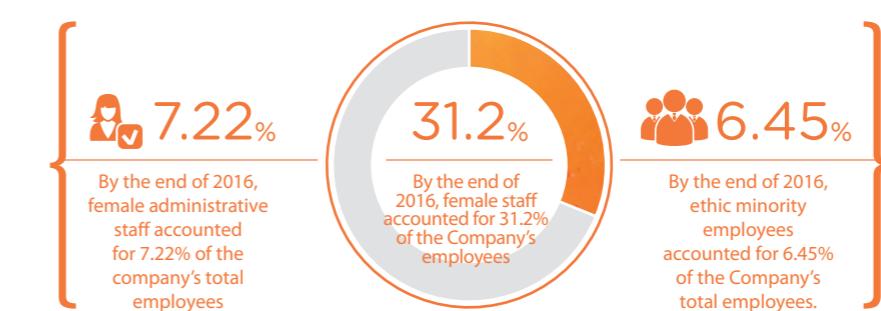
We are committed to providing equal opportunities and fair treatment to all employees regardless of their nationality, ethnicity, race, gender, religion and culture. We prohibit the employment and use of child labor and reject all forms of forced or compulsory labor. We emphasize the employment of local residents, women, ethnic minorities and college students in order to increase job opportunities for local communities. We strictly implement regulations on female employees' confinement and lactation to protect their rights and interests. We continued to recruit from public without restrictions regarding applicants' ethnicity, gender or religion.



	Workforce by Profession
Administrative staff	15.35%
Technical staff	13.52%
Production staff	58.92%
Sales staff	7.42%
Financial staff	2.34%
Others	2.45%



	Workforce by Education
Master's degree and above	3.5%
Bachelor's degree	30.77%
College degree	23.3%
Technical secondary school and below	42.43%



## Remuneration and Benefits

The Company has further improved its performance appraisal and remuneration system, promoted the mechanism to link payroll with performance, established a compensation scheme that pays attention to the value of a position, the job performance and the innovative results of employees while matching the particularities of all staff operations, ensuring that employees' compensation grows synchronously with the Company's business development and labor productivity. The compensation system continues to favor researchers, front-line employees, and those in difficult and key posts, so that each employee can realize their full potential. In addition, we are steadily extending employee coverage of social security programs in accordance with the *Social Insurance Law of the People's Republic of China*, and we have improved supplementary medical care and insurance, corporate annuity and living allowance schemes to ensure employees' interests are addressed.

## Democratic Participation

The Company attaches great importance to employee democracy and their legal rights and employees play a role through democratic management, democratic participation and democratic oversight. Apart from establishing trade unions, PetroChina has put in place a democratic style of management and a transparent system to deal with matters at its plants, through its Employees' Congress system, to ensure employees are well-informed and have the means to participate in and supervise corporate management. We have further standardized the content, procedures and model of our open system for matters at its plants by clarifying rights and obligations, the organizational system, and working processes for the employee representative congress.

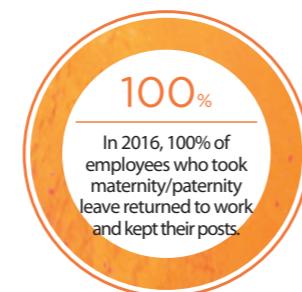
The Company has established multiple channels to communicate with employees and has continued to implement democratic procedures. We communicate across different levels of the Company, and conduct multi-level communication through meetings with staff representatives and online discussions, to encourage employees to participate in the management of production and operations.

### Case study: "General Manager's Mailbox", A Bridge Connects Frontline Employees and Management Team

In order to serve frontline employees and help them overcome their difficulties and problems, Urumqi Petrochemical set up the "General Manager's Mailbox" on the homepage of its website in 2010. By the end of 2016, the mailbox had received hundreds of thousands of clicks. The messages are dealt with in a timely manner, and all are replied by email or phone calls. Around 850,000 visits have been made to the mailbox since the beginning of this program, and it has become a bridge that connects the frontline employees and the management team.

## OCCUPATIONAL HEALTH

We abide by the *Prevention and Control of Occupational Diseases Act of the Peoples Republic of China* in our occupational health management, focusing on the prevention and control of occupational hazards as well as the implementation of related measures. We give top priority to employee health and personal safety by emphasizing occupational health management and protection at field operations, adopting mechanized production to reduce labor intensity and improve working conditions, and caring for employees' mental health.



In 2016, we released *Occupational Health Management Measures* to improve the management of occupational health. We also issued the *Guideline on Assessment of Occupational Disease Hazards and Medical Staff Competency of Overseas Projects*, and set up an industry-leading quantitative assessment system on occupational disease hazards covering nine indicators of six categories, and the deployment matrix of medical staff. We conducted special programs to deal with occupational disease caused by dust and promoted the use of surveillance cameras at dangerous workplaces to reduce occupational disease hazards. A program with specific hardware and software standards was launched, which enables doctors from hospitals in Beijing, CNPC Central Hospital and overseas projects to conduct joint consultations. We also organized heads of related departments from our subsidiaries to participate in training sessions on occupational health.

We pay close attention to our employees' mental health, and take measures to continuously improve the employee vacation system. We implemented the Employee Assistance Program (EAP), set up a hotline and a website for psychological counseling, and carried out various forms of training on mental health knowledge, in order to encourage employees to adopt a positive and healthy attitude. In 2016, we set up the first full-service psychological decompression chamber under the Company's Employee Assistance Program (EAP). The Company continued to implement mental health projects overseas such as hotlines and face-to-face counseling, and saw a substantial increase in hotline services. We continued to send psychological experts to projects in many countries, such as Mongolia, to carry out training and provide counseling services. In addition, we employed counselors to deliver lectures on cultivating a healthy mind and related psychological knowledge for frontline employees working in saline wastelands, deserts and other harsh natural environments, in order to help them cope with stress.

### Case study: PetroChina won 2016 International EAP Quality Award

The Employee Assistance Program Association (EAPA) is the world's largest and oldest EAP association, and represents the highest standards of international EAP implementation. In 2016, PetroChina won EAPA's "International EAP Quality Award", the highest honor won by Chinese corporations in the field of EAP.

Since 2008, when PetroChina's EAP was launched, it has progressed steadily in terms of its service content and form, and its international perspective, and now covers over 20,000 employees and their family members in Africa, the Middle East, Central Asia and Latin America. PetroChina is the first oil and gas Company in China to set up a psychological health hotline. Additionally, based on the mental health status and adaptive capability of the employees and their family members, the Company conducted on-site training, consultation and crisis intervention, and established a web platform where they can receive help either directly online, or get advice on other resources. Since 2010, the Company has sent experts dozens of times to its projects in many countries, such as Iraq and Iran, to provide psychological services.

According to EAPA, PetroChina's EAP is in line with international EAP standards and principles, with clear logic, strict management, and an efficient quality improvement strategy and actions. The program has achieved great success in meeting the demands of both employers and employees, especially in suicide prevention. This indicates that Chinese companies have reached the highest international level in terms of employee care, psychological management and EAP.

Sources of psychological problems for overseas employees	Customized solutions	Effects
<ul style="list-style-type: none"> <li>Far away from home</li> <li>Great work pressure</li> <li>Insufficient communication with their families</li> </ul>	<ul style="list-style-type: none"> <li>Remote psychological counseling hotline</li> <li>On-site counseling by experts</li> <li>Exclusive online platform for overseas employees</li> </ul>	<ul style="list-style-type: none"> <li>Overseas employees have mastered correct methods for easing psychological stress</li> <li>Improved psychological condition</li> <li>Improved work efficiency</li> </ul>



98%

The occupational health examination rate for employees facing occupational hazards was more than 98%.

100%

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



1,034 hours

In 2016, the psychological counseling hotline provided 1,034 hours of service, including 256 hours of face-to-face counseling.

87

The Company sent psychological experts to 15 subsidiaries overseas to provide 87 training sessions and lectures.

## ESTABLISHING A PLATFORM FOR EMPLOYEE DEVELOPMENT

We adhere to modern corporate concepts and advocate innovation in creating space and mechanisms for employee development. We have improved our training centers and network, and address our employees' need for career development at different stages by providing career planning services. We strive to develop innovative employees and provide a stage for employees to develop their self-worth.

### Employee Training

By applying modern corporate training concepts, we continue to improve our training bases and training network. We have carried out diversified and differentiated vocational training for employees through knowledge training, professional training, job training, off-the-job training, etc, in order to achieve positive interaction between employee development and the Company's development.

On the basis of promoting comprehensive staff training, we conducted the "Four Training Projects" for managerial, technical, skilled and international personnel.

### Main Training Programs of "Four Training Projects" in 2016

<b>Managerial Personnel</b>	<b>International Personnel</b>
<ul style="list-style-type: none"> <li>Training 252 executives of subsidiaries</li> <li>Leadership training for 591 medium-level managers</li> <li>Training 118 general accountants</li> <li>Training for over 3,500 departmental directors in 18 key posts including human resources, legal affairs, safety, information, auditing, etc.</li> </ul>	<ul style="list-style-type: none"> <li>172 employees received training under 10 training sessions at Stanford University in the USA, Siemens AG, and Gubkin Russian State University of Oil and Gas</li> </ul>
<b>Technical Personnel</b>	<b>Skilled Personnel</b>
<ul style="list-style-type: none"> <li>37 technical experts received elective-course training at Tsinghua University and China University of Petroleum (Beijing)</li> <li>5,200 core employees received training in 54 training sessions for senior technicians</li> <li>23 employees were selected to attend advanced training on complex reservoir E&amp;P theory and technological innovation held by the Ministry of Human Resources and Social Security</li> </ul>	<ul style="list-style-type: none"> <li>The Company held the 2016 Vocational Skills Competition.</li> <li>Operating skills training was carried out for 840,000 employees in 2016.</li> </ul>

We improve employees' occupational skills and abilities through training and competition. We held the 2016 Vocational Skill Competition, and organized our employees to take part in the Petroleum and Petrochemical System Vocational Skill Competition, the National Competition for Hazardous Chemical Incidents Rescue Skills, the Hoisting Competition and the National Vocational Skill Competition for Young Employees, revealing a number of highly-skilled talents. In 2016, eight of our employees won the title of "National Skill Experts" and two were awarded the "National May 1<sup>st</sup> Labor Medal".



**100%**

The training rate of senior skilled personnel and key operation post employees was 100%.

**100%**

The training rate of frontline employees was 100%.



