

2019

ENVIRONMENTAL, SOCIAL
AND GOVERNANCE REPORT



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ABOUT US

PetroChina Company Limited (hereinafter referred to as “the Company”, “we” or “us”) is a joint stock limited company incorporated on November 5, 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) respectively in April 2000, and on the Shanghai Stock Exchange (stock code: 601857) in November 2007.

PetroChina is one of the major oil and gas producers and distributors in China, and also a significant player in the global oil and gas industry. It engages in a wide range of activities related to oil and natural gas and provides sustainable energy and oil products for economic and social development. We are also committed to building a harmonious relationship between energy, the environment and the society.

“FORTUNE China
Top 500”
(Ranked No.2)

Brand Finance
“Top 50 Most Valuable
Oil & Gas Brands”
(Ranked No.2)

UN Global Compact
Network China
2019 Best Practice for
Corporate Achieving
the Sustainable
Development Goals

Shanghai Stock
Exchange
“The Information
Disclosure Appraisal
for Listed Companies
2019”: A (for the fifth
consecutive year)

China Securities Golden
Bauhinia Award

Enterprise of Excellent
Contributions upon the
70th Anniversary of the
Founding of the PRC
Annual Excellent CEO
Best Board Secretary of the
Listed Company (Lifetime
Honorary Award)

Corporate
Governance Asia

Best Investor Relations
Company (China)
Best CFO
Best Investors Relations
Manager (China)

Institutional Investor

“Most Honored
Companies” (Asian Oil &
Gas Industry)
“Best Investor Relations
Company”
“Best ESG/SRI Indicators”
Best Corporate Governance
Best CFO
Best Investor Relations
Professional

National Business
Daily

Best Board of Directors
of Listed Companies

BUSINESS STRUCTURE

Upstream Business

Exploration, development and production of crude oil and natural gas.



Mid-Downstream Business

Refining, transportation, storage and sales 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.



International Business

We are engaged in oil and gas exploration and production in more than 21 countries and have trade relations with more than 80 countries.



Oil and Gas Exploration, Development and Production

PetroChina is at the forefront of domestic oil and gas exploration and development. We operate in a number of major oil and gas producing regions such as Daqing, Changqing, Xinjiang, Liaohe, Tarim and Sichuan. In 2019, we produced 739.7 million barrels of crude oil, 3,633 billion cubic feet of saleable natural gas and 1,345.4 million barrels of oil and gas production equivalent domestically.

Refining and Sales of Crude Oil and Oil Products

We own 10 ten-million-ton-level refining bases. In 2019 we processed 1,228.4 million barrels of crude oil and produced 117.791 million tons of refined oil. 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 33.5% of China's oil products.

Production, Transportation and Sales 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 are ranked among the best in China. In 2019, we produced 25.756 million tons of chemical products and 5.863 million tons of ethylene.

Transportation of Natural Gas, Crude Oil and Refined Oil, and Distribution of Natural Gas

PetroChina is mainly responsible for the transportation and marketing of natural gas, and storage and transportation of crude oil and refined oil. The Company operates nearly 87,144 km of pipelines in China, covering 30 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China.

International Oil and Gas Cooperation

Currently, we have established five international oil and gas cooperation zones in Central Asia, Middle East, Africa, the Americas and the Asia-Pacific, 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 2019, our overseas oil and gas production equivalent reached 215.4 million barrels.

PETROCHINA AND THE UN SDGs

SDGs	Action and Results
 <p>1 No Poverty</p>	<ul style="list-style-type: none"> We contributed RMB 152 million to poverty alleviation and implemented nearly 70 alleviation projects, which helped 8 of the 10 targeted counties get out of poverty.
 <p>2 Zero Hunger</p>	<ul style="list-style-type: none"> To satisfy local needs, we carried out road construction, environmental rehabilitation, rural water supply and schooling, and other poverty alleviation projects, facilitating the development of related industries.
 <p>3 Good Health and Well-being</p>	<ul style="list-style-type: none"> We made efforts to ensure the occupational health, physical health and mental health of employees. We performed special occupational health examination and mental health management training. The detection rate of occupational hazards in the workplace reached 99.28%. The occupational health examination rate for employees facing occupational hazards reached 99.62%. Under the "Solidarity" program, we provided free medical treatment to nearly one hundred children aged up to 14 in economically underdeveloped regions. PetroChina Central Hospital made a 51-day round of visits to targeted regions, and treated more than 2,400 patients. We donated 12 "Mothers' Health Express" vehicles to Shangrao, Jiangxi Province, to support the local women's healthcare services, such as physical examination, emergency treatment of pregnant women, and maternal & child healthcare education/publicity.
 <p>4 Quality Education</p>	<ul style="list-style-type: none"> As part of the Teacher Training Program, we contributed to the construction of specialized schools and the optimization of educational resources in targeted regions. We contributed RMB 12.48 million to improve educational resources in poverty-stricken areas. As part of the Xuhang Program, we assisted more than 3,000 poor high-school students in the form of fellowships and scholarships at 20 schools in national-level poverty-stricken counties and old revolutionary base areas in Sichuan, Henan, Guizhou, Jiangxi, Gansu, Hebei, Yunnan and Qinghai provinces. PetroChina Scholarships were granted to 635 excellent college students in 2019.
 <p>5 Gender Equality</p>	<ul style="list-style-type: none"> We respected gender equality by treating employees of different genders equally. We guaranteed the rights and interests of female employees to take their legally entitled maternity leave. We took appropriate efforts to promote the employment of women locally (See page 64 for "Case Study: Women's Empowerment & Value Fulfillment").
 <p>6 Clean Water and Sanitation</p>	<ul style="list-style-type: none"> We continuously improved the efficiency of water utilization and strengthened water pollutant management. Total fresh water consumption in 2019 was 793,830,000 cubic meters, which represented a drop of 0.78%, representing a saving of 9,800,000 cubic meters of water.
 <p>7 Affordable and Clean Energy</p>	<ul style="list-style-type: none"> We kept promoting the exploration and development of natural gas. Our gas production grew significantly year-on-year and accounted 70% of the domestic total. The China-Russia East Natural Gas Pipeline was partly put into operation and will transmit 5 billion cubic meters of gas in 2020. Gas marketing covered over 10 million end users, with the sales volume increasing by 19.6% year-on-year. We imported natural gas resources from abroad through multiple channels, effectively introducing overseas pipeline natural gas and LNG.
 <p>8 Decent Work and Economic Growth</p>	<ul style="list-style-type: none"> We carried out 8.45 million hours of training and 307,000 persons got trained. We carried out the projects for employees' livelihood to improve the living and working conditions of front-line workers, and secured employees' personal benefits by linking their compensation to the Company's performance. We promoted the development of the local economy by cooperating with local suppliers/contractors and creating jobs for local people.

SDGs	Action and Results
 <p>Industry, Innovation, and Infrastructure</p>	<ul style="list-style-type: none"> • We attached importance to the construction of technical innovation capabilities and talents, formulated incentives for the excellent commercialization of research findings, and strengthened exchanges of and cooperative research on cutting-edge technologies. • We won the First Prize of the National Science and Technology Progress Award for the 100-million-tons production capacity project and the efficient development of carbonate reservoirs in the Middle East.
 <p>Reduced Inequalities</p>	<ul style="list-style-type: none"> • We had no child employment and forced labor. • We had no form of discrimination in gender, region, religion, nationality, etc.
 <p>Sustainable Cities and Communities</p>	<ul style="list-style-type: none"> • We helped poverty-stricken and remote areas to improve their livelihood by building water wells, roads, schools and hospitals. • To support the Battle for Blue Skies, our subsidiaries realized “zero coal” in and around the Beijing-Tianjin-Hebei region.
 <p>Responsible Consumption and Production</p>	<ul style="list-style-type: none"> • We invested around RMB 9.9 billion in environmental protection and treatment. • We updated action plans for green development. • We kept strict monitoring and control on discharge of waste and pollutants from production processes. • We took measures to reduce the discharge of pollutants into the air, soil and water, and witnessed a continuous drop in pollution emissions. • We completed the Stage A of upgrading gasoline and diesel quality to the National VI level. From January 2019, we began to deliver 300,000 tons of National VI gasoline and diesel every day to markets in 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China. • The energy saved was 780,000 TCE.
 <p>Climate Action</p>	<ul style="list-style-type: none"> • We formulated relevant work plans for low-carbon and green development. • We established a special low-carbon management division. • Major oil and gas fields cumulatively recycled nearly 730 million cubic meters of emitted gases and 130,000 tons of light hydrocarbon. • Clean technologies and facilities were promoted. We improved the existing carbon capture, utilization, and storage (CCUS) system, theoretically and technically. • We were deeply involved in the Oil and Gas Climate Initiative (OGCI) activities.
 <p>Life below Water</p>	<ul style="list-style-type: none"> • We adhered to the environmental philosophy of clean development, launched the environmental features acquisition plan, and maintained environmental control and monitoring, in order to protect the ecological environments and biological diversity in oceans.
 <p>Life on Land</p>	<ul style="list-style-type: none"> • When building the China-Russia East Natural Gas Pipeline, we adopted multiple measures to protect the original landscapes along the route. • We complied with local environmental protection policies, as well as laws and regulations on the trading of animals and plants. We took proper actions to protect local rare species (See page 68 for “Case Study: Careful Protection of Oryx Leucoryx”).
 <p>Peace, Justice, and Strong Institutions</p>	<ul style="list-style-type: none"> • We always upheld business ethics. We issued the <i>PetroChina Anti-commercial Bribery Manual</i>, which provides the requirements and codes of conduct in terms of gifts, entertainment, rebates, discounts, commissions, donations and sponsorships.
 <p>Partnerships for the Goals</p>	<ul style="list-style-type: none"> • Supply chain ESG management was enhanced. • We successfully hosted the Belt and Road Roundtable for Oil & Gas Cooperation, the Sino-Russian Energy Business Forum, and the International Cooperation Forum.

MESSAGE FROM THE CHAIRMAN



PetroChina will have to shoulder greater responsibilities and face more challenges as well as more opportunities. Nevertheless, we will continue to implement the strategy with respect to resources, the market, internationalization and innovation and the goal of building a top-class international energy company. While focusing on efficiency and profit and maintaining quality-based development, we will also seize the opportunities for the petroleum industry's low-carbon transformation, accelerate the research and layout of new energy business and contribute to the UN Sustainable Development Goals 2030, creating and sharing a bright future with all our stakeholders.

Thank you for reading this report as well as for your support to PetroChina over time.

In 2019, given the complex business environment combined with the growing risk of economic downturn worldwide as well as more intense competition in the market, PetroChina strove ahead amid the changing conditions and difficulties. We adhered to the concept of business growth stressing innovation, coordination, environmental friendliness, openness and benefit sharing, and the mission to deliver high-quality energy. We focused on our principal businesses, going all out to level up quality and efficiency while effectively dealing with material risks. Through these efforts, we achieved a better performance than expected, reaped significant benefits from our quality-based business development and furthermore, we improved our value-creating capabilities.

We were much stronger in supply of clean energy through increasing the exploration and production of natural gas, promoting environmentally-friendly development and optimizing the structure of energy supply. Guided by the industry's low-carbon transformation strategy, PetroChina was committed to developing green energy solutions and green technology, with the aim to provide clean and high-quality energy in a more responsible manner. PetroChina has maintained an increased strategic focus on natural-gas exploration and production. In 2019, PetroChina achieved substantial year-on-year growth in gas production. This growth represented 70% of the total domestic gas production as a result. Gas marketing covered over 10 million end users, with the sales volume growing 19.6% year-on-year, addressing public demand for clean, low-carbon and high-efficiency energy resources. PetroChina has accelerated construction of key cross-border and domestic gas pipelines, facilitating the import of natural gas and LNG. The Company created the Action Plan for Green Development, aiming to foster green development which centers on oil and gas, complemented by the trial development and utilization of new energies such as geothermal energy and gas hydrate. Bearing in mind that "Clean Waters and Lush Mountains are Invaluable Assets", PetroChina pursued cleaner production and a more efficient use of energy resources, continuously highlighting carbon emission management. The Company identified the risks that climate change brings and took appropriate measures. PetroChina was deeply involved in the activities of the Oil and Gas Climate Initiative (OGCI), and hosted the OGCI 2019 Conferences. We worked closely with international peers to explore opportunities for low-carbon transformation. The Company was honored with the 2019 Best Practice for Corporate Achieving the Sustainable Development Goals granted by the UN Global Compact Network China, and also the Exemplar Low-Carbon Enterprise in China for the ninth consecutive year.

We achieved steady and quality-based business growth by consolidating growth momentum with further innovation and deeper reform.

Innovation within technology, management and the business model is the fundamental path to address global energy challenges and realize an energy revolution. In this regard, PetroChina focuses on capacity building and promotes organizational and mechanism reforms related to technical innovation to stimulate research institutions and talents. In 2019, PetroChina achieved good performance in technical innovation, contributing effective solutions to issues, such as equal access to energy, response to climate change and enhancement of energy efficiency. Technical advancements boosted increases in reserves and production, as well as a series of major discoveries in risk exploration, including the billion-ton Qingcheng oilfield, and two trillion-m³ gas regions (i.e. shale gas in the Sichuan Basin and Bozi-Dabei in the Tarim Basin). Innovative theories and new technologies/products were developed, and breakthroughs were made in some core technologies. PetroChina won the First Prize of the National Science and Technology Progress Award for the 100-million-tons production capacity project and the efficient development of carbonate reservoirs in the Middle East. We increased the use of information technology across the industry chain by promoting the formation of digital oilfields, smart refineries, smart pipelines, smart gas stations and IoT, enabling the integration of automatic data collection, remote monitoring and production/business decision-making and enhancement of the efficiency and the reliability of business operations.

We further consolidated the foundation for sustainable development through improving compliance management and corporate governance.

PetroChina has continued to improve its management mechanism for sustainable development, integrating this concept into the whole value chain for effective control of environmental, social and governance risks. The Company has made increased efforts to improve corporate governance and its internal control system, through compliance management focused on system optimization and responsibility implementation, together with staff training in compliance education to ensure effective control of compliance-related risks. Our internal control and risk management system was found to have zero defects in external auditing for the 14th consecutive year. PetroChina enhanced supplier access and process monitoring to control ESG risks in the supply chain, and further improved communication and engagement with stakeholders to make our business operations more transparent. The Company was honored with awards such as the Most Honored Oil & Gas Company in Asia, and the Best ESG/SRI Indicators, further adding to PetroChina's brand value.


We have worked on openness and cooperation, to build a community of shared interests in the international oil and gas sector, and witnessed expansion of international cooperation.

PetroChina is committed to being a good corporate citizen, a preferred partner of the industry, and to addressing the major changes in the energy sector together with its peers. Its aim is to establish a shared-interest community featuring openness and a win-win cooperation. In 2019, PetroChina hosted important international exchange activities including the Belt and Road Roundtable for Oil & Gas Cooperation, the Sino-Russian Energy Business Forum, and the International Cooperation Forum on the sidelines of the China International Import Expo, and the memorandum on expanding cooperation in the oil and gas field of Kazakhstan and the extension contract of Block 5 in Oman were successfully signed, which represents the continuously expansion of cooperation scale and areas in the oil and gas field.

Through corporate social responsibility, we secured equitable and inclusive development.

PetroChina has undertaken projects for people's well-being, and increased employees' personal benefits by linking their pay to the performance of the Company, thus ensuring the employees enjoyed greater gains, enthusiasm and confidence. We managed to expand up-, mid- and downstream business partnerships with local investors to drive the economic and social development of local areas. PetroChina also leveraged its industrial, technical and human resources for targeted poverty alleviation to support the government's initiative. In 2019, we implemented nearly 70 targeted alleviation projects, and allocated 73% more funds than in 2018, helping to lift eight of the 10 targeted counties out of poverty. The localization strategy of the Company in overseas operations secured an over 90% local employment rate, among which many took up key technical or management posts. PetroChina paid taxes according to local laws, totaling RMB 42.9 billion overseas. Meanwhile, the Company continued to implement a series of projects to support local communities. PetroChina was honored with the Responsible Enterprise 2019 award for its outstanding social contributions.

In the year to come, given the complex situation, with accelerating energy transition and the profound adjustment of the energy supply-demand pattern, PetroChina will have to shoulder greater responsibilities and face more challenges as well as more opportunities. Nevertheless, we will continue to implement the strategy with respect to resources, the market, internationalization and innovation and the goal of building a top-class international energy company. While focusing on efficiency and profit and maintaining quality-based development, we will also seize the opportunities for the petroleum industry's low-carbon transformation, accelerate the research and layout of new energy business and contribute to the UN Sustainable Development Goals 2030, creating and sharing a bright future with all our stakeholders.



Dai Houliang

Chairman of the Board





CORPORATE GOVERNANCE

At PetroChina, we always advocate the modern concept of corporate governance characterized by the supremacy of law, reciprocity of power and responsibility, procedural compliance, credibility and integrity, justice and impartiality. Taking rule of law as the principle, we enhanced our capabilities in business management. Taking the *Articles of Association* as the guideline, we improved our corporate governance system and the scheme of business management, focusing on formulating systematic, scientific and effective internal rules and regulations. Taking compliance as a key issue, we set a code of behavior for both the company and employees. Disciplined by such rules and regulations, we strive to achieve the modernization and internationalization of the corporate governance and control systems. We make relentless efforts to test the rationality and practicality of enhancing our corporate governance and improve the long-term mechanism which aims at running our business in compliance with the law.

SDGs



SUSTAINABILITY MANAGEMENT

To promote sustainable development, which we consistently advocate, we must deliver clean, reliable and affordable energy to the public in a responsible, sustainable and ethical manner, abide by laws and regulations, respect human rights, protect the environment and make contributions to the geographic areas where we operate. We embrace the *United Nations Universal Declaration of Human Rights (UDHR)* and a number of codes of voluntary compliance, including but not limited to the United Nations Global Compact (UNGC) and the United Nations Sustainable Development Goals (SDGs) 2030.

The Company has established an effective system for sustainability management and created a governance structure for that purpose featuring clear layers of management and division of labor. We guide and manage the efforts in respect to sustainable development through the work of the Shareholders' General Meetings, the Board of Directors and its special committees, the Supervisory Committee, and the management team headed by the President. The philosophy of sustainability is deeply integrated in the entire process of our business operation for effective control of environmental, safety and social risks.

The Health, Safety and Environment (HSE) Committee has been set up under the Board of Directors which is responsible for overseeing whether the HSE plans of the Company have been effectively implemented; advising the Board of Directors or the President on any major decisions or any critical issues that may have an impact on the HSE aspects of the Company; enquiring about major incidents and liabilities arising in connection with production and operation, properties and assets, staff or other facilities of the Company; and conducting inspections of and urging the resolution of such incidents. The *Environmental, Social and Governance Report* of the Company will be presented to and considered by the Board of Directors on an annual basis.

In 2019, we focused on "high-quality development", upholding business ethics, making every effort to develop clean and low-carbon energy, and paying close attention to environmental protection and caring for employees, in order to make greater contributions to society and keep enhancing our capacity for sustainable development. We link compensation of senior management and employees to their performance with respect to sustainable development and exercise a veto against any breach of environmental regulations by persons-in-charge. We also proceeded with company-wide performance appraisal, deducting points away from the performance scorecard of subsidiaries which have HSE accidents and quality problems.

GOVERNANCE FRAMEWORK

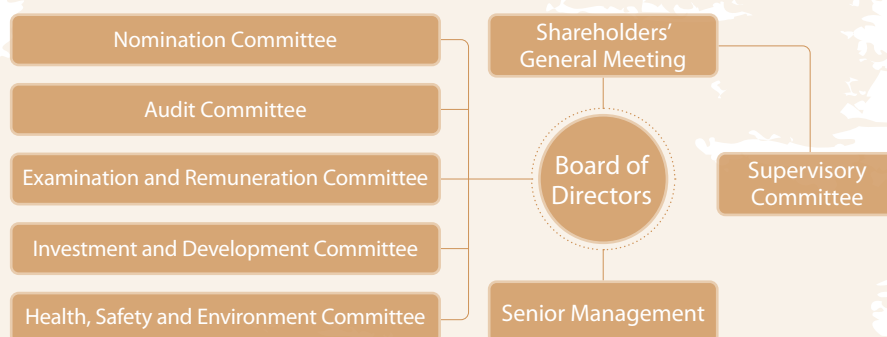
Ever since its incorporation, PetroChina has had in place a corporate governance framework in compliance with regulatory requirements and international practice, and this framework has been improving by taking into account actual operating circumstances in order to promote a continuous improvement in the standard of management. The governance framework is constituted by the Shareholders' General Meeting, the Board of Directors and its special committees, the Supervisory Committee, and senior management headed by the

President under which their respective authorities and responsibilities have been clearly defined. Such a management structure allows for close coordination and is highly effective.

We optimize the decision-making mechanism in keeping with laws and regulatory requirements, enhancing assessment of the mechanism, setting up and improving a system that traces back the person(s) held responsible for decisions made and holds decision-makers accountable for life. We keep on improving monitoring and checking the exercising of power, and following the principle that responsibility shall be commensurate with authority. We clearly delineated the limits of authority at different levels and set out a list of duties and powers. We made well-coordinated use of internal resources monitoring legal affairs, internal controls, auditing and internal inspection. We reinforced self-monitoring by means of double checking by dedicated departments and cross checking between superior and subordinate departments. We submit ourselves voluntarily to monitoring by the public to ensure well-grounded decision making, appropriate authorization, well-controlled exercise of power and disciplinary action against any abuse of power.

The governance system of the Company meets the requirement of the *Company Law of the People's Republic of China* ("Company Law"), the relevant provisions of the China Securities Regulatory Commission, the regulatory requirements of stock exchanges where the Company is listed and the *Articles of Association of PetroChina* ("Articles of Association").

