

2023

ENVIRONMENTAL, SOCIAL
AND GOVERNANCE REPORT





Reporting Period

This report covers the activities the Company undertook in 2023 pursuant to its ongoing commitment to fulfil its environmental, social and governance (“ESG”) responsibilities during the period from January 1, 2023 to December 31, 2023. For continuity and comparability, this report provides explanations on past and future initiatives on particular issues.

Scope of the Report

Unless otherwise specified, the relevant data contained in this report covers the Company and its wholly-owned and holding subsidiaries.

Explanation of Information

All information contained in this report has been taken from PetroChina’s official documents and statistics as well as performance reports and statistics gathered from the Company’s affiliated enterprises. It takes into account the Company’s development priorities and stakeholders’ concerns. This report has been reviewed and approved by the Board on March 25, 2024. The Board and all directors of the Company accept legal responsibility for the truthfulness, accuracy and completeness of this report and assure that there are no misrepresentations, misleading statements, or material omissions herein.

Forward-looking Statements

Besides historical facts, any mention and description of events that may or could occur, including but not limited to conditions, targets, estimations, and business plans, are considered to be forward-looking statements. The impact of external variables may result in actual developments or trends that are different from those expressed in forward-looking statements. Forward-looking statements contained in this report are made as at December 31, 2023. PetroChina is not obliged to or responsible for modifying any of the aforesaid forward-looking statements.

Standards of Reference

This report has been prepared in accordance with the Shanghai Stock Exchange (“SSE”) Guidelines on Self-Regulation for Listed Companies and the ESG Reporting Guide issued by the Stock Exchange of Hong Kong Limited (“HKEX”). Information disclosure is made with reference to the Recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) issued by TCFD, the Sustainability Reporting Guidance for the Oil and Gas Industry (2020) jointly issued by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the American Petroleum Institute (API), the GRI Sustainability Reporting Standards (2021) issued by the Global Sustainability Standards Board (GSSB) and the Ten Principles of the United Nations Global Compact (UNGC) together with other guidelines.

Reporting Principles

This report observes the principles of materiality, quantification, consistency, and balance in accordance with the requirements of the ESG Reporting Guide issued by the HKEX.

Materiality

Research and assessment were conducted in two dimensions, namely, the internal aspect and the stakeholder aspect, to identify material ESG issues relevant to the Company's sustainable development. For details, please refer to the section titled "Managing Material Issues" on page 18 of this Report.

Quantification

The Company conducts quantified management of material ESG issues, covering governance, safety, climate change, the environment, our employees, and society. Please refer to "Performance Data" and other relevant chapters of this report for details.

Consistency

This report observes the principle of consistency to ensure comparability with historical data. In 2023, the statistical scope and the calculation method for each of the remaining ESG performance indicators disclosed in this report remain consistent with those in the previous year without any material adjustments.

Balance

This report aims to reflect the Company's ESG governance strategies and performance in an objective and comprehensive manner, and to enhance the transparency of its ESG disclosure.

Enhancing the Report

In order to address the concerns of our stakeholders and comprehensively reflect the Company's ESG governance and practices, we continued to enhance and improve this ESG report. In 2023, we strengthened our disclosure in relation to "sustainability management" by systematically introducing our ESG governance structure, ESG performance and management remuneration, and the relevant measures and progress related to the management of material issues. A section titled "Targets and Performance" has been added

to the report to further illustrate the quantitative targets of our ESG governance, as well as our actual performance. The report also presents two case studies titled "Laying out comprehensive plans for new energies and creating a new driver for our transition towards a green and low-carbon future" and "In-depth participation in BRI construction and creating a model of cooperation based on mutual consultation, joint construction and shared benefits", where we describe our efforts and achievements in promoting low-carbon energy transition and participating in the Belt and Road Initiative. At the same time, we further enriched our content in relation to corporate governance, climate change response, and carbon emissions control to address stakeholders' concerns.

Availability of the Report

This report is available in simplified Chinese, traditional Chinese and English. In the case of any discrepancy, the simplified Chinese version shall prevail.

To view or download an electronic copy of this report, please visit the Company website at www.petrochina.com.cn, where further information is available.

Investor FAQs

The "Investor FAQs" has been made available on the Company website. Please feel free to communicate with us.



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MESSAGE FROM THE CHAIRMAN



In 2023, faced with an ever-changing external environment, we maintained a steady approach while seeking progress, through business development coordination, reform and innovation, quality improvement, efficiency enhancement, safety and environmental protection. Staying committed to our values of “Pursuing green development and supplying reliable energy to fuel the growth of our customers and power people’s happy life”, we have achieved fruitful results in energy transition, environmental protection, corporate governance, and social contributions. We made effective improvements in our environmental, social and governance (“ESG”) standards, making PetroChina’s due contribution to economic and social development.

Accelerate green and low-carbon transformation, building a green enterprise where humans and nature coexist harmoniously. The green development of energy is an essential aspect of ecological civilization construction and is the necessary path to achieving harmonious coexistence between humanity and nature. Guided by the carbon emission peak and carbon neutrality goals, we coordinated efforts to reduce carbon, decrease pollution, expand green initiatives, and promote growth to facilitate the green and low-carbon

transformation of development. We are the active promoter and exemplary practitioner of the concept that “Lucid waters and lush mountains are invaluable assets”. We maintained the measures to steady oil supply and increase gas capacity, and the oil and gas composition has been further optimized as the share of natural gas production in the Company’s domestic oil and gas equivalent production has grown further to 53.5%. In accordance with the general three-step strategy of “clean energy substitution, strategic succession and green transition”, we maintained the approach of integration and development of oil and gas with new energy and constructed a new model of energy supply system consisting of multiple energy sources which are mutually complementary. We further developed our position in emerging industries. With the completion of new energy projects including the construction of million-kilowatt photovoltaic (“PV”) stations in Kashgar, Xinjiang and the water electrolysis hydrogen production facility in Yumen, as well as the equity acquisition of Potevio New Energy Co., Ltd and the establishment of KunLun i-Charge, we achieved a historical breakthrough in development and utilization of new energy amounting to 11.5 million tons of standard coal annually, representing an increase of 44% over the past year. The “oil, gas, geothermal, electricity and hydrogen energy” pattern is beginning to take shape. We implemented a comprehensive action plan to address climate change, combining “carbon reduction, carbon utilization, carbon substitution, and carbon storage”. We strengthened carbon emission control and carbon asset management, enhanced energy-saving, consumption reduction, emissions reduction and clean energy substitution measures to promote the green development of the entire industry chain and industrialization of CCUS. We actively engaged in building carbon sequestration forests and carbon-neutral forests, participated in global climate governance and carbon market transactions. We also engaged in our development as a green enterprise, promoting the modernization of our ecological and environmental protection and governance system and capabilities towards more stringent standards. Our battle for blue skies, clear waters and clear land continued with a focus on source control and pollution prevention, as we rigorously implemented ecological and environmental protection measures in the Yellow River Watershed, the Yangtze River Economic Belt and key sea areas. We intensified efforts in ecological construction and restoration governance, establishing self-contributed protected areas for biodiversity conservation, devoting efforts to enhance ecosystem diversity, stability, and sustainability.

Continuous deepening of reform and innovation with a steady growth in corporate governance effectiveness.

We accelerated the modernization of the corporate governance system and governance capabilities continuously refining operational mechanisms, and ensuring that the board of directors and management operated in a more standardized and efficient manner. We achieved substantial progress by deepening reforms and strengthening management. We integrated ESG into corporate governance with the formulation and implementation of the Three-Year Action Plan for ESG Work, consistently focusing on sustainable development issues such as climate change, energy transition, biodiversity protection, community contribution, employee rights and development, board governance, and compliant operations. We rigorously managed and prevented ESG risks, laying the foundation for systematically, effectively, and continuously optimizing our ESG management. With innovation as the first strategy, we firmly move towards the middle and high end of the industrial chain, promoting technological innovation at both the level of supporting the present and directing the future. We continuously enhanced technology project management mechanisms, built an open and collaborative innovation ecosystem, and inspired greater technological innovation. Significant breakthroughs were achieved in several key areas of core technology research and development. With a close focus on the three main themes of “business development, management reform, and technology empowerment”, we strengthened the deep integration of digital technology with the energy industry, leveraged digital technology to facilitate high-quality development of the industrial and supply chains, established a digital intelligence research institute, developed key informatization projects such as large-scale centralized ERP, released guides for digital transformation construction, and created models for digital transformation and intelligent development for Tarim Oil Field and Lanzhou Petrochemical, further accelerating the construction of a digital and intelligent PetroChina.

Actively fulfilling social responsibilities, contributing to the economic and social prosperity of the community.

Through various measures, we increased efforts in the exploration and development of oil and gas resources and optimized oil and gas imports to secure energy supply, thus providing society with safe, reliable, and clean energy products. Annual oil and gas output equivalent production reached a historic high, allowing us to successfully complete key periods and key regional natural gas supply tasks. We accounted for over 60% of the national supply. We promoted local economic, social, and related industrial development through high-quality corporate growth. As responsible

corporate citizens, we enthusiastically participated in public welfare undertakings. We implemented Company's 14th Five-Year Plan for rural revitalization, leveraging our financial, technological, and human resource advantages to support rural revitalization together with our parent CNPC, achieving new results in improving people's livelihoods, cultivating local self-development capabilities, and driving people's prosperity. Throughout the year, we implemented 1,110 rural revitalization projects which benefited more than 5 million people and contributed to the advancement of agricultural and rural modernization as well as the establishment of a strong agricultural country. As always, we maintained our concept of “cooperating in development to achieve win-win for all”. We engaged in overseas community construction and promoted local employment and localized operations, sharing the fruits of corporate development with local populations and respective countries. Over the past decade of the Belt and Road Initiative (the “BRI”), PetroChina consistently adhered to the principles of mutual negotiation, joint efforts and shared benefits. Focusing on energy cooperation, green development, public welfare, and cultural exchange, PetroChina actively participated in the development of the BRI, making positive contributions to the prosperity and development of countries along the route, deepening and expanding international energy cooperation, and building a community with a shared future for humanity.

The year 2024 will be a crucial year for the Company to achieve the goals and tasks set in the 14th Five-Year Plan. In the new year, we will comprehensively implement our new development philosophy, maintain our drive for green and low-carbon transformation and development, continuously improve our corporate governance system and modernize our management capabilities, actively fulfil social responsibilities, contribute to economic and social development, and work together with stakeholders to move towards high-quality and sustainable development.



Dai Houliang

Chairman of the Board
PetroChina Company Limited

ABOUT US

PetroChina Company Limited (“PetroChina”, or the “Company”, “we” or “us” in this Report) is a joint stock limited company incorporated on November 5, 1999, upon the restructuring of the former China National Petroleum Corporation (currently known as China National Petroleum Corporation Limited or “CNPC”). The American Depositary Receipts (“ADRs”), H-shares and A-shares issued by the Company were listed on the New York Stock Exchange (“NYSE”, ADS code: PTR) on April 6, 2000, the Hong Kong Stock Exchange (“HKEX”) (stock code: 857) on April 7, 2000 and the Shanghai Stock Exchange (“SSE”) (stock code: 601857) on November 5, 2007, respectively, of which, the ADRs were delisted from the NYSE on September 8, 2022, EST. 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. We engage in a wide range of activities related to oil, natural gas and new energy and new materials, continuously providing energy and petroleum products for economic and social development. Our commitment is to promote a harmonious relationship between energy, environment, and society.




Innovation, Resources, Market
Internationalization, Green and Low-carbon



Pursuing green development and
supplying reliable energy to fuel
the growth of our customers and
power people's happy life.

BUSINESS STRUCTURE

Oil, gas and new energy



The Company is accelerating its pace of green transformation, comprehensively promoting the integrated development of oil, gas and new energy, with a focus on constructing a new model of energy supply system consisting of multiple energy sources which are mutually complementary, thereby transforming into an “oil, gas, geothermal, electricity and hydrogen energy” integrated energy company to provide society with clean energy products.


Oil and Gas Business

PetroChina is the leader of China’s oil and gas exploration and development. We operate in numerous major oil and gas producing regions such as Daqing, Changqing, Tarim, Southwest China, Xinjiang and Liaohe. Meanwhile, the Company is also engaged in oil and gas exploration and production in many countries over the world. Currently, we have established five international oil and gas cooperation zones in Central Asia-Russia, the Middle East, Africa, Latin America and Asia-Pacific. In 2023, our crude oil output amounted to 937.1 million barrels and marketable natural gas output amounted to 4,932.4 billion cubic feet, with a total oil and natural gas output equivalent of 1,759.2 million barrels.

New Energy Business

The Company continues to expand its new energy businesses, including geothermal, wind, PV, hydrogen, as well as Carbon Capture, Utilization, and Storage (CCUS), promoting an orderly transition to new energy businesses while synergizing with the oil and gas business. As of the end of 2023, the Company has cumulatively built wind and PV installations with a capacity of over 5 million kilowatts, provided geothermal heating for over 35 million square meters, and achieved a new energy development and utilization capacity equivalent to 11.5 million tons of standard coal per year.

Refining, chemicals and new materials



The Company is fully committed to promoting the synergistic development of petrochemical transformation upgrades and new materials, accelerating its move towards the mid-to-high end of the industrial and value chains, in order to provide society with higher quality petrochemical and new material products.


Refining and chemicals business

The Company owns 14 ten-million-ton-level refining bases in China. In 2023, we processed 1,398.8 million barrels of crude oil and produced 122.736 million tons of refined oil. We produce six major categories of chemical products: synthetic resin, raw materials of synthetic fiber and polymers, synthetic rubber, urea, organic and inorganic compounds, with thousands of trademarked products. Among such categories, our production capacity for products such as ethylene, synthetic resin, and synthetic rubber are ranked among the best in China. In 2023, we produced 34.308 million tons of chemical products in China.

New materials business

The Company actively develops the new materials business, with accelerated progress in technological breakthroughs and capacity building. In 2023, the Company’s production of chemical new materials reached 1.37 million tons, with significant growth in the production of functional synthetic resins, high-performance synthetic rubber, specialty fibers, high-end carbon materials and other new materials.


Sales



The Company continuously promotes the establishment of the terminal sales network, actively develops gas stations, comprehensive energy service stations, and new energy stations, providing the market with a diverse range of energy products to secure energy supply.

The Company operates 22,755 gas stations in China, 19,583 uSmile convenience stores, 21 hydrogen refueling stations, and 923 battery charging (swapping) stations in 31 provinces (autonomous regions and municipalities) throughout the country and the Hong Kong SAR. We actively develop international trading business and have established three major oil and gas operation centers in Asia, Europe and the Americas. In 2023, the Company’s total refined products sales amounted to 165.797 million tons, of which domestic sales accounted for 123.385 million tons.

Natural gas sales



The Company leverages the bridging role of natural gas in energy transition, continuously enhancing its sales and service capabilities in natural gas, and contributing to the optimization of China’s energy consumption structure.

The Company is the largest natural gas supplier in China with a nationwide sales network coverage. In 2023, the Company’s natural gas sales amounted to 273.548 billion cubic meters, of which domestic sales accounted for 219.757 billion cubic meters.