PetroChina's technology competition

### Provide Continuous Career Development Channels

With a corporate culture that values moral integrity as well as professional competence, we have developed a selection process that is democratic, open, competitive and merit-based in order to create a positive workplace atmosphere that enables the recognition and best use of talent. We attach great importance to career planning and endeavor to expand career development space for employees to maximize their potential. In 2016, we continued to promote the reform of professional rank-based career development for professional technical staff at R&D institutions, persisted in fair competition and merit-based selection, selected talents for appropriate positions through competitive employment, and provided technical professionals with an independent, continuous and stable career path. We improved the career path for skilled personnel by training leading technicians, and implementing the Operating Staff Promotion Plan, the Innovation and Efficiency Improvement Program and the Petroleum Expert Development Program. We also opened a career path for innovative talents by drafting plans for training oil scientists and outstanding young technicians. In 2016, two of our employees were listed in the national "Ten Thousand Talent Program". Dai Naxun, a well-known geophysics professor, won the "2016 Chinese Government Friendship Award". The IAU's Committee on Small Body Nomenclature (CSBN) has approved the naming of minor planet No.210231 after Wang Demin, academician of the Chinese Academy of Engineering and the pioneer of stratified development of oilfield and chemical flooding technology, for his contribution to oil development.

By the end of 2016, we had 18 academicians at the Chinese Academy of Sciences and the Chinese Academy of Engineering, 451 on job experts entitled to the Government Special Allowance, as well as 1,490 senior technical experts, 328 skilled experts, 5,136 senior technicians, and 27,221 technicians. We set up 54 Skilled Expert Studios, among which 14 are National Skilled Expert Studios.



A young employee in operation



### Case study: Petroleum Experts Development Program

In the context of China's economic transformation and upgrading, it has become imminent for the Company to carry out personalized customization and flexible production, and cultivate the spirit of craftsmanship, in order to train its skilled workers. In particular, enhancing the capability of skilled workers and incentivizing the vigor and creativity of frontline employees are extremely important against the backdrop of falling oil prices.

The Petroleum Experts Development Program is designed to train three to five top-quality experts of high moral standing from each major profession in main production enterprises, so that they can drive the holistic improvement of experts' skills throughout the Company.

Candidates for the program are identified by the Company, and they may enjoy preferential treatment in terms of training, setting up key technical projects, and working conditions. Outstanding candidates are chosen to take part in innovation programs, the selection of model workers and government special allowance experts, and the China Skills Award. The Company continues to increase support for Skill Expert Studios which serve as a platform for frontline employees to communicate and tackle technical problems through innovation. Multimedia is applied to strengthen the spirit of craftsman among skilled workers, and to create an environment of respecting skilled talents and competing to become top-notch talents to deliver the best performance.

## LOCAL STAFF DEVELOPMENT

At PetroChina, we embrace a respectful, open and inclusive culture and are committed to selecting more local talents overseas, upgrading their professionalism and making them more responsive to market forces. We abide by all laws and regulations of the host countries. We have formulated *Protocols on Local Employee Management in Overseas Operations* and have established an optimal system for hiring, deployment, performance appraisals, incentives and penalties. We work hard to attract and train top local talents and to provide a working environment more conducive to employee development.



Javier Aguirre is a local employee who has worked for Andes Petroleum for 18 years. As an IT engineer, he now serves as the supervisor of hardware base structure of the IT department.

"I had just started working when I joined the Company in 1997, and I still remember the total number of employees in the production field and office was less than 75 at the time. The Company has grown into a large-scale international Company in a little more than a decade. Cultural diversity and inclusiveness has provided us with an opportunity to learn from each other and make the Company one of the best among its peers."

—Javier Aguirre



On-site technical communication

### Local Hiring

We actively recruit and train local employees and do not discriminate against local candidates for managerial positions, providing local people with job opportunities. We have hired professionals in over 30 countries and regions to work in exploration and development, project construction, international trade, finance, accounting, and human resources at overseas projects. In 2016, international employees and local employees accounted for 91.1% of our overseas workforce. PetroChina International (Indonesia) has always regarded local hiring as an assurance of its long-term development. The Company continues to improve staff welfare and selects outstanding employees to assume managerial positions, and 98.6% of its employees are local hires, and 70% of them are managerial personnel.

### Respect for Cultural Diversity

PetroChina fully respects cultural diversity and local customs. We promote communication between employees from different cultural backgrounds and advocate respect for different values and traditions, in order to foster cross-cultural cooperation in a culturally diverse workplace.

### Case study: Lectures on Iraqi Culture at Halfaya Project

In order to help international staff better understand Iraq and the local people, Halfaya project has hosted a series of lectures on Iraqi culture. The lectures attracted a large number of international employees and contractors with content ranging from basic local etiquette and daily customs to the origins of Mesopotamian civilization.

The lecture series has enabled all staff to better understand the local culture and customs. The lecturers are local Iraqi employees who have worked at the Halfaya project for a long time, who see themselves as cultural ambassadors for Iraq with great responsibilities.

## STRENGTHENING OF SECURITY IN OVERSEAS OPERATIONS

The safety of our employees has always been an overriding priority in our overseas operations. We promoted operation of security management systems, strengthened comprehensive control over security risks, continuously enhanced emergency response capabilities, and eliminated security-related fatal incidents.

In 2016, we continued to improve the security management system, implemented the *Security Management Regulations for International Business*, and revised system documents according to situations of the projects. We reinforced supervision and inspection on system efficiency, and conducted inspections on the security management system of 17 subsidiaries with foreign businesses. We also strengthened anti-terrorism training to improve the employees' emergency response capability. In 2016, 264 trainings were organized for 16,000 employees, which helped to protect the safety of our staff.



91.1%



In 2016, international employees and local employees accounted for 91.1% of our overseas workforce.



## GIVING BACK TO SOCIETY



As a company rooted in society, we have a duty to give back. Our ultimate goal is to promote socio-economic development, so we attach great importance to the well-being of people and social advancement. We expand cooperation with the private sector through joint ventures, enhance local development capabilities, give donations to impoverished students and organize our staff to join volunteer activities and community service. Through our efforts, we strive to build a harmonious society.

### PROMOTING LOCAL DEVELOPMENT

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

In 2016, Fushun Petrochemical supported local investment promotion and industrial park construction. It provided 10 enterprises in Fushun High-tech Development Zone, including Qilong Chemical Co., Ltd, with C5 and C9 fraction from ethylene cracking, ethylene tar and other materials, and transported these materials for relevant supporting enterprises through mutual supply pipelines, promoting the development of deep processing enterprises in the industrial park. As a result, five industrial clusters (organic chemical industry, fine chemical industry, carbon fiber, synthetic rubber, and plastic wax) have been established, creating economic value and providing job opportunities.

### POVERTY ALLEVIATION

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

In 2016, together with CNPC, we continued to carry out fixed-point poverty alleviation and aid programs, and implemented over 30 projects, including infrastructure reconstruction, education & training, and healthcare in 13 counties and districts in seven provinces (municipalities and autonomous regions) of China, including Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou, promoted income increase for 20,000 people from the assisted areas.



See patients on a volunteer basis

At the "2016 Symposium on Enterprise Participation in Precise Poverty Alleviation Work & the Blue Book on Poverty Alleviation" sponsored by the China Foundation for Poverty Alleviation (CFPA), PetroChina was awarded the title of "Excellent Example of Enterprise Poverty Alleviation".

**20** person-times 

To enhance the ability of the appointed officials to implement targeted measures in poverty alleviation, we provided training for over 20 officials for fixed-point poverty alleviation and aid programs throughout the year.

**900** people 

We helped build the safflower plantation project in QapqalXibe Autonomous County, Xinjiang, promoting the development of its economy with local characteristics and providing jobs for 900 impoverished people.

**RMB 20** million 

In Shuanghu County, Tibet, we invested RMB 20 million in livelihood projects including the maintenance and expansion of PV power stations in townships, reconstruction of primary school campuses, and the construction of an integrated market for poverty alleviation.

**3,000** people 

In Barkol Kazak Autonomous County, Xinjiang, we carried out poverty alleviation activities, granting loans to 1,000 households and benefiting more than 3,000 people.

**2,800** people 

We helped build roads in Nantianmen Village, Niba Township, Xishui County, Guizhou Province, solving transportation difficulties for nearly 2,800 people.

**2,800** people 

We sent medical experts to Jeminay County and Qinghe County in Xinjiang, Lenghu in Tibet, and Xishui in Guizhou to provide medical diagnosis and treatment, benefiting a total of more than 2,800 people.

#### Part of Our Cooperated Poverty Alleviation Projects with CNPC and Achievements in 2016

Project Name	Start Time	Location	Partner	Project Details	Achievements
Tongzhou Health Poverty Alleviation Project	October, 2016	Hengfeng County, Jiangxi	China Foundation for Poverty Alleviation	In 2016, to mitigate the re-occurrence of disease-related poverty and help improve medical conditions in Hengfeng County, the project established a special relief fund of RMB 1 million to subsidize the treatment of critical illness and rehabilitation for impoverished people. The project is mainly intended for poverty-stricken patients aged 18 ~ 50 who are suffering from critical illnesses. In addition, an "Angel Home" will be established in Hengfeng County People's Hospital to pool social resources for patients suffering from critical illnesses through multiple channels and reduce the burden of their medical care. We also provide psychological counseling for patients to help them build up their confidence and improve the efficacy of their treatment.	By the end of 2016, the project has helped 13 local families.
Agricultural Plantation Project in Lenghu County	2015	Lenghu County, Qinghai	—	The project was officially launched on August 1, 2015. With a total investment of RMB 22.58 million and a construction scale of 4,200 square meters, the project mainly consists of the construction of 1,000 square meters of green planting areas and 3,200 square meters of vegetable planting areas.	Professional teams are engaged to provide planting management and technologies for agricultural greenhouses equipped with intelligent facilities. As a result, more than 10 varieties of seasonal vegetables, all pollution-free, can be planted simultaneously, with an annual output of 75 tons.
Project of "Women Returning Home to Work"	2016	10 poverty-stricken counties at the national level in Xinjiang, Henan, Guizhou and Jiangxi	China Foundation for Poverty Alleviation, Tencent 99 Charity Platform	Combining infrastructure construction and industrial development, construction of cooperatives and management of the tourism industry, and "red tourism" and the homestay economy, this project is designed to develop villages with unique characteristics and stimulate economic development in the recipient areas. It mainly supports labor-intensive village cooperatives with a high employment rate of women, helps migrant women to return home for work, cultivates and develops the collective economy of impoverished villages, and alleviates social problems like left-behind children and empty-nest families.	The project has provided job opportunities to housewives, promoted economic development in poverty-stricken areas, and reduced the number of left-behind children.
Drinking Water Safety Project for Urban and Rural Areas in Central and Southern Ningxia	November, 2012	Central and Southern Ningxia	—	Together with CNPC, we helped build the project with an investment of RMB 150 million. The project addresses drinking water safety issues for 1.1353 million urban and rural residents in 603 administrative villages in 44 towns and townships of four counties (districts) (Yuanzhou, Pengyang, Xiji and Haiyuan) in the central and southern regions, in order to improve their basic living conditions and promote regional economic development.	The project has been put fully into operation, providing clean and safe water to 1.1353 million urban and rural residents.