Corporate Governance Structure



Shareholders and Shareholders' General Meeting

The Shareholders' General Meeting is the highest authority in the Company, exercising functions and powers in accordance with the law. PetroChina's Shareholders' General Meeting is held annually to ensure that all shareholders enjoy equal status and exercise their rights effectively. In order to ensure fair and reasonable connected transactions, in voting on resolutions concerning connected transactions, CNPC, being a connected shareholder of the Company, will abstain from voting.

The shareholding structure of the Company is detailed in our annual report for 2019.

On June 13, 2019, PetroChina held the Shareholders' General Meeting for 2018. At the meeting, the annual report of the Board of Directors, the annual report of the Supervisory Committee, the annual financial report and the annual profit distribution plan for 2018 as well as some other proposals were presented. For details, please refer to the announcement on our website.

According to the provisions of the *Company Law* and the *Constitution of the Communist Party of China*, the Company shall establish Party organizations and the Party working body with the adequate number of Party affairs personnel, and guarantee the funds for the Party organizations. The Party organizations shall play the role of the core leadership and political nucleus.

The Board of Directors of the Company shall take the Party organization's advice before it determines material matters, such as the orientation of the Company's reform and development, key objectives/tasks and major work arrangements. When the Board of Directors intends to appoint management personnel, the Party organizations shall consider and put forward their advice on the candidates nominated by the Board of Directors or the President of the Company, or nominate candidates to the Board of Directors and the President of the Company.

Our independent directors perform their duties with diligence, loyalty and independence. With a proper understanding of the business status, financial performance and major projects of the Company, they effectively exercise their special powers for approving major connected transactions, and provide advice for the operation of the Board and the business development of the Company by making use of their expertise in their respective field and their experience.

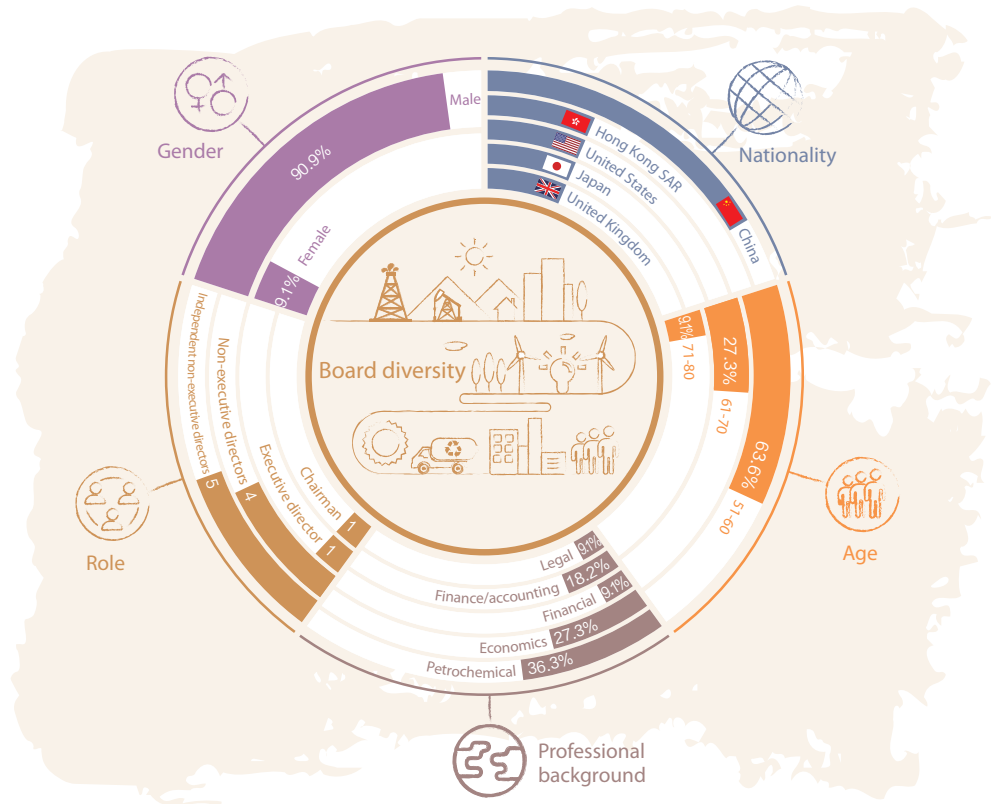
In 2019, our independent directors:

- Made on-site visits to Xinjiang Oilfield, Karamay Petrochemical, PetroChina International (London) Co., Ltd. and Kazakhstan projects;
- Conducted a number of work-related discussion sessions with the Quality, Security and Environmental Protection Department on carbon capture, utilization and storage;
- Provided comments and constructive suggestions on the Company's domestic and overseas projects.

Directors, Board of Directors and Board Special Committees

The directors are elected by the Shareholders' General Meeting and accountable to the shareholders of the Company. The term of office is three years, renewable at the end of the term upon re-election and re-appointment. Directors act in the interests of the shareholders as a whole, strictly adhere to the principle of diligence, integrity and pragmatism, and conscientiously perform their duties. Currently, the Company had 11 directors, including five independent non-executive directors.

The Company formulated the Diversification Policy of the Composition of the Board of Directors, so that Board members are engaged based on the actual situation, operational model and work requirements of the Company, while taking into account their nationality, gender, age, cultural and educational background and professional experience. This can help improve the decision-making capabilities of the Company. For details of Board members, please refer to our website and our annual report for 2019.



A total of six Board meetings were held in 2019, as detailed in our website and our annual report for 2019. For details of the attendance by independent directors at the Board meetings, please refer to our annual report for 2019.

The Board of Directors sets up a Nomination Committee, Audit Committee, Examination and Remuneration Committee, Investment and Development Committee, and Health, Safety and Environment Committee, all of which provide support to the Board of Directors in its decision-making (The composition, division of roles and the work of each of such committees are detailed in the annual report of the Company for 2019). Based on our operational requirements, we have formulated, improved and effectively implemented the work rules and procedures of the Board of Directors and its special committees.

Independent and Standardized Functioning of the Audit Committee

The Audit Committee of the Company is composed of one non-executive director and two independent non-executive directors. The Audit Committee performs its duties and functions in a standardized manner in accordance with the relevant regulations and requirements of the *Guidelines on the Conduct of Business by Audit Committees of Listed Companies* issued by the Shanghai Stock Exchange, the *Articles of Association* and *Rules of Procedure for the Audit Committee of the Board of Directors* of PetroChina. The Audit Committee primarily exercises the following duties: reviewing and monitoring the financial reporting process and internal control system of the Group, and providing advice to the Board of Directors.

The auditors of the Company shall be well-informed of relevant laws and regulations as well as the internal rules of the Company, and well-equipped with the knowledge and skills necessary for auditing. They shall participate in post-school education for at least 80 class hours annually. The audit department reports to the Audit Committee of the Board of Directors of the Company on its work four times a year.

Supervisors and Supervisory Committee

The term of office of our supervisors is three years, which is renewable at the end of the term upon re-election and re-appointment. No supervisor may concurrently hold the position of Director, President, Senior Vice-President, Vice-President or Chief Financial Officer. In accordance with the *Company Law* and the *Articles of Association*, the supervisors shall attend meetings of the Supervisory Committee and attend Board meetings on a non-voting basis. They shall report to the Shareholders' General Meeting, and submit the Supervisory Committee's work reports and relevant proposals. The Company's Supervisory Committee currently consists of nine supervisors, four of which are employee representatives.

The Supervisory Committee is accountable to the Shareholders' General Meeting. The Supervisory Committee formulated the *Organization and Rules of Procedures for the Supervisory Committee* and the *Rules on Supervisors' Performance of Duties*, setting out the manner, content, requirement and standard of appraisal with respect to the performance of duties by the supervisors. All supervisors are urged to monitor the Company's finances and the legality and compliance of the directors and senior management of the Company in performing their duties, in line with their responsibility to all shareholders.

In 2019, the Company held four Supervisory Committee meetings and formed 13 resolutions. All of the meetings were in compliance with the provisions of the *Company Law of the People's Republic of China* and the *Articles of Association* and were legal and effective.

Executive Body

The Company's executive body is headed by the President and is composed of Senior Vice-Presidents, Vice-Presidents and a CFO. They are appointed by and held accountable to the Board of Directors. They implement Board resolutions and organize the day-to-day production and business activities of the Company in accordance with the *Company Law* and the *Articles of Association of PetroChina* based on the authorization of the Board of Directors. The major business activities of the Company are detailed on our website.

3

The supervisors made three business inspections to Liaohe Oilfield, Fushun Petrochemical, Jilin Oilfield, Jilin Sales and PetroChina West Africa, which helped improve the management of the Company

MANAGEMENT SYSTEM

The Company stresses intensification, specialization and integration, and has established a management system where responsibility is commensurate with authority and is scientifically sound, lean, efficient, and vibrant, to strengthen the restrictions on and the supervision of the

exercise of power. The Company aims at achieving clear-cut control objectives, effective integration of resources and optimal efficiency and effectiveness in order to promote the improvement of our environmental, social and corporate governance standard and to achieve sustainable growth. The Company actively boosts the integration and innovation of the management system and promotes pilot programs for system construction and integration, in order to push forward reform of the management system and optimize resource configuration.

Compliance System

The Company regards adherence to laws and compliance as the fundamental guarantee for high-quality development, and insists on the concept of putting adherence to laws and compliance above economic interests and continuously setting out an ever more rigorous compliance management system. We also enhance on a continuous basis our compliance demonstration and review of major issues and major decisions, and intensify prevention and control measures against any risks associated with irregularities in order to ensure that both the management and operation are in compliance with rules and regulations according to the law. We have strictly implemented national laws and regulations and government regulatory requirements and strengthened compliance management in key areas. Therefore, we have seen enhanced compliance awareness among all our staff and an increasingly intense compliance atmosphere in the Company.



PetroChina's key actions in compliance management in 2019

- Formulated the *Anti-monopoly Administration Regulations*, the *Anti-monopoly Manual*, the *Guidance on the Anti-monopoly Works* and issued the *Anti-commercial Bribery Manual*, the *Opinion on Strengthening the Compliance Management of Overseas Operation* and the *Guidelines on the Prevention and Control of Legal Compliance Risks Incurred by Enterprises Engaging in the Sales of Refined Oil*
- Conducted analysis and assessment on compliance risks and issued five warning letters on significant events.
- Conducted stringent reviews on major decisions, reform, major policies and systems and joint venture and collaboration projects
- Conducted on a persistent basis compliance publicity and Company-wide compliance training
- Improved the assessment standards and scoring methods for business compliance.

Internal Control and Risk Management System

We keep building up the internal control system to ensure its completeness and effectiveness. In 2019, the Company focused on key areas, intensified its testing efforts and enhanced its rectification work. The Company's internal control system passed an external audit with no defects for the 14th consecutive year.

Anti-corruption Risk Prevention and Control System

We treat our business partners, customers, suppliers, contractors and counterparts with integrity, respect and equality, oppose any form of commercial bribery and require our business partners to follow the requirements pertaining to the Company's anti-commercial bribery and anti-corruption policies. Our management and employees are not allowed to abuse their position in operating business and enterprises in violation of the relevant regulations using PetroChina brand, signing business contracts for their own interests, or for the benefit of their friends or family, or to obtain personal benefits. We abide by relevant laws and regulations such as the *Company Law* and the *United Nations Convention against Corruption*, and strictly observe the *Punishment Regulations for Management's Violations and Non-compliance*, *Compliance Management Measures*, *Self-Discipline Convention Applicable to Bidding and Tender Activities*, and *Material Supplier Management Measures*, to regulate the behavior of employees and the Company.



In 2019, we:

In terms of improving our anti-corruption system and procedures

- Improved comprehensive integrity and risk control systems in some focal areas and departments and principal business segments
- Created a joint supervision information system by applying the concept of big data to achieve online supervision of sales of oil products and other key business segments
- Adopted a “top-down” supervision and inspection approach to take initiatives to investigate any indication of corruption related risks and issues

In terms of our anti-bribery training

- Made arrangements for senior management of the Company to sign confirmation letters relating to the code of professional ethics and for all staff of the Company to sign letters of undertaking on integrity practices
- Set up the official WeChat account entitled “Shi You Qing Feng” (《石油清风》) to launch a disciplinary education platform
- Published a booklet entitled “Jing Shi Lu” (Alerts, 《警示录》) and produced an educational video entitled “Li Jian Xiao Ge” (《利剑啸歌》) and disclosed typical cases on the website

In terms of strengthening our due diligence and monitoring practices against third party intermediaries/agents

- Adopted professional management and dynamic control, implemented strict market entry requirements, real time online assessments and annual evaluation, and basically created a dynamic “entry-exit” mechanism
- Formulated the *Administrative Measures on the Dishonest Acts of Bidders*, which specifies more stringent joint punishments on dishonest acts and regulates the duration and order of bidding and tendering activities
- Conducted special supervision and inspection on the procurement management irregularly, bidding and tendering activities, and imposing a ban on market entry or restricting any new business dealings involving intermediaries/agents which have committed corrupt acts
- Launched investigations of business and enterprises operated in violation of the relevant regulations by management and their relatives



The continuing transactions between the Company and its related parties are governed by the principle of fair, equitable and open pricing. Such transactions will not adversely affect the Company’s future financial situation or operating results, nor will they result in reliance on the related parties or affect the Company’s independence. For more details about related party transactions in 2019, please refer to our annual report for 2019.

We have a telephone hotline and an email address for reporting irregularities. The public can report cases of irregularities using their own names or anonymously. We will seriously investigate and provide feedback in a timely manner, and ensure that the identity of informants remains confidential.

Whistleblowing hotline: 010-62094741

Whistleblowing email: jcbjb@petrochina.com.cn

We adhere to the principles of no restricted area, full coverage and zero-tolerance, strictly impose tight constraints by adopting tough approaches and long-term deterrence strategies, and conduct investigation of parties offering bribes and also those accepting bribes in order to continuously maintain a tough stance in combating corruption and improve the efficiency of corruption control.

Upholding Business Ethics

We abide by business ethics and market rules, and adhere to the principle of honesty and credibility, equal consultation, mutual benefit and common development, and promote transactions with a high degree of business integrity and transparency, in order to maintain fair and impartial competition in our business activities. We strictly comply with the *Anti-monopoly Law of the People’s Republic of China*, the *Anti-unfair Competition Law of the People’s Republic of China*, the *Supervision Law of the People’s Republic of China*, the *UN Guiding Principles on Business and Human Rights* and other applicable laws, regulations and international practices on anti-monopoly, anti-unfair competition, anti-commercial bribery, extortion and fraud. We are against monopolistic acts. We fight against unfair competition in any form and comply with trade restrictions, and never conduct, participate in or support any form of money laundering.



In 2019, we formulated and issued the *PetroChina Anti-commercial Bribery Manual* which sets out the requirements and codes of conduct in relation to anti-commercial bribery in seven respects, covering gifts and entertainment, rebates, discounts and commissions, donation and sponsorship, facilitation fees, recruitment, business partners, account books and records.

SUPPLY CHAIN MANAGEMENT

We insisted on the principle of supplier management with regard to consistent rules, consistent business processes, consistent standards and consistent supplier reserves in order to achieve management in the full life cycle and closed loop. We actively provide guidance to our suppliers on lawful and ethical business operations, requesting expressly proper performance in corporate social responsibility and safe production in line with quality and safety standard and norms, manufacturing ever more reliable products, ensuring environment-friendly supply and the human right of employees to fulfill demand for personal development.

PetroChina is committed to interconnection and interaction with its suppliers, resorting to various means to understand their concerns and claims via a well-established mechanism for constant communication. The Company's Supply Chain Safety Management Process is detailed in Chapter 3, Section 2.

In 2019, we:

Promulgated rules on suppliers

- Suspended transactions with suppliers failing to pass enterprise system certification in terms of quality, safety and environment
- Debarred suppliers incurring material incidents in terms of quality, safety and environment

Promoted electronic procurement system 2.0 across the board

- Shared information with suppliers in phases such as planning and logistics in order to ensure more efficient business processing

Streamlined the qualification criteria applicable to tier-2 suppliers in respect of material purchasing

- Improved the basic admission criteria applicable to tier-2 suppliers with respect to material purchasing
- Enhanced qualification review of environment protection system and social risk management system, setting a timeframe for unqualified suppliers to rectify



Granted admission to newly added tier-1 suppliers in respect of material purchasing

- Introduced professional tender inviting firms and opted for open bidder qualification review to offer suppliers opportunities for equal participation
- Included factors such as corporate safety, environmental protection, human rights protection, business ethics compliance in the review and on-site examination of suppliers, providing guidance on the selection of business partners

Conducted regular communication with strategic suppliers

- Proceeded to cooperate *inter alia* in IoT, logistics management and green energy
- Shared management know-how *inter alia* in environmental protection, sustainable development and human resources

COMMUNICATION AND INTERACTION WITH STAKEHOLDERS

Stakeholders' trust and support is fundamental to the building of a sustainable business. We worked hard to enhance the quality and profitability of our development to maximize returns to our shareholders and value for our stakeholders, and to achieve our common goal of harmonious development and maximizing mutual benefits.



6

A total of six roadshows and reverse roadshows in 2019

30

Answering 30 questions from investors through Investor FAQs and <http://sns.sseinfo.com/> in 2019



Ethylene Plant of Dushanzi Petrochemical



Case Study: PetroChina's Third Company Day Event

In May 2019, we hosted our third "Company Day" event in Zhuhai, attended by over 100 investors and analysts from nearly 70 domestic and overseas institutions, including Goldman Sachs, Morgan Stanley, J.P. Morgan, CICC, CITIC Securities and Haitong Securities, as well as media representatives.

The event lasted for one-and-a-half days. Through expert lectures, on-site discussions and a variety of activities, we engaged the investors in extensive and in-depth discussions on key issues in the capital market, such as enhancing exploration and development, transformation and upgrading of Refining and Chemicals business and leveraging a well-integrated industry chain. Attendees were very positive about the event, saying it was productive and rewarding.

Case Study: PetroChina Held "Refueling for Dreams" Public Day Event in 2019



PetroChina Open Day — Dalian Petrochemical

In June 2019, the Company held a public day event themed on "Refueling for Dreams", where NPC deputies, CPPCC members, media reporters, primary and middle school students and local residents were invited to get close to, learn more about and gain a deeper insight into PetroChina and petroleum.

During the event, a total of 112 rounds of activities were organized by 78 subsidiaries of PetroChina in oil exploration, refining and chemicals, pipelines and sales. This event attracted 10,000 on-site visitors and 32 million on-line participants via live broadcasting on the Internet.

Case Study: Reverse Roadshow in Dagang

In July 2019, the Company held a reverse roadshow at Dagang Oilfield attended by nearly 60 shareholders, investors and analysts from over 40 domestic and overseas institutions including Citigroup, HSBC, Goldman Sachs and Credit Suisse, etc.

Investors made a visit to our shale oil production site to understand the actual drilling and production process. They also visited the production site of our No.4 Oil Extraction Plant at 2-2 man-made island in Chenghai, Dagang Oilfield, No.6 Oil Extraction Plant at Yang Well 1 in Congchang, the plant history exhibition hall and the shale core warehouse.

Case Study: On-site Survey of Projects in Xinjiang Oil Field and Kazakhstan by Independent Directors

In September 2019, the independent directors of PetroChina made site visits respectively to Xinjiang Oilfield (three independent directors) and Kazakhstan (four independent directors). Through the visits, the independent directors understood the recent progress made in exploration and development, technical innovation, business management, safety and environment protection, and entered into discussion on Company's efforts and profitability in terms of ESG.