Our Honors

FORTUNE

"FORTUNE Global Top 500" Number 5

China Social Responsibility 100 Forum

Central SOE ESG Pioneer 100 Index

Petroleum Intelligence Weekly

"Global Top 100 Petroleum Companies" Number 3

China Enterprise Reform and Development Society

Excellent ESG Practices for Chinese Enterprises (Dagang Oil Field)

Brand Finance

"Most Valuable Oil & Gas Brands" Number 3

China Federation Of Industrial Economics

Carbon Peak "Frontrunner" for Chinese Industries (Tarim Oil Field)

China Securities "Golden Bauhinia" Award

Excellent Listed Company (3 consecutive years)
Economic Person of the Year
Excellent CEO of Listed Companies
Excellent CFO of Listed Companies

Securities Daily

2023 Excellent ESG Practices

People's Daily

People's Enterprise Social Responsibility Award
"Green Development Award"

Institutional Investor

Most Honored Company in Asia
Best Board of Directors
Best Investor Relations Enterprise
Best ESG
Best Investor Relations Officer
Best Investor Relations Team

Capital Week

"Crystal Ball" Annual ESG Award

China Corporate Governance Experts 50 Forum

Chinese (non-financial) Listed Companies ESG TOP 50

Corporate Governance Asia

Best Investor Relations Company
Best CEO of Asia
Best CFO of Asia
Best Investor Relations Officer

China Securities Journal

ESG Golden Bull Award Top 100
ESG Golden Bull Award Top 50 Central SOE

CCTV Business Channel, State-owned Assets Supervision and Administration Commission of the State Council (the "SASAC"), All-China Federation of Industry and Commerce, China Academy of Social Sciences Institute of Economics, China Enterprise Reformation And Development Society

China Association for Public Companies ("CAPCO")

Best ESG Practices for Listed Companies
Best Board Practices for Listed Companies
Best Board Office Practices for Listed Companies

Annual ESG Action Report ESG Top 100 of China's Listed Companies

Tencent and Finet

10th Top 100 Hong Kong Listed Companies Awards – ESG Excellence Enterprise Award

STATEMENT OF THE BOARD OF DIRECTORS

The following is a statement from the Board of Directors of PetroChina Company Limited made in accordance with the requirements of the HKEX Environmental, Social and Governance Reporting Guide.

The Company and the Board consider ESG as the foundation for achieving sustainable development. We have integrated ESG into our corporate strategy and operations, enhancing the Board's supervision and management of ESG comprehensively. We continuously improve and refine the ESG management system, effectively control ESG risks, and aim to achieve a positive interaction among economic, social, and environmental benefits.

Responsibilities of the Board in Respect of ESG Management

As the highest decision-making body in respect of the ESG issues, the Board has ultimate responsibilities for the ESG management of the Company. The Board has established the Sustainable Development Committee (the "SDC") consisting of four directors, with Mr. Huang Yongzhang, Executive Director and President of the Company, serving as the chairman and responsible for overseeing the implementation of ESG policies, strategies and targets, and reviewing the Company's ESG Report.

ESG management approach: The Company practices the new development concept in its full and complete entirety. We maintain our commitment to our values, "Pursuing green development and supplying reliable energy to fuel the growth of our customers and power people's happy life". Based on the carbon emission peak and carbon neutrality goals, we continue to strengthen ESG awareness and improve ESG governance standards.

ESG Management Approach and Strategy

ESG management strategy: Our goal is to accelerate the establishment of a world-class international energy company, with ESG risk management and the improvement of ESG performance and ratings as the main focus, through strengthening ESG work management and innovation, deepening the organic integration of ESG with the Company's strategy and production operations, and systematically enhancing ESG governance standards.

The Board regularly reviews significant ESG issues, continuously strengthening ESG management in terms of ESG issue identification, risk control, inspection, and supervision. The Company conducts ESG risk identification and analysis based on macro-policy environment, industry development trends, stakeholder expectations, and other factors. We engage with stakeholders through various channels in order to establish key areas and management measures for ESG risk control. We integrate ESG considerations into the management system of our daily operations and conduct regular review and supervision of ESG work progress.

Targets, Indicators and Progress Review

The Company has formulated targets and performance indicators for ESG management, covering the governance system and capabilities, green and low-carbon transformation, GHG emissions, sustainable use of resources, pollutant emissions, health and safety, and human resources. We conduct progress review on a regular basis. We incorporate benefits, operations, energy conservation, emission reduction, safety and environment, and compliance management as assessment indicators into the annual performance evaluation of the Company's management. We have engaged PricewaterhouseCoopers Zhong Tian LLP to conduct independent assurance on certain ESG performance indicators of the Company to strengthen the independence and objectivity of these performance indicators (for details, please refer to page 121 of this Report).

TARGETS AND PERFORMANCE

Proportion of new energy production capacity in the domestic energy supply capacity

Progress made in 2023

3.6%

Our targets

- Boost the proportion of new energy output to **7%** of our company's domestic energy supply capacity by 2025
- Strive to achieve **balanced share** of new energies, oil, and natural gas businesses by 2035
- Strive to ensure that the proportion of the output from new energies and new industries reaches **half of our output** as a whole by 2050

Proportion of natural gas in PetroChina's total domestic oil and gas output

Progress made in 2023

53.5%

Our targets

- By 2025, proportion of natural gas in the Company's total domestic oil and gas output to be increased to approximately

55%

Total GHG emissions (Scope 1 and Scope 2)

Progress made in 2023

171.18 million tCO₂e

Domestic GHG emissions per unit of oil and gas production

Progress made in 2023

0.24 tCO₂e/toe

CO₂ injection volume of CCUS projects

Progress made in 2023

1.592 million tons

Our targets

- To reach **3** million tons by 2025



Methane emissions intensity

Progress made in 2023

0.34%

Our targets

- Reduce methane emissions intensity by **50%** as compared to 2019, to **0.25%** in 2025
- Reduce methane emissions intensity to **0.20%** in 2035

Water saved

Progress made in 2023

8.14 million cubic meters

Our targets

- Target for 2023: Amount of water saved will be more than **6.30** million cubic meters
- Target for 2024: Amount of water saved will be more than **6** million cubic meters

Freshwater consumption for processing 1 ton of crude oil

Progress made in 2023

0.473 cubic meters

Our targets

- Target for 2023: Freshwater consumption for processing 1 ton of crude oil will be lower than **0.480** cubic meters
- Target for 2024: Freshwater consumption for processing 1 ton of crude oil will be lower than

0.478 cubic meters

Energy saved

Progress made in 2023

0.83 million tons of standard coal

Our targets

- Target for 2023: Amount of energy saved will be more than **0.56** million tons of standard coal
- Target for 2024: Amount of energy saved will be more than **0.56** million tons of standard coal

Comprehensive energy consumption of production per unit of oil and gas equivalent

Progress made in 2023

106 kilograms of standard coal/ton

Our targets

- Target for 2023: Comprehensive energy consumption of production per unit of oil and gas equivalent will be under **110** kilograms of standard coal/ton
- Target for 2024: Comprehensive energy consumption of production per unit of oil and gas equivalent will be under

108 kilograms of standard coal/ton



CORPORATE GOVERNANCE

At PetroChina, we advocate value creation, upholding fundamental principles and breaking new ground, legal and regulatory compliance, collaboration, participation, and shared benefits as our governance doctrine. Through improvements to the modern enterprise system with Chinese characteristics and strong efforts to promote modernization of governance system and capabilities, we ensure that our decision-making is scientific, our checks and balances are effective, our operations are standardized and our supervision is powerful. We continue to improve corporate competitiveness, innovative capabilities, controlling power, influence and risk management capabilities. Sustained improvement in the effectiveness of our governance allows us to promote high quality and sustainable development of the Company, fulfil our social responsibilities, and safeguard the interests of the relevant stakeholders of the Company.

The UN Sustainable Development Goals





SUSTAINABILITY MANAGEMENT

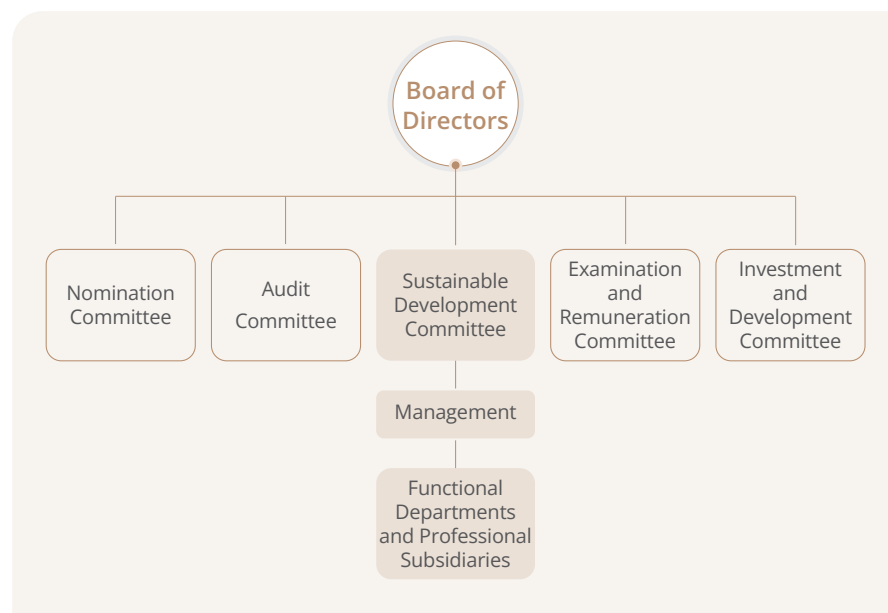
In support of international standards and initiatives such as the UN Global Compact, the UN's 2030 Agenda for Sustainable Development, and in pursuit of sustainable development, we advocate delivery of clean, reliable and affordable energy to the public in a responsible, sustainable and ethical manner, abide by laws and regulations, respect human rights, protect the environment and make contributions to the economic and social development of the locations with our business presence.





ESG Management Structure


The Company places strong emphasis on sustainable development management and has deeply integrated sustainable development concepts into the entire process of the Company's operations. The Company has established and continues to improve an effective ESG governance mechanism, guiding and managing sustainable development practices through the Board and its special committees, as well as the management team. We have formulated effective ESG management policies, comprehensively identified and controlled ESG risks, and assessed and supervised the Company's ESG management situation, continuously enhancing the Company's ESG management standards.

As the highest decision-making body in respect of the ESG issues, the Board has ultimate responsibilities for the ESG management of the Company. The Board has established the SDC, responsible for comprehensively coordinating and supervising the Company's ESG affairs. In 2023, the SDC expanded from 3 to 4 members, with Mr. Huang Yongzhang, Executive Director and President of the Company, serving as the Chairman, and Mr. Ren Lixin and Mr. Zhang Daowei, Executive Directors and Senior Vice Presidents of the Company, and Independent Non-executive Director Mr. Zhang Laibin, serving as members.

PetroChina ESG Management Structure



Responsible body	Key responsibilities	Progress made in 2023
 <p>Board – decision-making</p>	<ul style="list-style-type: none"> • Has ultimate responsibility for the Company's ESG management as the highest decision-making body for ESG affairs • Reviews the Company's ESG development strategies and goals, deliberates on significant ESG-related matters, and ensures the Company's operational activities are in line with the strategic planning • Reviews the Company's annual ESG Report as well as the Health, Safety, and Environmental ("HSE") Protection Report 	<ul style="list-style-type: none"> • Reviewed and approved the Company's annual ESG Report as well as the HSE Protection Report • Established a Leading Group on Carbon Peak and Carbon Neutrality, regularly studying, planning, and promoting the carbon emission peak and carbon neutrality action and the development of our new energy, new materials and new businesses • Strengthened risk assessment, with the Board receiving audit reports and internal control review reports and passing relevant resolutions
 <p>SDC – Supervision</p>	<ul style="list-style-type: none"> • Studies issues related to the Company's sustainable development (including but not limited to ESG aspects), identifies and assesses major risks and impacts on the Company's sustainable development, supervises commitments and performance on key issues, and makes recommendations to the Board • Reviews the Company's sustainable development approach, strategies, objectives, measures, and relevant significant issues, supervises and checks the implementation of sustainable development goals • Oversees the implementation and effects of the Company's ESG strategy • Reviews the Company's annual ESG Report as well as the HSE Protection Report and make recommendations to the Board • For details on the responsibilities of the SDC, please refer to the Company website: 	<ul style="list-style-type: none"> • Reviewed and approved the PetroChina Three-Year (2024-2026) Action Plan for ESG Work Enhancement (the "Three-Year Action Plan for ESG Work") • Reviewed resolution on the 2023 ESG Report of our Company and the resolution on the 2023 HSE Protection Report of our Company and passed the respective committee resolutions
 <p>Management – implementation</p>	<ul style="list-style-type: none"> • Develops ESG management strategies, goals, and implementation plans for submission to the Board for review • Implements Board resolutions, manages and supervises the Company's ESG management, ensuring that related strategies, goals, and management policies are effectively implemented • Reviews ESG-related reports and management suggestions submitted by the functional management departments, continuously improving the Company's ESG management 	<ul style="list-style-type: none"> • Convened various thematic work meetings such as the Legal Governance Conference and Ecological Environment Protection Conference as part of ESG-related work deployment

Responsible body	Key responsibilities	Progress made in 2023
 <p>Functional departments and professional subsidiaries – implementation</p>	<ul style="list-style-type: none"> • The Office of the Board of Directors is responsible for assisting the SDC in handling daily ESG-related affairs, coordinating various functional departments to carry out ESG-related management, and directing the preparation of the Company's ESG Report • Each functional department formulates relevant management policies and measures within their respective responsibilities in accordance with the Company's overall strategy and assigned objectives • Establish and improve the monitoring and evaluation mechanisms related to ESG, supervise and evaluate the ESG performance and achievements of affiliated enterprises, promptly identify problems and risks, and propose improvement and optimization suggestions to the management team • Implement and fulfil the Company's ESG management work requirements, incorporate ESG elements into daily operations, and promote the implementation and execution of ESG policies and measures 	<ul style="list-style-type: none"> • Formulated the Three-Year Action Plan for ESG Work • Formulated the ESG Management Measures of the Company, establishing an ESG performance indicator system with PetroChina characteristics, and deeply integrated ESG management into R&D, production, sales, service, and other production and operational aspects • Conducted quality, health, safety and environment ("QHSE") system audit work across the Company for 12 consecutive years • Started the "Green Enterprise" campaign, with annual appraisal of subsidiaries based on ecological environmental protection and sustainable development, encouraging subsidiaries to accelerate green and low-carbon transformation • Advanced and implemented measures of strengthening the enterprise through talents • Promoted community communication and participation, implemented community investment projects, supported rural revitalization, and cultivated local sustainable development capabilities

CASE STUDY

The Three-year Action Plan for ESG Work

In 2023, the SDC reviewed and approved the PetroChina Three-Year (2024-2026) Action Plan for ESG Work, which specified the ESG work objectives, responsibilities, and tasks for the next three years. This laid the foundation for systematically, effectively, and sustainably enhancing the Company's ESG management standard and performance.

- By 2024, establish a complete ESG work organization system with a sound mechanism and clear responsibilities
- By 2025, further improve the ESG work management system, establish a key performance indicator (KPI) system for ESG performance management, and build an ESG management information platform
- By 2026, further optimize the ESG work organization system, establish a scientific and efficient system of regulations, management system and performance evaluation system, thereby establishing PetroChina's unique ESG practice system

ESG Performance and Management Remuneration

The Company incorporates various indicators relating to benefits, operations, energy conservation, emission reduction, HSE and compliance management into our management performance review. The results of the review are linked to their remuneration. In particular, energy conservation and emissions reduction indicators weighted at 10% and up to 10 points may be deducted for non-performance of relevant indicators, while for safety, environmental protection and compliance management indicators, 5 points would be deducted for non-performance of each indicator. In 2023, we made adjustments to the energy-saving and emission reduction components of the performance assessment for the management team. We introduced new indicators for energy intensity and carbon emission intensity, further linking energy reduction and carbon reduction with the performance and remuneration of the management team. We consistently implemented performance assessments and rewards for the heads of relevant functional departments and subsidiaries in the development of new energy and new materials business, comprehensively promoting the Company's green and low-carbon transformation and development.