 Case Study: "Hand in Hand" to Help Ordinary People Realize Their Public Welfare Dreams

#### Public Welfare Platform "Hand in Hand"



## Case Study: "Hand in Hand" to Help Ordinary People Realize Their Public Welfare Dreams

### Welfare Initiative: Traveling with Sanitation Workers

In February 2016, "Traveling with Sanitation Workers", a public welfare initiative proposed by the Henan Xinxian Volunteers Association, was officially launched on the platform, attracting many netizens. With 50,000 votes, this initiative was outstanding and selected for funding by PetroChina.

On May 1, 2016, 14 sanitation workers in Xinxian City, Henan Province, started a three-day trip to Beijing, paying visits to the Forbidden City, the Great Wall, Nanluogu Xiang and the Temple of Heaven. This trip has left them with good memories. To ensure the smooth implementation of the event, the team brought along a doctor, two volunteers to deal with emergencies, and three professionals to record the entire journey.

PetroChina's funding and the warm praise from netizens have made this long-awaited public welfare dream come true. Through this program, we hope that public respect and care will be aroused for sanitation workers, who are a special group in our society. Now, more and more people start to pay attention to them.

——Liu Fupeng, initiator of the "Traveling with Sanitation Workers" program

Fulfilling the dreams of public welfare is just the first step. Through the Internet, the programs on the platform are attracting more attention. More dreams and aspirations for public welfare will be gathered, exchanged and shared here.

——Wen Yong, executive of the "Hand in Hand for Public Welfare Platform"



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CNPC  
China Foundation for Poverty Alleviation



## SUPPORTING EDUCATION

The Company believes that supporting education is important for social progress and development. Therefore, together with CNPC, we set up scholarships, offered grant loans and subsidies to students from underprivileged families, and supported relevant competitive activities in order to give young people equal opportunities for education and help them to pursue their goals and personal growth. It teamed up with 13 tertiary institutions, including China University of Petroleum, Tsinghua University and Peking University, to set up the PetroChina Scholarship. In 2016, we granted PetroChina Scholarships worth a total of RMB 3.99 million to 635 students. We have sponsored the Kunlun Lubricant Formula Student China (FSC) program for six consecutive years, aiming to create a cooperation platform for the government, enterprises, colleges and universities, research institutes and users, to nurture talent for the automobile industry. In addition, we explore new modes to support education, and call on the public to focus on and work together to achieve educational equality. For instance, PetroChina and the China Foundation for Poverty Alleviation (CFPA) co-sponsored the "Xuhang" Program, a public welfare project enabling the Company and drivers to jointly help senior high school students from poor families complete their studies. Through the "Teacher Training Program", we introduced advanced teaching ideas and methods to poverty-stricken areas, improving the professional quality and skills of local teachers.

**11,047** students

Since its inception in 2002 to December 31 2016, we have granted PetroChina scholarships to 11,047 outstanding students (including 4,207 impoverished students), worth a total of RMB 49.7 million.

## Case Study: Xuhang Educational Program



Sellers of PetroChina service station providing free drinking water to students in the shuttle bus to the college entrance examination

### Make financial donations for solving students' worry for living expenses

Offline Activities

PetroChina makes use of 80 service stations in Chengdu and Zhengzhou as the platform for this program. To help poverty-stricken students to complete their studies, for every liter of gasoline purchased by its customers, the Company donates RMB 0.01 to the project.

The project volunteers, including caring persons, customers, PetroChina employees and journalists, took part in a motorcade to visit the recipients of the donations and witness the changes brought about by the program.

Online Activities

With the help of online platforms of Tencent and Fellowship Society, the project got the support of 12,378 netizens, and raised RMB 100,000 in a week.

We not only provide material assistance to the impoverished students, but also help them strengthen their social communication skills, develop positive and healthy attitudes, expand their horizons and improve their overall quality through service station experience and work-study programs.

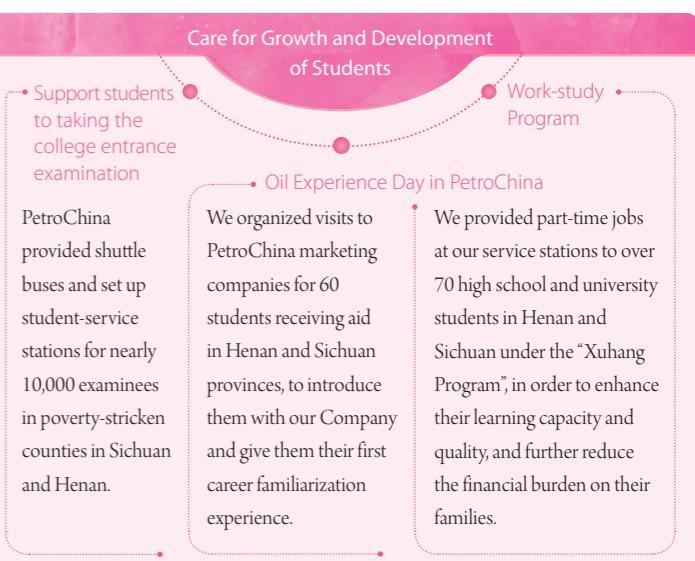
——An Executive of the "Xuhang" Program

The "Xuhang" Program has truly provided timely assistance to impoverished students to be admitted to universities. This generous educational program will benefit future generations.

——Feng Chun, Deputy Director of Tongjiang County Education Bureau

The Xuhang Program is a public welfare project which is jointly launched by CNPC and China Foundation for Poverty Alleviation (CFPA). The Company actively participated in the project, and help impoverished senior high school students from underdeveloped areas complete their studies and gain access to a college education by providing support for their learning and daily life.

By the end of 2016, the program has invested a total of RMB 4 million through the project to support 1,000 impoverished senior high school students in Sichuan and Henan provinces. Among the 400 high school graduates supported by the program, more than 300 students have realized their dreams for universities, with each one granted RMB 5,000 in enrollment scholarships. Hundreds of youth volunteers from PetroChina, and more than 5 million of the public and consumers participated in this program.



We are deeply touched and encouraged by PetroChina's moves to provide financial assistance to impoverished students, organize young volunteers to set up student-service stations, and fund the leasing of shuttle buses for the college entrance examination. These good deeds have demonstrated the Company's efforts to spread positive social energy as a central government-led enterprise.

——Principal of Xinxian County High School

The "Xuhang" Program has provided me with a great deal of care and love. I will redouble my efforts to study, in order to repay those who have helped me with practical actions.

——A student from Tongjiang County Middle School

Although a penny may not be worth much on its own, when accumulated, they can help impoverished students achieve their educational dream and promote their career development.

——Henan Channel of People's Daily



### Case Study: Teacher Training Program

The Teacher Training Program was launched jointly by CNPC and China Foundation for Poverty Alleviation (CFPA). The Company actively participated in the project, in order to improve the quality of teaching and compulsory education in the recipient areas. Under the program, outstanding teachers in developed areas are assigned to poverty-stricken areas in Xinjiang, Henan, Jiangxi, and Guizhou for academic exchanges, while outstanding young teachers in poverty-stricken areas are sent to developed regions for advanced studies.

In 2016, in partnership with the Education Group of Experimental High School Attached to Beijing Normal University, we held training sessions for high school managers, which were attended by 40 principals and educational administrators from Henan, Guizhou, Jiangxi and Qinghai. In the same year, we invited famous teachers from the High School Affiliated to Renmin University of China and Beijing No.171 High School to provide teacher training in poverty-stricken counties in Xinjiang, Henan, Jiangxi, and Guizhou. Previously in 2015, we selected 12 outstanding young teachers from poverty-stricken counties for a semester of training at Beijing No.171 High School.

Since its implementation, the program has conducted training for a total of nearly 500 person-times using superior educational resources in prestigious schools throughout China.

### VOLUNTEER ACTIVITIES

PetroChina has made continued efforts to improve the voluntary service system. It encourages and supports employees to devote their personal time, skills and expertise to participate in volunteer activities, to serve the community and show their care.

In 2016, we had 6,892 youth volunteer teams with 184,000 members. They provided 421,000 hours of volunteer services to 1.843 million beneficiaries. The "Blue Sky Volunteer Association" of Daqing Oilfield launched the "Blue Sky Life Bracelet" campaign, a voluntary activity to assist the old, weak, sick and disabled, and other vulnerable groups including those suffering from depression and Alzheimer's disease. In 2016, it distributed bracelets to 700 elderly people without family and autistic children in Songyuan City, and set up emergency teams to provide timely help for those wearing the bracelets. The youth volunteer service team of Changqing Oilfield has dedicated itself to tree planting together with local residents, covering a cumulative area of 20,600 square meters in Jingbian County, effectively curbing land desertification.

The Spring Festival in 2017 marks the sixth consecutive year for us to provide free food and gasoline at the Company's service stations at 65 national and inter-provincial highways in Fujian, Jiangxi, Hunan and Hubei provinces for migrant workers who need to travel home on motorcycles before the Spring Festival. The volunteer service has been extended from two to 10 days.

#### Free services by the Activities

Refueling	A PetroChina service station is situated every 50~100km along the route to ensure a free supply station for migrant workers every 1~2 hours of their journey
Fast food	
Ginger soup	
Lounge	
A map of PetroChina service stations	

**130,000** person-times

According to incomplete statistics, the "Helping Migrant Workers Return Home" campaign has helped an accumulative total of 130,000 person-times over the past six years.



The volunteers play with the students

### CONTRIBUTIONS TO THE DEVELOPMENT OF OVERSEAS COMMUNITIES

We respect the cultures and conventions of the host countries in which we operate, committed to establishing long-term and stable cooperative relations with the host countries, and promote their socio-economic development.

In 2016, thanks to the excellent performance in our local operations in Indonesia, the Indonesian government granted us the "Share Fulfilment Commitment Award" for honoring our commitment to support localization in 2015. In recognition of our outstanding contributions to enhancing oil and gas cooperation between China and Kazakhstan, promoting green and sustainable socio-economic development in Kazakhstan and promoting friendship between the two peoples, we were awarded the "Order of Friendship" of the Republic of Kazakhstan by Kazakh President Nursultan Nazarbayev.