Independent directors visit Xinjiang Oilfield

Stakeholder	Expectations	Communication Approach
 <p>Governments</p>	<ul style="list-style-type: none"> • Stable energy supply • Harmonious economic and social development • Leading role of brand and technology • Tax payment according to law 	<ul style="list-style-type: none"> • Offer company expertise • Attend to public concerns and improve corporate behavior • Launch strategic cooperation with relevant departments • Attend seminars and forums
 <p>Shareholders</p>	<ul style="list-style-type: none"> • Standardized corporate governance • Stable business growth • Sustainable development 	<ul style="list-style-type: none"> • Fulfill requirements on statutory information disclosure • Organize non-deal roadshows and other activities • Issue reports and announce results performance on a regular basis • Receive public opinions through Investor FAQs and http://sns.sseinfo.com/ • Organize reverse roadshows and site inspections
 <p>Employees</p>	<ul style="list-style-type: none"> • Basic rights guaranteed • Professional development • Growth in wages and benefits 	<ul style="list-style-type: none"> • Elect employee representatives to join the Supervisory Committee • Establish trade unions at all levels • Convene employee representatives meetings and make reports • Organize employee training programs • Set up a complaints and feedback system
 <p>Consumers</p>	<ul style="list-style-type: none"> • Provide safe, environmentally friendly, high-quality products • Constantly improve the quality of services • Operate with integrity 	<ul style="list-style-type: none"> • Carry out activities to protect consumers' interests • Publicize commitment to quality services • Provide hotline services • Conduct customer satisfaction surveys
 <p>Business partners</p>	<ul style="list-style-type: none"> • Fair and transparent procurement • Win-win cooperation 	<ul style="list-style-type: none"> • Hold tendering meetings • Hold large cross-border business negotiations and technical exchange meetings • Use the electronic trading platform • Engage in sharing managerial practices and technical standards • Conduct contract negotiations and routine meetings • Hold training for business partners • Conduct daily operation meetings
 <p>NGOs</p>	<ul style="list-style-type: none"> • Improve sustainable management • Perform social responsibilities such as poverty alleviation and environmental protection 	<ul style="list-style-type: none"> • Share the Company's experiences • Participate in NGO activities • Promote international communication
 <p>Communities</p>	<ul style="list-style-type: none"> • Promote employment growth • Protect community environment • Promote economic development in the community • Respect cultural traditions of the community 	<ul style="list-style-type: none"> • Hold dialogues with local communities • Organize community visits • Conduct social and environmental impact assessments of projects • Promote knowledge sharing and education programs • Increase information disclosure

Key Actions

- Behave legally and ethically, and abide by the applicable laws and regulations in the jurisdictions where we operate
- Stabilize oil and gas supplies
- Participate in discussions organized by the government on climate change, energy conservation and emission reduction
- Promote local employment and cultivate local talents
- Pay taxes according to law

- Operate in a responsible manner to maintain a good reputation
- Convene Shareholders' General Meetings
- Ensure equal treatment of shareholders, and value the opinions of both small and medium-sized shareholders
- Strengthen management over investor relation and hold dialogues with investors and shareholders in various ways

- Enhance employee training and skills development
- Organize vocational skill contests
- Conduct occupational health checks
- Promote local employment in overseas operations
- Provide a career development platform for employees
- Protect employee safety in overseas operations

- Enhance quality management
- Improve service quality at refueling stations
- Increase the supply of clean fuel, such as natural gas, high-standard gasoline and diesel
- Secure oil supplies for disaster relief and agricultural production
- Organize Refueling Station Open Day activity

- Strengthen centralized procurement management to provide suppliers with equal opportunities
- Enhance communication and coordination with contractors and strengthen the HSE management of contractors by creating a safe and healthy working environment
- Improve security measures and the emergency response network
- Open the investment field
- Hold high-level forums

- Submit a progress report to the UN Global Compact (COP)
- Deal with external concerns through various forms of communication
- Play an active role in participating in and supporting international environment and standardization initiatives
- Participate in a wide range of forums and conferences

- Participate in disaster relief and reconstruction, and provide financial support for education and poverty alleviation
- Support and drive the economic and social development of areas where business located with large projects construction
- Supply clean energy, e.g. natural gas, to remote regions
- Promote employees to provide voluntary services
- Procure locally, where the business is carried out
- Provide job opportunities and training for the local community





ENERGY AND THE ENVIRONMENT

The destiny of humankind and nature is intertwined, therefore only by observing the law of nature can we avoid pitfalls in the exploitation and utilization of natural resources. We incorporate care for life and protection of the environment into our corporate mission. To adhere to the global trend of energy transition, we make great efforts to develop clean, low-carbon, safe and efficient energy, continuously upgrade the management and control of carbon emissions, and endeavor to build PetroChina into a resource-conserving, environmentally friendly and safety-conscious business.

SDGs



ENERGY TRANSITION

Ongoing technical innovation has accelerated the global process towards clean and low-carbon energy. Although fossil fuels will remain the main energy source for a long time, the future energy mix will change significantly due to factors including global climate change and development of new technology. Natural gas, as a clean, low-carbon, safe and efficient energy resource, is playing an increasingly significant role in the global energy transition, and has entered a golden development period.

Opportunities and Challenges

Global primary energy demand continues to grow, and the issue of equal access to energy stands out. The United Nations' *World Population Prospects* estimates that the world population will be close to 10 billion by 2050. Population growth, urbanization and industrialization of developing countries will continue to drive global energy demand and consumption growth. Meanwhile, according to a study by the International Energy Agency (IEA), more than 1.2 billion people around the world still do not have access to affordable modern energy, thus losing opportunities for equal development. It is a substantial part of the oil and gas industry's fulfillment of social responsibilities and the achievement of the Sustainable Development Goals (SDGs) of the United Nations to help this group have equal access to clean, low-carbon and affordable energy.

Although the pace of transition to low-carbon energy under the goal of limiting global warming to less than 2°C is accelerating, fossil fuels remain the main source of energy. Climate change

Scenery of Qinghai Oilfield



and people's pursuit of a high quality of life will further promote the transition and upgrading of energy, and ongoing technical innovation will expedite the development of clean and low-carbon energy worldwide. Nevertheless, fossil fuels will remain the dominant energy source, and clean and efficient development and utilization of fossil fuels is the most realistic way to deal with climate change. By 2025, fossil fuels will represent over 80% of global primary energy consumption, among which oil represents approximately 33% and natural gas represents approximately 26%. By 2050, clean energy (natural gas and non-fossil fuels) will represent an aggregate of 56% of primary energy consumption.

Strategic Response

Oil and gas will remain the world's main energy source for a long time to come. Focusing on the oil and gas business, the Company will vigorously promote green and low-carbon development through adjusting its business structure, thus offering more clean energy sources. The Company is also actively transforming from an oil and gas producer and supplier to an integrated energy service provider.

Actively developing new energy and renewable energy

- Carrying out scale development of geothermal resources and promoting utilization of waste heat from oil production
- Promoting the development and utilization of low-carbon and non-carbon clean energy according to local conditions

Vigorously developing natural gas and enhancing supply of clean energy

- Taking natural gas as a strategic and growing business to promote the Company's green development, and vigorously supporting the innovation, application and promotion of clean and efficient utilization of natural gas
- Endeavoring to improve domestic productivity and effectively introducing overseas pipeline natural gas and LNG

Strengthening international cooperation

- Actively participating in relevant work of the Oil and Gas Climate Initiative (OGCI)
- Driving the momentum for green development such as low-carbon technology, environmental protection industry, and green finance

Reducing carbon footprint

- Strengthening energy consumption management in production processes to improve energy efficiency
- Enhancing the innovation of technologies, such as carbon capture, utilization and storage



50%

The proportion of natural gas in the Company's total domestic oil and gas production equivalent is expected to reach 50% by 2020 and grow further thereafter.

TOPIC: TECHNOLOGICAL INNOVATION, MEETING ENERGY CHALLENGES

For the energy industry, it is very challenging to meet the growing energy demand while optimizing the energy mix to reduce environmental pollution. PetroChina believes that innovation is the only way to cope with such challenges. Technological innovation can improve our ability to ensure energy supply, and provide more clean, low-carbon and affordable energy resources, in order to drive the sustainable development of the Company and the society.



Technological Innovation System of PetroChina





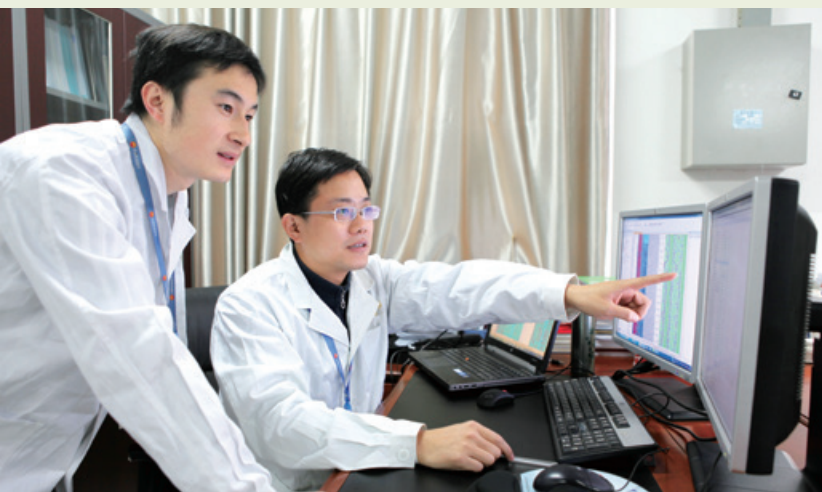
Target

Technological reform management

Cooperation and communication

Measures

1. The Company issued institutional documents, such as *Measures to Further Deepen Reform of the Science and Technology System and Mechanism*, *Measures to Improve Science and Technology Incentives*, and *Measures to Stimulate Scientific Research Institutions and Talents*.
 2. The Company has formulated a pilot plan for dividend incentives.
-
1. The Company continued to consolidate its strategic alliances with international companies to promote the sharing of superior technical resources and the exchange of cutting-edge technologies.
 2. The Company signed a strategic cooperation agreement with the Chinese Academy of Sciences on joint research and the cultivation of skills in exploration and development, new energy and new materials.
 3. Following the strategy of school-enterprise cooperation, the Company launched strategic technological projects with China University of Petroleum (East China), and worked out the implementation plan for an innovative alliance with Southwest Petroleum University.



Researchers are making test in the laboratory

Progress in Technological Innovation

Progress in 2019

21.41 billion RMB

The investment in research and development by the Company and its subsidiaries

35

Key laboratories

20

Research bases

289

Senior technical experts and corporate chief technical experts

39,377

Researchers

2,717

Patents of which the registration was completed

1,600

Invention patents included

Innovation Directions

Exploring new areas to increase reserves and production under complex geological conditions, in order to consolidate the base for meeting long-term growing energy demand

1. Qingcheng oil field, with over 1 billion tons of reserves discovered in the Ordos Basin. *
2. Additional original shale gas in-place of 740.971 billion cubic meters was proved in the Changning-Weiyuan and Taiyang blocks, adding up to a total of 1.06 trillion cubic meters across the Sichuan Basin, and forming a giant shale gas region in southern Sichuan. *
3. More than 10 geological theoretical cognitions and 10 core technologies (e.g. development of extra-large conglomerate oil fields) have been formed, effectively contributing to significant breakthroughs in risk exploration.
4. With regard to new energy, new progress was made in geothermal and aviation biofuel technologies.



In 2019, the Company

- won the first prize of National Science and Technology Progress Award as a leader.
- won one China patent gold award and one China patent silver award.
- was the leader in the formation of seven international standards.
- had one newly-elected academician of the Chinese Academy of Engineering.

* The proved economically recoverable reserves of above discoveries have not been verified by an independent third-party. The Company will disclose further information according to relevant regulations in a timely manner.

Developing clean energy utilization technologies to meet social demand for clean, low-carbon and efficient energy products

1. A total of five new cognitions and six complete series of technologies (e.g. production of National VI gasoline and diesel) were formed, and eight core technologies were developed.
2. Heavy oil sludge treatment and comprehensive utilization technology was developed to procure the treatment of heavy oil sludge by quality and classes. Liaohe Oilfield has processed 103,000 tons of heavy oil sludge.
3. Refinery waste gas treatment and VOC emission control and utilization technologies were developed, significantly improving the overall capability of refinery gas and VOC treatment.
4. The existing carbon capture, utilization and storage (CCUS) system was improved both theoretically and technically.
 - More than 1.5 million tons of carbon dioxide was stored in the CO₂-flooding demonstration project in Jilin Oilfield.
 - New demonstration projects will be built in Xinjiang Oilfield and Changqing Oilfield.
5. The National VI gasoline and diesel technologies were applied in affiliated enterprises, with a total annual production capacity of 14.3 million tons. These technologies have effectively supported the Company's oil quality upgrading.

Enhancing energy efficiency, reducing costs, securing energy security, and improving operational reliability

1. In view of pipelines, storage and transportation, 14 technology series in pipeline engineering design were set up, facilitating pipeline construction and operational capacity.
2. Application of information technology:
 - The digital oilfield was configured with the Dream Cloud platform covering exploration and development, collaborative research, operation management and other businesses.
 - Intelligent refinery. Its operational management control and analysis decision-making capabilities were consistently improved.
 - The intelligent pipeline is characterized by comprehensive and unified data, perceptual interaction and visualization, system integration and interconnection, precise matching of supply and demand, intelligent and efficient operation, and controllable prediction and early warning.
 - Smart sales facilitated the cross-border integration of "service + commodity + Internet + finance".
 - The construction of the IoT system was in full progress, to improve the integration of automatic data collection, remote monitoring, and production & operation decision-making.
 - The "three clouds" (i.e. business application, e-commerce, and scientific computing) were basically established, providing efficient services for technological research and development, as well as engineering design.

600⁺
million tons

In 2019, the Company's domestic newly-added proven geological reserves of oil exceeded 600 million tons for 14 consecutive years.*

400⁺
billion cubic meters

The newly-added proven geological reserves of natural gas exceeded 400 billion cubic meters for 13 consecutive years.*

1,345.4
million barrels

The Company's domestic oil and gas production equivalent was 1,345.4 million barrels.

*The above data have not been verified by an independent third-party. The Company will disclose further information in a timely manner.

RESPONSE TO CLIMATE CHANGE

We support the goal of limiting global warming to less than 2°C by the end of this century. To this end, we implement the low-carbon development strategy proposed by the Chinese government. We strive to be the supplier of clean energy and the promoter of the low-carbon transition of society, and share the practices of greenhouse gas control with industry peers and all segments of society.

Management of Climate-related Risks

The Company's Board of Directors attaches great importance to climate-change-related risks and opportunities, and includes them in the Company's development plan. We pay close attention to existing and emerging carbon markets, and have formulated relevant work plans for low-carbon development and green development as well as climate-related plans. At the management level, we continue to strengthen climate-related risk management, carbon emissions management and carbon risk management, improve a carbon emission control system, develop low-carbon industries, improve clean energy supply, and actively participate in cooperation among global oil and gas industry in tackling climate change.

Major Climate-change-related Risks Identified by PetroChina and Responses

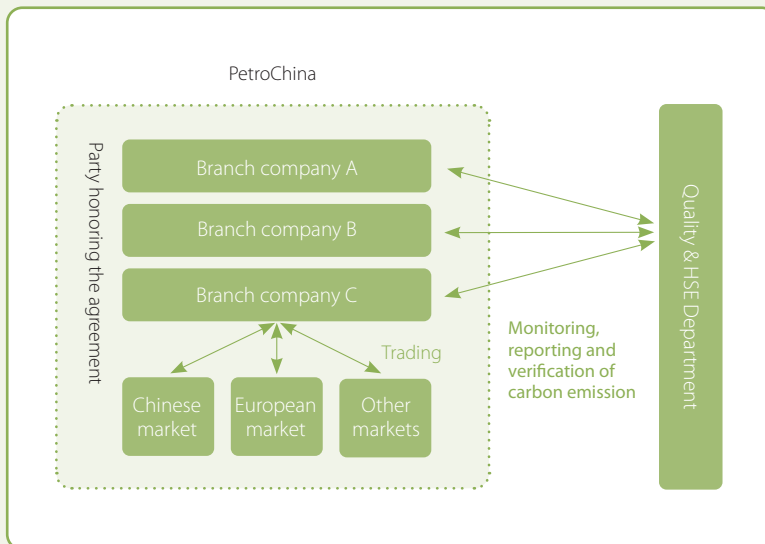
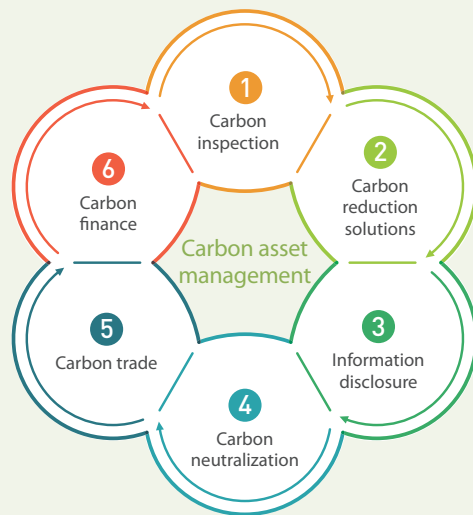
Category	Risks	Responses
 Reputation	<ul style="list-style-type: none"> A low-carbon image is an important indication of the influence of multinational companies and a major concern of stakeholders. If the Company fails to meet its low-carbon development goals or fails to meet such goals by the expected routes and measures, its reputation and image may be affected adversely. Litigation related to climate may affect the Company's reputation and image. 	<ul style="list-style-type: none"> Accelerating low-carbon transition of the Company Improving level and transparency of ESG information disclosure Extending external communication and participation
 Market	<ul style="list-style-type: none"> Public attention to climate change may facilitate market preference for low-carbon products and services, thereby affecting demand for fossil fuels. The Company's capital expenditure may increase and strategic growth opportunities may reduce. The rapid development of unconventional oil and gas resources, alternative energy, new energy and new products may bring competitive pressure on the Company. 	<ul style="list-style-type: none"> Continuing to pay attention on new trends, clean production, unit cost reduction and efficiency enhancement Vigorously developing clean energy and promoting high-quality sustainable development of natural gas business Incorporating climate-related considerations into the investment decision-making process, and increasing investment in new and alternative energies
 Technology	<ul style="list-style-type: none"> Transition to low-carbon economy will increase the Company's technical innovation costs, and the scale of the new business model will affect the Company's development strategy. 	<ul style="list-style-type: none"> Increasing expenditures in technological innovation and vigorously developing low-carbon and energy-saving technologies
 Operation	<ul style="list-style-type: none"> Performance of carbon emissions trading may affect the Company's cost expenditure and profits. 	<ul style="list-style-type: none"> Accelerating the Company's transition to low-carbon development, strengthening management of carbon assets and actively participating in construction of the carbon emission market
 Policies and regulations	<ul style="list-style-type: none"> The government will introduce more stringent environmental and safety regulations and higher standards for refined oil, possibly making the Company's compliance cost increase. International, domestic, and regional treaties and agreements restricting greenhouse gas emissions, as well as relevant regulatory measures in some countries may result in high expenditure for the Company. 	<ul style="list-style-type: none"> Paying close attention to the latest policies, regulations and treaties, and avoiding any increase of the Company's cost and expenditure due to non-compliance
 Physical factors	<ul style="list-style-type: none"> Natural disasters caused by climate change may directly prejudice the Company's assets and business operation, and disruption to the supply chain will affect the Company indirectly. 	<ul style="list-style-type: none"> Closely monitoring and regularly updating climate data, and timely issuing early warnings Strengthening HSE management

Curbing Carbon Emissions

PetroChina continuously improves its management and control of carbon emissions. In 2019, in order to further strengthen management of carbon emissions, the Company established a special low-carbon management division for the management of greenhouse gas control, preparation of greenhouse gas control development plans and action plans, formulation of related policies and measures, and improvement of relevant management system. The Company worked on the recovery of vented natural gas. In the Changqing, Tarim, Southwest and North China fields, the vented gases and light hydrocarbons recovered totaled almost 730 million cubic meters and 130,000 tons, respectively.



At the 10th Charity Exhibition entitled “Low-carbon Development · Green Life” and the “2019 China Low-carbon Models” press conference, PetroChina was awarded the title of “Low Carbon Model in China” for the ninth consecutive year.



PetroChina's Carbon Asset Management System

**PetroChina's
Low-carbon
Development
Plan**

**Safeguard
measures**

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

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

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

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



Strategic goals

By

2020

- By 2020, reduce CO₂ equivalent emissions per unit of operating revenue by 25% compared with 2015.

By

2030



Progress in 2019

- In 2019, the Company's CO₂ equivalent emissions per unit of operating revenue decreased by 25.17% from the level in 2015.
- In 2019, natural gas accounted for 45% of the Company's domestic production equivalent output.

**Enhanced carbon trading
performance and carbon
asset management**

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

Strengthened management on carbon emissions

- Optimized the industrial structure and eliminated backward production capacity for energy saving and emission reduction.
- Optimized the energy mix to focus more on clean energy.
- Strengthened greenhouse gas recycling (CO₂ utilization, methane recovery in oil and gas fields).
- Formulated carbon emission rules to regulate the enterprise's carbon emission.
- Conducted greenhouse gas emission monitoring, reporting and verification (MRV).

Improved efficiency:

- Enhanced capabilities in energy control
Made on-site analysis and assessment on the energy control progresses and levels of some pilot units including Daqing Oilfield, Southern Exploration, Sichuan Petrochemical and Qingyang Petrochemical.
110 people trained on energy control standards.
- Implemented technical upgrading for both energy and water saving
Invested RMB 650 million in energy and water saving projects.
Tested and evaluated the energy efficiency of more than 6,000 equipment/devices such as heating furnaces and pump units.
Saved 780,000 tons of TCE in 2019.

3. Infuse low-carbon development into technological innovation

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



4. Integrate low-carbon development concept into social responsibility

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

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

By

2050

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

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

- The existing CCUS system was improved both theoretically and technically.
- Over 1.5 million tons of carbon dioxide was stored in the CO₂-flooding demonstration project in Jilin Oilfield.
- New demonstration projects are in construction in Xinjiang Oilfield and Changqing Oilfield.

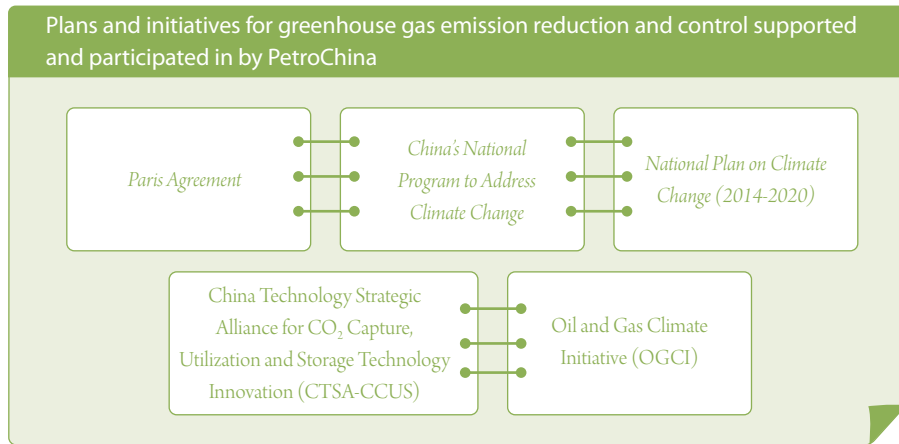
Participated in activities under the OGCI framework

- Constructed the Xinjiang CCUS Industrial hub.
- The Company's executives attended the CEO Summit of OGCI.
- Hosted the OGCI 2019 conferences in Hangzhou, China.