Management performance evaluation

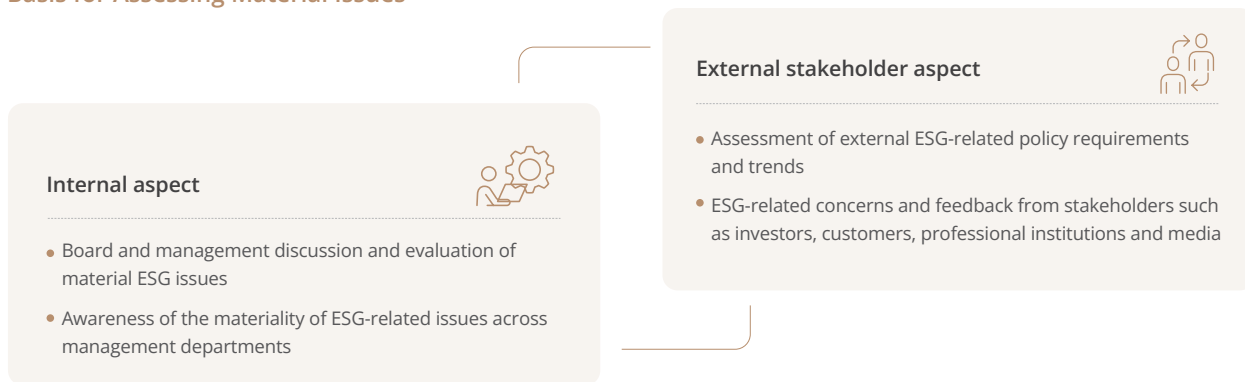
Item and weight	KPI	Weight
Energy conservation and emission reduction (10%)	Overall energy consumption per RMB 10,000 of output	2%
	Chemical oxygen demand (COD) emissions	2%
	Nitrogen oxides emissions	2%
	Volatile organic compounds (VOC) emissions	2%
	CO ₂ emissions per RMB 10,000 of output	2%
Safety and environmental protection (Mandatory)	Fatality rate per million work hours	5 points deducted for non-performance of each indicator
	Major safety production liability incidents	
	Major environmental liability incidents	
Compliance Management (Mandatory)	Investment planning control	
	Internal control system operation evaluation	



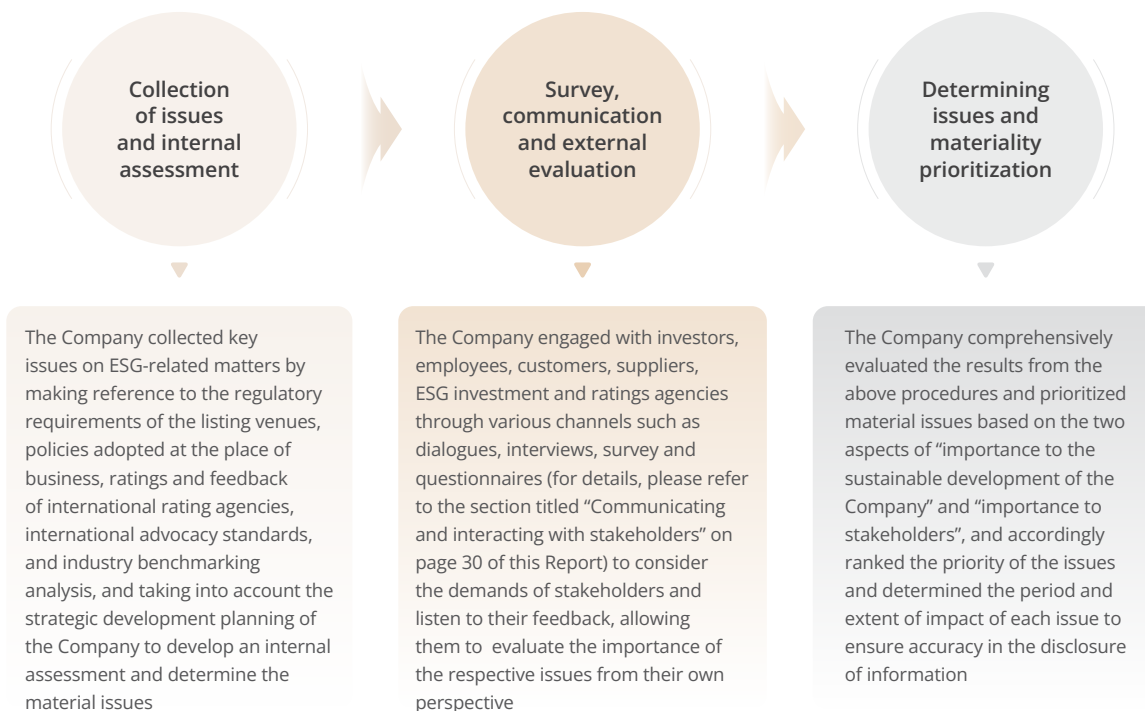
Managing Material Issues

We conduct research and assessment with both internal and external stakeholders to identify important ESG management issues for the Company. In 2023, based on feedback from both internal and external sources and benchmarking results from the industry, we improved on the material issues for the Company. A total of 22 substantive issues were identified as having a significant impact on the Company and stakeholders. For details, please refer to the materiality matrix of material issues on page 19.

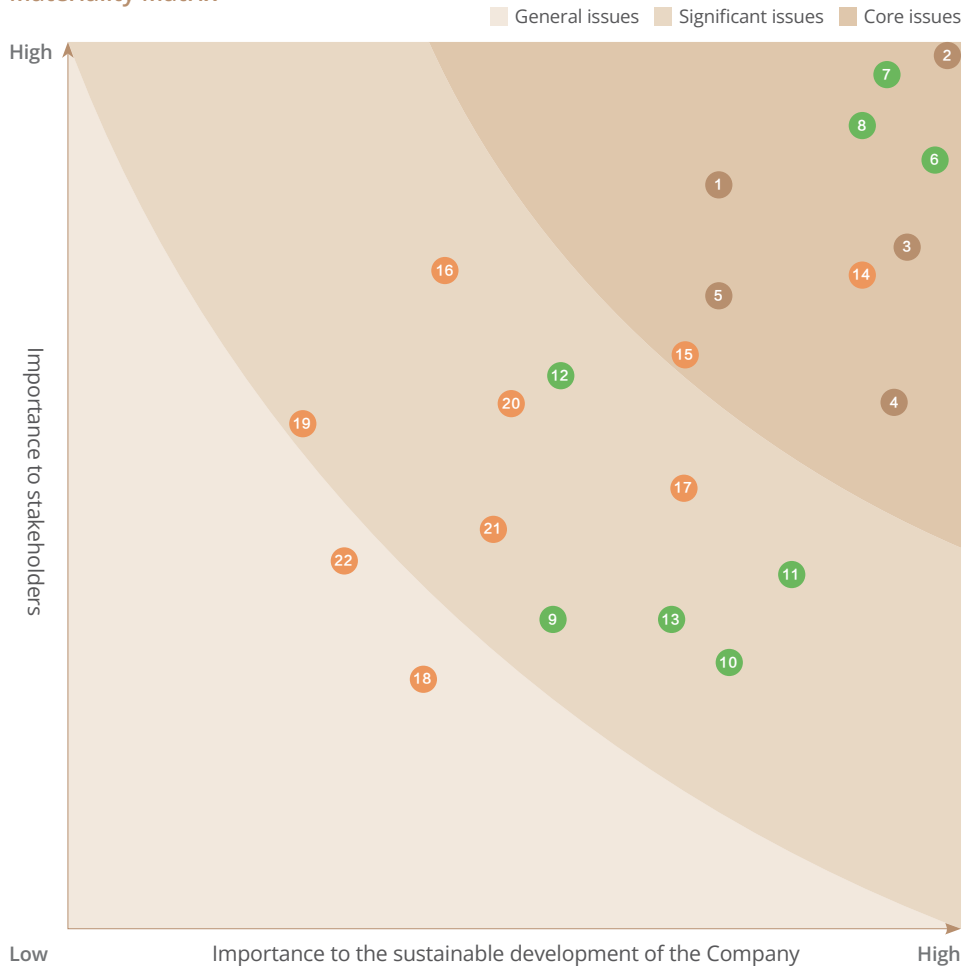
Basis for Assessing Material Issues



Materiality Analysis Procedures



Materiality Matrix



Governance	Environment	Society
1 Board governance	6 Energy transformation	14 Safety
2 Compliance operation	7 Climate change	15 Health
3 Operating results and shareholder interests	8 Carbon emissions management	16 Human rights
4 Technological innovation	9 Waste management	17 Employee rights and development
5 Integrity risk prevention and control	10 Water resources	18 Diversity, equality and inclusiveness
	11 Environmental risk management	19 Product and services
	12 Biodiversity protection	20 Community contribution
	13 Sustainable use of natural resources	21 Community relationship
		22 Supply chain management

ENHANCING THE CORPORATE GOVERNANCE



The governance system of our Company meets the requirements of the Company Law of the People's Republic of China ("Company Law"), the Securities Law of the People's Republic of China, the relevant provisions of the China Securities Regulatory Commission, and the regulatory requirements where shares of the Company are listed.

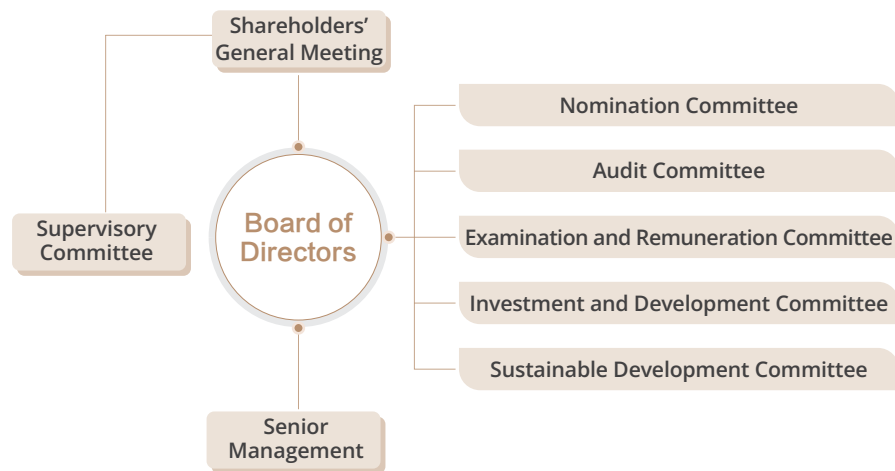


In 2023, the Company held four shareholders' meeting, where 18 resolutions were considered and approved. The shareholders' meetings complied with regulatory rules and statutory procedures, and the resolutions adopted are legal and valid.

For details on the shareholders' meetings and resolutions, please refer to the Company website and the 2023 annual report of the Company.

Since incorporation, PetroChina has set in place a corporate governance framework in compliance with regulatory requirements and international practices, formulated and strictly practiced the Articles of Association of PetroChina Company Limited (the "Articles of Association"), building a corporate governance system based on "statutory and transparent powers and responsibilities, coordinated operations, effective checks and balances", so that the modernization of the corporate governance system and governance capabilities could be continuously enhanced. The respective authorities and responsibilities of the Shareholders' meeting, the Board of Directors and its special committees, the Supervisory Committee, and senior management headed by the President have been clearly defined. Such a management structure allows for close coordination and is highly effective.

Corporate Governance Structure Chart



Shareholders' Meeting and Protection of Shareholders' Rights and Interests

The Shareholders' meeting is the highest authority in the Company, exercising functions and powers in accordance with the law. PetroChina's Shareholders' meeting is held annually to ensure that all shareholders enjoy equal status and exercise their rights effectively.

Protection of Shareholders' Rights and Interests >>

The Company attaches great importance to the protection of shareholders' rights and interests, especially the legitimate rights and interests of minority shareholders, ensuring and continuously improving their participation and voting mechanisms in shareholders' meetings, facilitating communication channels with investors, and is committed to ensuring that every shareholder feels equally valued by the Company.

The Company actively facilitates shareholders' participation in the shareholders' meetings, giving full consideration to the timing, location, and format of the meetings, in order to ensure that attendance would be convenient for shareholders, especially minority

shareholders. We invite individual shareholders to participate and serve as scrutineers at the meetings. The Company respects shareholders' right to information and includes an investor communication session during shareholders' meetings, with the management responding earnestly to shareholders' questions. After the meetings, our investor relations staff conducts separate shareholder engagement activities to ensure full communication with shareholders, including minority investors.

The independent directors of the Company strictly comply with relevant domestic and international laws, regulations, and the Articles of Association, diligently fulfilling their duties and impartially providing independent advice and contributing to the protection of the legitimate rights of minority shareholders. Since 2018, the Company has been implementing a "cumulative voting system" for the election of directors and supervisors, strengthening the power of minority shareholders and further increasing their participation in corporate governance.

Since the Company's listing, we have maintained a long-term, stable, and proactive cash dividend policy, with a dividend payout ratio consistently exceeding 45% of net profit attributable to the parent, providing positive returns to our shareholders.



The Company complies with the relevant rules of the SSE, HKEX and the SSE Self-regulation Guidelines 5 - Transactions and Connected Transactions, and the continuing connected transactions between the Company and its connected persons 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 any reliance on its connected persons or affect the Company's independence.

For more details about the Company's connected transactions in 2023, please refer to our annual report for 2023.



Percentage of votes from non-connected (independent) shareholders approving the new three-year (2024-2026) continuing connected transactions

Ensuring Fair and Reasonable Related Transactions >>

The Company strictly complies with the relevant rules and regulations where shares of the Company are listed in relation to connected transactions, and strictly practices various regulations, including the Related Party Transaction Management Measures, Internal Control Management Manual, and Internal Control Operation Evaluation Management Measures. The Company's audit committee under the Board reviews internal control evaluations and the implementation of continuing connected transactions twice a year. At the same time, the Company's board of supervisors receives reports on internal control evaluations and the implementation of continuing connected transactions, and the auditors review and issue reports on the Company's implementation of continuing connected transactions, in order to ensure that the connected transactions would not undermine the interests of minority shareholders.

At the time of the Company's listing, the Company and CNPC entered into a continuing connected transaction agreement. We update the particulars (including the service scopes and transaction amounts) of the continuing connected transactions with CNPC on a regular basis in accordance with regulatory requirements and submit these to the Board and the shareholders' meeting of the Company for approval. The historical transaction amounts of the continuing connected transactions in the past years were all within the caps approved by the shareholders' meeting of the Company and the Board and disclosed in our annual report every year. In order to ensure the fairness and reasonableness of the connected transactions, CNPC, as a connected shareholder of the Company, abstained from voting on resolutions concerning connected transactions in the shareholders' meetings.

In 2023, the Company determined the new three-year (2024-2026) quota of continuing connected transactions on a rational basis and in accordance with the principles of "objectivity, overall control, balanced increase and decrease and reasonable controllability", in the overall interests of the Company and our shareholders.

We actively listened to the views of our shareholders and have improved the disclosure of shareholder communications, adding content such as CNPC's commitments, risk management of China Petroleum Finance etc. We have provided detailed explanations of the Company's connected transactions from various aspects, such as safeguarding the Company's production and operation, implementing future development strategies, ensuring sustainable and healthy growth, and safeguarding the overall interests of all shareholders, addressing the concerns and demands of independent shareholders and receiving widespread recognition and support from our shareholders.



In 2023, the Company convened 7 board meetings and 14 special committee meetings, deliberated and approved 46 board resolutions, which covered various topics such as the Board reelection, establishment of independent director committees, continuing connected transactions and issuance of annual ESG reports.

For details on the duties of the Board, please refer to the Company website and the 2023 annual report.

Improving the Structure of the Board

The Company attaches great importance to the establishment of our Board, having established standardized mechanisms for board member elections and appointments, as well as rules for proceedings. Continuous efforts are made to enhance the professionalism and supervisory capabilities of the board of directors, providing strong support for the Company's sustainable development. In 2023, the Company formulated the PetroChina Company Limited Board of Directors Delegation and Management Measures (Trial), reaffirming our commitment to the principles of legal and regulatory compliance, balance of authority and accountability, and manageable risks, specifying accountable bodies, implementing standardized and scientific authorization, thus improving decision-making quality and efficiency, and promoting the high-quality development of the Company.

The Directors are elected at our shareholders' meetings and are 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 interest of shareholders as a whole, strictly adhere to the principle of diligence, integrity and pragmatism, and

conscientiously perform their duties. In 2023, the Company held a re-election of Board members. During the election process, we strictly adhered to regulatory requirements, expanded recruitment channels, and optimized the appointment process. The current Board consists of 12 members. For detailed information about Board members, please refer to the Company website and the 2023 annual report.