#### Enhancing Communication with Local Communities

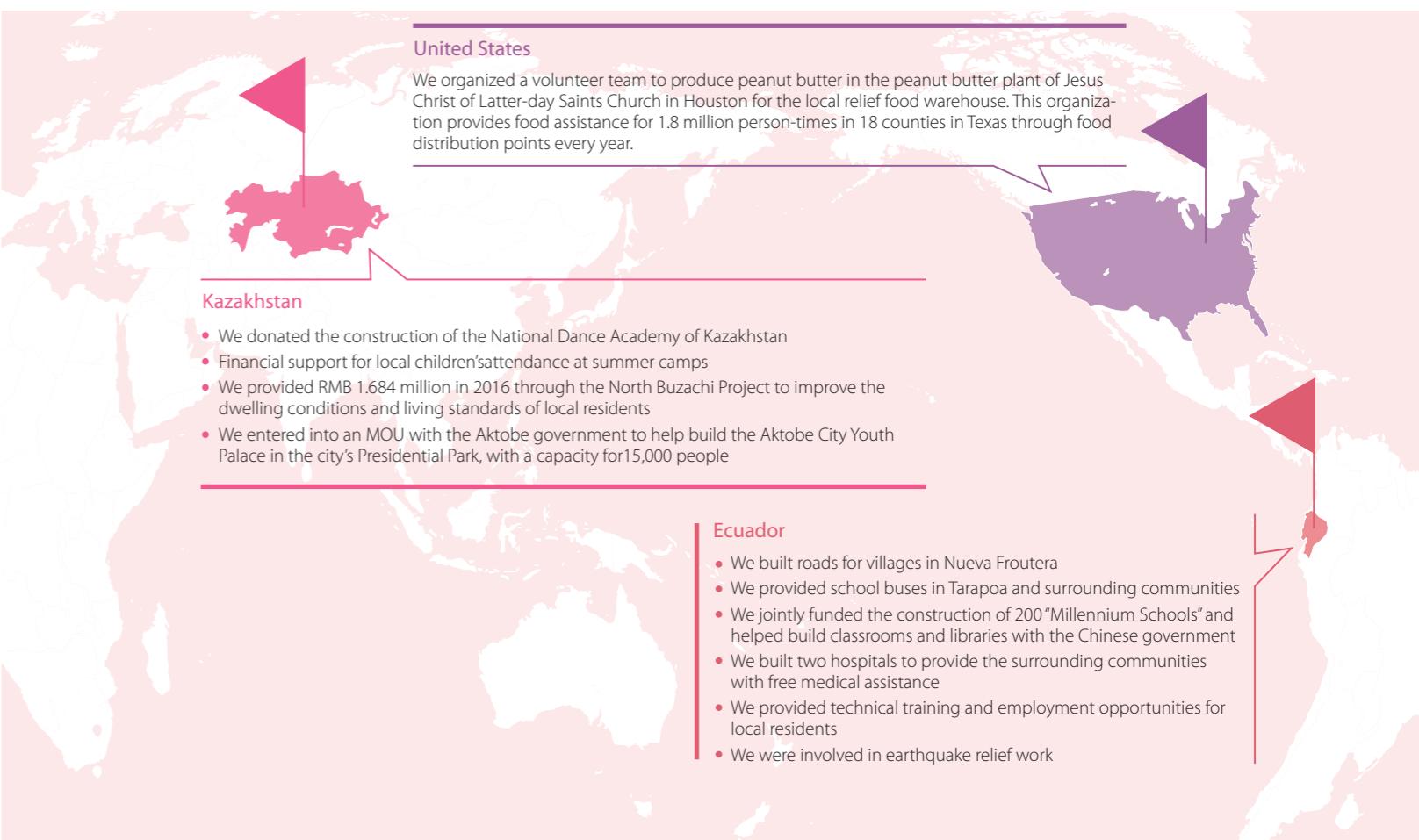
We have set up environmental protection and community relations coordination departments in many overseas areas to promote cooperation with local governments, NGOs and community representatives. By holding conferences, issuing reports and paying visits, we strengthen communication and coordination and achieve a win-win situation in cooperation. In Iraq, we launched safety education campaigns for 18 local schools in the oilfields and surrounding communities.

#### Community Welfare

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

#### United States

We organized a volunteer team to produce peanut butter in the peanut butter plant of Jesus Christ of Latter-day Saints Church in Houston for the local relief food warehouse. This organization provides food assistance for 1.8 million person-times in 18 counties in Texas through food distribution points every year.





In 2016, our project company TTGP presented gifts and festive blessings to children at Abad District International School.

Caring for orphans at Abad District International School in Tajikistan

"For our foundation, the Kazakhstan-China Gas Pipeline Project Company has achieved three very important tasks. First, it is the first Chinese joint venture to make donations to the foundation. Second, the donations cover a broad range of recipients, including more than 20 World War II veterans, solving the problems facing the foundation in a timely manner. Third, the donation process has been highly efficient. It took just over one month for us to receive donations from the day the activity was launched."

—Zbarhanov, President of the Kazakhstan WWII Veterans Foundation



In 2016, letter of acknowledgment to Trans-Asia Gas Pipeline Company from the Kazakhstan World War II Veterans Council



Tajikistan employees from TTGPB attended comprehensive management training course at University of Petroleum (East China)

## Local Environmental Protection

We stress the importance of striking a balance between business development and environmental protection. Therefore, we strictly comply with the laws and international standards on environmental protection in the countries in which we operate, protect local ecological environment, take measures to restore the original environment immediately after our operation, and strive to minimize the impact of our operations on the environment.

### PetroChina International in Kazakhstan

- We improve construction of the environmental protection system, and keep establishing and auditing our environmental protection system. In our projects such as PK and MMG, we develop environmental protection system certification review programs at the beginning of each year, and conduct comprehensive auditing of the ISO 14001 environmental system according to our annual plan.
- We carry out environmental impact assessment and risk control. In key areas such as refineries, oilfields, oil depots and pipelines, we regularly conduct risk assessment and hazard monitoring and control. For new projects, renovation projects and expansion projects, we take environmental measures such as environmental impact assessments and design program optimization in strict accordance with laws and regulations. Environmental protection facilities are designed, built and commissioned together with the main project. Our Aktobe Project monitored and controlled polluted soil and entered into treatment contracts with professional companies by regions, to ensure the full implementation of the treatment schemes for oil-contaminated soil. PK Project established a dedicated environmental protection database according to relevant environmental factors and their influence.
- We increase our investment to promote the construction of environmental protection projects. The project for integrated utilization of natural gas in Kazakhstan was completed and put into operation, setting the benchmark for natural gas processing in the region.

### Trans-Asia Gas Pipeline Company Limited

- Southern Kazakhstan Project: Since 2015, we have been maintaining a reasonable level of investment in sand fixation along the pipeline. To beautify and protect the environment, we fix shifting sand along the pipeline disturbed by construction, and carry out forestation when the construction of the stations is completed.

- Uzbekistan-China Gas Pipeline: Waste heat boilers are used in the six compressor stations along the pipeline in winter as main sources of heat. The boilers are heating equipment specially used for fuel-driven compressor stations.



Award for Zero Exploration Accident from the Indonesian Ministry of Employment



Award for Zero Operational Accidents from the Indonesian Ministry of Employment



ISO 14001 Certificate (Environmental Management Systems) issued by Sucofindo International Certification Services



"Certificate of Appreciation of Occupational Safety and Health Management System (SMK3)" from the Indonesian Minister of Employment





Turkmenistan natural gas treatment plant



Mtwara natural gas treatment plant supplies water to the nearby villagers

## Develop Local Economy

PetroChina places strong emphasis on reliance on local resources and procurement of local products and services, strengthening cooperation with local enterprises in technical services, logistical support, catering and logistics to boost and promote the development of local SMEs and create more income and employment opportunities for the local communities. In 2016, in the implementation of the Aktobe Project in Kazakhstan, we actively hire local staff, and contract with Kazakh manufacturers for material supply if technical requirement permits, we gave as much as possible priority to contracts, and promote the development of related local industries.

## Tax Payments According to Law

PetroChina strictly complies with the laws and regulations in the countries where it operates, makes lawful and transparent tax payments to local governments, and makes due contributions to local economic development. In countries where the EITI (Extractive Industries Transparency Initiative) standard is implemented, such as Iraq, Mongolia and other countries, our local companies actively participate in the multi-stakeholder groups and publish information on our projects and tax payments, as required by EITI with the content beyond EITI's minimum disclosure requirements. We support and respond to the Base Erosion and Profit Shifting (BEPS) initiative and the *PetroChina Tax Policy*, and pledge to pay tax according to the law in areas where we operate and create value, in order to strive for our sustainable development and make due contributions to socio-economic development.



### PetroChina Tax Policy

PetroChina tax policy is consistent with its corporate strategies. PetroChina is committed to paying taxes in countries where business activities take place and value is created in compliance with applicable tax laws and regulations, and to contributing to local economic growth and sustainable development of the company.

- PetroChina carries out tax planning in support of its business strategy and in compliance with international tax agreements and principles, as well as tax laws of host countries. PetroChina opposes to aggressive tax planning to avoid potential risks and negative impacts on the company's reputation and sustainability.
- PetroChina pays taxes in compliance with applicable tax laws of host countries, its business principles and code of conduct, and adheres to high professional standards to ensure the legitimacy and accuracy of tax payment in a timely manner.
- PetroChina advocates tax transparency, and ensures the accuracy and completeness of tax information disclosure in line with requirements of tax authorities.
- PetroChina manages tax risks through its effective internal control system and engages with tax authorities and external advisors in case of different interpretation of tax laws and regulations for professional judgment.
- PetroChina carries out intercompany transactions based on arm's length principle and not for the purposes of eroding tax base and shifting profits.
- PetroChina takes part in promoting a fair, consistent and stable taxation environment globally and strives to establish a fair, transparent and effective dialogue with tax authorities of host countries.



## Protecting Indigenous Rights

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



### Case Study: Localization of Operation in Indonesia

In 2016, on behalf of the Government of Indonesia, the country's Ministry of Energy and Mineral Resources granted PetroChina International (Indonesia) the award for honoring its commitment to support localization in its operation in 2015. The award aims to encourage upstream oil and gas companies engaged in international cooperation in Indonesia to use local materials and equipment, as well as human and technical resources, and recognizes the oil companies' outstanding performance in honoring their commitment to contract more local businesses in Indonesia.