Built carbon sink forests

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





Case Study: PetroChina Actively Participates in OGCI Activities to Promote Carbon Emission Reduction in the Industry

As the sole member of OGCI in China, China National Petroleum Corporation (CNPC), PetroChina's parent company, is deeply involved in international cooperation with other OGCI members to address issues on climate change and low-carbon transition in the oil and gas industry. PetroChina takes an active part in CNPC's endeavors under the OGCI framework.

Construction of Xinjiang CCUS Hub

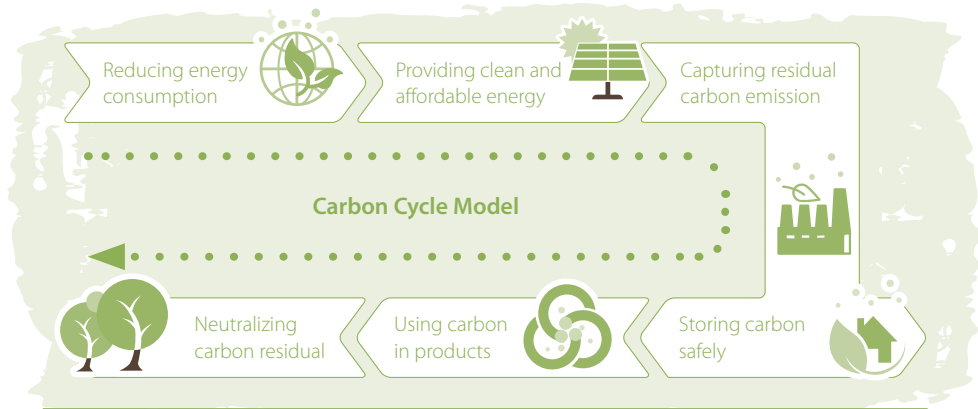
In 2019, OGCI launched the CCUS KickStarter, a major new initiative designed to facilitate a commercially and technically viable, safe and environmentally responsible CCUS industry, by enabling multiple low-carbon industrial hubs, and in support of the Paris Agreement goals. According to this initiative, OGCI will bring five emerging CCUS hubs into operation worldwide, including the Xinjiang CCUS Hub (led by PetroChina).

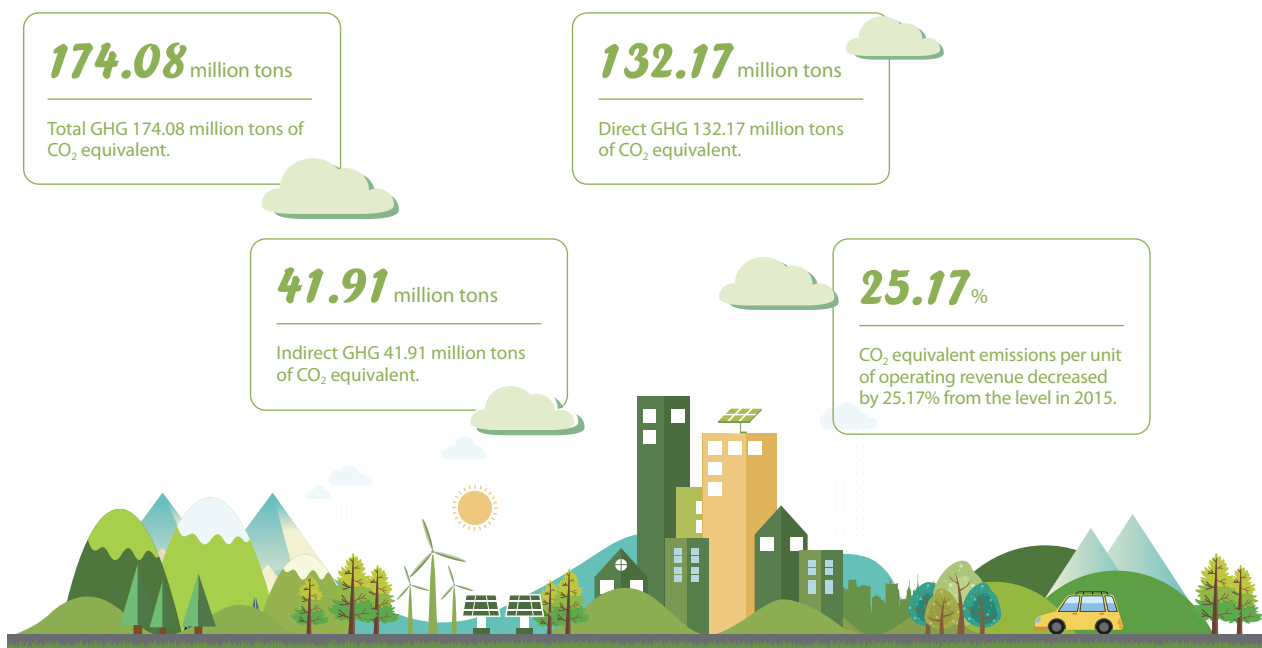
PetroChina actively participated in the discussions of the OGCI CCUS working group and made a feasibility study for construction of the Xinjiang CCUS Hub. The hub will be built with the support of the OGCI think tank, and with reference to the global technical and management experience of mature million-ton CCUS hubs.

Industry Exchange

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

OGCI carbon cycle model





Actively developing CCUS:

- The existing CCUS system was improved both theoretically and technically.
- In 11 years when the CO₂-flooding demonstration project in Jilin Oilfield was operated stably, more than 1.5 million tons of carbon dioxide was stored.
- New demonstration projects will be built in Xinjiang Oilfield and Changqing Oilfield.

CLEAN ENERGY

We will continue to focus on the sustainable supply of clean energy, vigorously develop natural gas, continue to upgrade the quality of oil products and explore new energy sources to meet the requirements for clean and high-quality energy.

Natural Gas

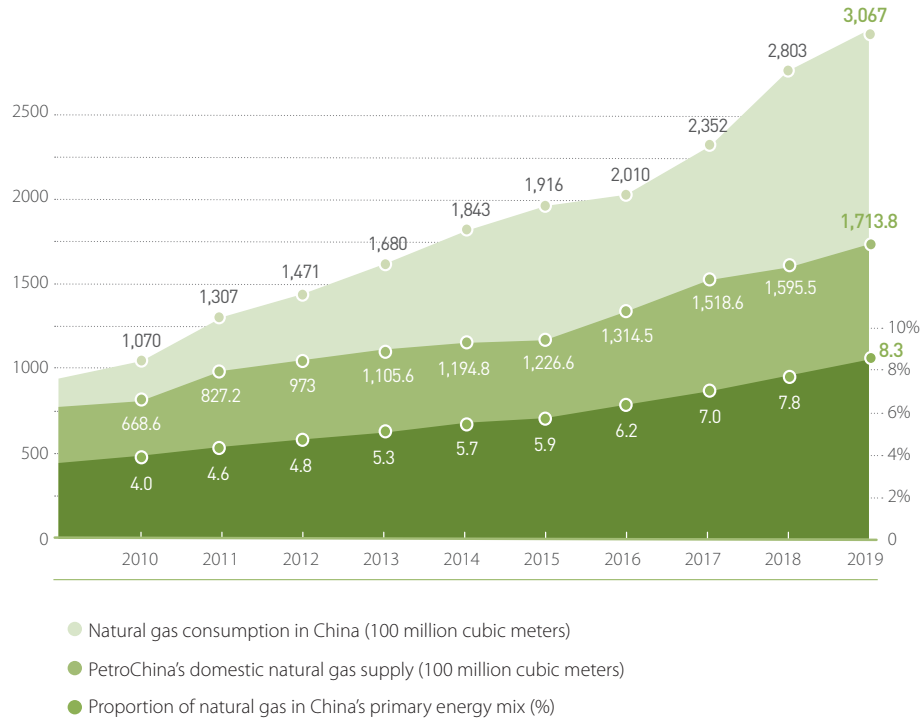
Natural gas accounts for an increasing proportion of China's primary energy mix: 8.3% in 2019 and around 10% in 2020. Regarding natural gas as a strategic and growing business, the Company continued to strengthen natural gas exploration and development, accelerated the construction of cross-border gas pipelines and domestic gas pipeline networks, and facilitated the development of conventional gas and unconventional gases such as tight gas, shale gas and coal-bed methane. In addition, the Company imported natural gas through multiple channels in order to form a diverse energy supply system.

Green Power and Improving Energy Mix

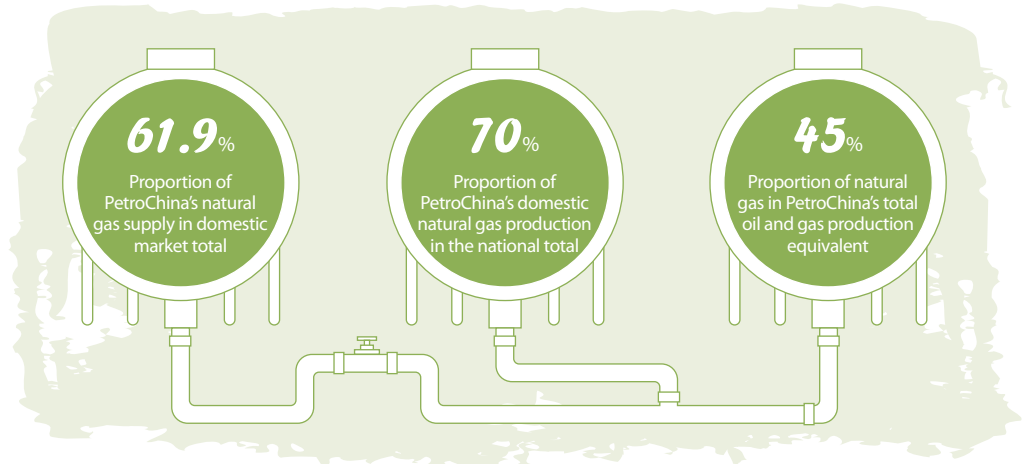
Source: Energy Statistical Review of CNPC Economics and Technology Research Institute



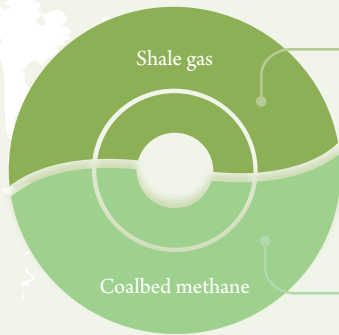
Component	Proportion (%)
Tight gas	27.8%
CBM	1.7%
Shale gas	6.8%
Conventional natural gas	63.7%



In 2019, the Company produced 110.66 billion cubic meters of natural gas, including domestic production of 102.88 billion cubic meters, up by 9.3% year-on-year and accounting for 70% of the national total. We increased imports of pipeline gas and LNG, and supplied 171.38 billion cubic meters of natural gas, an increase of 7.4% over 2018. The number of end users of natural gas exceeded 10 million, and 23 projects such as the Guangzhou-Chaozhou section of Fujian-Guangdong main branch of the Third West-East Gas Pipeline and the expansion of gasification capacity at the Jiangsu LNG terminal, as well as the China-Russia East Natural Gas Pipeline, were completed and operational, which effectively satisfied residential gas demand. PetroChina's achievements in natural gas have contributed to the optimization of China's energy mix and the construction of a beautiful China.



Unconventional Natural Gas



- Daily shale gas production exceeded 30 million cubic meters, breaking the record in China.
- Exploration appraisal achieved outstanding results, forming a large shale gas province of trillion cubic meters scale in the Sichuan Basin.
- The test yield of a shale gas well deeper than 3,500 meters made a new record for a test yield of a single deep shale gas well in China.
- Comprehensive renovation was conducted in existing blocks such as Fanzhuang, Zhengzhuang and Hancheng, and capacity construction and protection tests were initiated in new blocks including Mabidong, Daning-Jixian and Gilalantu.
- Additional proven geological reserves and production of coalbed methane were 23.5 and 2.07 billion cubic meters, respectively.

Natural gas utilization and alternative fuels

We promote the comprehensive utilization of natural gas in city gas, industrial fuels, power generation, chemical feedstock and vehicle fuels. As at 2019, the Company had cumulatively developed 1,001,000 “coal-to-gas” users in seven provinces and municipalities in northern China, of which 844,000 users successfully accessed the gas supply. To ensure users in northern China could enjoy sufficient gas supplies in the winter months, the Company maintained a resource delivery pattern of “pipeline gas plus LNG”.



1,001,000

1,001,000 “coal-to-gas” newly-developed users

844,000

844,000 “coal-to-gas” users accessed gas supplies



PetroChina's Pad Changning14 for shale gas development in Sichuan Basin

Case Study: "Coal-to-gas" in Xiong'an

Xiong'an New Area in Baoding, Hebei Province, is a state-level new area proposed by the State Council in 2017. It is of great significance for easing Beijing's non-capital functions, optimizing the urban layout in the Beijing-Tianjin-Hebei region, and fostering a new engine for the innovation-driven development. Accordingly, there are much stricter requirements for Xiong'an than other cities in terms of ecological protection and clean energy supply.

PetroChina proactively contributed to the construction of Xiong'an New Area through undertaking the "coal-to-gas" rural heating renovation project in 2019. This project benefits about 550,000 residents in 140,000 households with an area of 1,460 km². It is expected to help save about 500,000 tons of coal annually, equivalent to reduction of about 1.5 million tons of wood. Local residents entered the "gas era", accessing clean, safe and convenient natural gas.

Efficient completion of "coal-to-gas" project

The "coal-to-gas" project involves the vast countryside, where the geographical environment is relatively complex and the village infrastructure is weak. It corresponds to many risk points, a large work quantity, and a high time pressure. Nevertheless, through scientific coordination and efficient operation, PetroChina completed the coal-to-gas switch in just four months. Ultimately, the whole Xiong'an New Area can enjoy clean gas via the medium-pressure pipeline network connecting the high-pressure gas pipelines such as the Baxian-Baoding Pipeline and the Wen'an-Xiong'an Pipeline.

Provision of smart and safe services

PetroChina installed domestically advanced smart gas meters, which can simultaneously realize functions such as the remote transmission of operation data, automatic uploading of user information and mobile payment. Safety was ensured by the installation of gas alarm devices for each household.

Increased gas supply

To further satisfy gas demand in the Xiong'an New Area, PetroChina increased the supply of natural gas to the area by 150 million cubic meters.

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

—Local Residents

Oil Product Quality Upgrading

We optimize the energy consumption structure by upgrading refined products. In 2019, we completed upgrading to National VIA gasoline and National VI diesel as scheduled, and realized stable supply. We developed four National VI clean gasoline production technologies, which could effectively support the upgrading of gasoline quality. Since January 2019, PetroChina has delivered 300,000 tons of National VI gasoline and diesel daily to 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China, gradually increasing the proportion of clean energy in the market. In 2019, PetroChina supplied 110.299 million tons of oil products (gasoline and diesel) domestically, accounting for 33.5 % of the China market.

We actively respond to



New Energy and Alternative Energy

We take new energy and alternative energy as new drivers for the low-carbon transition. In 2019, we worked actively on new energy and alternative energy, including geothermal energy, bio-fuels, solar energy, uranium ore, and charging (battery exchange) stations. In particular, we accelerated the development and applications related to geothermal technologies and underground coal gasification. The Company carried out a study on the future development of hydrogen business.

Case Study: Geothermal Development and Utilization in North China

North China is rich in geothermal resources. PetroChina is devoted to making greater efforts in research on geothermal resources. Through the simultaneous development of oil fields and thermal fields, PetroChina promotes the commercialization of geothermal resources.

Huabei Oilfield

With the emergence of Xiong'an New Area, Huabei Oilfield accelerates the 3-million-m² heating project. Geothermal heating was initiated in the New Oil City Community (Phase I) in Renqiu in 2019.

- Coverage of 630,000 square meters
- More than 4,000 households and shops
- Replacement of 8,908 tons of fuel coal annually
- Emission reduction of 23,000 tons of CO₂ and 65.5 tons of NO_x

Jidong Oilfield

Jidong Oilfield completed the geothermal heating project of 2.3 million square meters in New Caofeidian City. The project is the largest single geothermal heating project in China. For the first time, it achieved "zero emissions" and "zero pollution" of carbon dioxide and dust from coal combustion, making Caofeidian the first "dust-free city" in the Tangshan region.

- Annual saving of 53,600 tons of TCE
- Emission reduction of 140,400 tons of CO₂
- Equivalent to planting 500,000 trees

ENVIRONMENTAL PROTECTION

PetroChina actively responds to global initiatives and international conventions including the UN's *2030 Agenda for Sustainable Development* and *Convention on Biological Diversity*, and relevant requirements put forward by the Chinese government for environmental protection. We strictly observe applicable international and Chinese laws and regulations, and learn from advanced practices of the industry. We implement lifecycle management and control of production operations to minimize the discharge of waste and pollutants. We have amended the *Regulations on Environmental Protection Management*, upgraded related action plans for green development, and implemented the *Plan for the Upgrading of Pollution Control*, the *Environment Protection Program* and low-carbon development plans. We make great efforts to build a green development system that covers all aspects of the industry chain, and execute the mode of green production with low energy consumption and low emissions in order to achieve harmonious coexistence with the environment.

Continuous Improvement of HSE Management

The Company attaches great importance to health, safety and the environment (HSE), and gives top priority to HSE at all times. We adhere to the green development concept of "integration and coordination between development activities and environmental protection, with environmental

New energy and alternative energy research directions promoted by the company

Type of New Energy and Objectives



Geothermal energy

Accelerating the development and utilization of technologies as thermal reservoir fracturing and dry-hot-rock exploration development



Hydrogen energy

Focusing on the development of technologies as low-cost hydrogen production, hydrogen liquefaction, as well as storage & transportation

Progress in 2019

- Initiated the development and utilization of geothermal resources in North China, Liaohu, Xinjiang and other regions
- Participated in geothermal resource development in Kenya

Built the hydrogen+oil refueling stations jointly with Haipoer Hydrogen Technology Company



In 2019, neither PetroChina nor any of its subsidiaries was included in the list of heavily polluting enterprises released by the Ministry of Ecology and Environment.

9.9 billion RMB

In 2019, PetroChina invested about RMB 9.9 billion in environmental governance. Key projects include:

- Anti-seepage upgrading of buried storage tanks at gas stations, 18,515 stations completed in total
- Comprehensive treatment of VOCs in refineries
- Upgrading of sewage treatment plant
- Oily sludge treatment
- Control and treatment of eco-environmental risks/hazards

protection first". We follow a uniform HSE management system in our operations worldwide, and have formed a globally integrated HSE working platform and risk control platform. We continuously strengthen supervision and safety training, in order to enhance our HSE management performance.

We have established an environmental protection incentive mechanism to commend the units and individuals for their outstanding achievements, and to protect and reward individuals who report environmental violations. The environmental protection performance as a KPI index is included in the performance appraisal of senior management of the Company and senior managers of regional companies, and the accountability system for environmental protection performance and the lifelong accountability system for ecological damage have been put in place.

In 2019, we strove to improve the environmental risk prevention and control capability. Our safety and environmental protection performances are steadily improving.

2019 Environmental Management Progress

Environmental management system	Ecological environment smart management and control platform	Pollution control
<ul style="list-style-type: none"> • Improved the <i>Regulations on Environmental Protection Management</i>, and implemented the <i>Measures for Environmental Protection Management of Projects Construction</i>, <i>Measures for Environmental Monitoring and Environmental Information Management</i>, and <i>Measures for Environmental Incident Management</i> • Implemented the "one-post, two-responsibility" system for environmental protection management, requiring environmental protection to be prioritized in all development, production and business operations 	<ul style="list-style-type: none"> • Connected a total of 396 monitoring points in 38 subsidiaries to PetroChina's online pollution monitoring system • Realized online monitoring of pollution sources in all subsidiaries classified as key enterprises under national surveillance 	<ul style="list-style-type: none"> • Carried out special surveys on pollution sources in domestic and overseas business • Formulated and implemented the action plan of air pollution control measures for enterprises in key regions • Accelerated the implementation of pollution control tasks according to the national pollution prevention and control campaign

Improving the environmental risk management mechanism

We continuously improved the "three-level" environmental risk prevention and control system, conducted environmental risks identification and assessment, determined "six major environmental risk factors", and made inspections and treatment of ecological and environmental hazards. We established the environmental risk management mechanism featuring "layered management and graded prevention and control", and organized emergency drills and emergency monitoring drills on a regular basis, in order to improve the Company's capabilities in environmental risk prevention and control.

In 2019, we continued to improve our environmental risk prevention and control capabilities.

- Organized enterprise safety and environmental risk diagnosis and assessment, and strengthened the source control of accidents and incidents
- Regularly carried out comprehensive ecological and environmental risk investigation and hazard inspection, and took control and treatment measures as per the list of hazards formed



Case Study: Yunnan Petrochemical Builds Smart Environmental Protection Information System



Yunnan Petrochemical integrated the real-time data and key parameter monitoring data of two automatic monitoring stations of ambient air, three online monitoring systems, 19 oily sewage lifting ponds and 14 polluted rainwater ponds with the Manufacturing Execution System (MES). Managers at all levels can inquire about relevant data and make adjustments when necessary.

Yunnan Petrochemical applied the “Yunnan Petrochemical Online Environmental Monitoring” mobile application for 24-hour monitoring. With this, the online monitoring data and trends of key pollution sources are transmitted in real-time, so that any abnormal condition can be detected and treated in a timely manner. In this way, the pollutant discharges are kept under control and are subject to standards.

Water Management

The Company strictly complies with applicable laws and regulations on the protection of water and the prevention of water pollution, such as the *Environmental Protection Law of the People's Republic of China*, the *Water Law of the People's Republic of China* and the *Water Pollution Prevention and Control Law of the People's Republic of China*, aiming to improve the efficiency of water utilization.