There are five special committees under the Board, namely the Nomination Committee, the Audit Committee, the Examination and Remuneration Committee, the Investment and Development Committee, and the Sustainable Development Committee, providing support to the Board in decision-making. The Directors sitting on the special Board Committees focus on matters according to their division of duties and make proposals for the improvement and enhancement of the management level of the Company.

Board Diversity >>

In implementing the Diversification Policy of the Composition of the Board of Directors, our Board members are engaged based on the operational model and work requirements of the Company, while taking into account their nationality, gender, age, cultural and educational background and professional experience. Our Board members comprise of veteran experts in petrochemicals, finance, accounting, safety management, and other areas. They possess extensive industry experience and provide valuable opinions and suggestions to the Company.

For further details of Board members, please refer to the Company website and the 2023 annual report.

Gender

Female
8.3%

Male
91.7%

Age

41-60
75.0%

Over 61
25.0%

Region

Mainland China
66.7%

Hong Kong SAR
25.0%

Macau SAR
8.3%

Professional background

Petrochemical
66.7%

Finance/accounting
25.0%

Economics
8.3%

Position

Chairman
1

Vice chairman
1

Executive directors
3

Non-executive directors
2

Independent non-executive directors
5



Proportion of independent directors

Board Independence Improvement >>

In accordance with relevant regulations of the Measures for the Administration of Independent Directors of Listed Companies issued by the CSRC, we formulated and implemented the Measures for the Administration of Independent Directors of PetroChina Company Limited (the "Measures for the Administration of Independent Directors"), to standardize the conditions and procedures for the appointment and removal of independent directors, and specify their responsibilities and authority. The independent directors are given significant roles in the corporate governance of the Company as we continuously optimize the system of independent directors, increase their role capacity, and strengthen the independence of the Board. The term of office of an independent director shall be three years, and at the end of the term, he/she may be re-elected for a term not exceeding six years. By the end of 2023, the Company has a total of five independent non-executive directors, accounting for 41.7% of the Board, which complies with regulatory requirements.

The Company strictly implements the PetroChina Independent Directors Management Measures (the "Independent Director Management Measures"), standardizing the conditions and procedures for the appointment and removal of independent directors, specifying their responsibilities and authority, and providing institutional safeguards to enable them to perform their duties. The independent directors adhere to the principle of diligence and integrity, utilizing their professional knowledge and extensive experience in their respective fields to provide advice and strategies for the operation of the Board and the development of business, effectively safeguarding the rights and interests of all shareholders.

In 2023, the independent directors of the Company took the initiative to understand the Company's operating conditions, financial performance and major projects through various means such as meetings, field research and high-level exchanges. They attended shareholders' meetings, board meetings and special committee meetings on time, carefully reviewed the proposals and related documents of the Company; they actively participated in discussions, and put forward professional opinions and suggestions through in-depth communication with the senior management. They supervised the implementation of meeting decisions, and kept track of the progress for effectiveness. They carefully reviewed the Company's periodic reports, and communicated with the auditors before and after the annual audit and before the board meetings, so as to ensure truthful, accurate, and complete information disclosure. They kept in pace with the latest policies and regulations on listed companies, and performed their duties in strict accordance with the regulations. They also paid great attention to the demands of stakeholders, especially connected transactions, investment budget planning and other key work of the Company.

For the Independent Director Management Measures, please refer to the Company website and the annual report for 2023.



In 2023, the Company held 5 Supervisory Committee meetings, passing 17 resolutions. A new Supervisory Committee and committee chairman was successfully elected. Reviews of the Company's 2022 annual report, 2023 interim report and quarterly reports were also completed, and relevant disclosures were provided in compliance with regulatory requirements. All meetings were legal and valid, in compliance with the provisions of the Company Law of the People's Republic of China and the Articles of Association of the Company.

Supervisors and Supervisory Committee

The term of office of our supervisors is three years, renewable at the end of the term upon re-election and re-appointment. No supervisor may concurrently hold the position of a director, 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 sit in on Board meetings on a non-voting basis. They shall report to the Shareholders' meeting, submit the Supervisory Committee's work reports and relevant proposals. By the end of 2023, the Company's Supervisory Committee consisted of 8 supervisors, 4 of which were employee representatives.

The Supervisory Committee is accountable to the Shareholders' meeting. The Supervisory Committee formulated and amended the 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 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 with due diligence.

Management Team

The Company's executive body is headed by the President and is composed of Senior Vice Presidents, Vice Presidents, a CFO and Secretary to the Board, etc. 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 on the strength of authorization by the Board.

MANAGEMENT IN ACCORDANCE WITH LAWS AND COMPLIANCE

The Company incorporates legal compliance into the 14th Five-Year Plan, specifying the concept of "supremacy of laws, compliance as the priority, honesty and good faith, and safeguarding rights according to the law". This has been achieved through strengthening our compliance management system, enhancing compliance management responsibilities and strengthening compliance risk control mechanisms. We have continuously optimized and improved our compliance management system to comprehensively enhance our level of legal compliance operation.

We strictly comply with laws, regulations and government regulatory requirements, incorporating compliance requirements into our systems and processes. We have clearly defined the compliance management responsibilities of governance bodies and established a compliance management organizational structure where each department is responsible for its own duties, working together to manage compliance. We continuously optimize a compliance system based on the Compliance Management Regulations and the Integrity Compliance Manual, with specific regulations formulated with reference to various business norms and key compliance risk prevention guidelines as operational regulations. Continuous efforts have been made to strengthen compliance risk prevention and control, including measures such as compliance reviews, evaluations of the effectiveness of compliance management systems, compliance assessment and reporting and supervisory accountability. During the reporting period, there was no significant violation of relevant laws and regulations.



Progress of key compliance management work in 2023

Improving compliance management system

- Revising and improving the Compliance Management Regulations and Management Measures for Compliance Review, further strengthening the compliance management organization, clarifying compliance management responsibilities, optimizing compliance risk control mechanisms, strictly enforcing compliance review requirements and strengthening compliance safeguards

Assessing the effectiveness of the compliance management system

- Developing detailed compliance evaluation indicators, organizing subsidiaries to conduct self-assessment, conducting on-site evaluations for some enterprises and incorporating evaluation results into the assessment of enterprise legal construction

Strengthening compliance risk prevention and control in key areas

- Dynamically monitoring the legal compliance environment to monitor and prevent major compliance risks
- Formulating and implementing Anti-Monopoly Compliance Guidelines and Tender Business Compliance Guidelines, refining preventive measures and providing specific guidelines for business personnel to fulfill their compliance duties

Strengthening compliance advocacy and training

- Conducting compliance training covering company management and high-risk area employees
- Organizing special training for middle and senior management on legal compliance and legal knowledge examination to enhance compliance awareness and capabilities
- Holding training sessions on compliance and business operations for overseas projects to enhance the compliance risk prevention and control capabilities of overseas business personnel



Compliance training coverage rate

CASE STUDY

PetroChina International Co. Ltd. obtain domestic and international certification of compliance management systems

PetroChina's subsidiary, PetroChina International Co. Ltd., has been continuously advancing the construction of a compliance management system that leads domestically and aligns with international standards. It benchmarks world-leading standards in terms of institutional processes, organizational support, work mechanisms, accountability and cultural development, drawing on the best practices in the industry. It has developed a set of high-standard, comprehensive compliance management systems. In 2023, it successfully passed the comprehensive review of third-party authoritative certification bodies and obtained dual certification of compliance management systems, ISO37301 and GB/T35770, which represent international and domestic standards respectively. This achievement signifies a new level of compliance management and risk prevention capabilities.

Note: ISO37301, issued by the International Organization for Standardization, is a widely recognized standard for compliance management systems worldwide. GB/T35770 is an authoritative management system certification standard in China, which is an important and significant compliance management guidance for Chinese enterprises and organizations.

INTERNAL CONTROL AND RISK MANAGEMENT SYSTEM

The Company continuously improves its internal control system and risk management framework, establishes effective management mechanisms, comprehensively identifies and prevents various risks encountered during the company's development process, and enhances the operational efficiency and risk defense capabilities of the Company. The Board and the Audit Committee regularly receive reports on internal control, dynamically assess significant risks, determine prevention and control measures, as well as response plans to ensure the completeness and effectiveness of the Company's internal control system. We have formulated and amended regulations such as Risk Management Regulations and Business Process Management Measures, incorporating various requirements of risk management into business processes, outlining management structures and responsibilities, emphasizing the closed-loop management of risk assessment, monitoring, early warning and response, strengthening the cultivation of risk management culture, and promoting the digitization of risk management information, enhancing supervision, evaluation and accountability.

Internal Control and Risk Management Structure

Management body	Key responsibilities
Board and special committees	As the Company's risk management decision-making body, it regularly receives reports on enterprise internal control and risk management and reviews relevant reports
Legal and corporate reform department	As the department responsible for centralized management of the Company's internal control and risk management, it leads the establishment and operation of the risk management system
Functional managing departments and professional firms	Driving the development of internal control and risk-based institutional processes in the respective fields, continuously strengthening professional and business risk control
Subsidiaries	Establishing and improving the Company's internal control system, continuously implementing the Company's requirements for risk management work

Closed-Loop Management of Risks

Closely integrating the annual major risk assessment, business risk assessment and special risk assessment with our annual operating plans, business controls and major events, as well as high-risk business. Incorporating the risk response measures into relevant system processes, implement them in key departments and positions, regularly evaluate their effectiveness, and continuously improve them



Incorporating risk response measures into work plans and assessment requirements, continuously monitoring risk changes, assessing the effectiveness of response measures, and promptly adjusting risk response measures based on actual circumstances

Dynamically and continuously tracking changes in risks, establishing risk indicators and warning thresholds rationally, continuously conducting risk indicator monitoring, and enhancing the proactive and forward-looking nature of company risk management

Internal Control and Risk Management: Key Tasks in 2023

Improving top-level design

- Strengthened institutional construction, revised the Risk Management Regulations and Business Process Management Methods, implemented the latest regulatory requirements, optimized closed-loop management content, and provided basic guidance for risk and process management
- Enhanced standard construction, conducted re-examinations and revisions of five corporate standards, including Risk Assessment Standards and Information System Application Control Design and Implementation Standards, and performed a revision quality check on the Internal Control Management Manual of affiliated companies, in order to solidify the foundation of internal control management

Strengthening risk control

- Conducted analysis and application based on risk data. Conducted comprehensive analysis of various risks using risk indicators, risk events, and risk impact factors as the focus, and clarified the focus of risk control
- Refined and supplemented company-specific risk indicators based on the SASAC's risk classification monitoring indicator system, and carried out risk analysis and judgment in a coordinated manner

Strengthening Risk Control

- Adhered to integrated planning, implemented process management responsibilities at all levels, comprehensively carried out optimization of process documents and authority manuals, and promoted comprehensive coverage of process management
- Standardized the management of related transactions, refining and chemical product production costs, and sales income of refined oil products, identified and revised important risks, and completely presented end-to-end processes



In 2023, the Company conducted 1,002 internal audit projects and submitted three work reports to the Board and the Audit Committee.

We conduct internal audit work within the Company, carrying out comprehensive reviews and evaluations of the Company's finances, operations, and risk management, thus improving and strengthening internal controls and risk management. In 2023, we focused on economic supervision, with an emphasis on standardized operation, key project construction, prevention of overseas asset risks, implementation of major decision deployments, and internal control supervision and evaluation. We have also incorporated business ethics into the scope of audits, continuously expanding the breadth and depth of audit supervision. Furthermore, we have intensified efforts to translate audit results into action and accountability, rigorously enforcing the audit rectification system to enhance the Company's operational efficiency and risk prevention capabilities. Throughout the year, the Company has conducted 1,002 internal audit items and has passed external audits for 18 consecutive years.

BUSINESS ETHICS AND INTEGRITY RISK PREVENTION

We strictly comply with the Supervision Law of the People's Republic of China, Regulations for Implementation of the Supervision Law of the People's Republic of China, the Anti-Money Laundering Law of the People's Republic of China, the Anti-Unfair Competition Law of the People's Republic of China and other laws and regulations, as well as international principles and initiatives such as the United Nations Convention Against Corruption and the United Nations Guiding Principles on Business Ethics and Human Rights. We uphold business ethics and market rules, adhere to the principles of honesty, fairness, mutual benefit, and win-win cooperation, promote enterprise operation and compliance management in accordance with the law, refrain from using unethical means to seek transaction opportunities or undermine the competitive advantages of other operators, and work with partners to maintain a fair market competition.



We have formulated a series of regulation and management systems and professional codes of conduct to regulate corporate and employee behavior in order to prevent integrity risks.

- Anti-Commercial Bribery Compliance Guide
- Integrity and Compliance Manual
- Corporate Culture Manual
- Professional Code of Conduct for Senior Management
- Professional Code of Conduct for Employees
- Employee Misconduct Handling Regulations

Integrity Risk Prevention System

We place a high emphasis on the establishment of an integrity risk prevention and control system, continuously strengthening standardized operations, supervision checks, compliance controls, and education training. We coordinate internal supervision resources such as legal, internal control, audit, disciplinary inspection, supervision and inspection, enhance self-supervision, dedicate department supervision and supervision at all levels, and maintain self-awareness of social supervision. Employees are required to strictly comply with relevant legal standards and ethical principles, and we have formulated and implemented regulations such as the Anti-Commercial Bribery Compliance Guide, Integrity and Compliance Manual, Employee Misconduct Handling Regulations and Corporate Culture Manual to regulate employee and corporate behavior.

All organizations under the Company have formulated and complied with rules of procedure for the board of directors, management, and other meetings, implementing democratic centralism and the major decision-making system¹, in order to ensure a scientific, democratic, fair and reasonable decision-making process and results.

The Company strictly implements a series of system regulations covering procurement, contract management, bidding, fund usage and internal control, and implementing a whole-process supervision mechanism of preliminary prevention, process supervision and post evaluation.

The company has established accessible reporting channels such as a telephone hotline and letterbox for whistleblowing. Employees, third parties with business dealings with the Company, and the public can report any illegal behavior involving the business of the Company in confidence. The Company strictly handles whistleblowing and leads in accordance with standard procedures, promptly initiates handling procedures, and organizes forces to investigate and dispose of them in accordance with rules and laws. In 2023, there was zero corruption litigation case brought against the Company or its employees.

100%

Coverage of integrity risk prevention training for staff (including members of the Board and all employees)

Note: Employees include dispatched workers

【1】 The major decision-making system refers to major decisions, important appointment and removals, big projects, and large fund use.

Key Measures and Annual Progress in Business Ethics and Integrity Risk Prevention and Control

Integrity Risk Prevention and Control

- Enhancing and improving the system mechanisms, such as separating the exercise of powers, dividing responsibilities by position, authorizing at different levels, and regularly rotating and exchanging positions, deeply integrating integrity risk prevention and control with the establishment of the internal control system
- Incorporating business ethics within audit scope

Management supervision and inspection

- Strengthening checks and supervision of the exercise of powers by management personnel at all levels, coordinating the establishment of a joint supervision mechanism involving disciplinary inspection, inspection, audit, finance and accounting, internal control, organizational personnel, etc. Holding regular coordination meetings, establishing a "three-line defense" consisting of business supervision, functional supervision and full-time supervision, and setting up a "five-mechanism" framework for daily communication, cooperation, results sharing, accountability and performance evaluation
- Enhancing supervision over the exercise of powers, performance, integrity, and self-discipline of management personnel, and organizing all employees to sign a letter of integrity responsibility

Building a clean culture

- Studying and elaborating governance measures relating to work processes, operating mechanisms, power allocation and job settings, in order to optimize the business process
- Guiding grassroots enterprises in developing the Guidelines for Anti-corruption Risk Prevention and Control in Key Areas, establishing a specialized company-level risk database, identifying business risks and anti-corruption risks, formulating corresponding prevention and control measures, in order to promote long-term effectiveness

Business partner compliance management

- Rigorously cracking down on cases of abuse of power for personal gain, bribery, rent-seeking, and other illegal activities
- Improving the joint disciplinary mechanism for bribery, employing measures such as interviews, warnings, downgrading of cooperation evaluation levels, market access restrictions and blacklists, in order to penalize bribe givers, fostering a fair, competitive and transparent business environment

Developing education and training

- Conducting legal education and training sessions from time to time on laws and regulations such as the Supervision Law, Administrative Penalty Law, Anti-Corruption System, and Rules for Ethical Conduct for all members of the Board and employees
- Compiling a case warning record, organizing warning education meetings, pre-appointment integrity education, etc. and conducting anti-corruption and integrity education activities based on different employee levels, in order to form a long term and effective mechanism for integrity education
- Providing business partners with various forms of compliance and anti-commercial bribery training

Whistleblower Protection System

We have established a robust supervisory guarantee mechanism, strictly implementing regulations such as the Supervision Law and rules on law enforcement supervision. We firmly ensure the personal freedom, life, health, property, relief rights of individuals under review and investigation. Additionally, we enhance protection of the legitimate rights and interests of whistleblowers, accusers, witnesses, individuals under investigation, and their relatives and relevant personnel. We show no tolerance to retaliation due to supervisory actions such as criticism, whistleblowing, complaints, accusations, etc.