In response to low oil prices, PetroChina International (Indonesia) has taken measures to deepen corporate management, strengthen cost control, ensure effective economic evaluation and cost sharing, and minimize expenditure.

By the end of 2016, the company had provided local communities with over 3,300 direct employment and over 10,000 indirect employment, with a localization rate of 98.6%. In addition, in terms of equipment/material procurement and technical service procurement, the local shares reaching 75% and 90% respectively, exceed the requirement set by the Indonesian Ministry of Energy and Mineral Resources.

## INVESTOR FAQS



### PETROCHINA'S OVERALL ESG PERFORMANCE

**Q** PetroChina requires contractors to follow the company's health, safety and environmental (HSE) standards. How does the company monitor and ensure contractors' HSE performance is conforming to the company's requirements?

Work safety and environmental protection is a pre-requisite, which secures our steady development. In 2016, we attached great importance to health, safety and the environment (HSE), giving it top priority in our operations, and reinforced our HSE system. By improving the management system and implementing stricter inspection of responsibility fulfillment, PetroChina closely monitored workplace safety results, strengthened hazard control, and endeavoured to enhance HSE management performance. As a result, our overall HSE performance was stable and improved in 2016.

The Company carries out system audits covering all units twice a year. In 2016, we set up an audit team to conduct on-site audits, make recommendations and rectify problems. We initiated quantitative management of the HSE system, organized the preparation of *Criteria for Quantization Review and Evaluation of the HSE Management System*, and helped affiliates in benchmarking against advanced standards to improve their management level. Using the scoring system, the criteria not only includes laws and regulations and the Company's system requirements, but also reflects the HSE best practices of outstanding enterprises. It also combines priorities and weaknesses, including rated risk prevention and control, contractor management, risk control, and pollution reduction.

To ensure HSE management keeps pace with our daily production and operations, we carried out HSE standardization at the grassroots level, which covered compliance with management and operation procedures, equipment integrity and worksite cleanliness. We emphasized the importance of risk management and control, focused on the enhancement of execution capability, and standardized our procedures in order to ensure our staff at the grassroots level to pass the assessments. We promoted advanced HSE management concepts and methods to staff, and facilitated the continuous improvement of HSE at the grassroots level.

In 2016, we implemented safety management regulations and mechanisms, including the Administrative Measures for Production Safety Risk Control. We strengthened the implementation of the safety and environmental protection responsibilities of all employees, and carried out an appraisal of their capabilities to perform safety and environmental protection duties. As a result, our clearly defined, companywide safety management system, and the various levels of responsibilities continued to become more effective.

**Q** PetroChina has been developing and implementing its Compliance Management System. Key actions related to management mechanisms include prevention, control, supervision, and accountability. Regarding 'Accountability' – what will be the next step? Are third party audits and reporting on performance being considered?

**Q** What is the process of prioritization of material issues?

In 2016, the Company will adjust and optimize the allocation of audit resources and distribution, strengthen auditing oversight, legal supervision and effectiveness monitoring, and strictly investigate accountability for violations. It is worth emphasizing that the Company's internal control and risk management system passed an external audit for the eleventh consecutive year in 2016.

The Company has established an *Emergency Preparedness Plan* (the Plan) in accordance with the laws, regulations, regulatory requirements and guidance promulgated by the government and CNPC. This plan covers 22 categories of material issues including natural disasters, social

security, public health, exploration and development business. In the event of any emergency, these material issues will be looked into with the same level of attention, and the Company's relevant departments will take action in a timely and efficient manner under the Plan.

**Q** For the company's CAPEX strategy, to what extent does PetroChina consider demand risk in project sanctioning? What kind of impact does PetroChina expect fuel efficiency, carbon pricing and other climate regulatory measures to have on demand, and how is it considered in the CAPEX strategy

**Q** What is PetroChina's plans in relation to their gas share of potential production in 2015-2025?

**Q** Has the Company set a target to improve H&S performance?

The Company formulates its production, business and investment plan according to market needs, while the CAPEX is determined based on the production, business, and investment plan of the company. The Chinese government has increasingly tightened requirements relating to environmental law and carbon emissions. We strictly abide by laws and regulations, conduct environment impact assessments for new projects, actively cooperate with the local government and carry out public hearings to ensure all production process and products meet governmental, environmental and emissions regulations. At the same time, the company strictly complies with China's oil products quality upgrade timetable and oil quality needs to produce oil products. We have been putting efforts in developing the natural gas business, and contributed clean energy to the country and society.

In terms of long-term business strategy, we actively optimize our business structure, step up the development and utilization of natural gas exploration, accelerate the efficient development of unconventional resources, and increase the output of green, low-carbon energy forms to reduce carbon dioxide emissions and work with the globe to address the climate change.

Looking ahead, in our 13<sup>th</sup> Five Year Plan, we will increase investment in natural gas exploration and development, as well as in the construction of pipelines and marketing. Meanwhile, we will continue to promote natural gas production.

The primary goal of our HSE efforts is to achieve "Zero Accidents, Zero Pollution and Zero Casualty". Through clear lines of responsibility as well as stringent risk and HSE management, the accident and casualty rates at our production facilities continue to decline, while the HSE performance has improved remarkably. All of these achievements serve to reinforce the company's corporate image and lay a solid foundation for our stable growth.



### PETROCHINA'S GOVERNANCE

**Q** Can you provide information about corruption investigations and trials on former or current employees of PetroChina, and other relevant documents on anti-corruption?

Please find the below information on ongoing investigations into former employees as you have requested.

1. Several of PetroChina's former employees were suspected of bribery and other acts of corruption. China's regulators have made clear that the suspected corrupt conduct of these former employees was limited to the individuals concerned. PetroChina and its affiliates or subsidiaries have not been implicated in any allegation of corruption, and the Company's operations have not been affected.

2. The former employees under investigation are facing allegations of mainly bribery, abuse of power, misconduct and violating regulations advocated by the Communist Party of China. Once their cases of violating China's laws have been confirmed, China's procuratorial organ will file a suit against them in court. At present, some of the suspected employees have been tried and

relevant information has been published, while the rest remain under judicial investigations. The Company has no further knowledge of the matter.

3. PetroChina takes a zero-tolerance stance on corruption. With our relentless focus on combating and preventing corruption, the Company has developed a series of rules and regulations, and built related monitoring and inspection mechanisms.

**Q Is the Company taking all necessary steps to avoid corruption and bribery? What kind of efforts is the Company making to strengthen its internal policies and oversight systems to guarantee compliance?**

PetroChina strives for good corporate governance, and has always made the three areas of safety and environmental protection, harmony and stability, and anti-corruption as its top priorities. Further, PetroChina takes a firm stance against corruption. As a company listed in three major financial hubs, including the Hong Kong Stock Exchange, New York Stock Exchange and Shanghai Stock Exchange, PetroChina has a well-established corporate governance structure as well as an open and transparent information disclosure system, in compliance with all applicable listing rules and related policies. Since becoming a member of United Nations Global Compact (UNGC) in 2007, and as one of the pioneer Chinese company participants, PetroChina has been reporting its progress in social responsibility, including anti-corruption, in compliance with the Ten Principles of the UNGC.

Regarding PetroChina's progress in fighting corruption, we would like you to know that PetroChina has a firm commitment against corruption and has adopted a series of anti-corruption measures.

1) The Company views anti-corruption as one of the key initiatives for the management. PetroChina has established an anti-corruption leading group led by its Chairman, and formulated a system and work plan for corruption penalties and prevention, to continuously promote the functioning of the disciplinary mechanism for corruption.

2) The Company has developed comprehensive mechanisms, rules and procedures to combat corruption. PetroChina has further enhanced and reinforced its systems, promoted management innovation, strengthened its fundamental work, ensured the proper exercise of management authority, clearly defined the delegation of power, developed a compliance management system, stepped up the supervision of its overseas businesses, and strengthened its supervision and accountability system. Since 2012, the Company has implemented a series of measures and regulations, including the 2013-2017 Work Plans to Establish and Improve the Systems for Punishment and Prevention of the Bribery Act, the Anti-corruption Guidelines for Overseas Businesses and the Views on the Implementation of Anti-Corruption Training of Senior Management. These aim to create a long-lasting, effective mechanism which can plug loopholes, prevent and resolve the problems.

3) To improve the corporate governance structure, PetroChina has set up a board nomination committee, consistent with the best standards in corporate governance in August 2015. A more transparent and complete nomination process has thereby come into being.

**Q To what extent is the management system certified to OHSAS 18001 or other systems?**

PetroChina has enhanced its HSE system through recognized certification, in compliance with international regulations and standards. For example, the Oman Project was certified under OHSAS 18001:2007, ISO 90001:2008, ISO 14001:2004, three international certifications issued by British Standards Institution. Det Norske Veritas was engaged for the Halfaya Project to conduct a HSE audit in 591 aspects, according to the requirements of International Safety Rating System (SRS).

To ensure the smooth operations of the HSE system and its continuous improvement, PetroChina introduced a third-party HSE management system. An independent HSE Management Certification Center, which is also certified under the national OHS-MS management system, was established with support from the former State Economic and Trade Commission. The Certification Center will conduct an independent audit of HSE applicants. Successful applicants will be granted both HSE and OSH-MS certification.

**Q How do you train your employees in anti-corruption, what's the content of the trainings, how is the training conducted? Who will receive these trainings? How about the frequency of the trainings?**

With regard to the anti-corruption training, the Company places a strong emphasis on senior management and staff training. We arrange internal training for senior management of the Company's subsidiaries every year with the aim of enhancing their knowledge of internal monitoring. For example, our representatives have attended the "China Overseas Listed Corporate Regulation and Corporate Governance Conference" organized by The Hong Kong Institute of Chartered Secretaries and the training organized by Hong Kong's Independent Commission Against Corruption to deepen their understanding of the principles of company management and anti-corruption. The Company also arranged for staff to participate in training, study training material and has pushed forward the strengthening of moral standards.