Continuously improve the efficiency of water utilization. Through measures including strengthening water conservation management and water-saving technological transformation, we reduced fresh water consumption and realize sustainable water utilization.

Tuha Oilfield conducted an overall comprehensive analysis of the current status of the water injection system, factors affecting system efficiency, and energy-saving transformation effects. On this basis, Tuha Oilfield proposed 11 effective measures, saving 120,900 cubic meters of water.

Strengthen water pollutant management. The Company took necessary preventive and control measures to prevent water pollution and avoid oil leakage. At oil/gas fields, effluent such as heavy oil wastewater, oil production wastewater and fracturing backflow fluid is comprehensively recycled. At refineries, wastewater from key pollution sources is specifically treated and the wastewater treatment plant is upgraded to ensure various wastewater is disposed thoroughly. We enhanced treatment of nitrogen, phosphorus and characteristic pollutants such as petroleum, in addition to conventional water pollutants.

Case Study: Sichuan Petrochemical Realized Effective Reuse of Wastewater

Sichuan Petrochemical is the first super-large petrochemical enterprise in Southwest China. Based on PetroChina's experience in clean production management for decades and the world-class comprehensive solution to wastewater treatment provided, Sichuan Petrochemical reduced the pollutants to the minimum level through the whole-process control, and all emissions met or exceeded national standards.

Sichuan Petrochemical collected the wastewater from the production process and the rainwater falling in the work area, and then treated them separately with clear water, sewage, and rainwater. In this way, all wastewater is reused and effectively prevented from polluting the environment.



Green factories of Sichuan Petrochemical



793.83 million cubic meters

Annual fresh water consumption was 793.83 million cubic meters, representing a decline of 0.78%.

9.8 million cubic meters

9.8 million cubic meters of water was saved.

0.52 cubic meters

Fresh water consumption in processing one ton of crude oil was 0.52 cubic meters.

Land Resources Management and Protection

The Company attaches great importance to the protection of land resources and has developed the *Measures for Land Management*, in order to achieve the sustainable use of land resources.

Increase land utilization rate. We increase the land utilization rate through innovations in land-saving technology and the management model. Specifically, we make careful and intensive use of land during production, strictly controlling land use growth, and optimize use of land in various ways such as active reclamation and carrying out environmental treatment and recovery in mining areas.

In 2019, we

- Saved around 1,247 hectares of construction land
- Recovered around 2,435 hectares of construction land
- Reclaimed around 10,000 hectares of land

Strengthen control and remediation of soil and groundwater pollution. The Company adopts whole-process management and control of collection, storage, transportation, utilization and disposal of solid waste such as oily sludge, drilling waste and used catalyst. Meanwhile, we improve pollution prevention and control facilities. Drilling waste in environmentally sensitive areas is collected on-site without contacting the soil, and oil-based drilling waste is recycled and disposed following biosafety treatment.

In 2019, we continued to promote new intensive operation modes, such as large well cluster and pad. We applied “no mud on ground” and mud recycling technologies and clean drilling and workover technologies, and used the integrated devices to replace small- and medium-sized stations.

- Land occupation was reduced by more than 2,000 hectares.
- Drilling waste was reduced by more than 4,800,000 tons.
- Oily sludge and oily plastic cloth was reduced by 274,000 tons.



Case Study: Tarim Oilfield Realized Efficient Recovery of Oil-based Mud

Tarim Oilfield adopts liquid of oil-based mud reuse for environmental technology (LRET) to efficiently recover oil-based mud, forming a set of locally tailored pollution control solutions for sulfonated solid waste, oil-based drilling mud, and oily sludge. The treated solids exhibit less than 0.3% oil content, which is superior to the national environmental standards, and the heavy metal indicators satisfy the level 1 standard for soil quality.

Since the completion of the first recovery and treatment station in October 2013, Tarim Oilfield has treated 324,000 tons of oil-based solid wastes and recycled 41,000 cubic meters of mud. Environmental pollution caused by oil-based solid waste is effectively avoided.

Air Pollutant Management

The Company strictly abides by the *Law of the People's Republic of China on the Prevention* and other laws and regulations and continuously strengthens the treatment of conventional and special air pollutants. In 2019, the Company implemented ultra-low-emission retrofitting of boiler flue gas and replacement by clean energy such as natural gas, which have contributed to the further reduction of pollutant emissions. Desulfurization and denigration of catalytic cracking units in refineries and replacement by clean fuels were fully completed. The Beijing-Tianjin-Hebei region and its surrounding areas have achieved “zero coal” in an all-round way.

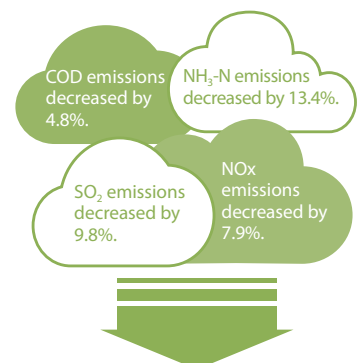
Biodiversity Conservation

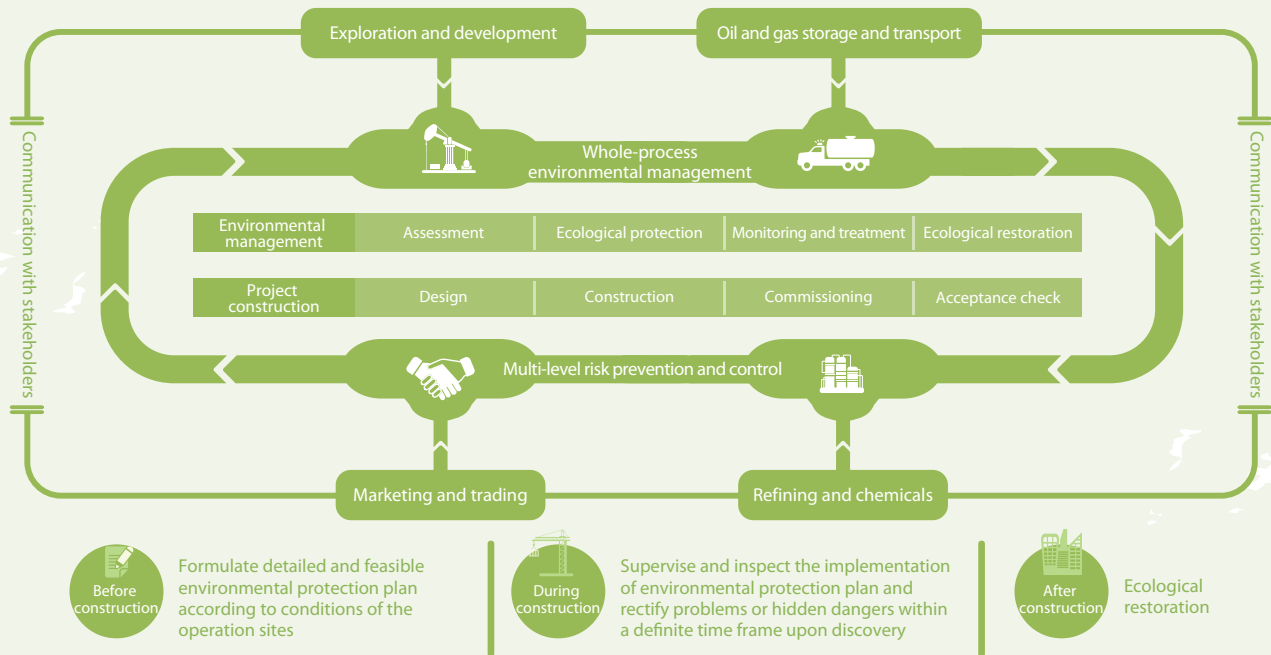
The Company is committed to reducing the potential impact on the environment and biodiversity during production and operation. We insist on the source management and control and implement environmental management in the full life cycle throughout the industry chain. We comprehensively check and rectify environmental pollution and ecological damage and reduce the impact on the ecology through noise reduction, emission reduction and other means.

We endeavored to reduce the occupation of arable land and put a lot of effort into the conservation of soil and water and restoring vegetation, working hard to restore the ecology of our operating areas.



5 billion RMB

PetroChina invested nearly RMB 5 billion in the treatment of volatile organic compounds (VOCs), implementing comprehensive VOC treatment projects in refining and chemical enterprises.





Whole-process Eco-environmental Management throughout the Industrial Chain

PetroChina's Main Practices in Ecological Protection		Progress in 2019
 Ecological Protection and Restoration	Green fields	<ul style="list-style-type: none"> 4 demonstration enterprises and 12 oil and gas production companies passed the national and local inspection and acceptance on green field construction Developed and improved the <i>Quantitative Scoring Worksheet for Inspection and Acceptance of Green Oil and Gas Fields</i> (2019 Edition)
	Green factories	<ul style="list-style-type: none"> Implemented the pollution emission upgrading and treatment plan, and performed ultra-low emission upgrading in key areas Changqing Petrochemical passed the green factory verification of the petroleum and petrochemical industry and the state
	Vegetation restoration, re-vegetation, sand fixation and windbreak in deserts	<ul style="list-style-type: none"> Changqing Oilfield constructed ecological forests (more than 600,000 <i>mu</i>), such as "PetroChina Changqing Forest", "Jiaozychuan River Basin Changqing Carbon Sink Forest" and "Changqing Maling Carbon Sink Forest"
 Demonstrative Ecological Protection Projects	Green oil and gas fields	<ul style="list-style-type: none"> Southwest Oil and GasField Company planted, annually, more than 50,000 trees, 60,000 square meters of lawn and 45,000 meters of hedges.
	B&R green energy channels	<ul style="list-style-type: none"> China-Russia East Natural Gas Pipeline was put into operation to facilitate clean energy supply Rewarded with dozens of environmental protection prizes in countries along the "Belt and Road"
	Local governments' afforestation activities	<ul style="list-style-type: none"> Supported local afforestation, with a green area of 7,438,000 square meters and a total of 530,900 trees planted

Case Study: High-quality Construction of China-Russia East Natural Gas Pipeline

The China-Russia East Natural Gas Pipeline is invested and constructed by PetroChina Pipeline Co., Ltd., in which PetroChina Company Limited holds a 72.26% stake. This pipeline runs from Heilongjiang Province to Shanghai for a total of 3,371 km (including the newly constructed trunk and branch lines). Construction of the Pipeline is divided into three sections: Heihe-Changling, Changling-Yongqing, and Yongqing-Shanghai. The Heihe-Changling section was put into operation in 2019.

Ensure clean energy supply

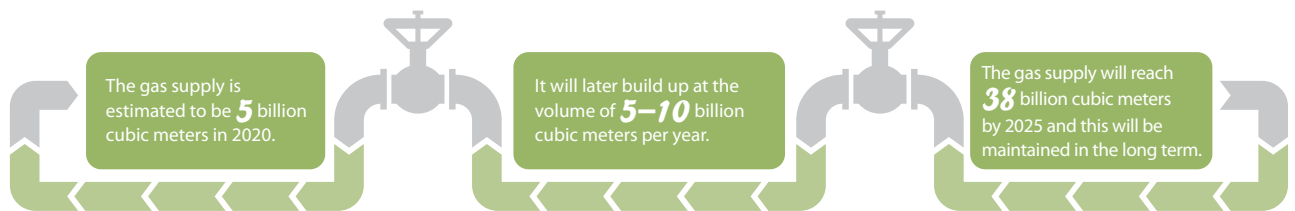
Once it is fully operational, the China-Russia East Natural Gas Pipeline is expected to deliver 38 billion cubic meters annually by 2025 and maintain the throughput thereafter. The pipeline will transport gas from Russia, through nine provinces (municipalities and autonomous regions) within China, to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

Optimize regional gas consumption structure

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

Green construction

For the purpose of environmental protection, the Heihe-Changling section was constructed through a narrower mechanical operation zone, with less deforestation. Moreover, backfilling and vegetation restoration were conducted in a timely manner. Culvert, shield crossing and other techniques were adopted to protect the "green waters and green mountains" in environmentally sensitive areas such as rivers, lakes, forests, roads and bridges.



Site of the China-Russia East Natural Gas Pipeline





EMPLOYEE DEVELOPMENT

At PetroChina, employees are our most valuable asset. The all-round development of employees is one of our important targets. We protect employees' rights, care for their physical and mental health, and provide 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.

SDGs



EMPLOYEE RIGHTS AND INTERESTS

In 2019, no labor-related offence of material implication to our business was committed in the Company.



- Administrative staff: 28.51%
- Professional and technical staff: 13.94%
- Operating staff: 57.55%



- Master's degree and above: 4.03%
- Bachelor's degree: 33.99%
- College degree: 22.98%
- Technical secondary school and below: 39.0%

We remain committed to a people-first philosophy in treating our employees with respect and equality while safeguarding their legal rights. We endeavor to resolve the most practical issues that our employees are concerned about and ensure that all employees share the fruits of our development on an equal basis.

Fair Treatment of Employees by Law

We conscientiously abide by international conventions approved by the Chinese government, including the *International Covenant on Economic, Social and Cultural Rights* and the *Elimination of Discrimination in Respect of Employment and Occupation*, along with domestic laws including the *Labor Law of the People's 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 formulated the *Measures for the Management of Employment Contracts* and the *Measures for the Management of Overseas Employment*, and established a 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 appraisal and vocational training. We strictly comply with the applicable laws and regulations on the dismissal and working hours of employees, and in line with specific circumstance of the Company, have formulated management regulations and detailed implementing rules that are applicable to all enterprises, employees and business operations of the Company. Through self-inspection of our employment practices in compliance with the law, we regulate the recruitment and promotion of employees and the termination of employee contracts, and provide effective protection of employees' legal rights. 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 continue to open recruitment to the public, without restrictions on applicants' ethnicity, gender or religion.

28.79%

Female staff



7.44%

Female administrative staff



6.53%

Employees of ethnic minority



100%

In 2019, 100% of employees who took maternity/ paternity leave returned to work and kept their posts.



Remuneration and Benefits

The Company has further improved its performance appraisal and remuneration system, promoted the mechanism to link pay with performance, established a compensation scheme that pays attention to the value of a position, job performance and the innovative results of employees while matching the particularities of all staff operations, ensuring that employees' compensation matches the Company's benefits 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 pay all social insurance premiums for employees on time and in full in accordance with the *Social Insurance Law of the People's Republic of China*, and we have improved corporate annuity and supplementary medical care and insurance, and improved production and living conditions for front-line workers, in order to ensure employees' interests are addressed.

In 2019, we:

- Pushed further ahead the two-level performance appraisal for headquarters office employees to effectively mobilize their enthusiasm and creativity.
- Signed the performance contract for 2019, ensuring full coverage of subsidiary executives in performance appraisal
- Bought critical illness insurance for employees, including retired employees.
- Provided emergency care and first-aid services for employees working overseas.

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 and improving the work of 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 our plants by clarifying duties and authorities, the organizational system, and working processes for the Employees' 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.



Employees' Congress of Huabei Oilfield



99.28%

Detection rate of workplaces susceptible to occupational hazards

99.62%

The occupational health examination rate for employees facing occupational hazards

100%

The establishment rate of employee occupational health monitoring archives



HEALTH AND SAFETY

Our health and safety management covers all staff, including staff in entities in our supply chain. We give top priority to employee health and personal safety by emphasizing occupational health management and protection at field operations, continuously improving working conditions, abiding by statutory working hours and holidays required by the places of businesses and taking employees' mental health as a priority.

Occupational Health

We abide by the *Prevention and Control of Occupational Diseases Act of the People's 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, such as poison prevention, dust removal and noise reduction.

Key Actions for Occupational Health in 2019

Occupational health management	Drafted the detailed rules on Quantitative Audit on Occupational Health, which are based upon the characteristics of functions
Response to Healthy China 2030	Acted as per <i>Healthy China 2030</i> to enhance employee health management
Occupational health awareness	Organized the event of the 2019 Publicity Week of the <i>Law on Prevention and Control of Occupational Diseases</i>
Occupational health inspection	Conducted special inspections on occupational health archives and jobs/workplaces susceptible to occupational hazards, and urged to rectify the excessive hazards at workplaces

Mental Health

We pay close attention to our employees' mental health. We take measures to improve the employee vacation system and regularly organize employee health examinations, 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 2019, we continued to implement the Employee Assistance Program (EAP) overseas by providing training sessions on mental health management.



PetroChina's EAP Overseas

EAP online platform

- Improved the efficiency of psychological counseling services
- In 2019, psychological counseling was provided to about 400 employees, for over 1,168 hours.

On-site counseling by experts

- Helped employees to improve their stress tolerance and family bonds
- Psychologists were sent to Niger, Chad, Myanmar, Saudi Arabia and the United Arab Emirates for on-site mental health counseling, as a part of the "Shining Overseas" campaign.

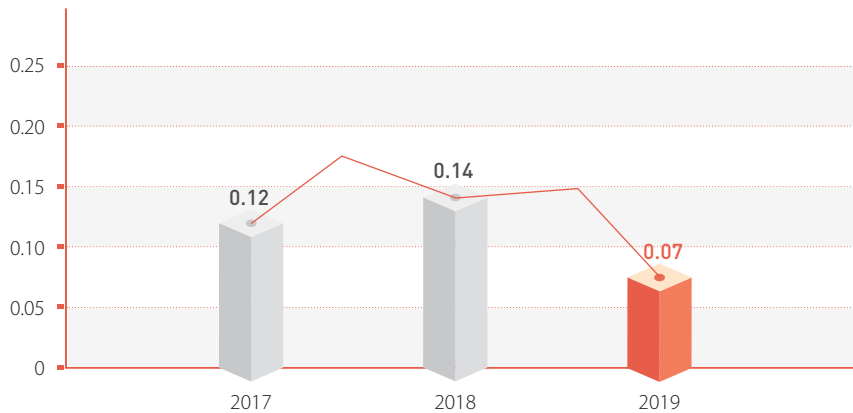
EAP training

- Enhanced the EAP personnel training team
- A total of 11 sessions of psychological crisis response training and 6 sessions of Family Happiness Camp were held.

Safety and Security

PetroChina views production safety as a core value and implements this concept in all segments and all production and operation processes. We actively promote the building of a longstanding work safety system to raise the overall safety management level. We took steps to improve our supervision to better implement safety accountability, and by doing so, we consolidated basic work at the grassroots level, and kept up a stable and controllable situation in terms of operational safety.

Production Related Fatal Accident Rate (FAR) (per/100 million working hours)



Loss of working days due to work-related injury:

3,366 days

Fatalities:

2

Total accident rate:

0.0562/100 million working hours

The safety of our employees has always been an overriding priority in our overseas operations. We established an overseas security prevention and control management system to ensure safety, promoted the operation of security management systems, strengthened comprehensive control of security risks, continuously enhanced emergency response capabilities, and eliminated security-related fatal incidents in our overseas projects in 2019.

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

PetroChina Supply Chain Safety Management Process



Capacity building

- Promote the holding of certificates by contractors' management personnel
- Provide trainings on system development, HSE system audits, safety 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 inspection of contractors' safety management

17,400

In 2019, 255 sessions of overseas counter-terrorism training were performed, benefiting 17,400 trainees.



Key Actions for Overseas Security in 2019

 <p>Social security management system</p>	<ul style="list-style-type: none"> • Issued the <i>Provisional Rules for Five-Dimensional Performance Review of Overseas Social Security Management</i> to enhance the performance review of security management in overseas operations
 <p>Social security risk assessment</p>	<ul style="list-style-type: none"> • Formulated the <i>Rules for Assessment of Social Security Risks by Levels in Countries/Regions</i>, which facilitates the dynamic management of risk levels and responses with the support of quantitative assessment on security risks
 <p>Security plan approval for projects overseas</p>	<ul style="list-style-type: none"> • Reviewed and approved over 200 security plans for new projects in countries/regions with high risk or higher-level risks
 <p>Responses to security issues in key countries/regions</p>	<ul style="list-style-type: none"> • Held meetings to discuss prominent security issues in Middle East, Latin America, Middle Asia and Africa and provided coordination and guidance • Took proactive measures against security emergencies in key host countries to ensure the safety of personnel and facilities
 <p>Counter-terrorism training for overseas employees</p>	<ul style="list-style-type: none"> • Performed 255 sessions of overseas counter-terrorism training, benefiting 17,400 trainees
 <p>Employee health management</p>	<ul style="list-style-type: none"> • Procured all expatriate personnel to have health examination and assessment, totaling 28,000 person-times • Took effective actions to improve the health of employees • Kept track of epidemics worldwide and issued timely warnings on any epidemic to employees in overseas projects; took preventive and control measures against major epidemics like Ebola and malaria

EMPLOYEE DEVELOPMENT

We push ahead innovation in systems and mechanisms for personnel training, strive to develop innovative employees. We address the employees' need for professional development at different stages and respect employees' career planning. We provide a stage for employees to develop their personal potential.

Employee Training

By applying modern corporate training concepts, we continued to improve our training centers and training network. We carried out diversified and differentiated vocational training for employees through skills training, professional training, on and off-the-job training, etc., in order to achieve positive links between employee development and the Company's development.