We fully respect the whistleblower's desire for anonymous reporting and strictly prohibit the use of technical means to trace relevant information. For named reports, we strictly follow the notification feedback procedure, maintaining strict confidentiality regarding the whistleblower's name, workplace, address and related information about the report. During the process of accepting reports or conducting verification, the identity information of the whistleblower is not disclosed. If any retaliatory behavior is found, it will be dealt with seriously in accordance with regulations and laws.

COMMUNICATING AND INTERACTING WITH STAKEHOLDERS

2,000⁺

Stakeholder engagements throughout the year

100%

Response rate to investor inquiries



In 2023, the Company expanded its communication channels with the capital market on multiple aspects. It organized high-quality annual, semi-annual, and quarterly performance releases, conducted 39 performance roadshows, 8 roadshows for communicating with shareholders regarding related transactions, and 2 reverse roadshows. The Company received over a thousand investor hotline calls, responded to more than 3,000 emails, answered questions on SSE E-interactive over a hundred times, participated in 56 brokerage strategy meetings, and achieved a 100% response rate to investor inquiries.

We are dedicated to enhancing the quality and profitability of our development to maximize returns to our shareholders and value for our stakeholders. We place great emphasis on investor relations management, comply with relevant laws, regulations, and the securities regulatory rules of domestic and foreign listing venues, and formulate and continuously improve corporate documents such as the Information Disclosure Management Methods and Investor Relations Management Methods, strictly following their implementation. We have established multi-level communication channels with stakeholders, facilitating a comprehensive understanding of stakeholders' demands and expectations, and promoting communication and collaboration, in order to achieve our common goal of win-win cooperation and harmonious development.

Stakeholder engagement annual progress

Quality information disclosure

- Reviewed and approved the Company's Information Disclosure Management Measures, enhancing and refining the information disclosure management system, and fulfilling information disclosure obligations in accordance with the law
- Published quarterly, semi-annual and annual financial reports, as well as the annual ESG Report on a regular basis in accordance with regulatory requirements, providing comprehensive disclosure of the Company's operational, financial and ESG governance information
- Published 199 announcements, reporting major matters such as the election of the Company's board of directors and connected transactions to investors on a timely basis (please refer to the Company website)
- Received "A" rating in information disclosure by SSE for 9 consecutive years

Published announcements

199

Received "A" rating in information disclosure by SSE for 9 consecutive years

A

CASE STUDY

Strengthening Investors Communication through Reverse Roadshow

In response to the SSE's "Visiting Listed Companies" themed investor communication event to enhance communication with investors, the Company organized a reverse roadshow from June 13 to 16, 2023, at PetroChina Tarim Oil Field Company and Dushanzi Petrochemical Tarim Branch for both Chinese and foreign investors.

Approximately 30 institutional investors and brokerages from domestic and international organizations, such as Bosera Funds, BlackRock, Zhongyong Capital, Everbright Securities, Haitong Securities, Morgan Stanley, Bank of America Merrill Lynch, etc., attended the event. They visited and conducted research on the Tarim Oil Field Exhibition Hall, Intelligent Operation Center, Dushanzi Petrochemical Tarim Ethane-to-Ethylene Project, West-East Gas Pipeline's first station, Desert Highway and other projects. Two thematic communication sessions were held during which the Company extensively communicated with investors about the relevant business operations, further deepening investors' understanding and approval of the Company, and received praise from the participating investors.

Enhancing communication through various channels

- Revised the Company's Investor Relations Management Measures, further standardizing the principles, content, and organizational implementation process of investor relations
- Engaged with shareholders through various online and offline channels, including shareholder meetings, performance briefings, investor receptions, shareholder visits, brokerage strategy meetings, investor hotlines, SSE E-interactive, online investor reception days, roadshows and reverse roadshows
- Organized PetroChina Open Day for the sixth consecutive year where over a hundred affiliated enterprises invited government officials, media reporters, company clients, resident representatives, and various groups to visit and learn about PetroChina, showcasing the Company's actions and achievements in technological innovation, green and low-carbon transformation, intelligent development, new energy exploration, and social contributions
- Actively cooperated with the CSRC, SSE, HKEX and the U.S. Securities and Exchange Commission (SEC), completing dozens of surveys and questionnaires, providing feedback and suggestions for ESG information disclosure policy consultations
- Communicated with ESG investment and rating institutions such as the Carbon Disclosure Project (CDP), MSCI, Climate Action 100+ (CA100+), BlackRock to enhance mutual understanding
- As the unit of the Vice President of CAPCO and Deputy Head of the CAPCO ESG committee, we actively supported CAPCO, strengthened experience sharing with member units, and received major awards such as the ESG Best Practice Case, Best Board Practice, Best Board Office Practice, and 5A-level Evaluation of Secretary's Performance from CAPCO
- Enhanced the service quality of the 956100 customer service center, providing customers with consulting, inquiries, business transactions, complaint handling, value-added services, and conducting customer satisfaction surveys
- Held multi-level employee representative conferences, communicated with employees through various channels such as labor unions and feedback mailboxes, and understood employee demands
- Continued to improve community communication mechanisms, enhance social communication and contribute to local economic development
- Participated in exchanges and cooperation with industry organizations such as Oil and Gas Climate Initiative (OGCI) and the China Oil and Gas Methane Control and Emission Reduction Alliance
- Participated in organizing the "China Methane Control Efforts, Progress, and Opportunities" side event at the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (the "COP28")

Stakeholder communication approach

Stakeholder	Expectations	Communication approach
 Governments	<ul style="list-style-type: none"> • Providing stable energy supply • Promoting harmonious economic and social development • Taking on leadership role in terms of brand and technology • Paying taxes according to law 	<ul style="list-style-type: none"> • Contributing company experience • Conducting strategic cooperation with relevant departments • Attending seminars and forums
 Shareholders and investment institutions	<ul style="list-style-type: none"> • Standardizing corporate governance • Ensuring stable business growth • Promoting sustainable development and ESG governance 	<ul style="list-style-type: none"> • Fulfilling obligations on statutory information disclosure • Organizing non-deal roadshows and other communication activities • Issuing regular reports and organizing results announcement conferences and investors conferences • Engagements and seminars from time to time
 Employees	<ul style="list-style-type: none"> • Safeguarding employee rights • Providing career development • Improving remuneration and welfare 	<ul style="list-style-type: none"> • Electing employee representative to join the Supervisory Committee • Establishing labor unions at all levels • Convening employee representatives' meetings and making reports • Organizing employee training programs • Setting up a complaints and feedback system
 Customers	<ul style="list-style-type: none"> • Providing safe, environmentally friendly and high quality products • Improving the quality of services on a continuous basis • Operating with integrity 	<ul style="list-style-type: none"> • Carrying out activities to protect consumers' interests • Publicizing commitment to quality services • Providing 956100 hotline services • Conducting customer satisfaction surveys
 Business partners	<ul style="list-style-type: none"> • Conducting fair and transparent procurement • Pursuing win-win cooperation 	<ul style="list-style-type: none"> • Holding tender meetings • Holding large cross-border business negotiations and technical exchange meetings • Using electronic trading platforms • Sharing managerial practices and technical standards • Conducting contract negotiations and routine meetings • Conducting training for business partners • Holding routine business meetings
 NGOs	<ul style="list-style-type: none"> • Improving sustainable development management • Taking on social responsibilities such as rural revitalization and environmental protection • Actively tackling climate change 	<ul style="list-style-type: none"> • Contributing company experience • Participating in NGO activities • Promoting international communication
 Communities	<ul style="list-style-type: none"> • Promoting employment growth • Protecting community environment • Promoting community economic development • Respecting community culture and traditions 	<ul style="list-style-type: none"> • Establishing a comprehensive community engagement mechanism and actively holding dialogues with local communities • Paying attention to community feedback and improving social effectiveness • Conducting publicity and education • Fulfilling notification obligations and increasing information disclosure

Key actions	
<ul style="list-style-type: none"> Complying with the applicable laws and regulations in the jurisdictions where we operate and operating with integrity and compliance Ensuring stable energy supply Participating in policy discussions organized by the government on climate change, energy conservation and emission reduction 	<ul style="list-style-type: none"> Promoting local employment and nurturing local talents Paying taxes according to law
<ul style="list-style-type: none"> Operating in a responsible manner to maintain a good reputation Holding general meetings Ensuring equal treatment of shareholders and valuing the opinions of minority shareholders and providing feedback to the Company's management in a timely manner 	<ul style="list-style-type: none"> Strengthening management over investor relations and communicating with minority shareholders, investment institutions and ratings agencies in various ways
<ul style="list-style-type: none"> Enhancing employee training and skills development Organizing vocational skill contests Conducting occupational health checks 	<ul style="list-style-type: none"> Promoting local employment in overseas operations Providing a career development platform for employees Protecting employee safety
<ul style="list-style-type: none"> Enhancing quality management and properly handling customer complaints Protecting customer privacy Providing quality services and improving product and service quality 	<ul style="list-style-type: none"> Increasing the supply of clean fuel, such as natural gas, high-standard gasoline, geothermal heating, hydrogen fuel and green power Prioritizing the supply of oil for disaster relief and agricultural production actively Organizing PetroChina Open Day activity
<ul style="list-style-type: none"> Establishing a unified material procurement platform and bidding platform to provide suppliers with equal competition opportunities Enhancing communication and coordination with contractors and strengthening the QHSE management of contractors by creating a safe and healthy working environment 	<ul style="list-style-type: none"> Opening the investment field Holding high-level forums
<ul style="list-style-type: none"> Paying attention to concerns of the public through various forms of communication Playing an active role in participating in and supporting international environment protection standardization 	<ul style="list-style-type: none"> Participating in a wide range of forums and conferences
<ul style="list-style-type: none"> Managing impact on communities and conducting social and environmental impact assessments Fulfilling social responsibility and investing in community welfare Participating in disaster relief and reconstruction and providing financial support for education and rural revitalization Supporting and driving the economic and social development of areas where businesses are located with large projects construction 	<ul style="list-style-type: none"> Supplying clean energy such as natural gas to remote regions Inspiring employees to provide voluntary services Expanding local procurement Providing job opportunities and training for the local community

TECHNOLOGICAL INNOVATION AND DIGITAL EMPOWERMENT

Innovation is our primary strategy and the basis for our entire development vision. Our goal is to deepen technological innovation and digital empowerment through optimizing allocation of innovation resources, building a dynamic and open innovation ecology, enhancing overall efficiency of the innovation chain, strengthening technological innovation to support leadership capabilities. We promote quality establishment of a smart PetroChina, and expedite deep integration of digital technology and operations in order to achieve steady progress in digital transformation and smart development.

Technological Innovation

Technological innovation drives the transformation of our production methods towards a green and low-carbon future, addressing issues such as energy supply, carbon emissions reduction and improving efficiency. We strengthen planning and top-down design as well as our efforts in foundational research and overcoming key technology barriers, optimizing our technological innovation management system, building an innovative technology enterprise and innovation platform. In 2023, thanks to our steady improvement in innovation capacity, the Company made its debut into the Boston Consulting Group's list of Top 50 Most Innovative Companies.

Annual R&D expenditure
RMB

30.477 billion

Annual R&D expenditure
growth year-on-year

6.1%

Proportion of annual R&D
expenditure to the operating
revenue of the Company

1.0%

R&D personnel

30,483

Proportion of R&D personnel
to the total employees of the
Company

8.11%

Technological Innovation Initiatives and Progress

Expediting establishment of research institutes and innovation platforms

- Construction of the National Key Laboratory for the Green Exploitation of Continental Shale Oil with Multi-Resource Collaboration has been approved
- Expediting the establishment and operation of our new materials research institute in Shanghai, new energy research institute in Shenzhen and the Wisdom Pool Research Institute in Japan. Significant progress has been made in organizational structure, charter systems, talent pool development, scientific research and development, exchange and cooperation, digital information and base construction
- Established the PetroChina (Beijing) Digital Intelligence Research Institute Limited to establish a high-level digital intelligence application research and development and innovation platform

Facilitating green and low-carbon and new energy technological development

- Promote the implementation of the "Technology Innovation Supporting Carbon Peak and Carbon Neutrality Implementation Plan". Starting from the four key areas of oil and gas production, refining and chemical industry, new energy, and new businesses, focus on four major carbon reduction pathways: energy efficiency improvement in the main business, clean substitution, engineering carbon sink, and structural optimization. Tackle major comprehensive technologies, innovate and break through key core technologies, and construct a low-carbon and zero-carbon technology system
- Expediting technological breakthrough and application demonstration in focus areas such as hydrogen fuel, energy storage, geothermal power, coal associated resources, carbon capture and storage/carbon capture, utilization and storage (CCS/CCUS), energy conservation and environmental protection

Strengthening innovative talent workforce

- Connecting with top R&D institutes in China and overseas to attract top technology talents
- Strengthening cooperation with higher education schools to nurture young and innovative talents
- Increasing efforts in nurturing talents in the exploration and development of new energy technology, implementing specialized training programs for talents in new materials, CCUS and other areas, and organizing professional technical lectures around the theme of "Dual Carbon, Three New"²

[2] "Dual Carbon, Three New" refers to carbon peak and carbon neutrality, new energies, new materials, and new businesses.

CASE STUDY

Launching the "Ten Thousand Meter Era" of deep earth drilling

On May 30, 2023, drilling commenced at the PetroChina Shenditake-1 well, located in the heart of the Taklamakan Desert in Xinjiang. The well was designed with a depth of 11,100 meters. By March 4, 2024, the drilling depth had already exceeded 10,000 meters, breaking the record for the deepest vertical well in Asia and advancing the ten thousand meter drilling technology to the forefront of the world.

Independently overcame the technical bottlenecks of drilling ultra-deep wells of ten thousand meters. From the surface to ten thousand meters underground, the drilling of the shenditake-1 well not only faced complex and variable geological structures but also had to penetrate through multiple sets of rock layers with different lithologies and pressure systems. Facing extreme temperatures and pressure underground, we carried out technical research and development, creating a batch of key core technologies in the process.

Development of ultra-deep oil and gas resources contributes to securing energy supply. Currently, China's onshore deep and ultra-deep oil and gas resources account for 34% of the country's total oil and gas resources, with the proportion of new oil and gas reserves in deep and ultra-deep layers increasing annually. The Tarim Basin, where the shenditake-1 well is located, is the only oil and gas basin in the world that primarily contains ultra-deep layer resources and is also China's largest deep earth oil and gas enrichment area. In recent years, PetroChina has vigorously implemented the Deep Earth Project in the Tarim Basin, successfully drilling more than 140 deep wells exceeding 8,000 meters in depth. In 2023, PetroChina's Tarim Oil Field produced 19.57 million tons of ultra-deep oil and gas in the Tarim Basin, ranking first in the country, becoming China's largest ultra-deep oil and gas production base.



Building a Green Refinery with Advanced Technology

The Company is vigorously promoting clean production, low carbon energy, resource conservation, and smart management. In projects such as ethylene production and Guangdong Petrochemical Refinery Complex, we have adopted low-carbon technology and low-grade oil upgrading technology, with a focus on creating green and smart demonstration projects.