## PETROCHINA'S OPERATIONS IN SENSITIVE REGIONS

**Q Please describe PetroChina's business in Sudan and introduce the Company's practical measures to avoid investing and operating in politically sensitive regions.**

PetroChina has no asset in Sudan or South Sudan. As a subsidiary of CNPC, PetroChina has been carrying out production and operations independently since its listing in April 2000. This is in compliance with the *Company Law*, the *Articles of Association of the Company*, and the regulatory rules stipulated by the listing venues. Under its operational guidelines of maximizing enterprise value and shareholder value, PetroChina conducts extensive oil and gas production in the PRC and abroad, while respecting local religions, customs and cultures, emphasizing environmental protection, and maintaining stable production. PetroChina strictly complies with the relevant regulations of the United Nations, and respects the principles of the U.S. and other Western investors that prohibit investing in companies operating in conflict-prone and sensitive regions. In countries and other jurisdictions under UN sanctions and sanctions by the governments where we are listed, including Sudan and South Sudan, we do not have any oil and natural gas exploration, development, production and investment projects at present. We also do not own any venture companies, representative offices and staff or provide any product and service in these areas. PetroChina does not communicate or have relationships with these countries and governments. In the future, we will always handle our investment and business activities in politically sensitive regions in a prudent and responsible manner, and always take our shareholders' rights and respect for our investors' choices into consideration.

PetroChina's holding company CNPC owns assets and operations in Sudan and South Sudan. However, we must emphasize that CNPC and PetroChina are two separate legal entities. PetroChina has no influence or control over the business activities of its controlling shareholder, and is not involved in its parent's business activities and investments in Sudan and South Sudan.



## PETROCHINA'S COMMUNICATION WITH STAKEHOLDERS

**Q Has PetroChina considered developing mechanisms to carry out stakeholder communication and engagement that ensure proactive and inclusive community consultation, and call for the development and implementation of formal and transparent communication and grievance procedures?**

The Company has established multiple channels to communicate with employees and has continued to implement democratic procedures. We communicate across different levels of the Company, and conduct multi-level communication through meetings with staff representatives and online discussions, to encourage employees to participate in the management of production and operations.

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

**Q How does stakeholder engagement (active consultations, feedback, general communications, etc.) influence PetroChina's identification and prioritisation of material issues?**

The Company has built a multi-faceted mechanism to communicate with stakeholders, through periodic reports, interim reports, media communications, interviews and visits, as well as interactive communication. It has amplified and honed the management and other related systems for the disclosure of major events. Through in-depth communications with stakeholders and listening to their views, the Company can effectively identify stakeholders' real concerns on material issues.

**Q Could you provide insight into PetroChina's approach to identifying any risks to the rights of local communities and other stakeholders in the countries where it operates?**

We remain committed to a people-first philosophy in treating our employees with respect and equality while protecting their legal rights. We endeavour to resolve the practical issues that most concern our employees and make sure that all employees can equally share in the fruits of our development.

We strictly abide by domestic and international rules and regulations and have established a fairly complete employment management and policy system to regulate employment practices according to the law. The system incorporates employment contract management, remuneration, insurance and benefits, leave, performance appraisals and vocational training. Through self-inspection of our employment practices in compliance with the law, we provide effective protection of the legal rights of employees.

We are committed to providing equal opportunities and fair treatment to all employees regardless of their nationality, ethnicity, race, gender, religion and culture. We prohibit the employment and use of child labor and reject all forms of slavery and forced labor. Instead, we emphasize the employment of local residents, women, ethnic minorities and college students in order to increase job opportunities for local communities.

**Q Can you elaborate on how the company has enhanced communications with communities?**

The Company has set up environmental protection and community relations coordination departments in many overseas areas to promote cooperation with local governments, NGOs and community representatives. By holding conferences, issuing reports and paying visits, we strengthen communication and coordination and achieve a win-win situation in cooperation. For the Canadian project, we have set up a counselling office and held senior official meetings, leadership committee meetings, community advisory group meetings and environment meetings, in order to communicate with members of the local community, and enhance their understanding of and support for the project.

## PETROCHINA'S ENVIRONMENTAL PROTECTION



**Q Internal audits of the EMS are conducted, is it considered to obtain auditing and certification by independent third-parties?**

The Company's Health, Safety and Environment (HSE) Management System is aligned with international standards and widely accepted by the petroleum industry. To ensure the standardized operations and continuous improvements of the HSE Management System, PetroChina introduced a third-party management certification system and encourages corporations and their subsidiaries to appoint third parties to conduct the HSE management system assessment, in order to raise their HSE Management levels and sharpen their competitive edge.

**Q To what degree are site-level reduction targets and strategies to improve toxic emissions performance developed in-house?**

As a leading energy company in China, the Company takes national carbon emission reduction targets as reference when setting our own general carbon emission reduction target. Our general target has been further deconstructed to apply to various departments at different levels and on various projects.

**Q What is PetroChina's plans in relation to future GHG direct emission and zero routine flaring by 2030?**

As a responsible energy company, we attach great importance to the control and reduction of greenhouse gas emissions and have addressed climate change in our development plan. We have already started to formulate the roadmap for low-carbon development and started to establish a carbon emission control system. This specifically sets development goals, emission reduction measures and technical routes, with a primary focus on carbon footprint verification, carbon emission reduction and on building near-zero carbon emission demonstration projects. Additionally, we will strengthen greenhouse gas management and controls, plan and mitigate carbon dioxide and other greenhouse gas emissions from the source, production process and product use, and conduct carbon inventories and reporting in accordance with international practice.

PetroChina strictly comply with the Chinese government's requirements on greenhouse gas emission reductions, and actively support and cooperate with the international community in the formation of policies and action to address climate change. As the founding member of the Oil and Gas Climate Change Initiative (OGCI), we have taken the initiative to reduce carbon emissions and sequester carbon to address climate change challenges together with the international community.

In terms of long-term business strategy, we actively optimize our business structure, step up the development and utilization of natural gas exploration, accelerate the efficient development of unconventional resources, and increase the output of green, low-carbon energy forms. In China, we supply natural gas to more than 500 million people, increasing the proportion of natural gas in China's primary energy consumption by 3.4%.

With regard to the disclosure of carbon emissions, the Company will calculate greenhouse emissions based on the new national greenhouse emission calculation methods and reporting guidelines. The emission data will be released according to applicable regulations upon approval by third party organizations and government authorities. At present, relevant work is under preparation, and will complete as soon as possible.

**Q About PetroChina's stance in some peer companies increases the share of low-carbon energy in their portfolios or even created separate divisions for lower carbon activities?**

We believe only by increasing the development and use of clean and efficient low-carbon energy and by reducing the carbon emissions caused by the use of energy, can the earth reach the carbon dioxide emissions peaking soon and effectively control the rise in the earth's temperature. Natural gas is generally recognized as a high quality clean energy and is the most realistic option to adjust the energy structure, control air pollution and reduce carbon emissions at present. PetroChina is eyeing the sustainable supply of future clean energy, and considers natural gas as a strategic and growing business. It is increasing investment in natural gas exploration and development, accelerating the construction of cross-border gas pipelines and the domestic gas pipeline backbone network facilities, advancing the development of unconventional gases such as tight gas, coal bed methane and shale gas, pushing forward the development and use of natural gas, researching, developing and promoting the development and use of new energy, in order to meet demand by society for clean energy.

In addition, as the application of science and technology plays a significant role in controlling greenhouse gas emissions and addressing climate change, we carried out studies on carbon dioxide flooding and storage and other key carbon lowering technologies. PetroChina's "Study on Key Technologies for CO<sub>2</sub> Enhanced Oil Recovery and Carbon Dioxide Storage" project under the National 863 Program passed national acceptance. Moreover, we established China's first CCS (carbon capture and storage) base in Jilin Oilfield which covers the entire value chain, including carbon dioxide separation, capture and flooding in. Furthermore, a memorandum of understanding was signed with GE on technology and R&D cooperation which promotes our collaboration in carbon capture, storage and utilization, and low-carbon and environmentally friendly technologies.

With its excellent performance in green, low-carbon development, PetroChina was named a "China Low-carbon Model Enterprise" for the sixth consecutive year at the Seventh "Low-carbon Development • Green Life" Charity Exhibition and the Press Conference on 2016 China Low-carbon Model Enterprises organized by China News Service and China News Weekly.

**Q How does increasing regulation on ecological and environmental degradation affect the Company's approach to overall risk management? How have environmental impact assessments (EIA) and mitigation strategies evolved in response?**

Our oil and gas exploration and development projects, long-distance pipeline projects and refining facilities may involve certain environmental risks. PetroChina respects and protects the environment and strictly complies with relevant international and domestic laws and regulations. We take the initiative to evaluate the environmental impact of our decisions and activities, step up efforts in hazard control and environmental protection during production in order to safeguard our land, water and biodiversity, and reinforce ecological restoration of the environment. By doing so, we endeavour to grow in harmony with the environment. In 2016, the Company reported no major environmental pollution or ecological damage accidents.

We assess and identify environment risks, implementing a risk prevention and control management model focusing on environmental forecasting, early warning and monitoring. We begin the environmental risk management at an early stage, and establish a sound risk management mechanism featuring "management in tiers, prevention and control by level". Environmental management is implemented for the duration of construction projects. For each construction project, facilities for the prevention and control of pollution, and other potential damages to the environment, are integrated and established in the process of design, construction and operation, with the main project to ensure full control of environmental risks. We have reinforced the environmental monitoring capacity, completed the installation and data networking of online monitoring equipment for waste water and waste gas, and performed real-time monitoring and early warning of discharges from major pollution sources, to ensure treatment at the source and control over the production process.

**Q What is the expected time horizon regarding the disclosure of carbon emission targets and performance data?**

With regard to the disclosure of carbon emissions, the Company will calculate greenhouse emissions based on the new national greenhouse emission calculation methods and reporting guidelines. The emission data will be released according to applicable regulations upon approval by third party organizations and government authorities. At present, relevant work is under preparation, and will complete as soon as possible.

**Q On behalf of about 300 institutional investor members, the Global Investor Coalition on Climate Change calls for a disclosure of a "2°C stress-testing" from companies in their portfolios. Has this caused any new considerations or initiatives?**

We support "China's National Program to Address Climate Change" and "National Plan on Climate Change (2014-2020)", and agree that the rise in global temperatures cannot exceed 2°C.

PetroChina has developed the Action Plan for Green Development, promoted green and sustainable development as our business strategy, and has taken the initiative to adapt to the global trend of low-carbon development. The Company adjusted its business structure to promote clean energy development, launched numerous campaigns for associated gas recovery in an effort to reduce greenhouse gas emissions, and carried out energy conservation technology research, research and development of low-carbon technologies, active development of carbon sinks, and promotion of carbon emission reduction throughout China.