In 2019, we:

- "Internet + training"**
 - Put 1,147 courses online
 - Developed a standardized video program for production workers
- Trainer faculty**
 - Organized a part-time trainer faculty comprising enterprise executives, academicians, senior experts, R&D leaders and senior skilled personnel
 - Initially established the dynamic credit management system and quantitative ranking system for part-time trainers
- Training materials**
 - Developed 16 textbooks (e.g. Induction for New Employees), and distributed 27,000 free copies to relevant enterprises

100%

Training rate of senior skilled personnel and personnel at critical operation posts



100%

Training rate of front-line personnel



307,000 person-times

Total personnel trained



8.45 million hours

Total training time



27.5 hours

Average training time per person

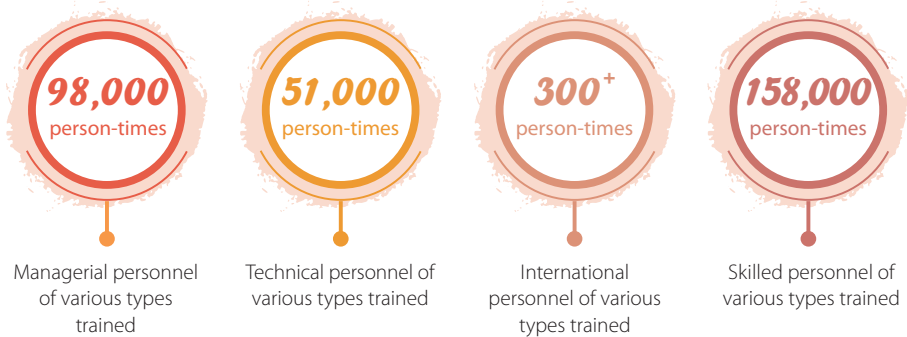
1.12 million person-times

Remote training: 1.12 million person-times, 2.16 million hours

1.98 billion RMB

Training investment

On the basis of full-staff training, we focused on the training of four types of personnel, including managerial, technical, international and skilled personnel. We organized 156 training projects at the headquarters level covering over 27,000 employees.



Main training programs of "Four Types of Personnel" in 2019

- Party School training courses of the Company
- Training courses for young and middle-aged managers of the Company
- Training programs for person in charge of Party building, Secretary of disciplinary committee and chief accountant
- Training sessions for business managers to level up their leadership
- Visiting scholar programs for Stanford University
- International training programs for heads of enterprises to communicate with overseas petroleum companies

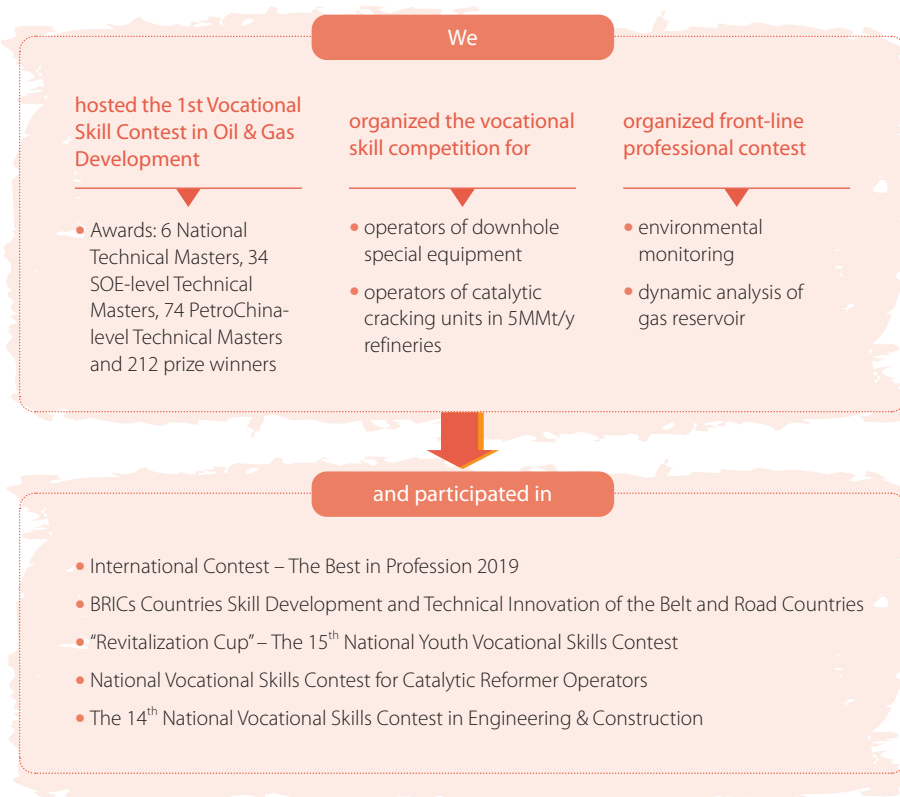


- Training programs for young business backbone in Baker Hughes Oil and Gas University
- International taxation management training program in the U.S.
- The Australia-China Natural Gas Technology Partnership Fund training program of National Energy Administration
- "Thousand People Training Project" for international talents

- Petroleum scientists and young technical talents visited domestic and overseas universities and research institutions to attend refresher courses
- Demonstration training courses for principal professional senior technical talents
- Technical training program for exploration and development of unconventional oil and gas and drilling in Canada
- Experts training courses in Public Joint Stock Company Gazprom and PJSC Rosneft Oil Company

- Held company-wide vocational skills competitions, organized and participated in national and international vocational skills competitions
- Academic seminars for technical experts of the Company
- Carried out the Petroleum Craftsman Development Program
- Various demonstration training programs for advance-skilled talents

We improve employees' vocational skills and professional abilities through the combination of training and competition such as vocational skills competitions. Through these measures, we promote the development of front-line employees and test the results of grassroots training. In 2019, PetroChina obtained the National Vocational Skill Certification, and became the first central SOE to be granted this certification.



The 28th Sun Yueqi Energy Science & Technology Award*

4 winners of Grand Energy Prize and 20 winners of Youth Technology Prize

* Sun Yueqi Energy Science & Technology Award was established in 1992, aiming to promote the advancement of science and technology as well as education & cultivation of reserve talents for China's energy industry.

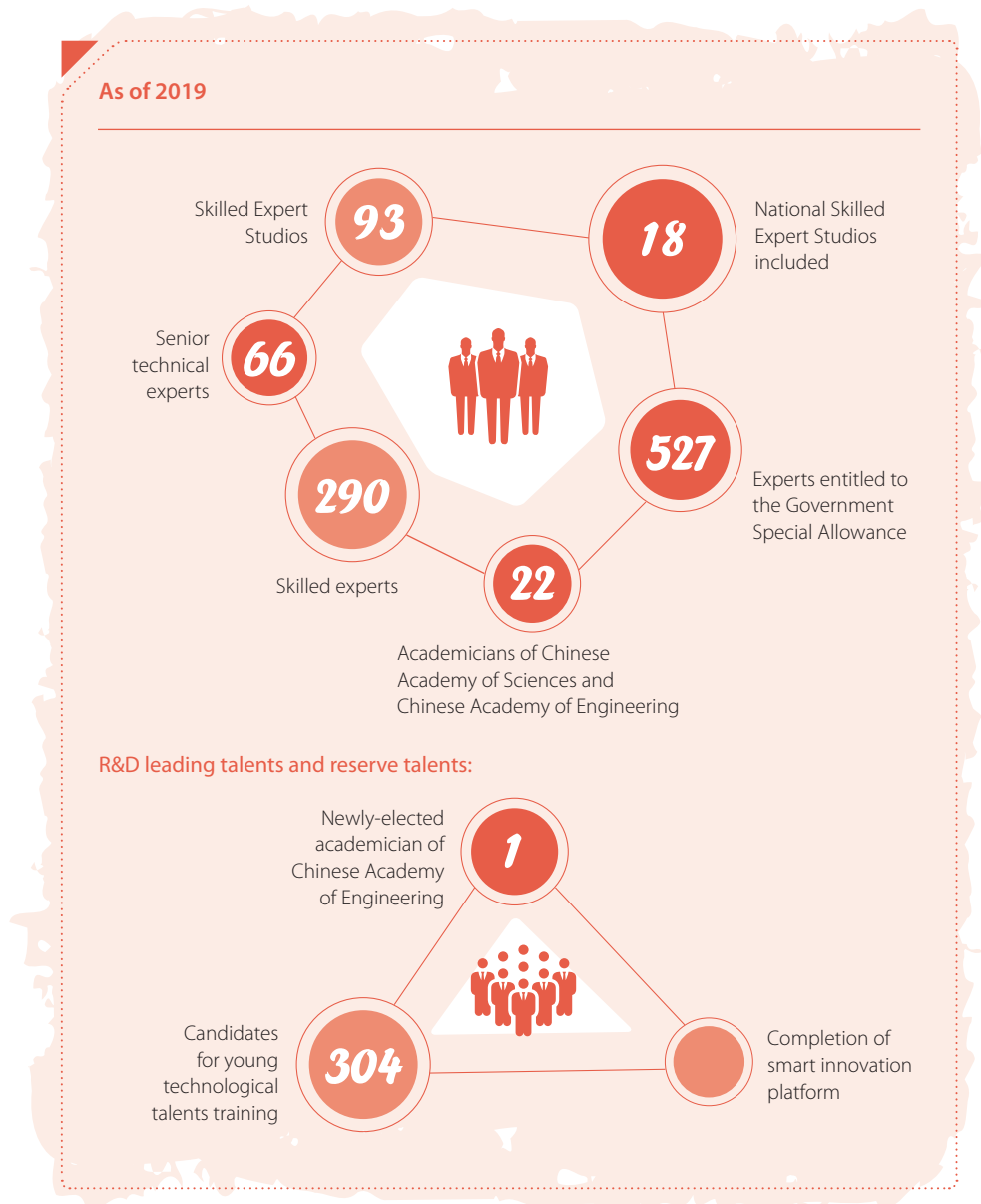
Female technical staff



Provide Unimpeded Career Development Paths

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 atmosphere that enables the recognition and best use of talent. We attach great importance to the career planning of employees and endeavor to expand career development for employees in order to maximize their potential.

In 2019, we continued to promote professional-rank personnel management and improve the mechanisms of dynamic job transfer, appraisal-based recruitment & promotion, and compensation & incentive, to provide technical professionals with independent, unimpeded and stable career development paths. We initiated the skilled personnel development program, and successfully carried out the skills promotion program, innovation/productivity-oriented promotion program and "Petroleum Craftsman" training program for operational personnel.



Case Study: “China Skills Carnival 2019 — Approaching PetroChina”

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

The event covers 19 themes in four aspects:

- sponsoring/hosting national, industry and company-wide contests/competitions, to drive the fast growth of skilled personnel;
- promoting technical and skills communication and exchange among enterprises, to facilitate the sharing of achievements and intelligence;
- organizing activities on innovation and efficiency to keep consistent technical support to front-line operations;
- providing intensive training for key skilled personnel, to create a team of leading talents.

Organized 263 symposiums, 26 technical sessions among skilled expert studios, and 46 rounds of on-site technical services

Fixed 325 field operation related problems, applied for 23 patents, and promoted 465 front-line innovations

Held 56 skill contests/competitions and 453 sessions of skill-enhancing training

Trained nearly 300,000 operational personnel, contributing over 23,000 senior skilled personnel

Case Study: Wang Qimin, the “People’s Model” and “Superb Striver”

Wang Qimin, formerly President Assistant and Deputy Chief Geologist of Daqing Company, took the lead or was involved in eight major development pilot projects and over 40 research projects. He has won 19 awards, including the National Special Prize on Science & Technology Progress Award and the National Special Prize of the Science & Technology Achievement Award.

His achievements are outstanding. The Efficient Water Injection Method overrides the popular moderate water injection in China and inaugurated a new solution to stabilize production in oilfields with middle to low water cut. The



development mode of “separate-layer exploitation, and production stabilization in alternative manner” increased water flooding recovery by 10%~15% during the production test. The research on untabulated reservoir development implied the addition of 740 million tons of geological reserves for Daqing Oilfield. The new super-high molecular polymer flooding has contributed benefits close to RMB 300 million.

In 2019, Wang was honored as the “People’s Model” by the Standing Committee of National People’s Congress and the “Superb Striver” by the Publicity Department of the CPC Central Committee.

“I’ve done but one thing all my life, that is how to best develop the Daqing Oilfield”, says Wang Qimin.

Liu Hongtao from PetroChina Tarim Oilfield Company was honored with the title of "Honest and Trustworthy Youth" in the "China Progressive and Moral Youths 2019".

Liu is a young researcher targeting exploration and development. He innovatively established the first "cross-discipline and cross-sector" studio in Tarim Oilfield. He won the Sun Yueqi Youth Science and Technology Award.

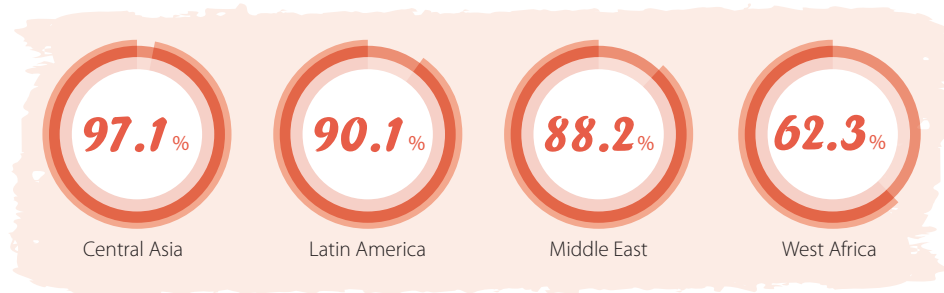
LOCAL HIRING AND DIVERSITY

At PetroChina, we embrace a respectful, open and inclusive culture and we are committed to "selecting more local talents who live close to our overseas operations, upgrading their professionalism and making them more responsive to market forces". We abide by all laws and regulations of the host countries. We formulated *Measures for Administration of Local Employees in Overseas Operations* and established an optimal system for hiring, deployment, performance appraisal, incentives and penalties. We work hard to attract and train top local talents and to provide them with a working environment conducive to their employee development.

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. Professionals employed in our overseas projects involve multiple disciplines, such as exploration and development, refining and chemicals, pipeline operation, international trade, finance, accounting, and human resources management, covering over 30 countries and regions. In 2019, international and local employees accounted for 94.23% of our overseas workforce.

Proportion of Local Employees in PetroChina's Overseas Business Regions



Case Study: I'd Like to Keep Working in PetroChina

Michelle Amod, a Chadian aged 35, is engaged in electric engineering. He joined PetroChina's Chad Company in 2012, and has progressed to become an expert in electric engineering. He was awarded twice as the Excellent Staff in the Chad Project. In 2018, he was invited for an on-site visit to Daqing Oilfield as the Outstanding International Employee. Michelle has a happy family, with three children studying in bilingual schools.

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

—Michelle Amod

Case Study: Equal Employment and Development Opportunities are Offered to Peruvian Employees

In Peru, PetroChina recruits excellent local people majoring in the petroleum-oriented industry in terms of technical and operational management, following fair and competitive procedures. PetroChina reports, from time to time, to the Ministry of Labor and Employment Promotion of Peru any job vacancy for the disabled to have an offer of employment.

In addition to Chinese and Peruvian employees, PetroChina's Peru Company engages Bolivian, Venezuelan and Argentinean personnel, recording a labor localization ratio of 94% as of 2019.



Simon (second from left), a Peruvian employee, has grown into a key talent

Cultural Integration

PetroChina fully respects cultural diversity and local customs. We promote and encourage communication and exchanges between employees with 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: Cultural Exchanges of PetroChina International (America) Inc.

PetroChina International (America) Inc. organized publicity on the Chinese Mid-Autumn Festival. Local employees had an in-depth knowledge about the origin and legend of the Festival, and also learned how to make mooncakes.

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



Employees of PetroChina International (America) participate in volunteer activities





SOCIAL CONTRIBUTION

As a company rooted within society, PetroChina has a duty to give back. Our ultimate goal is to promote socioeconomic development, so we attach great importance to the well-being of people and social advancement. We expand our scale of joint ventures and cooperation, enhance local development capabilities, give donations to impoverished students, and carry out customer satisfaction and community service activities. Through our efforts, we strive to build a harmonious society.

SDGs



TARGETED POVERTY ALLEVIATION

Poverty alleviation is a major issue for global sustainable development 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 leveraging our strengths in terms of industrial resources, we have taken targeted measures to help areas receive assistance to enhance their self-development capacity and promote the sustainable development of the local economy.

In 2019, together with CNPC, we continued to carry out selected poverty alleviation and aid programs. We implemented nearly 70 targeted poverty alleviation projects, typically involving industrial cooperation, featured tourism, photovoltaic power generation and education/training, in 13 counties/districts in seven provinces (municipalities and autonomous regions) of China, such as Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou. These projects benefited tens of thousands of people.

8



Among 10 targeted counties, eight were removed from the list of poverty-stricken counties, and the remaining two will get out of poverty in 2020.

152 million RMB



We contributed RMB 152 million to poverty alleviation (73% more than in 2018) and implemented nearly 70 alleviation projects.

9.62 million RMB



In conjunction with China Foundation for Poverty Alleviation and other organizations, we contributed RMB 9.62 million of social capital, which represents a year-on-year increase of 47%.

3,570 person-times



We provided training to grassroots managers for 3,570 person-times and to technical personnel for 3,138 person-times, representing a year-on-year increase of 50% and 182%, respectively.



168 million RMB



We facilitated the sales of the agricultural products from poverty-stricken areas through canteens, supermarkets and service stations, with sales volume of RMB 168 million.

12 million RMB



We allocated in aggregate RMB 12 million to the eco-forest project in Qapqal Xibe Autonomous County, Ili Kazakh Autonomous Prefecture, Xinjiang, with fruit trees planted in an area of 6,000 mu.

1,000⁺



We helped over 1,000 poor people find jobs.

200⁺ person-times



Following the model of "enterprises + cooperatives + poor households", we supported 26 cooperatives in targeted counties by providing job or business opportunities for poor families.

Highlights of PetroChina's Targeted Poverty Alleviation Projects in 2019

Project	Venue	Description	Effects
PV power station	Henfeng County, Jiangxi	Construction of the 1.05mV centralized PV power station in Longmenfan Township	Increased the income of 16 local villages and many poor families
Specialist schools under the Teacher Training Program	Fan County and Taiqian County, Henan	Introduced advanced educational resources and concepts to help the poverty-stricken areas cultivate excellent management teams	Optimized the overall teaching resources to improve the educational capacity in the poor counties
Model tourism project	Golmud, Qinghai	Construction of Changjiangyuan Village Services Centre and the Tanggulashan Township Cultural Tourism projects, are featuring unique Tibetan culture and beautiful landscape	Built the Tanggulashan Township into a tourism brand – “First Ecological Township along the Yangtze River”, driving the development of the tourist industry of Golmud
Combating natural disasters	Yushu, Qinghai	Provided living materials to the herdsmen affected by severe snows	Assisted the herdsmen affected by severe snows to minimize the property damage
Products sales event	Urumqi, Xinjiang	Sold the agricultural and handicraft products of the targeted counties at PetroChina service stations and convenience stores	Exhibited 682 kinds of agricultural and handicraft products, and entered into purchase agreements worth a total of RMB 150 million

Case study: Village Tourism Projects were Implemented for Poverty Alleviation

In 2017, the “PetroChina Model Village Tourism for Poverty Alleviation Project” was initiated in three counties, namely, Xishui County of Guizhou Province, and Taiqian County and Fan County of Henan Province, where the tourism resources are rich. Under the project, PetroChina invests in building featured homestays to help the counties develop the tertiary industry in form of cooperatives, and ultimately form an industrial system integrating multiple sectors such as plantation, processing, tourism, cultural creation and resorts. As October 2019, the projects in Taiqian County and Fan County have been officially operational and made a profit of nearly RMB 300,000.



Hanxuzhuang Village Homestay Project in Fan County, Henan Province

These projects have driven local development and improved the living standards of the villagers.

- According to local conditions, the idle houses in villages were reconstructed into boutique homestays, while the rural landscape was reserved if practical.
- Village infrastructure was improved to upgrade the living conditions of villagers.
- Sales of local agricultural products increased with the improvement of the environment and the enrichment of tourist products.
- Training of villagers in proper labor skills, achieving the enhancement of overall quality of villagers and the urbanization rate.
- Villages with unique cultural and natural strength will be more beautiful, harmonious and sustainable driven by tourism.

Case Study: Eco-Forest Project for Poverty Alleviation

Since 2018, PetroChina has donated RMB 12 million to help Qapqal Xibe Autonomous County, Xinjiang, build an eco-forest with an area of 6,000 *mu*. The project created job opportunities for poor families in the county. Poverty alleviation achievements were further consolidated along with ecological and environmental management.

By the end of 2019, the project had yielded economic benefits, providing stable employment to 120 people from poor families and an annual income of RMB 12,000 per capita. When the trees bear fruit in five years, 10% of the revenue from the sales of the fruits will be distributed to poor households.

Rehemaitijiang Ayiwahong is an example who got out of poverty by contracting fruit trees. In addition to the monthly income of RMB 1,000, he enjoys the tree custody fee of RMB 12,000 annually by contracting another 50 *mu* of fruit trees.

Case Study: Women's Empowerment & Value Fulfillment

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

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

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

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

Helped the housewives transform into working women

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

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

Women trained with skills for a better life

Many women from poor families are less educated and less skilled when it comes to gaining employment. Considering that maternity matrons are in huge

demand, with low entry threshold, ideal payment and opportunities, PetroChina initiated the "Angelical Maternity Matrons" project from 2016 to help local women improve their nursery skills and gain more employment opportunities.

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

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

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



Xinjiang Talanchi Food Factory employs local women

WIN-WIN COOPERATION

While providing a stable energy supply to drive national economic development, we follow the principle of open and win-win cooperation, expanding our joint ventures and cooperation with local businesses. Meanwhile, we engage and develop local suppliers and contractors when possible, thereby creating jobs and driving the growth of related businesses, and giving back to local people.

PetroChina's outstanding JV projects in 2019 include:

- Capital increase for the liquid chemical terminal in Dongjiakou harbor area, Qingdao Port
- Acquisition of equity in Tianjin Taida Gas Company
- Equity participation in China Huadian's project in Jiangsu

Case Study: Changqing Oilfield Spurs on Local Economy

While developing its own capability, Changqing Oilfield builds a new type of relationship with local enterprises/governments based on mutual benefits, win-win and sharing, with Shaanxi, Gansu, Ningxia, Inner Mongolia and other provinces/regions. In this way, Changqing Oilfield is committed to improving the local economy, thereby bringing benefits to local people.