The Tarim ethane-to-ethylene plant is a national demonstration project for ethane cracking to produce ethylene. The ethylene device utilizes purity ethane as the raw material and adopts ethane steam cracking technology, which is independently developed by PetroChina as a patented technology. Compared to traditional production of ethylene from naphtha cracking, the total energy consumption saved through ethane-to-ethylene is approximately 160 kilograms of standard oil per ton. It is characterized by a high ethylene yield, a short process flow, low production costs, and low comprehensive energy consumption.



Intellectual Property Rights Protection and Management

We place high importance on the protection and management of intellectual property. The Company strictly complies with relevant laws and regulations, such as the Patent Law of the People's Republic of China (the "Patent Law"). We focus on critical aspects, enhance the integration of intellectual property with technological innovation, and fully leverage the role of intellectual property in safeguarding the development of core business and technological innovation.

We have established an Intellectual Property Management Office to coordinate and oversee the work of technological innovation and intellectual property management. We have formulated a group-wide intellectual property development plan and an evaluation method for intellectual property work, constructing a "1+3+N" intellectual property management system³. Two intellectual property technical support centers for oil and gas and new energy, refining and new materials, and one intellectual property research management center have been established. Professional management and service organizations provide technical support for intellectual property protection. We have improved the mechanism for the professional growth of intellectual property talents, advocating for the inclusion of intellectual property positions in professional technical sequences. We have established a pool of intellectual property experts, accelerating the development of a high-level and specialized intellectual property talent team with a reasonable quantity and optimized structure. In 2023, the Company had 5,433 patent applications in China (of which 5,094 or 93.9% were invention patents in China) and 161 PCT patent applications, representing a growth of 49.97% in domestic and international patent applications.

Annual Progress in Intellectual Property Protection and Management

- Advanced the implementation of the Intellectual Property Development Plan (2023-2030) and the Implementation Plan for the High-Quality Development of Intellectual Property Work
- Revised and improved the "1+3+N" intellectual property management system, established the implementation of the intellectual property supervision and inspection system
- Formulated the "Management Measures for Intellectual Property Commissioners", organized training and workshops for intellectual property personnel at all levels, and recognized the first batch of intellectual property commissioners



Digital Empowerment

Digital transformation is a major strategic initiative in the Company's drive towards modernization of the Company's governance system and capabilities. We have formulated the "Guidance on Digital Transformation and Intelligent Development" and released the "Digital Transformation Construction Guide (1.0)". We strongly promote digitalization, networking and smart development, utilizing digital technology such as cloud computing, IoT, 5G, big data and AI to integrate digital technology into products, services, and processes across the oil and gas industry chain. As we shift from a capacity-driven development model to an innovation-driven development model, we create new industries, new business types and models that align with the characteristics of a digital and intelligent PetroChina.



PetroChina Smart Operation Center

PetroChina adheres to the general principles of "value orientation, strategic leadership, innovation drive and platform support", focusing closely on the aspects of "business development, management reform and technology empowerment". By building an

[3] "1+3+N" Intellectual Property Management System: "1" stands for "Intellectual Property Management Regulations", "3" stands for "Patent Management Measures", "Technical Secrets Management Measures", "Computer Software Copyright Management Measures", and N stands for a series of management regulations.

industrial internet technology system and an applied ecosystem based on cloud platforms, we continuously drive business model restructuring, management model reform and business model innovation, in order to accelerate industrial transformation and upgrade as well as value growth.

Aspect	Target	Progress
Business development	<p>Collaborative optimization of oil and gas business chains</p> <p>With the goal of maximizing the overall benefits of the upstream and downstream business chains and the value of shareholders, carrying out optimal allocation of resources and overall planning of operating results and linkage of emergency response</p>	<ul style="list-style-type: none"> Advanced the construction of production and operation platforms, accelerated the digital transformation of production sites, and continued to promote "visualizable, controllable, and manageable" production operations, thus gradually achieving real-time perception, dynamic analysis, intelligent control, and adaptive optimization of all elements and processes in production operations Optimization of the oil and gas value chains has shown significant results, effectively supporting proactive decision-making in production and operation and the integrated optimization of the industry chain, achieving coordination of management activities such as market forecasting, planning optimization, profit calculation, and comprehensive analysis, promoting the deep integration of production and operation with financial management, and supporting the Company's decision-making in production and operation
	<p>Transformation and upgrading of main business</p> <p>Integrating the Internet, big data, artificial intelligence and other technologies with the Company's business in order to promote industrial transformation and upgrade</p>	<ul style="list-style-type: none"> Issued the "Digital Transformation Construction Guide (1.0)", covering six construction standards including business scenario design, data, cloud computing resource requirements, dedicated production networks, network security, and the Internet of Things (IoT). The guide clearly outlines the path and construction sequence for digital transformation <ul style="list-style-type: none"> Smart oil and gas field: Focusing on eight business areas including oil and gas exploration, oil and gas development, and engineering technology, we established unified standard templates for digital transformation. A pilot project has been completed at the Tarim Oil Field, achieving an efficient and minimally staffed production site, multi-party linkage in operation and control, and collaborative sharing in scientific research. For the Southwest Oil and Gas Field, three integrated collaborative working environments have been built with a new business management model in areas such as well engineering and gas production implemented Smart petrochemical: We developed the Technical Guidelines for the Digital Transformation and Intelligent Development of the Refining Business. Lanzhou Petrochemical explored and created a set of digital twin intelligent factory construction templates based on physical entity factories. Dushanzi Petrochemical and Guangdong Petrochemical Co., Ltd were awarded the "2023 Smart Manufacturing Demonstration Factory" by the Ministry of Industry and Information Technology Smart sales: Completed all scenario constructions, continuously optimizing functions in logistics intelligent scheduling, member services, intelligent marketing, cross-industry cooperation, and other scenarios Natural gas smart sales: Enhanced capabilities such as sales volume forecasting, household safety inspections, and station control
Management reform	<p>Promoting the improvement of decision support, operation management, collaborative office, collaborative R&D and shared services through digitalization, and pushing forward the modernization and transformation of the corporate governance system and governance capabilities</p>	<ul style="list-style-type: none"> Accelerating the construction of a unified comprehensive office management platform, focusing on one platform and multiple scenarios, comprehensively upgrading the integrated office management platform. We achieved single sign-on and integration of pending data for 14 office systems The global shared services system, including "financial shared services" and "human resources shared services" has been established. The financial shared services system achieves unified domestic management of three types of businesses: accounting, report preparation, and fund settlement. The human resources shared services system completes full coverage of six types of business under three categories Initiation of a large-scale ERP project, advancing the optimization of the company's resource planning system, integrating business and finance, coordinate operations and production, and accelerating the realization of the convergence of "four flows" - logistics, funds, information, and value. This comprehensive approach enhances the company's capabilities in standardized and regulated business processes, efficient resource coordination, and value creation
Technology empowerment	<p>Creating a first-class industrial Internet system in the energy and chemical fields to empower digital transformation with technologies</p>	<ul style="list-style-type: none"> Increasing application of our cloud technology platform in order to continuously improve PetroChina's cloud resource computation and storage capacities based on PetroChina's four major data centers Initiating a special data governance campaign to implement comprehensive data lifecycle management, promote collaborative, shared governance of data, fully tap into data value, and drive the development of data governance and the data lake system

CLIMATE CHANGE AND ENERGY TRANSITION

Climate change is a global issue for all humanity and requires the combined efforts and response of the whole world. China has proposed the vision of building a human community with a shared future and set out clear carbon emission peak and carbon neutrality goals, requiring energy industries to accelerate their transformation. PetroChina firmly implements China's policies on carbon emission peak and carbon neutrality, actively participates in global climate governance, promotes the transition to a green and low carbon model on a strategic level in the Company's overall development, vigorously develops clean, low-carbon, safe and highly-effective energy sources, continuously enhances carbon emission management and control, and strives to play an integral role in the state's efforts to achieve carbon emission peak and carbon neutrality goals and to safeguard energy security.

The UN Sustainable Development Goals





RESPONSE TO CLIMATE CHANGE

The Company recognizes the temperature goal set out in the Paris Agreement and strives to firmly implement the goals and action plans proposed by the Chinese government to achieve carbon peak and carbon neutrality. By leveraging our own energy resources, we intend to carry out the carbon emission peak action plans systematically and on a step-by-step basis. We have continued to improve our governance mechanism for addressing climate change, incorporating it into our overall development strategy. We have also improved our risk management procedures and its implementation plans and collaborated with other institutions on climate change issues to actively and steadily contribute to the carbon emission peak and carbon neutrality goals. We disclose climate information with reference to the Task Force on Climate-Related Financial Disclosures (TCFD) framework in four areas, namely, governance, strategy, risk management, and Metrics and Targets.

We have participated in and supported the following organizations and initiatives related to climate change

- United Nations Framework Convention on Climate Change
- Paris Agreement
- China's National Program for Addressing Climate Change
- National Climate Change Adaptation Strategy 2035
- Carbon Peak Action Plan before 2030
- Methane Emissions Control Action Plan
- Carbon Peak and Carbon Neutrality Declaration of China's Petroleum and Chemical Industry
- OGCI's Zero Methane Emissions Initiative
- China Technology Strategic Alliance for Carbon Dioxide Capture, Utilization and Storage (CTSA-CCUS)
- China Oil and Gas Methane Alliance

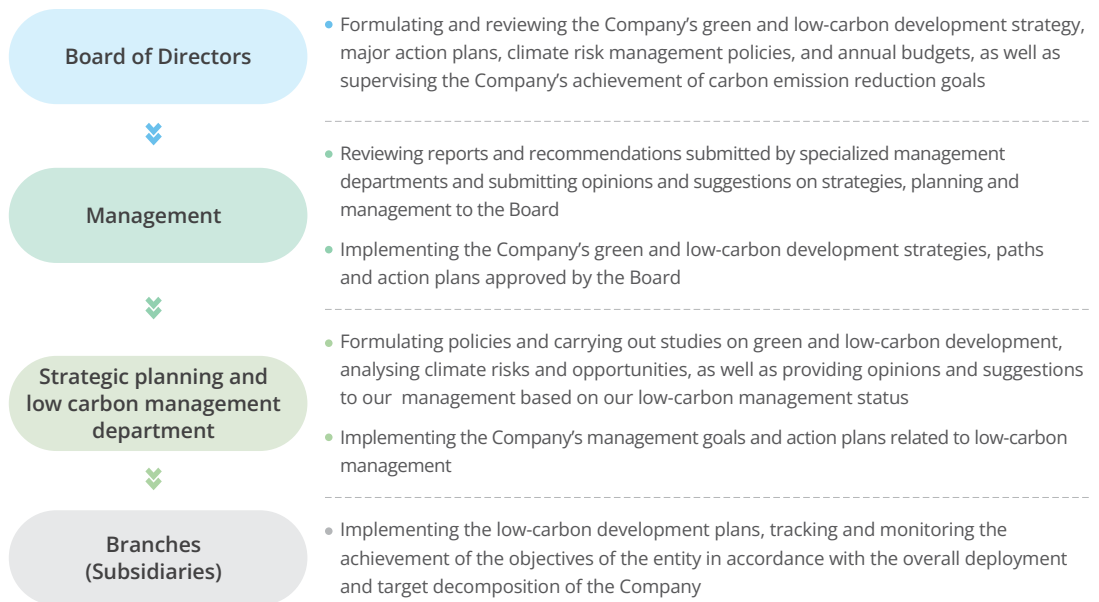


Ma'anshan Carbon Neutral Forest at Daqing Oil Field

Climate Governance

The Company attaches great importance to climate change-related risks and opportunities. We have thus established a climate governance structure including our Board of Directors, management, strategic planning and low carbon management departments, and branches (subsidiaries). We closely monitor policies, laws, technology, and market changes related to the global and China's transition to a low-carbon economy. In our policy research, we take into consideration the impact of climate risks and the low-carbon economic transition policy to identify and assess the real challenges and potential impact of climate change on the Company. The Company also established a Leading Group on Carbon Peak and Carbon Neutrality. Through regular meetings, we study, deploy, and implement action plans to support these initiatives, continuously strengthen the management of climate-related risks, improve our carbon emission management and control system, develop low-carbon industries, improve clean energy supply, and actively participate in the cooperation across the global oil and gas industry in tackling climate change.

Climate Governance Structure



Key Actions Taken by the Board and the Management to Manage Climate Risks

- Incorporated green and low-carbon initiatives into the Company's overall development strategy
- Established a Leading Group on Carbon Peak and Carbon Neutrality, which is responsible for convening regular meetings to study, deploy, and implement relevant action plans
- Continued to strengthen our top-level design and study policies, optimize gas and electricity planning and carbon peak action plans
- Incorporated indicators for energy consumption, GHG emissions etc. into the annual performance evaluation of key management team members of the Company's headquarters and branches (subsidiaries), and embedded response to climate change as a mandatory module in the training program of our senior management
- Accelerated the building and operation of the Research Institute for New Energies in Shenzhen, the Research Institute for New Materials in Shanghai, and the Wisdom Pool Research Institute in Japan, and conducted more research on green and low-carbon strategies and technologies
- Actively participated in the national carbon emissions trading, offset carbon emissions by purchasing carbon allowances etc., promoted the development of carbon reduction projects on a voluntary basis under international and domestic carbon reduction systems on a voluntary basis, and standardized carbon asset management

Strategic Response

The Company attaches great importance to the risks and opportunities brought about by climate change. We thoroughly analyze the impact of climate factors on our business, strategies and finance, and incorporate such factors into our strategic considerations and top-level design, and strives to enhance our capabilities to address climate change, and to strengthen our resilience in coping with climate change.

Climate Change Risk >>

We have systematically identified major climate risks and opportunities in terms of reputation, market, technology, operation, policies and regulations, and physical factors, and formulated corresponding solutions.

Major climate risks identified by the Company and our solutions

Type of Risks	Description of Risks	Response Measures
Transitional risks	Reputation (mid-term risk) <ul style="list-style-type: none"> Having a low-carbon footprint helps energy companies build their reputation and is a major concern of stakeholders. If we fail to meet our low-carbon development goals or fail to meet such goals using the expected routes and measures, our reputation and image may be adversely impacted 	<ul style="list-style-type: none"> Formulating low-carbon development objectives, establishing a three-step strategy to energy transition, which consists of "clean energy substitution, strategic succession and green transition", further detailing specific arrangements and measures for clean energy transition, incorporating low-carbon objectives into the performance review for key management team members of the Company's headquarters and branches (subsidiaries), strengthening supervision, and accelerating the Company's transition to a green and low-carbon economy Facilitating all-round communication and exchange, and improving the disclosure and transparency of climate change information
	Market (long-term risk) <ul style="list-style-type: none"> Attention on climate change may drive market preference for low-carbon products and services, thereby affecting demand for fossil fuels The rapid development of alternative energy sources, new energies and new products may put competitive pressure on the Company 	<ul style="list-style-type: none"> Incorporating climate factors into our investment decisions and increasing investment in new energies and alternative energies, vigorously developing clean energy sources, and accelerating the transformation into an "oil, gas, geothermal, electricity and hydrogen energy" integrated energy company Increasing development and production of green products, and providing more clean and low-carbon energy products to the market
	Technology (mid and long-term risk) <ul style="list-style-type: none"> Low-carbon transition will increase the Company's cost of technological innovation 	<ul style="list-style-type: none"> Increasing investment in technological innovation, and vigorously developing low-carbon and energy-saving technologies Establishing research institutes that focus on the technological research of new energies and new materials
	Operation (mid-term risk) <ul style="list-style-type: none"> Climate change will exacerbate uncertainty in the energy market, posing greater risks to the Company's investment and strategic decision-making The carbon emission trading policy may affect the Company's cost expenditure and profits 	<ul style="list-style-type: none"> Devoting greater efforts in identifying climate risks, and incorporating climate risks into our investment decisions Actively promoting clean energy development, and accelerating the Company's transition to green and low-carbon energy Increasing the amount of energy conserved, carbon reduced, and striving to reduce carbon emissions Strengthening our carbon asset management, incorporating the cost of carbon emissions into our cost efficiency analysis, minimizing the impact of carbon trading policies to the Company, promoting the development of voluntary carbon reduction projects, and striving towards carbon reduction benefits
	Policies and regulations (short and mid-term risk) <ul style="list-style-type: none"> Governments in places where our business operations are located may impose stricter environmental regulations in the future, and mandate stricter standards for GHG emissions and emission allowances. Compliance with the new regulations and standards will increase the Company's compliance cost 	<ul style="list-style-type: none"> Closely monitoring and strictly complying with the relevant laws and regulations related to carbon emissions and carbon trading, actively adopt measures to reduce carbon emissions, strictly complying with the carbon emission regulations in countries and regions in which we operate, strengthening carbon asset storage and management, and ensuring our contract compliance Improving our management and control of low-carbon development and climate risks

Type of Risks	Description of Risks	Response Measures
Physical risks	Acute risk (short-term risk) <ul style="list-style-type: none"> Natural disasters such as typhoons (hurricanes), storm surges and floods caused by climate change may cause direct damage to the Company's assets and business operation Natural disasters may bring about disruptions to the supply chain, which may affect the Company indirectly 	<ul style="list-style-type: none"> Strengthening communication with governments, meteorological and emergency service departments in locations where the Company operates, in order to issue timely warnings Continuously improving our emergency response plans for natural disasters, improving our emergency response capabilities, carrying out emergency drills regularly, and improving our response plans for natural disasters to reduce the impact of natural disasters on the Company's production and operation Strengthening our supply chain management to establish a supply chain with better resilience
	Chronic risk (mid and long-term risk) <ul style="list-style-type: none"> Increased rainfall and rising sea levels may pose a threat to the assets of businesses in coastal areas Water supply may become more constrained in water-scarce areas 	<ul style="list-style-type: none"> Adopting relevant climate adaptation measures in early stages of our project design and construction, in order to improve the capability of assets in coastal areas to withstand natural disasters Expanding the scope of insurance to reduce property damage caused by natural disasters through insurance Incorporating water shortage risks into project assessments to improve water efficiency

Climate Opportunities >>

Climate change has also brought about new opportunities for the Company, and motivated us to accelerate our transition and upgrade towards a greener and lower-carbon economy and a path towards sustainable development.