## PERFORMANCE STATISTICS

Category	Indicator	2014	2015	2016
Economic	General assets (RMB 10 <sup>9</sup> )	2,405.5	2,393.8	2,396.7
	Turnover (RMB 10 <sup>9</sup> )	2,283.0	1,725.4	1,616.9
	Net Profit (RMB 10 <sup>9</sup> )	107.2	35.5	7.9
	Taxes (RMB 10 <sup>9</sup> ) <sup>①</sup>	414.0	337.5	317.1
	Proved reserves of crude oil (10 <sup>6</sup> barrels)	10,593	8,521	7,438
	Proved reserves of gas (10 <sup>9</sup> ft <sup>3</sup> )	71,098	77,525	78,712
	Oil equivalent production (10 <sup>6</sup> barrels)	1,450.4	1,493.9	1,466.6
	Crude oil production (10 <sup>6</sup> barrels)	945.5	971.9	920.7
	Marketable natural gas production (10 <sup>9</sup> ft <sup>3</sup> )	3,028.8	3,131.0	3,274.5
	Total length of crude oil pipelines (km)	18,107	18,892	18,872
Safety	Total length of refined products pipelines (km)	10,086	10,091	10,560
	Total length of natural gas pipelines (km)	48,602	48,629	49,420
	Crude runs (10 <sup>6</sup> barrels)	1,010.6	998.1	953.3
	Ethylene production (10 <sup>3</sup> tons)	4,976	5,032	5,589
Environment <sup>②</sup>	Death rate caused by accidents (person/100 million working hours)	0.466	0.26	0.20
	Total accident rate (incidents/million working hours)	0.0487	0.0498	0.0598
	Total energy consumption (10 <sup>6</sup> TCE)	—	80.77	79.90
	Total raw coal consumption (10 <sup>6</sup> TCE)	—	11.83	11.80
	Total crude oil consumption (10 <sup>6</sup> TCE)	—	2.90	2.03
	Total natural gas consumption (10 <sup>9</sup> m <sup>3</sup> )	—	16.5	16.2
	Total electricity consumption (10 <sup>9</sup> kwh)	—	42.9	46.6
	Comprehensive energy consumption for producing unit volume of oil and gas equivalent (Kg of standard coal / ton)	—	128	119
	unit energy factor consumption for refining (Kg standard oil / [t · factor])	8.74	8.3	8.07
	Comprehensive energy consumption of producing ethylene products (Kg of standard coal / ton)	616.7	594	576.3
Employees	Energy conserved (10 <sup>6</sup> TCE)	1.16	1.04	0.87
	Water conserved (10 <sup>6</sup> cubic meters)	19.79	16.83	11.32
	COD discharged (10 <sup>3</sup> tons)	31.0	28.5	28.4*
	NH <sub>3</sub> -N emissions (10 <sup>3</sup> tons)	12.4	11.7	11.4*
	SO <sub>2</sub> emissions (10 <sup>3</sup> tons)	174.4	123.3	123.2*
	NO <sub>x</sub> emissions (10 <sup>3</sup> tons)	140.3	122.7	112.7*
	Number of employees (10 <sup>3</sup> )	535	522	508.8
Public welfare	Percentage of female staff (%)	31.9	31.6	31.2
	Percentage of female administrative staff (%)	7.26	4.7	7.22
	Percentage of employees receiving Occupational health checks (%)	97	98	98
	Percentage of non-Chinese nationals in Overseas hires (%)	91	91.3	91.1
	Contribution to poverty alleviation (RMB 10 <sup>6</sup> )	89.74	208.64	252.89
	Educational donations (RMB 10 <sup>6</sup> )	64.31	15.40	41.88
	Donations to disaster relief (RMB 10 <sup>6</sup> )	3.14	3.88	1.74
	Environmental protection (RMB 10 <sup>6</sup> )	0.85	92.95	2.43

<sup>①</sup> The total taxes paid by the Company in China and abroad. The data disclosed in Sustainability Reports published before 2015 were the taxes paid by the Company in China.

<sup>②</sup> Data indicated with \* are internally tested and audited data.

**Note: Measurement units**

1 BOE = 1 barrel of crude = 6,000 cubic feet of NG = 169.9 cubic meter of NG

1 cubic meter of NG = 35.315 cubic feet of NG

1 metric ton of crude = 7.389 barrels of crude (API = 34)

## OBJECTIVES AND PLANS

In 2017, we will firmly establish and implement new development concepts, continue to optimize our business chain and value chain, give better play to our integration advantages, and endeavor to grow steadily. We will adjust our structure, improve weak areas, enhance profitability and guard against risks. We will fully carry out all works, and make our development more balanced, coordinated and sustainable.

Aspects	2017 Objectives	2017 Action Plans
Corporate governance	Optimize corporate governance structure, improve relevant systems, ensure operation and management are in legal compliance, and optimize foundational management.	<ul style="list-style-type: none"> <li>Improve the corporate governance structure, and optimize the management and control model;</li> <li>Improve rules and regulations, and promote their integration with management systems;</li> <li>Intensify the implementation of rules and regulations;</li> <li>Focus on compliance management in key areas, fair competition in the market, and integrity in operations;</li> <li>Adjust and optimize the allocation of audit resources and distribution, strengthen auditing oversight, legal governance and monitoring effectiveness, and strictly investigate accountability for violations.</li> </ul>
Oil & gas production and supply	Enhance quality and efficiency, and promote the coordinated development of core businesses. Make full use of domestic and foreign resources and markets, ensure optimal operation of oil business chain and gas business chain, and strive for maximum overall benefits.	<ul style="list-style-type: none"> <li>Enhance the ability to create benefits along the crude oil business chain;</li> <li>Endeavor to increase reserves and achieve stable production, focus on large basins and key areas in domestic oil and gas exploration, and ascertain high-quality reserves;</li> <li>Focus on enhancing benefits in overseas oil and gas exploration and development, and enhance project viability;</li> <li>Intensively participate in the One Belt and One Road Initiative;</li> <li>Strive to implement projects of strategic value along the natural gas chain;</li> <li>Promote innovation-driven growth, and accelerate the fostering of new momentum for development.</li> </ul>
Safety and environmental protection	Strictly implement the Work Safety Law and the Environmental Protection Law, implement the responsibility interface and content at every level, and continually improve performance of safety and environmental protection.	<ul style="list-style-type: none"> <li>Expand quantitative review of HSE management system;</li> <li>Improve mechanism for graded risk prevention and control;</li> <li>Strengthen risk prevention and control in key areas;</li> <li>Promote hazard control in oil and gas wells, pipelines, tank areas and hazardous chemicals;</li> <li>Focus on safety supervision of hazardous chemicals and radioactive source management, and fully complete key hazard treatment in chemical tank areas;</li> <li>Carry out thorough inspections of construction projects, strengthen contractor management, and strictly implement the primary responsibilities of the construction companies;</li> <li>Expedite the building of HSE standardization in grassroots teams, and strengthen safety capability training for employees;</li> <li>Implement new national standards for environmental protection and new requirements for air pollution prevention and control, and implement measures to strengthen air pollution prevention and control in Beijing-Tianjin-Hebei and surrounding key areas;</li> <li>Strengthen energy measurement and online monitoring of major energy consumption, and establish a classified energy management mode progressively at different levels.</li> </ul>
Employee development	Build a talent team based on innovation, promote strategic restructuring of the talent team, and implement the Law of the PRC on Promoting the Transformation of Scientific and Technological Achievements.	<ul style="list-style-type: none"> <li>Push forward key talent projects;</li> <li>Strengthen the cultivation of highly-skilled talents led by skilled experts;</li> <li>Develop employee incentive policies;</li> <li>Promote reforms in professional and technical posts;</li> <li>Improve innovation and entrepreneurship platforms, and organize the "Oil Maker" contest.</li> </ul>
Social contribution	Let the general public enjoy the fruits of our reform and development in a wider and fairer way and contribute towards a harmonious community.	<ul style="list-style-type: none"> <li>Broaden joint ventures and cooperation, and push forward reforms to steadily promote mixed ownership of state-owned enterprises;</li> <li>Move forward with targeted poverty alleviation;</li> <li>Participate in public welfare undertakings;</li> <li>Support local economic and social development, and share local resources and the fruits of development with host countries.</li> </ul>

## GLOSSARY

Proven reserves	According to China National Standards, proven reserves are estimated quantities of hydrocarbon deposits possibly to be recovered from reservoirs proved by appraisal drilling during the period of reservoir evaluation, with a reasonable certainty or a relative difference of no more than ±20%.
Proved reserves	According to the guidelines of the US Securities and Exchange Commission, proved reserves refer to, against current economic and operating circumstances, the quantity of oil, natural gas or liquid natural gas which can be reasonably identified and recovered from 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, HFC <sub>s</sub> , PFC <sub>s</sub> 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.

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

## GRI, IPIECA/API AND HKEX INDEX

The report consults the reporting elements and performance indicator indices proposed by the Global Reporting Initiative (GRI) and compares the report with indicators listed in Oil and Gas Industry Guidance on Voluntary Sustainability Reporting by the International Petroleum Industry Environment Conservation Association (IPIECA) and American Petroleum Institute (API). Meanwhile, we took reference from the Environmental, Social and Governance (ESG) Reporting Guide issued by the Hong Kong Stock Exchange.