Radiating to local economy

Changqing Oilfield has played an increasingly prominent role in driving the development of the local economy. The development of oil and gas resources spurs the fast rise of the local petrochemical, power generation and refinery sectors, which in turn become the pillar industry in local areas. The large-scale capacity construction and market-oriented mode of operation have attracted more than 350 local private enterprises and 100,000 people, facilitating the rapid development of local sectors such as labor, building materials, logistics and manufacturing, as well as production and services.

Driving related sectors with poverty-alleviation projects

Since 2017, Changqing Oilfield has contributed in aggregate RMB 183 million in Longdong oil area to implement 75 alleviation projects including road construction, environmental rehabilitation, rural water supply and rural school building. These projects have driven the development of related sectors in local areas, such as drilling/production engineering, downhole operations, and transportation, creating nearly 20,000 jobs and achieving an average annual income of RMB 40,000 per capita.

183 million RMB

RMB 183 million invested

75

75 projects

20,000

Nearly 20,000 jobs

40,000 RMB

Achieving an average annual income of RMB 40,000 per capita

100,000⁺

350 local private enterprises and more than 100,000 local people

OVERSEAS COMMUNITY CONSTRUCTION

We respect the cultures and conventions of the host countries in which we operate, and we are committed to establishing long-term and stable cooperative relations with the host countries. We proactively integrate our operations with local socioeconomic growth to create economic and social value. We work jointly with host governments and our business partners to promote the development of local communities. In 2019, PetroChina's Jabung block in Indonesia was granted the Green and Environmental Rating Certificate.



Enhancing Communication with Local Communities

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

Cooperate with the host countries on the basis of mutual benefits to support the sustainable development of the local community.

 <p>In the process of decision-making for overseas business</p> <p>Assess and consider the impact of our operations on the community and other stakeholders</p>	 <p>In the full life cycle of business</p> <p>Maintain good interaction with the community and other stakeholders</p>
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Community Welfare

We take an active role to help improve the production and living conditions of local residents, give donations to education, and carry out public welfare programs with respect to hygiene and healthcare to achieve harmonious and mutual development.

Middle East	Iraq	<ul style="list-style-type: none"> • Offered free clean energy to local people, benefiting 280,000 families • Established the Coffee Foundation to offer help to communities • Set up the Community Contribution Committee, contributing US\$5 million annually for public welfare undertakings • Built community hospitals and school camps or dorm buildings
Americas	Peru	<ul style="list-style-type: none"> • Provided free health checks and on-site medical counseling for local residents, and donated medical devices and instruments • Provided parenting training to 1,200 illiterate mothers • Assisted 1,200 families to reclaim land and built 1,200 bio-toilets
Asia-Pacific	Singapore	<ul style="list-style-type: none"> • Established the special scholarship with Nanyang Technological University, for students who are academically and ethically outstanding • Participated in the event of "The Boys' Brigade Share-A-Gift" for the 8th consecutive year, claiming and satisfying 100 Christmas wishes from seven social welfare institutions
Asia-Pacific	Japan	<ul style="list-style-type: none"> • Sponsored the Go Game for local residents • Kept the company's football court open to the public, and organized teenager football games for the community • Guided local primary school students to visit the refinery, enabling them to understand more about the petroleum industry • Carried out forest protection activities
Africa	Chad	<ul style="list-style-type: none"> • Donated US\$950,000 to the Majestic Heart Foundation, assisting local areas in education, culture and healthcare • Sponsored the "Peace" Half Marathon in Chad • Drilled wells, built/repared roads, built schools, and donated study materials for local community
Central Asia - Russia	Kazakhstan	<ul style="list-style-type: none"> • Supported public welfare programs organized by local state social foundation, orphanage, association for the disabled, and association for the blind • Donated to poor and lonely WWII soldiers and their family members

Case Study: A Village-level Town was Formed through Meeting the Community's Requirements

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

PetroChina took over the Ronier Oilfield in 2011. Since then, the Company's public relations department visited local communities to understand their needs. For clean drinkable water, PetroChina drilled 49 wells, benefiting 25,000 residents in 39 villages nearby including Gudawa. Moreover, PetroChina constructed the main road in Gudawa and a primary public school accommodating 300 students in six grades. The oilfield development also created job opportunities for local people – up to 969 people in total.

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



Water well drilling for Gudawa



Drilling water well for and donating school bags to Gudawa

Protect Local Environment

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



PetroChina's Peru Company adopts a green and environmentally friendly development mode to protect the local rainforests



Case study: Careful Protection of Oryx Leucoryx

When operating in the United Arab Emirates, PetroChina complies with local environmental protection policies and applicable laws and regulations governing animals and plants trading. PetroChina carefully protects local rare species, including Oryx leucoryx, flamingo, dugong, green turtle, and mangrove forest, and prohibits any illegal imports and exports of specimens of rare species.

To protect the Oryx leucoryx living around the area of the seismic acquisition, PetroChina's crews made a detailed survey and evaluation of the surroundings and understood the travel routes, timing and location of the Oryx leucoryx. Accordingly, the team designed plans for avoidance, mitigation and transfer.



Pipelines in UAE project are buried to protect Oryx leucoryx

Promote Localization

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

Case Study: Local Personnel Training Program in Chad

PetroChina incorporates local personnel training into the strategy of company in Chad. Through multi-level short-/long-term training programs, a number of local technical and administrative talents have been cultivated for the Chad project.

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



"I'm a Singaporean, and I fully recognize the corporate culture of PetroChina. Someone asked me: what is your greatest happiness? My answer is very simple: my greatest happiness is the time when I solved a difficult problem in my work!"

—Lin Fufa, a Singaporean employee of PetroChina International (Singapore), and manager of an oil depot

Tax Payments According to Law

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



For details on the *Tax Policy of PetroChina Company Limited*, please visit PetroChina's website.



Protect Indigenous Rights

Before the construction of a project, we conduct assessments of the social and economic impact in relation to the needs of indigenous people, human rights, cultural heritage and involuntary resettlement. We try our best to protect all the legal rights and interests of the indigenous people. We uphold standard operation in land compensation and formulate compensation plans by taking into account the opinions of the local governments, our partners and the local residents in order to protect the interests of the indigenous people. Specifically, compensation is paid before land use, and the compensation information is released in a timely manner to ensure operational transparency.

Case study:

PetroChina Helped Improve the Quality of Life of Indigenous People in Suku Anak Dalam, Indonesia

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

In conjunction with Indonesia's Social Ministry and KKI Warsi (a foundation of Jambi), PetroChina built clean water facilities for Gurun Tuo and Sungai Surian, two villages where over 80 Suku Anak Dalam families reside. In addition, PetroChina provides regular health checks, necessary medicine and education for these indigenous people.

CUSTOMER SERVICE

As a leading producer and supplier of petroleum and petrochemical products in China, PetroChina continues to optimize its product structure and improve its product quality, while upholding the principle of pursuing integrity and excellence in quality control. We endeavor to enhance quality management continuously by focusing on the formulating, 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 and services.

Product Quality and Safety

We provide consumers with products that meet legal requirements and standards with a high sense of responsibility. In the process of providing a product, we comprehensively consider its impact on the consumers and ensure product quality and safety.

The Company strictly abides by quality management laws and regulations and has formulated specific management regulations and implementation rules covering the entire enterprise, all of the staff and the whole process. In 2019, we improved the product and service quality standards, developed the quality improvement action plan, and continuously promoted product quality upgrading, in order to provide our customers with diversified and high-quality products. We completed the quality upgrading of gasoline and diesel to the National VIA standard on schedule and achieve stable supply. We developed 72 new brands of chemical products, with an output of 705,000 tons. Kunlun Lubricant became an official supplier for the Beijing 2022 Winter Olympics.

Key Progresses of Quality Management in 2019



Focus	Description
System audit	<ul style="list-style-type: none"> Implemented integrated audit on QHSE system and full coverage on Quality Audit System
Quality culture	<ul style="list-style-type: none"> 223,000 employees participated in the quality activities Over 250,000 employees attended the quality management contest organized by the State Administration of State-Owned Assets Commission Carried out the consumer satisfaction survey, collected 30,607 valid responses, and proposed six improvement suggestions
Supervision and inspection	<ul style="list-style-type: none"> Enhanced supervision of self-manufactured products, and made spot checks of 1,570 batches of crude oil, natural gas, refined oil and chemical products Conducted special supervision of 1,258 batches of materials procured, with 90 batches unqualified

At the Yandong Service Station, the first smart service station of Jilin Marketing Company, the robot in the convenience store is very attractive for kids



Consumers' Rights and Interests

We strictly abide by such applicable laws, regulations and international standards relating to advertisements, labeling and privacy of products and services as the *Law of the People's Republic of China on Protection of Consumers' Rights and Interests* and the *United Nations Guidelines for Consumer Protection*. The Company established customer data management rules and acted in strict compliance with the rules in the management and use of customer data, in order to protect the security and privacy of consumer data.

Value-added Services

For the purpose of customer satisfaction, we strive to improve our service network and functions. In 2019, we continued to strengthen online and offline integration. Specifically, the first batch of refueling card mobile payment services was successfully launched, and the first "people, vehicle and life" one-stop service station, i.e. a warehouse-type convenience store, was constructed in Nanning, offering more convenient services for consumers.

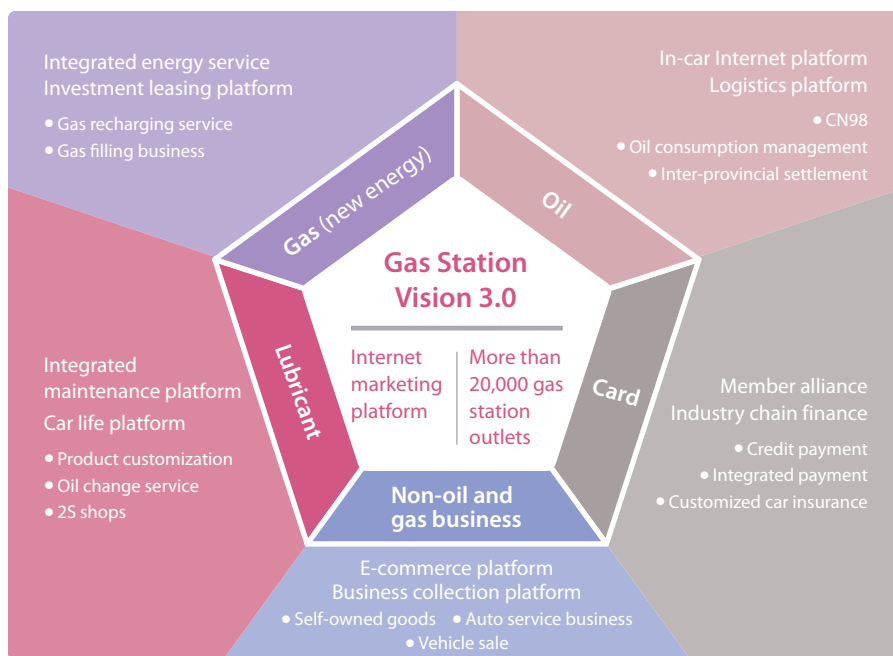


PetroChina initiated the "uSmile · Quality Action for Good Life" program

In 2019, PetroChina officially initiated the "uSmile · Quality Action for Good Life" program in the convenience stores of its 19,000 service stations across the country. This program was designed to upgrade the quality of PetroChina's products and services, supporting consumers' desire for a good life. In the meantime, PetroChina carried out the nationwide Golden Experience campaign, in which the consumers were invited to enjoy the in-store experience and make an evaluation, in order to ensure the success of the Quality Action program.

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In 2019, PetroChina's oil product retail network covered 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China



According to the 2019 China Customer Satisfaction Index SM (C-CSI) brand ranking and analysis report released by Chnbrand, a renowned brand rating institute, PetroChina's overall rating ranked first for the third consecutive year.



INVESTOR FAQs

SAFETY AND ENVIRONMENT

Q1 The International Maritime Organization (IMO) will impose a much lower limit for sulfur content in bunker fuel oil in 2020. How will PetroChina be affected?

A: PetroChina makes great efforts on the production of low-sulfur bunker fuel oil. In 2019, our nine regional companies worked out the formula of low-sulfur bunker fuel oil and put it into trial production. The produced low-sulfur bunker fuel oil has been successfully tested in ocean vessels. As the IMO imposes the new limit and the Chinese government provides relevant incentives, especially the tax refund policy that has been further clarified, we will improve the capacity of low-sulfur bunker fuel oil based on our own low-sulfur crude oil, addressing demand in the international shipping market while optimizing the structure of our refined products.

Q2 How does PetroChina ensure the safety and environmental protection of the supply chain?

A: Safety is our core corporate value. We integrate it into all aspects of our production and operation. All our contractors and suppliers shall perform their corporate social responsibilities, and work and act safely in line with applicable quality and safety standards and rules. We follow meticulous procedures to select contractors and suppliers, provide them with relevant training, and make process control and assessment, to ensure the safety of our supply chain. The Supply Chain Safety Management Process is given in Section 2, Chapter 3 of the 2019 ESG Report.

We make great efforts to build a green development system that covers all aspects of the industry chain. We request and procure our suppliers to provide more reliable products and environment-friendly materials. Our progress in supply chain management in 2019 is described in Section 4, Chapter 1 of the 2019 ESG Report.

Q3 How does PetroChina keep aligned with China's commitments to reducing carbon emissions?

A: China signed the *Paris Agreement*, clearly committing that, by around 2030, it would: (a) achieve a peak in carbon dioxide emissions and make best efforts to peak early; (b) lower carbon dioxide emissions per unit of GDP by 60% to 65% from the 2005 level; (c) increase the share of non-fossil fuels in primary energy consumption to around 20%, and (d) increase the forest stock volume by around 4.5 billion cubic meters from the 2005 level. To drive the low-carbon transition, PetroChina has issued plans on low-carbon and green development in the past two years, promoting green development in aspects such as energy supply-side, energy consumption and new energies, and supporting China's commitments to voluntary emissions reduction.

In view of Commitment (a) above, PetroChina will exercise rigorous control over carbon dioxide emissions by way of improving energy efficiency, fully introducing clean fuels, reinforcing controls over greenhouse gas and implementing carbon capture, utilization, and storage (CCUS). With these measures, we expect to lower CO₂ equivalent emissions per unit of operating revenue by 25% from the 2015 level by 2020. We firmly understand that increasing the share of clean energy in the primary energy mix is the foremost means to fulfill the commitment to the *Paris Agreement*, so we are always devoted to increasing the supply of clean energy such as natural gas. In China's primary energy mix, the share

of natural gas rose from 5.9% in 2015 to 8.3% in 2019, of which 61.9% was contributed by PetroChina. By 2020, our oil-gas equivalent production ratio will reach 1:1 domestically.

In view of non-fossil fuels and forest stock volume, PetroChina has developed a new energy plan covering biomass energy (fuel ethanol and biodiesel), geothermal energy, solar energy and wind energy, pursuant to which, by 2030, non-fossil energy will take a much higher share of PetroChina's primary energy production and become an important contributor to China's new energy sector. Besides, PetroChina will contribute to the growth of forest stock volume nationwide by way of implementing greening projects in production bases, assisting the China Green Carbon Foundation and carrying out ecological programs for poverty alleviation.

Q4 What is the policy adopted by PetroChina on recycling drilling fluid and what progress has been made?

A: We attach much importance to the recycling of drilling fluid. We innovate methods in the disposal of water- or oil-based drilling fluid waste to enable them to be reused more effectively and efficiently. At Changqing Oilfield, Huabei Oilfield and Dagang Oilfield, the technology of processing water-based drilling fluid on ground while drilling is widely applied, so that the fluid phase from solid-liquid separation is 100% recycled. In Tarim Oilfield and Changning-Zhaotong Shale Gas Zone, LRET oil-based mud reuse technology was applied, obtaining oil content in debris of less than 1%. In 2019, PetroChina reduced drilling waste by more than 4.8 million tons and oily sludge and oil-splattered plastic cloth by 274,000 tons.

Going forward, we will further uphold the new concept of clean production to exercise "well site-closed" whole-process control and create a clean drilling mode featuring a standardized drilling site, green source, simplified process, resources-oriented terminal and well-integrated facilities.

Q5 What measures has PetroChina taken to safeguard work safety?

A: We integrate the concept of work safety into all aspects of our production and operation. We promote the long-term mechanism of safe production and improve management of work safety.

We maintain a prevention mechanism integrating risk control and rectifying hazards, which is mainly manifested in risk prevention and control by levels and closed-loop management of hazards, in order to prevent risks and hazards from escalating. We maintained strict management of critical areas of high-risk and dangerous operations. We conduct diagnosis and management evaluation of safety and environmental measures in key enterprises, major projects and high-risk areas to ensure that major risks are controllable and under control.

When any accident/incident occurs during production and operation which causes personal casualties or direct economic losses, we conduct an immediate investigation in accordance with the *Administration Measures for Safety Incidents*, and define the accountability of liable persons; we learn the lessons of such accidents/incidents in order to avoid any re-occurrence.

RESPONSE TO CLIMATE CHANGE

Q6 How do you view TCFD recommendations?

A: We are dedicated to low-carbon development and take an active part in international cooperation in response to climate change by sharing our practices in greenhouse gas control with peers in the industry and all sectors of the society. We deeply investigate and consider relevant international standards such as the TCFD recommendations as well as the best practices of our peers in the industry, facilitating our low-carbon transition and addressing investors' concerns. We will work further on matters relating to climate change and identify the impact of climate change on our business. The major climate-change-related risks identified by PetroChina and our responses are described in Section 2, Chapter 2 of the 2019 ESG Report.

Q7 What incentives does PetroChina adopt in respect to climate change?

A: We grant awards to the collectives and individuals of the Company with outstanding performance in response to climate change and environmental protection, and also provide rewards and protection to individuals whistle-blowing with regard to any violations of or failure to comply with environmental laws or regulations. Environmental protection performance as a KPI index is included in the performance appraisal of senior management of the Company and senior managers of regional companies, and the accountability system for environmental protection performance and the lifelong accountability system for ecological damage have been put in place.



Our oilfield uses the dual-rig factory-like operation mode

We encourage regional companies to stay actively engaged in technical research and international cooperation in low-carbon areas. Phase I and II of PetroChina's Major Project for Key Low-Carbon Technologies were initiated in 2011 and 2015 respectively, enhancing our competitiveness in low-carbon development.



CORPORATE GOVERNANCE

Q8 What procedures does PetroChina follow to ensure compliance with the principles of human rights and other legal requirements?

A: Keeping the “people-oriented” principle in our mind, we always respect and equally treat all employees, regardless of nationality, ethnicity, gender, religion and cultural background. We protect the legitimate rights and interests of our employees, and address the issues they are most concerned with and face most frequently. We are committed to offering our employees more and fair opportunities to benefit from the business growth of PetroChina.

We conduct self-inspection on the compliance of employment and follow legal procedures for recruitment, promotion and dismissal, to secure the legitimate rights of employees (refer to Section 1, Chapter 3 of the ESG Report). We also encourage employees to play a role through democratic management, democratic participation and democratic oversight, and consistently improve the trade unions and the democratic management system with the employees’ congress as its basic form to promote the transparency of corporate management in which the employees have the right to know, participate and supervise.

In addition, we respect and protect the rights and interests of indigenous peoples. Before implementing a project, we assess its social and economic impacts on their needs, human rights, cultural heritage, involuntary resettlement and other aspects, and try our best to protect their legal rights and interests.

Q9 What are the laws and regulations PetroChina follows in corporate governance?

A: Ever since its incorporation, PetroChina has had in place a corporate governance framework in compliance with regulatory requirements and international practices, and this framework has been improving by taking into account actual operating circumstances in order to promote the continuous improvement of the standard of management. The governance framework is constituted by the Shareholders’ General Meeting, the Board of Directors and its special committees, the Supervisory Committee, and senior management headed by the President under which their respective authorities and responsibilities have been clearly defined. Such a management structure allows for close coordination and is highly effective.

PetroChina carries out standard internal management and operations in accordance with the *Company Law of the People’s Republic of China*, the *Articles of Association*, *Working Manual of the Board of Directors*, *Rules of Organization and Procedure of the Supervisory Committee*, and the *Rules of PetroChina Company Limited for Information Disclosure Control and Disclosure Procedures*, and provides timely, accurate, complete and reliable corporate information to all market players and regulatory authorities, consistently improving the Company’s value.

Q10 What progress has PetroChina made in anti-corruption activities?

A: We adhere to the principles of no restricted area, full coverage and zero-tolerance, impose tight constraints by adopting tough approaches and long-term deterrence strategies, and conduct investigation on parties offering bribes and also those accepting bribes, in order to maintain a tough stance in combating corruption. We make ongoing efforts to improve the anti-corruption system and procedures, provide anti-corruption training and reinforce due diligence and monitoring of intermediaries. For details, refer to Section 3, Chapter 1 of the ESG Report.

WIN-WIN COOPERATION

Q11 In 2019, the State Council issued the *Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area*. How would PetroChina support the government's efforts in the Greater Bay Area?

A: We have a lot of businesses in Guangdong Province and Hong Kong. To effectively support the government's efforts in the Greater Bay Area and seize the opportunities for energy companies, we have initiated the *Planning for Coordinating PetroChina's Business Development in Guangdong-Hong Kong-Macao Greater Bay Area*. Through this, we expect to secure the supply of clean, efficient, green and low-carbon energy to the Greater Bay Area, and at the same time seek opportunities for innovative development and cooperation by virtue of momentum-gathering factors, such as world-class megacities in the Greater Bay Area, exchange and cooperation between the mainland and Hong Kong-Macao, innovation-driven development, the forefront of reform and opening-up, a new platform for international economic cooperation, and a milestone in pushing ahead the Belt and Road Initiative.