Major climate opportunities and action plans identified by the Company

	Climate opportunities	Action plans
Business development	<ul style="list-style-type: none"> Climate change has increased people's demand for low-carbon energy. Our oil and gas exploration and development businesses are mainly located in the northwest, northeast, and northern China regions, where geothermal, wind, and solar resources are also abundant. Our Company possesses advantages in land use and technology, we are presented with new opportunities for the transformation and development of depleted oil fields Increase the production of substitution of clean energy for energy consumption and accommodate the integration of new energy generation 	<ul style="list-style-type: none"> Accelerate the expansion of geothermal, wind and solar power, hydrogen energy, and battery charging (swapping) stations, as well as other new energy businesses, and vigorously promote the integrated development of oil, gas, and new energy Establish development bases for new energy businesses, and accelerate the transformation of depleted oil and gas fields into clean energy bases such as wind power, PV and geothermal energy Create new scenarios and new business modes for zero-carbon and carbon-negative development based mainly on the CCUS business
Technological advancement	<ul style="list-style-type: none"> Carbon reduction targets motivate the Company to strengthen our technological innovation, reduce carbon emissions, increase energy efficiency, lower production costs and improve competitiveness 	<ul style="list-style-type: none"> Increase R&D of carbon replacement technologies and vigorously promote energy conservation, carbon reduction and pollution control through technological means to improve efficiency in a coordinated manner. Steadily advance the clean substitution of self-consumption energy and increase clean production and pollution prevention, in order to build a green enterprise

Green and Low-Carbon Transition Path >>

Incorporating green and low-carbon initiatives into our overall development strategy and the overall 14th Five-Year Plan, the Company has established a three-step transition path to clean energy, which consists of the “clean energy substitution, strategic succession and green transition”, so as to achieve carbon peak and carbon neutrality actively and steadily. We developed the Green and Low-carbon Development Action Plan 3.0, and actively implemented the “three major initiatives” and “ten major projects” to continue to accelerate our transition towards a green and low-carbon economy.

PetroChina's green and low-carbon transition path

Clean energy substitution

2021 – 2025

Targets

- Boost the proportion of new energy output to 7% of our company's domestic energy supply capacity by 2025

Measures

- Enhance the development and utilization of geothermal, solar, wind and hydrogen power and other new energy sources, and promote the use of clean energy alternatives in production, in order to facilitate the synergistic development of new energy sources and the oil and gas industry chain
- Actively promote the integration and development of natural gas-fired power generation and new energy power generation, in order to provide clean energy products for the society
- Actively conduct technological research and pilot demonstrations on the hydrogen supply chain, the clean conversion and utilization of fossil energy and other energy transition technologies, strive to apply CCUS measures to actively explore possibilities to develop and utilize fossil energy in a clean manner and at a lower cost
- Build synergies and enhance efficiency by vigorously promoting energy-saving, carbon reduction, and pollution reduction measures, gradually replacing the self-consumption of fossil energy with clean energy, and enhancing the levels of clean production and pollution control

Strategic succession

2026 – 2035

Targets

- Strive to achieve balanced share of new energies, oil, and natural gas businesses, and substantially achieve the strategic succession of the oil and gas business to geothermal, wind, PV and hydrogen

Measures

- Promote the synergistic development of new energy new businesses and the oil and gas business, and put in place a preliminary strategic succession plan to replace oil and gas resources with clean electricity, establish a hydrogen industry chain, promote the cleaner use of fossil fuels and develop other new businesses
- Promote the mass implementation of CCUS and carbon sequestration projects to continuously reduce carbon emissions



The Green and Low-carbon Development Action Plan 3.0

The Company has issued the Green and Low-carbon Development Action Plan 3.0, where we proposed the concept of developing a “circular carbon economy”. We intended to create three innovative projects, namely, the “Natural Gas+” Clean Energy Development Project, the “Hydrogen+” Zero Carbon Fuel Upgrading Project, and the CCUS Carbon Negative Industry Chain Construction Project. We also deployed and implemented three major initiatives, namely, the Green Enterprise Construction Leaders Initiative, the Clean and Low-Carbon Energy Contributor Initiative, and the Circular Carbon Economy Pioneer Initiative, as well as a total of ten major projects under such initiatives.

Green transition

2036 – 2050

Targets

- Strive to ensure that the proportion of the output from new energies and new industries reaches half of our output as a whole

Measures

- Continue to increase the scale of new energy development and utilization and the strategic succession of oil and gas resources, and complete the five major energy platforms of “oil, gas, geothermal, electricity and hydrogen energy”
- Direct our business operations towards full-scale electrification, implement our strategic succession plan through the construction of the CCS/CCUS industry, and develop a circular carbon economy

Action deployment

(“Three initiatives”, “Ten projects”)

The green enterprise construction leaders initiative

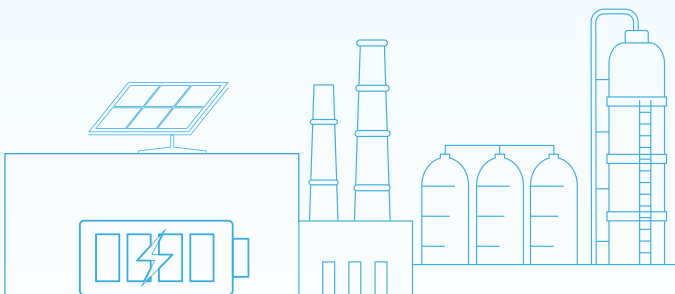
- The energy saving and carbon reduction project
- The methane reduction project
- The ecology construction project
- The green culture project

The clean and low-carbon energy contributor initiative

- The “Natural Gas+” clean energy development project
- The “Hydrogen+” zero carbon fuel upgrading project
- The comprehensive energy supply system reconstruction project

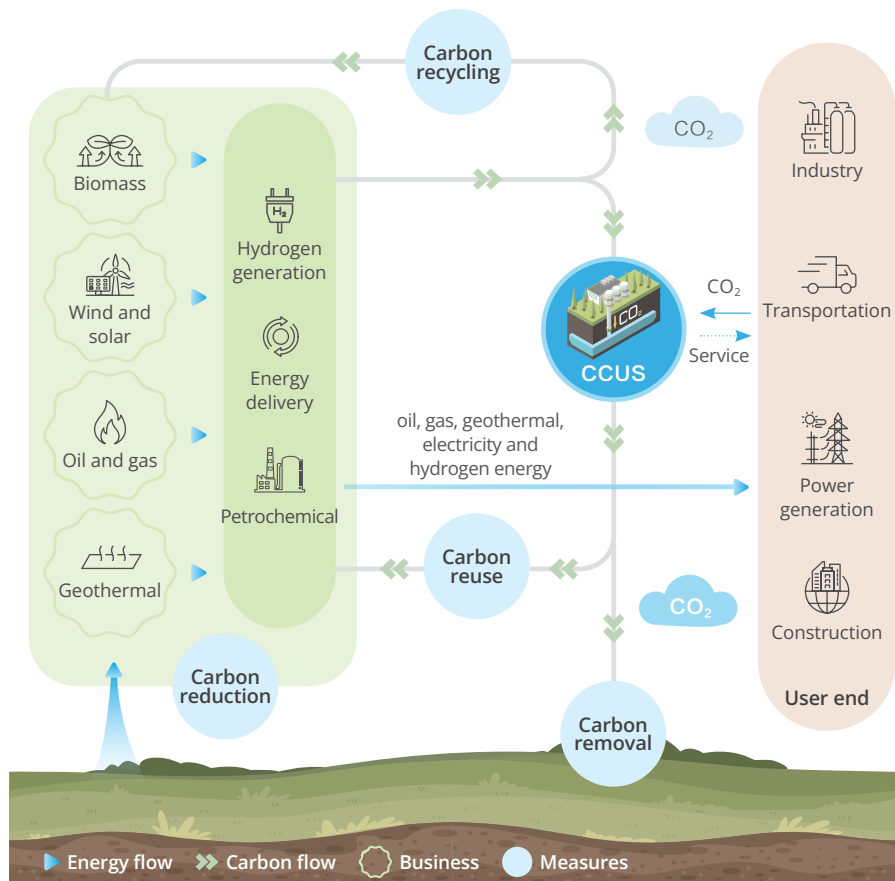
The circular carbon economy pioneer initiative

- The in-depth electrification project
- The CCUS industry chain construction project
- The zero carbon production and operation and reengineering project



PetroChina's Development Path Towards a Circular Carbon Economy

At its core, the circular carbon economy consists of four principles, i.e. carbon reduction, carbon reuse, carbon recycling and carbon removal (collectively, the 4Rs), as proposed at the G20 Summit in 2020. By continuing to optimize our energy and carbon flows, PetroChina focuses on implementing reformed measures to reduce carbon emissions and reutilize carbon as a resource. We are actively exploring new energy sources, new materials, and new industries with the aim to establish a CCUS industry chain, to accelerate our transition towards clean energy supply and a scalable carbon industry, and progress on our path towards a green and low-carbon future.



CCUS Project at Jilin Oil Field

Climate Risk Management

The Company incorporates risks related to climate change into its list of comprehensive risk management and control measures. We identify, analyze and assess climate risks on an annual basis, formulate risk management and control strategies and procedures, regularly track and report risk events, and adjust risk prevention and control strategies in a timely manner. We strictly monitor the implementation of climate risk management and include GHG emissions as part of the framework of the annual performance evaluation for relevant departments of the Company and responsible persons from each branch/subsidiary. Their performance obligations are accounted for, evaluated, and fulfilled each year.

Indicators and Targets

The Company has established climate-related performance targets for each departments and branches (subsidiaries). These targets are reviewed and assessed against actual results annually, and are optimized and adjusted according to internal and external feedback.

Performance indicators	Our Targets	Progress in 2023
Methane emissions intensity	<ul style="list-style-type: none"> By 2025, methane emissions intensity to decrease by 50% to 0.25% as compared to 2019 By 2035, methane emissions intensity to decrease by 20% to 0.20% as compared to 2025 	<ul style="list-style-type: none"> Methane emissions intensity was 0.34%
Proportion of new energy production capacity	<ul style="list-style-type: none"> Boost the proportion of new energy output to 7% of our company's domestic energy supply capacity by 2025 Strive to achieve balanced share of new energies, oil, and natural gas businesses by 2035 Strive to ensure that the proportion of new energies and new businesses reaches half of the total output by 2050 	<ul style="list-style-type: none"> Proportion of new energy capacity in the domestic energy supply capacity was 3.6%

CURBING CARBON EMISSIONS

Being concerned with our carbon emissions and carbon footprint arising from our production and operation, we continued to enhance our carbon emission management system by establishing a “1+3” carbon emission mechanism based mainly on the Guiding Opinions on Strengthening Greenhouse Gas Emission Management and Control, as well as the Measures for Management of Carbon Trading, the Management Measures for the Statistical Assessment of Greenhouse Gas Emissions, and the Management Measures for the Voluntary Greenhouse Gas Reduction Project. The Company actively strives to create synergies between carbon reduction through conserving energy and carbon reduction through reducing pollution, in order to increase clean energy substitution rates and promote electrification. We continued to improve our GHG accounting and inspection system, adopted an assessment model to review our carbon emission controls annually, strengthened our carbon asset management, actively participated in carbon trading, carried out research and development activities related to CCUS technologies and the implementation of demonstration projects, promoted its application in business settings, actively planning forestry carbon sequestration, and collaborated with other industries to reduce carbon emissions, in an effort to contribute to the fight against climate change.



Tarim Oil Field was named a 2023 “Carbon Peak Frontrunner” of China’s Industries by the China Federation of Industrial Economics.

Carbon Peak and Carbon Neutrality

At PetroChina, we fully advocate the national carbon peak and carbon neutrality targets. We have adopted the four major measures of “carbon reduction, carbon utilization, carbon substitution, and carbon storage” and carried out carbon neutrality projects to minimize and offset carbon emissions arising from our production and operation activities, and constantly strive towards the carbon peak and carbon neutrality goals. In 2023, a number of our production and operation sites, including the Yumen Oil Field Juidong Operation Field, the first station on the West-East Gas Pipeline, Jinan Laiwu Integrated Power Plant 19, and the office building of our sales company in Chongqing (Wanzhou Branch), were certified as “zero-carbon factories” or “carbon neutral” by relevant authorities.

Major pathways towards carbon neutrality

Carbon reduction

To reduce carbon emission at source, vigorously develop our natural gas business, give full play to the key supporting role of natural gas in the transition to green energy, and continuously increase the scale of the development and comprehensive utilization of wind power, solar energy, geothermal energy and other non-fossil fuel energy

Carbon utilization

To continuously improve the utilization rate of carbon, and strengthen our position in the development of CO₂ chemical utilization and industrialization development

Carbon substitution

To effectively substitute traditional fossil energy, vigorously promote geothermal and solar energy to replace the traditional use of oil and gas for heat production, promote the substitution of coal-fired electricity with clean electricity, accelerate the production and saleable application of hydrogen energy, expand the scale of utilization of “green electricity”, and continuously increase our electrification rate

Carbon storage

To actively explore and improve technologies and efficient ways to capture and sequester carbon, implement carbon dioxide flooding and carbon dioxide sequestration on a large scale, continuously expand the “zero carbon” and “negative carbon” industries, and enhance the carbon sequestration capacity and scale of the ecosystem

CASE STUDY

Our headquarters building was certified as carbon neutral

In March 2024, the Company obtained a certification of carbon neutrality issued by the Tianjin Climate Exchange, certifying our headquarters as "Carbon Neutral Building".