	IPIECA/API 2015	GRI 4.0	ESG
<b>Material Topics</b>	G4-19		
<b>About Petrochina</b>	G4-3, G4-4, G4-5, G4-6, G4-7, G4-8, G4-9, G4-13, G4-17, G5-56	B6	
<b>Message from the Chairman</b>	E1, E3, SE1, SE4, SE11, SE12	G4-1, G4-2, G4-43, G4-56, G4-EC2	B7
<b>Interview with the President</b>	E1	G4-1, G4-2, G4-43, G4-EC2	A1.3
<b>Integrity and Compliance-Based Corporate Governance</b>	Sustaining Steady Development Solidifying Governance Framework Optimizing Management System Upholding Business Ethics Communicating with Stakeholders	G4-1, G4-2, G4-35, G4-42, G4-43, G4-44, G4-45, G4-51 G4-34, G4-35, G4-36, G4-38, G4-40, G4-41, G4-46, G4-47, G4-48, G4-49, G4-52 G4-56, G4-504 G4-24, G4-25, G4-26, G4-27, G4-37, G4-45	
<b>Sustained Energy Supply</b>	Consolidating Our Resource Base Developing Clean Energy Pushing Forward Pipeline Network Construction Enhancing International Cooperation Ensuring Stable Supply	G4-8 G4-8, G4-EN27, G4-EC7 G4-8, G4-6, G4-EC7, G4-EN30 G4-6 G4-8	A2.3
<b>Safe and Clean Production and Operation</b>	Improving HSE Management Enhancing Operational Safety Ecological Protection Promoting Energy Conservation Response to Climate Change	G4-14 G4-14 E4, E5, E6, E7, E8, E10, E11 G4-EN3, G4-EN5, G4-EN6 E1, E2, E3, E4	A1, A1.5, A1.6, A2, A2.4, A3, A3.1 A2.3, A3, A3.1
<b>Customer-First Market Service</b>	Enhancing Quality Management System Providing High-Quality Products Delivering Considerate Services Whole Supply Chain Management	HS4 HS4 HS4 SE8, SE9	B6.4 B6, B6.3 B6.2 B5
<b>People-Oriented Employee Development</b>	Protection of Employee Rights Occupational Health Establishing a Platform for Employee Development Local Staff Development Strengthening security in Overseas Operations	SE16, SE18 HS2, HS3 SE17 SE6, SE15, SE17 SE10	B1, B1.1, B4, B4.2 B2, B2.1, B2.2, B2.3 B1, B3 B1 B1
<b>Giving Back to Society</b>	Promoting Local Development Poverty Alleviation Supporting Education Volunteer Activities Contributions to the Development of Overseas Communities	SE1, SE5 SE4 SE4 SE1, SE2, SE3, SE4, SE5, SE7, SE15	B8, B8.1 B8.1 B8.1 B8.1 B8, B8.1, B8.2
<b>Investor FAQs</b>	SE2, SE3, SE8, SE9, SE11, SE12, SE15, SE16, SE17	G4-41, G4-58	A1, A2, A3, A3.1, B1, B2, B3, B4, B7, B7.1, B7.2, B8, B8.1
<b>Performance Statistics</b>	E2, E6, E7, HS2, HS3, SE4, SE6	G4-EC1, G4-EN5	A1.1, A1.3, A2.1
<b>Objectives and Plans</b>			
<b>Appendix</b>			
<b>Global Compact and Us</b>		G4-16	
<b>Approach to Reporting</b>		G4-17, G4-18	
<b>About This Report</b>		G4-20, G4-21, G4-22, G4-23, G4-28, G4-29, G4-30	
<b>Contacts</b>		G4-31	

## APPENDIX

We strictly complied with applicable laws and regulations on quality management. For this, we established rules and regulations covering all production units, staff and processes relevant to the Company, which including but not limited to:

	Names of the Rules and Regulations
1	<i>Measures of PetroChina Company Limited for Management of Labor Contract</i>
2	<i>Measures of PetroChina Company Limited for Performance Evaluation of Senior Executives</i>
3	<i>Administration Measures of PetroChina Company Limited on Production Safety and Environmental Protection Accountability System</i>
4	<i>Administrative Measures of PetroChina Company Limited for Supervision and Inspection of Product Quality</i>
5	<i>Administrative Measures of PetroChina Company Limited for Appraisal of Staff Safety and Environmental Performance</i>
6	<i>Regulations of PetroChina Company Limited on Environmental Protection Concerning Project Acquisition</i>
7	<i>Administrative Measures of PetroChina Company Limited for Energy and Water Conservation</i>
8	<i>Regulations of PetroChina Company Limited on Quality Supervision of Procured Materials</i>
9	<i>Regulations of PetroChina Company Limited on Detection of Occupational Hazards at Workplace</i>
10	<i>Regulations of PetroChina Company Limited on Occupational Health Surveillance</i>
11	<i>Measures of PetroChina Company Limited for Material Supplier Management</i>
12	<i>Measures of PetroChina Company Limited for Tender Management</i>
13	<i>Measures of PetroChina Company Limited for Service Trademark Management</i>
14	<i>Measures of PetroChina Company Limited for Land Management</i>
15	<i>Regulations of PetroChina Company Limited on the Management of Industrial Water of Refining Enterprises</i>

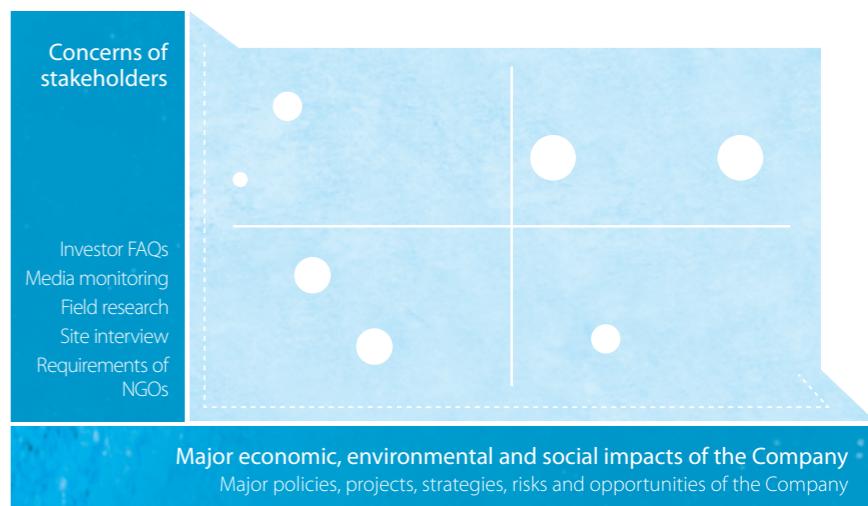
## GLOBAL COMPACT AND US

The Global Compact is a global framework initiated and advocated by the United Nations aiming at the promotion of sustainable development and the collective improvement of social well-being through responsible and innovative business practices. As a member of the UN Global Compact, we are committed to observing and supporting the Ten Principles advocated by the Global Compact in the fields of human rights, labor rights, environment protection and anti-corruption, using the Ten Principles to guide our practices in fulfilling social responsibilities. And we will continue to disclose our progress in keeping with the Ten Principles in the Global Compact in our annual report.

	Ten Principles in the Global Compact	Corresponding sections herein
<b>Human Rights</b>	1. Businesses should support and respect the protection of internationally proclaimed human rights; 2. Make sure that they are not complicit in human rights abuses.	5.1 Employees' Rights, Investor FAQs 5.1 Employees' Rights, Investor FAQs
<b>Labour Rights</b>	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; 4. The elimination of all forms of forced and compulsory labour; 5. The effective abolition of child labour; 6. The elimination of discrimination in respect of employment and occupation.	5.1 Employees' Rights, Investor FAQs 5.1 Employees' Rights, Investor FAQs 5.1 Employees' Rights, Investor FAQs 5.1 Employees' Rights, Investor FAQs
<b>Environment Protection</b>	7. Businesses should support a precautionary approach to environmental challenges; 8. undertake initiatives to promote greater environmental responsibility; 9. Encourage the development and diffusion of environmentally friendly technologies.	3.5 Response to Climate Change Message from the Chairman, Interview with the President, 3.2 Enhancing Operational Safety, 3.3 Ecological Protection, 3.4 Promoting Energy Conservation, 3.5 Response to Climate Change 3.5 Response to Climate Change
<b>Anti-Corruption</b>	10. Businesses should work against corruption of all kinds, including extortion and bribery.	About PetroChina, Integrity and Compliance-based Corporate Governance, Investor FAQs

## APPROACH TO REPORTING

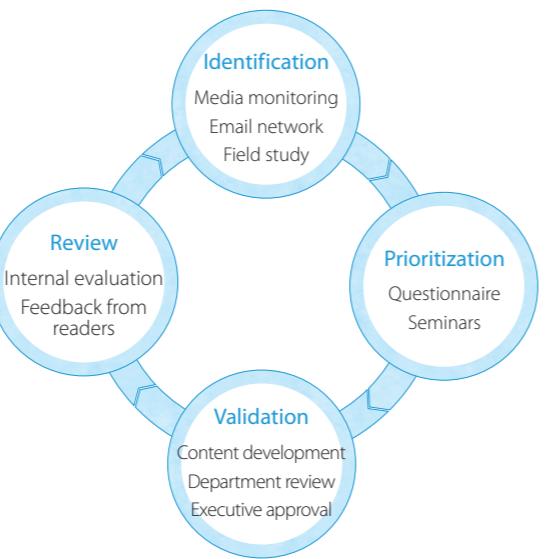
This report focuses on major international and domestic events related to the sustainable development of the Company and its subsidiaries.



## Content Selection Process

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 ISO 26000 (Guidance on Social Responsibility).
4. Topics are selected based on the comprehensive assessment of stakeholders concerns and their impact on the Company's strategies. The time span and the scope of impact for each specific topic are clearly defined to ensure the accuracy of the information disclosed.



## ABOUT THIS REPORT

This report illustrates activities the Company undertook in 2016 pursuant to its ongoing commitment to advance the community, the economy and the environment. All information disclosed in this report was sourced from PetroChina's official documents and statistics as well as from statistics gathered from the Company's affiliated enterprises. It takes into account the Company's development priorities and stakeholder concerns. This report has been reviewed in accordance with the Company's Rules for Information Disclosure Control and Disclosure Procedures. For continuity and comparability purposes, this report provides explanations on past and future initiatives on certain issues.

This report is formulated according to the key principles of accuracy, transparency and consistency. We took reference from the Guideline on Preparing the Report on Performance of Corporate Social Responsibility issued by the Shanghai Stock Exchange and the Environmental, Social and Governance (ESG) Reporting Guide issued by the Hong Kong Stock Exchange. Furthermore, we continued to consult the Sustainability Reporting Guideline (Version 4.0) released by the Global Reporting Initiative (GRI) and the Oil and Gas Industry Guidance on Voluntary Sustainability (2015) co-published by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the American Petroleum Institute (API). As a member of the United Nations Global Compact (UNGC), we report our progress in compliance with the Ten Principles and will submit the report to be posted on UNGCs website (<http://www.unglobalcompact.org>).

This report includes a set of Forward-Looking Statements. Excluding historical facts, all events that may or will occur (including, but not limited to, premise, objectives, estimation and business plans) and descriptions of such events are categorized as Forward-Looking Statements. Due to the presence of external uncertainties, actual outcomes or the future climate may differ from those expressed in the Forward-Looking Statements. As the Forward-Looking Statements were made prior to December 31, 2016, PetroChina holds no responsibility or liability for any modifications made subsequent to the said date.

Thank you for taking the time to read this report. We welcome any comments and suggestions you may have as we believe that your feedback can improve our performance. This report is published, along with the Company's Annual Report 2016 in March 2017, in simplified Chinese, traditional Chinese and English. In the case of any discrepancy, the version in simplified Chinese shall act as the lead publication.

The Board and all the Company's directors hereby certify that there are no misrepresentations, misleading statements or material omissions in this report. Furthermore, we jointly and severally accept full responsibility for the truthfulness, accuracy and completeness of this report.



You can log on to our website [www.petrochina.com.cn](http://www.petrochina.com.cn) or scan the QR code to browse or download the electronic version of this report and learn more about us.