Q12 Please illustrate how PetroChina performs corporate social responsibilities in international cooperation.

A: PetroChina keeps expanding partnerships worldwide and its involvement in the local economy and society. We are dedicated to creating jobs and contributing to local stability and prosperity through cooperating with local oil and gas companies, and pay taxes according to law, striving to be a good corporate citizen in local areas.

In Iraq, we brought sophisticated and applicable management and technical know-how along with equipment and facilities to join hands with local partners in contributing to Iraq's national vision of restoring and boosting its oil industry. We managed to stay ahead of schedule in the production capacity building of projects we are involved in, which accelerated the revitalization of the Iraqi oil industry. We proceeded with pilot tests of water flooding in huge carbonate reservoirs and effectively applied such advanced technologies as cluster well and multilateral horizontal well to boost the fast development and production of oilfields. Typically, the Halfaya project met the target of producing 70,000 barrels/day 15 months ahead of the timeline under the contract; the Rumaila project met the target of a 10% increase in its output 2 years ahead, recording the highest output over the past 30 years. We are active in pushing ahead with the localization of business operations by providing more training to local employees and promoting more Iraqi employees to important managerial, professional and operating posts, which amount to 72.9% at the Halfaya project and 93.65% at the Rumaila project. We prioritize business partnerships with local companies and lead Iraqi contractors to build a construction system up to international standards, playing an indispensable role in the development of Iraq's oil industry. We have established emergency committees for all of our projects in Iraq, comprising local government, local oil companies, heads of local communities and operator representatives, in order to enhance communication with local employees and communities and scale up our participation in welfare activities.

PERFORMANCE DATA

Category	Indicator	2017	2018	2019
Safety and quality	Fatal accident rate (per/100 million working hours)	0.12	0.14	0.07
	Total accident rate (incidents/million working hours)	0.0652	0.0414	0.0562
	Fatalities	3	4	2
	Loss of working days due to work-related injury	10,166	9,971	3,366
	Pass rate for third-party certification on quality management system (%)	100	100	100
Environment	Energy			
	Total energy consumption (10 ⁶ TCE)	80.98	84.40	87.03
	Total raw coal consumption (10 ⁶ TCE)	12.21	12.67	12.68
	Total crude oil consumption (10 ⁶ TCE)	1.87	1.86	1.80
	Total natural gas consumption (10 ⁹ m ³)	16.6	18.1	18.5
	Total electricity consumption (10 ⁹ kwh)	50.3	54.2	56.3
	Energy saved (10 ⁶ TCE)	0.82	0.81	0.78
	Comprehensive energy consumption for producing unit volume of oil and gas equivalent (kg of standard coal/ton)	118	122	119
	Unit energy factor consumption for refining (kg standard oil/ [t · factor])	7.91	7.81	7.68
	Comprehensive energy consumption for producing ethylene products (kg of standard oil/ton)	584	592	580
	Water			
	Fresh water consumption (10 ⁶ m ³)	791.21	800.05	793.83
	Year-on-year change in fresh water consumption (%)	2.32	1.11	-0.78
	Fresh water consumption for processing 1 ton of crude oil (m ³)	0.51	0.51	0.52
	Water saved (10 ⁶ m ³)	11.01	10.76	9.80
	Land			
	Land saved (hectare)	1,180	1,253	1,247
	Pollutants and Wastes			
	COD emissions (10 ³ tons)	28.2	25.7	24.4
	SO ₂ emissions (10 ³ tons)	109.1	104.0	93.8
	NH ₃ -N emissions (10 ³ tons)	10.8	10.0	8.7
	NOx emissions (10 ³ tons)	102.9	96.6	89.0
	Greenhouse Gas			
	Total GHG emissions (10 ⁶ tons of CO ₂ equivalent)	-	-	174.08
	Direct GHG emissions (10 ⁶ tons of CO ₂ equivalent)	-	-	132.17
	Indirect GHG emissions (10 ⁶ tons of CO ₂ equivalent)	-	-	41.91
	Reduction in GHG equivalent emissions per unit of operating revenue (over 2015), (%)	-	-	25.17

Category	Indicator	2017	2018	2019
Employees	Number of employees (10 ³)	494.3	476.2	460.7
	Localization and Diversity of Employees			
	Percentage of female staff (%)	30.71	29.82	28.79
	Percentage of female administrative staff (%)	7.32	7.35	7.44
	Percentage of ethnic minority employees (%)	6.50	6.51	6.53
	Percentage of foreign personnel in overseas projects (%)	91.6	92.7	94.23
	Workforce by Profession			
	Administrative staff (%)	26.93	27.71	28.51
	Professional and technical staff (%)	13.91	13.90	13.94
	Operating staff (%)	59.16	58.39	57.55
	Workforce by Education			
	Master's degree and above (%)	3.63	3.83	4.03
	Bachelor's degree (%)	31.87	32.87	33.99
	College degree (%)	23.24	23.16	22.98
	Technical secondary school and below (%)	41.26	40.14	39.0
	Employees who took maternity/paternity leave returned to work and kept their posts (%)	100	100	100
	Detection rate of workplaces susceptible to occupational hazards (%)	98.5	99.99	99.28
	The establishment rate of employee occupational health monitoring archives (%)	100	100	100
	Occupational health examination rate of employees (%)	98.5	99.97	99.62
	Training rate of front-line employees (%)	100	100	100
Training rate of senior skilled personnel and personnel at critical operation posts (%)	100	100	100	
Communities	Taxes (RMB 10 ⁹)	329.6	367.2	353.6
	Overseas taxes (RMB 10 ⁹)	25.2	40.1	42.9
	Public Welfare			
	Contribution to poverty alleviation (RMB 10 ⁶)	129.31	93.98	137.60
	Educational donations (RMB 10 ⁶)	26.58	40.31	27.68
	Donations to disaster relief (RMB 10 ⁶)	79.73	11.49	20.58
	Environmental protection (RMB 10 ⁶)	3.36	48.60	43.83

Notes:

PetroChina calculates its GHG emissions according to the GHG emissions accounting methods and reporting guidelines launched by the Chinese government. The statistical data cover all the projects in which the Company participates as an operator, and have been verified by the China Quality Certification Center. As of the reporting date, the accounting of GHG emissions for overseas projects in 2019 has not been completed. Therefore, the portion of four GHG emissions data for overseas business covered in this Report is based on the emissions data for 2018.

OBJECTIVES AND PLANS

In 2020, we will firmly establish and implement new development concepts. To build a top-class exemplary enterprise, we will establish first-class standards for business development, reform and innovation, and the building of a harmonious enterprise, making solid and effective progress in all aspects, and continuously acquire new achievements.

Aspects	2020 Objectives	2020 Action Plans
Corporate governance	Improve the modern enterprise system, promote the building of a modern and international corporate governance system and management & control capability, and create a sound business environment	<ul style="list-style-type: none"> • Improve the Company's sustainability management and effectively control ESG risks • Promote corporate governance structure • Strengthen compliance management in key areas • Keep building up the internal control system • Implement anti-corruption laws and regulations • Improve communication and interaction with stakeholders
Energy and environment	<p>Optimize the energy mix to enhance supply of clean energy</p> <p>Further enhance energy management and pollution control, and improve the HSE system, in order to ensure stable and improving HSE performance</p> <p>Save 610,000 TCE of energy and 7.8 million cubic meters of water, and reduce CO₂ equivalent emissions per unit of operating revenue by 25% compared with 2015</p>	<ul style="list-style-type: none"> • Strengthen exploration and development and make great efforts to develop clean energy such as natural gas • Build up technological innovation capacity and promote the Company's green development and transition • Fulfill the HSE responsibilities, and investigate and determine the accountability for accidents/incidents • Continuously reinforce the HSE management system audit • Strictly manage and control risks by category and enhance the emergency response capabilities • Set up the mechanism for inspection and treatment of environmental risks/hazards to continuously improve the ability to prevent and control ecological risks • Urge and supervise the implementation of pollution prevention and control, and comprehensively strengthen the management and control of greenhouse gas • Organize energy-saving and water-saving technology exchanges, and implement energy and water facility transformation
Employee development	<p>Build excellent groups of managers and talents</p> <p>Improve the mechanism for regular growth in employee compensation</p> <p>Secure the safety of personnel and property</p>	<ul style="list-style-type: none"> • Devoted more to the selection and training of young managers • Strengthen all-staff education and training to improve overall quality • Improve the differentiated payroll determination mechanism and performance appraisal mechanism • Continue to promote the pilot application of the professional manager system • Innovate the mode of employment and properly arrange redundant personnel • Strengthen overseas risk assessment and early warning, and enhance terrorism emergency response capabilities
Social contribution	Earnestly fulfill social responsibilities and actively participate in public welfare undertakings	<ul style="list-style-type: none"> • Support the preparations for 2022 Beijing Winter Olympics • Carry out targeted and selected poverty alleviation to support China's fight against poverty • Maintain close communication and coordination with local governments, and support and drive the local economic and social development

GLOSSARY

Liquefied natural gas (LNG)	Liquefied natural gas is produced by dewatering, deacidifying, dehydrating and fractionating the natural gas produced from a gas field and then turning it into liquid under low temperatures and high pressure.
New energy	New energy refers to unconventional energy and renewable energies, mainly including CBM, shale gas, oil sands, oil shale, fuel ethanol, biodiesel, geothermal energy, wind energy, solar energy, hydrogen energy, water-soluble gas and NGH.
Low-carbon economy	A low-carbon economy is an economic development model characterized by low energy consumption, low pollution and low emissions. Its essence is efficient energy consumption, development of clean energy and pursuit of green GDP. The core of this model is the optimization of the industrial structure, low-carbon technology and institutional innovation. A low-carbon economy is developed by means of energy conservation, emissions reduction and the development of clean energy.
Greenhouse gas (GHG)	Greenhouse gases are gases in an atmosphere that absorb solar radiation from the surface and then emit radiation, such as water vapor, CO ₂ , and most refrigerants. Their effect is making the Earth's surface warmer, as the "greenhouse effect" sequesters solar radiation and increases the temperature of the air. Greenhouse gases in the Earth's atmosphere mainly include CO ₂ , CH ₄ , N ₂ O, HFC _s , PFC _s and SF ₆ .
Carbon sequestration	Also refers to carbon sinks. It is the process, activity and mechanism to remove carbon dioxide from the air. Generally, it indicates the capability of forests to absorb and store carbon dioxide. Carbon dioxide in the atmosphere is artificially sequestered in biological forms in plants and the soil through forestation, forest management, and other forest carbon sequestration measures.
HSE management system	HSE is the acronym of the health, safety and environment management system. The HSE management system is an integration of various elements such as organizational structures, mandates, practices, procedures, processes and resources used for health, safety and environment management. The advanced, scientific and systematic integration and operation of these elements create the mutually reinforcing, supportive and interactive and dynamic management system.
Oils (mineral oil)	Compounds of hydrocarbons in wastewater. These include all substances collected by certain solvents, as well as all substances extracted by solvents from acidified samples, which remained fixed during the extracting process.
Chemical oxygen demand (COD)	Chemical oxygen demand is the quantity of strong oxidant consumed to process water samples. It serves as a comprehensive index of pollutants in wastewater and their impact on the environment. A higher COD represents the heavier pollution of reductive substances in the water body.

Major accident	Major accidents refer to accidents that cause deaths above 10 but below 30, or grievous harm to people numbering above 50 but below 100, or economic losses worth above RMB 50 million but below RMB 100 million.
Emergency accidents	Emergency accidents refer to sudden emergent accidents which result in or may result in serious casualties, and/or damage to property, the environment, society and public safety. Emergency accidents faced by PetroChina include four types, namely natural disasters, accidents, public health and social security.
Occupational disease	Diseases caused by exposure to dust, radioactive substances and other toxic and hazardous substances to employees working for enterprises, institutions and private organizations.
Occupational health surveillance	A series of health examinations for professionals in an industry aimed at preventing occupational health threats and improving the health of employees. Occupational health surveillance includes occupational health checks, management of occupational health archives, etc.
Occupational health examination	Physical examination of workers exposed to occupational health threats. The items and frequency of checks should be determined by the category of health threats, and by stipulations in the <i>Items and Frequencies of Occupational Health Checks</i> . These include checks before, during and at the end of a worker's assignment, as well as emergency checks.
Occupational health examination ratio	The annual ratio between the numbers of workers exposed to occupational threats who have taken occupational health checks and the total number of workers who should receive such checks.
Stakeholders	Stakeholders are groups and individuals that are able to impact the accomplishment of corporate goals, or groups and individuals that are impacted by corporate goals, including the natural environment, future generations, and non-human species that are directly or indirectly affected by corporate business activities.
Production base	Generally, this refers to mining zones recovered, being recovered or to be recovered. It includes several regions covering mines and open mines equipped with utilities like production processes, ground transportation, power supply, telecommunication scheduling, production management and living services.
Community	A community is an administrative jurisdiction within which a group of people live in a fixed geographical area, fulfilling their social functions and creating social norms. It is at the same administrative level as an administrative village.

GRI, IPIECA/API AND HKEX INDEX

The table below provides a contrast of indicators of the Oil and Gas Industry Guidance on Voluntary Sustainability Reporting by the International Petroleum Industry Environment Conservation Association (IPIECA)/American Petroleum Institute (API), the Global Reporting Initiative (GRI), and the Environmental, Social and Governance (ESG) Reporting Guide issued by the Hong Kong Stock Exchange.

		IPIECA / API	GRI 2016	HKEX ESG
Material Topics			102-47, 103-1	
About Us			102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-16, 102-45	B6
Message from the Chairman		E1, E2, E3, HS1, SE1, SE4, SE5, SE6, SE7	102-14, 102-15, 102-16, 201-2, 203-2	B1
Corporate Governance	Sustainability Management		102-14, 102-15, 102-32, 102-35, 103-2, 103-3	
	Governance Framework		102-18, 102-19, 102-20, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-30, 102-31, 102-32, 102-33, 102-36, 405-1	
	Management System	SE11, SE12	102-16, 102-17, 205-2	B7, B7.2
	Supply Chain Management	SE9	102-9, 102-10, 414-1, 414-2	B5, B5.1, B5.2
	Communication and Interaction with Stakeholders	SE11	102-21, 102-29, 102-33, 102-34, 102-40, 102-42, 102-43, 102-44	
Energy and the Environment	Energy Transition		102-15	
	Response to Climate Change	E1, E2, E4, E9	102-12, 201-2, 203-1, 301-2, 302-1, 305-1, 305-2, 305-4, 305-5	A1, A1.2, A1.5, A2.3
	Clean Energy	E3	203-1	
	Ecological Protection	E4, E5, E6, E8, E9, E10, E11	102-11, 203-1, 302-1, 302-3, 302-4, 303-1, 303-3, 304-1, 304-2, 304-3, 305-6, 305-7	A1.3, A1.6, A2, A2.2, A2.4, A3, A3.1
Employee Development	Employee Rights and Interests	SE16	102-8, 102-52, 401-1, 401-3, 405-1, 407-1, 408-1, 409-1	B1, B1.1, B4, B4.1
	Health and Safety	HS1, HS2, HS3, HS5, SE10	403-3	B2, B2.1, B2.3
	Employee Development	SE17	404-1, 404-2	B1, B3, B3.1
	Local Hiring and Diversity	SE6, SE15, SE17	202-2, 405-1	B1
Social Contribution	Targeted Poverty Alleviation	SE1, SE4	203-1, 203-2	B8, B8.1, B8.2
	Win-win Cooperation	SE4, SE5, SE6, SE7	203-1, 203-2	B8, B8.1, B8.2
	Overseas Community Construction	SE1, SE2, SE3, SE4, SE5, SE6, SE7	201-1, 203-1, 203-2, 204-1, 411-1, 413-1	B8, B8.1, B8.2
	Customer Service	HS4	416-1, 416-2, 417-1	B6, B6.1, B6.2, B6.3, B6.4, B6.5
Investor FAQs		E1, E10, HS3, HS5, SE1, SE2, SE3, SE4, SE5, SE6, SE7, SE8, SE11, SE12	102-9, 201-2, 205-2, 308-1, 308-2, 413-1, 414-1	A1, A1.6, B2, B2.3, B4, B5, B7, B8
Performance Data		E1, E2, E3, E4, E6, E7, E8, HS2, HS3, SE4, SE6, SE11, SE15, SE17	201-1, 302-1, 302-3, 302-4, 305-1, 305-2, 305-4, 305-6, 305-7, 403-2, 405-1	A1, A1.1, A1.2, A1.5, A2.1, A2.2, A2.3, A2.4, B1.1, B2.1, B2.2, B3.1, B8.2
Objectives and Plans				
Appendix			102-54, 102-55	A1, A2, B1, B2, B4, B5, B6
Global Compact and Us			102-13	
Approach to Reporting			102-45, 102-46	

	IPECA / API	GRI 2016	HKEX ESG
About this Report		101-1, 101-2, 101-3, 102-48, 102-49, 102-50, 102-51, 102-52	
Contacts		102-53	

This report follows the HKEX's *ESG Reporting Guide*. In compliance with the "comply or explain" provisions, we make the following explanations on the undisclosed indicators A1.4, and A2.5 and partly disclosed indicator A1.3:

1. The Company has been focusing on energy efficiency and recycling, actively conducts comprehensive utilization of solid waste, boosts comprehensive utilization efficiency so as to reduce the discharge of pollutant. We have deepened systematic control of the discharge, collection, storage, utilization, transportation, disposal and other phases in order to ensure the management of solid waste complies with laws and regulations.
2. Our products do not apply to A2.5.

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:

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 on Environmental Protection Management of PetroChina Company Limited</i>
7	<i>Measures for Environmental Monitoring and Environmental Information Management of PetroChina Company Limited</i>
8	<i>Regulations of PetroChina Company Limited on Environmental Protection Concerning Project Acquisition</i>
9	<i>Administrative Measures of PetroChina Company Limited for Energy and Water Conservation</i>
10	<i>Regulations of PetroChina Company Limited on Quality Supervision of Procured Materials</i>
11	<i>Regulations of PetroChina Company Limited on Detection of Occupational Hazards at Workplace</i>
12	<i>Regulations of PetroChina Company Limited on Occupational Health Surveillance</i>
13	<i>Measures of PetroChina Company Limited for Material Supplier Management</i>
14	<i>Measures of PetroChina Company Limited for Tender Management</i>
15	<i>Measures of PetroChina Company Limited for Service Trademark Management</i>
16	<i>Measures of PetroChina Company Limited for Land Management</i>
17	<i>Regulations of PetroChina Company Limited on the Management of Industrial Water of Refining Enterprises</i>

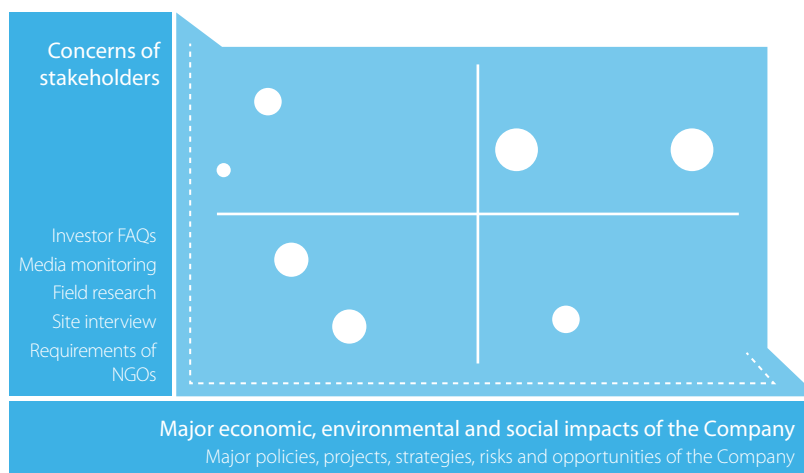
GLOBAL COMPACT AND US

The Global Compact is a global framework initiated and advocated by the United Nations aimed 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, PetroChina is committed to observing and supporting the Ten Principles of the UN Global Compact in the areas of human rights, labor, environment and anti-corruption. We will always follow the Ten Principles in our practices for fulfilling social responsibilities, and consistently disclose the compliance thereof in our annual report.

	Ten Principles of the UN Global Compact	Corresponding Sections Herein
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights	1.1 Sustainability Management; 3.1 Employee Rights and Interests; 4.3 Overseas Community Construction
	2. Make sure that they are not complicit in human rights abuses	3.1 Employee Rights and Interests
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	3.1 Employee Rights and Interests
	4. The elimination of all forms of forced and compulsory labor	3.1 Employee Rights and Interests
	5. The effective abolition of child labor	3.1 Employee Rights and Interests
	6. The elimination of discrimination in respect of employment and occupation	3.1 Employee Rights and Interests
Environment	7. Businesses should support a precautionary approach to environmental challenges	2.1 Energy Transition; 2.2 Response to Climate Change; Investor FAQs
	8. Undertake initiatives to promote greater environmental responsibility	Message from the Chairman; 2.2 Response to Climate Change; 2.3 Clean Energy; 2.4 Environmental Protection; Investor FAQs
	9. Encourage the development and diffusion of environmentally friendly technologies	2.2 Response to Climate Change; 2.3 Clean Energy; Investor FAQs
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery	Corporate Governance; Investor FAQs

APPROACH TO REPORTING

This report focuses on material topics 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, 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 various 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 2019 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 2016)* 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 Sustainable Development Goals 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, 2019, 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 2019 in March 2020, 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.



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