In 2023, our headquarters building neutralized carbon dioxide emissions through the following:

- Complete substitution of carbon dioxide emissions from electric power through Yumen Oil Field green certification
- Partial offset of carbon dioxide emissions from natural gas and heating through Hongse Nanliang carbon neutral forest in Changqing Oil Field
- Offset of outstanding carbon dioxide through purchase of high standard carbon assets with international accreditation



First station on the West-East Gas Pipeline certified as a "Carbon Neutral Station"

On December 20, 2023, the first station on the West-East Gas Pipeline in the Tarim Oil Field successfully passed the onsite audit conducted by an authorized organization and was awarded the "Carbon Neutral Station" certification in accordance with the international PAS 2060-2014 standard Specification for the Demonstration of Carbon Neutrality.

Harnessing natural gas pressure differences to generate electricity is a clean and efficient energy recycling technology that not only consumes zero amount of natural gas but is also capable of producing completely clean and green electricity, without producing pollutants such as wastewater, exhaust gases or solid wastes. At the first station on the West-East Gas Pipeline in the Tarim Oil Field, we actively promoted the clean substitution of energy and completed the construction of pressure differential devices, which recycle pressure differences arising from natural gas when pumped into the compression station to drive a generator to produce electricity. Up to 5.20 million kWh of electricity can be generated annually, which can offset carbon emissions from the annual operation of the equipment, pipeline maintenance, gas transmission and other daily production activities of the West-East Gas Pipeline I, achieving a "zero-carbon" operation at the site.

This was not only a successful exploration of clean and efficient distributed energy by the Company, but also the establishment of a new model of resource utilization of the Company by leveraging the pressure difference of natural gas in our pipeline network.

Carbon Emission Management

The Company implements a dual-control system for managing our total carbon emissions and intensity. The amount and intensity of carbon emissions associated with each branch (subsidiary) are individually recorded and incorporated as part of the framework of the annual performance evaluation for key management team members at our headquarters and branches (subsidiaries), which are accounted for, evaluated, and fulfilled each year. In accordance with the national GHG inspection and accounting standards, we set up a GHG inspection and accounting mechanism, founded the GHG Inspection and Accounting Center, and established a carbon asset management platform for the Company, which enabled us to carry out regular GHG emission accounting and reporting procedures as well as regular inspections.

	2021	2022	2023
Total GHG emissions (Scope 1 and Scope 2) (million tCO ₂ e)	159.54	160.56	171.18
-Direct GHG emissions (Scope 1) (million tCO ₂ e)	121.39	119.68	124.66
-Indirect GHG emissions (Scope 2) (million tCO ₂ e)	38.15	40.88	46.52
Domestic GHG emissions per unit of oil and gas production (tCO ₂ e/toe)	0.25	0.24	0.24

Methane emissions

Methane emissions

371,200 tons

Year-on-year decrease

7.41%

Emission intensity

0.34%

The Company actively carried out the Seven Major Projects for the Management and Control of Methane Emissions, established a methane monitoring, reporting and verification (MRV) mechanism, put more effort into technological innovation, and comprehensively enhanced our methane emission management and control level through increasing the recycling and utilization rates of associated gas, further improving oil containment solutions and other measures. In 2023, the methane emissions recorded a year-on-year decrease of 7.41%.

Seven actions to control methane emissions

- Zero routine flaring project
- Project for improving oil containment solutions
- Leak detection and repair (LDAR) system construction project
- Project for wellbore vent gas recovery
- Project for managing and controlling operating gas emissions
- Methane emission monitoring and accounting system
- Social responsibility action plan for managing and controlling methane emissions

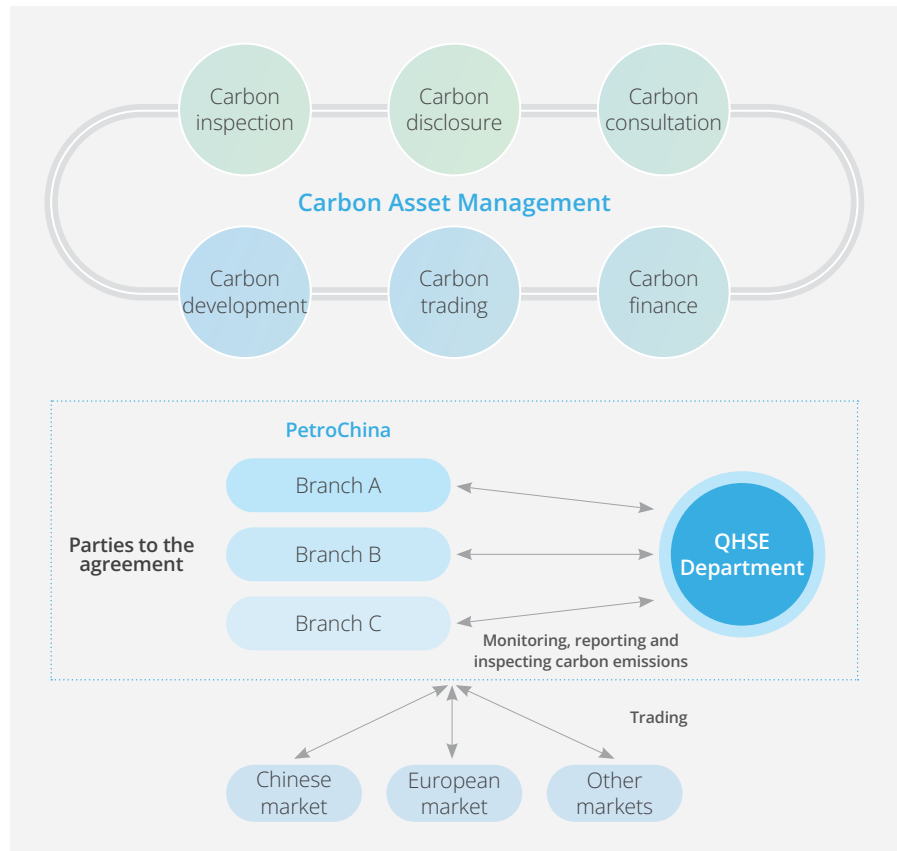


Carbon Asset Management and Carbon Trading

The Company has established and continuously improved its carbon asset management system, and formulated the Measures for Management of Carbon Trading, the Management Measures for the Voluntary Greenhouse Gas Reduction Project and Measures for Financial Management of Carbon Assets. We developed and launched a platform for managing and controlling carbon assets, standardized the compliance control of carbon trading companies, and facilitated the standardized management of carbon assets. The Company promotes carbon emission cost accounting and incorporates carbon emission costs into our cost-benefit analysis. We strengthened market analysis to reduce compliance costs for key emitting entities, established a carbon asset reserve mechanism, and implemented carbon reserve targets for key emitting entities. We also enhanced our carbon asset products, forming a diverse reserve of China Emission Allowance (CEA), China Certified Emission Reduction (CCER), and European Union Allowances (EUA), thereby improving our carbon asset reserve capacity.

The Company is an active participant in national carbon emission trading, where we offset carbon emissions through the purchase of carbon allowances, and develop voluntary carbon reduction projects under the international and domestic carbon reduction mechanism. In 2023, all of our seven branches (subsidiaries) that participate in the national carbon trading market fulfilled their obligations.

PetroChina's Carbon Asset Management System



Carbon Capture, Utilization and Storage (CCUS)

PetroChina attaches great importance to the development of the CCUS industry. We actively explore technologies and efficient ways to capture and sequester carbon, and promote CO₂ enhanced oil recovery technology. A technology system that serves the entire CCUS industry chain has been newly established, which enables the application of the carbon dioxide flooding process in our CCUS project.

The Company implemented key CCUS demonstration and pilot projects in Daqing, Jilin, Changqing, Xinjiang and other oil fields, and accelerated the construction of a 3-million-ton key CCUS demonstration project in Songliao Basin. In 2023, the annual CO₂ injection volume of the Company was 1.592 million tons.

Targets and progress

Indicator	Progress in 2023	2025 Target
Annual CO ₂ injection in CCUS projects	1.592 million tons	3 million tons

Forestry Carbon Sequestration

The Company actively lays out plans to build carbon sequestration forests and carbon neutral forests, with the aim to achieve carbon neutrality through carbon compensation. We prepared and issued the 14th Five-Year Plan for Green Development, the PetroChina's Carbon Neutrality Guidebook, and the PetroChina's Guidebook for Carbon Sequestration Forest Construction. Implementing these strategies, together with the construction of a "zero-carbon" demonstration zone, we devote strong efforts to build carbon sequestration forests and carbon neutral forests.

In 2023, a second carbon neutral forest, the Junggar Carbon Neutral Forest, was planted in our Xinjiang Oil Field. 400 hectares of carbon sequestration forests and carbon neutral forests were newly planted throughout the Year. As at the end of 2023, we had 14,000 hectares of forests, of which a cumulative total of 1,190 hectares of carbon sequestration forest and carbon neutral forest was planted in the Daqing Oil Field, Changqing Oil Field and Xinjiang Oil Field.



Newly planted carbon sequestration forest and carbon neutral forest during the year



Cumulative carbon sequestration forest and carbon neutral forest in the Daqing Oil Field, Changqing Oil Field and Xinjiang Oil Field



Tree planting and afforestation projects are carried out all year round at Changqing Oil Field to add greenery to the well site

Strengthening Cooperation and Exchanges on Emission Reduction

The Company actively advocates for and implements a sustainable development model of “low energy consumption, low pollution, and low emissions”. Together with CNPC, our parent company, we participate extensively in international cooperation on combating climate change, especially strengthening collaboration with OGCI and sharing technologies and experiences with other member companies, to contribute our efforts to addressing climate change issues and helping the oil and gas industry transition to a low-carbon future. We promoted and participated extensively in the work of China Oil and Gas Methane Alliance, and the influence of such Alliance continued to increase. The Company, together with other enterprises, also jointly established the New Energy and Carbon Neutral Development Committee under the China International Council for the Promotion of Multinational Corporations to promote the development of new energies and the collaboration with other carbon neutral enterprises.

Major progress in carbon reduction collaboration and exchange



Annual OGCI Collaboration Progress

- Acted as one of the leading companies of the OGCI Transportation Working Group to conduct an analysis on the development potential of global hydrogen power centers and the suitability of OGCI's participation, to promote the development of hydrogen power in the global transportation sector
- Prepared roadmaps for clean transportation development in four major economies: China, the United States, the European Union, and Brazil
- Participated in research related to CCUS, Natural Climate Solutions, and the Energy Transition Accelerator, prepared the CCUS Roadmap for the Industrial Sector, the Joint Guidelines for Natural Climate Solutions, the Report on Decarbonization Pathways in the Oil and Gas Sector, and other special reports and research results
- Participated in the preparation and release of the OGCI 2023 Annual Progress Report

Work related to the China Oil and Gas Methane Alliance

- Standardized the Alliance's workflow
- Organized and convened annual technological exchange meetings for the Alliance
- Invited experts to deliver special reports on methane management and control technologies
- Prepared annual reports for the Alliance

Other collaborations and exchanges

- Hosted a side event under the 28th United Nations Climate Change Conference (COP28) titled “China's Efforts, Progress and Opportunities on Methane Emissions Abatement”
- Jointly established the New Energy and Carbon Neutral Development Committee under the China International Council for the Promotion of Multinational Corporations to promote the development of new energy and the collaboration with other carbon neutral enterprises

GREEN AND LOW-CARBON TRANSFORMATION

We have adopted the “green and low-carbon” policy as one of the five key strategies of the Company. We are placing new energies and new businesses in a position of equal importance to our oil and gas operations. Following the “three-step” work plan, we are actively promoting the Company’s transformation and development towards green and low-carbon practices, gradually increasing the proportion of new energy output to our total domestic energy output. We actively responded to the “Action Plan for Accelerating the Integration of Oil and Gas Exploration and Development with New Energy Development (2023–2025)” released by China’s Central Government, which has determined a path of transitioning to a green and low-carbon economy based on carbon emission peak and carbon neutrality principles and hard constraints. We also implemented stable oil production, increased gas production, accelerating the layout of new energy and new businesses, vigorously promoting the development of different renewable energy systems (oil, gas, geothermal, electricity and hydrogen energy), substituting clean energy for fossil fuels, in order to create a green and low-carbon future for PetroChina.

Natural Gas Development and Utilization

Natural gas is the Company’s strategic, growing, and value-added business, which plays a key supporting role in the process of energy transition, and is also a bridge for the transition from fossil energy to clean energy. Intensive development and utilization of natural gas is key to the green and low-carbon transformation and development of the Company. Thus, we have determined natural gas to be the strategic focus of our green development, and continue to step up our efforts to explore and develop natural gas. In addition, the Company imports natural gas through multiple channels and is expediting the construction of liquid natural gas (“LNG”) terminals and gas storage tanks to create a diverse energy supply system.

In 2023, we produced 152.9 billion cubic meters of domestic natural gas, a year-on-year increase of 5.1%, of which the domestic saleable natural gas volume was 134.19 billion cubic meters, representing a year-on-year increase of 6.0%. We increased imports of pipeline gas and LNG and continuously improved the natural gas marketing network, so that the gas supply covers 31 provinces (municipalities and autonomous regions) and the Hong Kong Special Administrative Region. We sold 219.757 billion cubic meters of natural gas domestically during the year, which positively contributed to the optimization of China’s energy consumption structure.

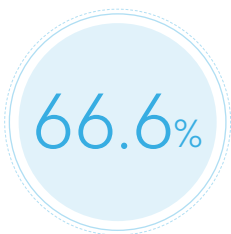
Our target

By 2025, proportion of domestic natural gas production in the Company’s domestic oil and gas production equivalent to be increased to approximately

55%

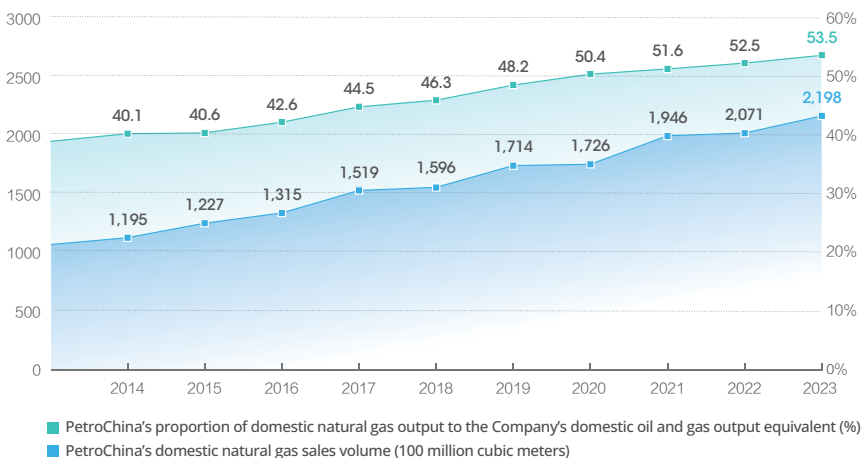


PetroChina’s proportion of natural gas in our total domestic oil and gas output



PetroChina’s share in domestic natural gas output

Green power for better energy mix



New Energies and New Businesses

Investment in new energies and new businesses



PetroChina's proportion of new energy output to the national total



Year-on-year increase in investment in new energies and new businesses

The development of new energies and new businesses is indispensable to address climate change and achieve energy transition. The Company attaches great importance to the development of new energies and new businesses, hence our Board and management convene meetings regularly to strategically coordinate the development of new energies, new materials and new businesses. We have strengthened the strategic planning and established a business management structure for developing our new energy businesses. Our oil and gas and new energy subsidiaries and 16 of our upstream oil and gas enterprises have set up new energy new business departments with an innovative flat organization management structure, which injected new drivers into the development of our new energy businesses. Research institutes were established in Shanghai, Shenzhen, and Japan, to provide technical support to the development of new materials and new businesses. We also formulated development plans including "PetroChina's Carbon Peak Action Plan" and "Action Plan for Accelerating the Integration of Oil and Gas Exploration and Development with New Energy Development (2023-2025)", to lay out a comprehensive plan for our new energy businesses, and facilitate the Company's transition into green and low-carbon development.

Clean Energy Substitution

Our Company has vigorously introduced measures to save energy and reduce carbon emissions, substituting clean energy for non-renewable energy sources in our production process. We have optimized our energy structure, improved the utilization rate of clean energy resources, and reduced fossil fuel consumption and carbon dioxide emissions during the production process, to achieve green and low-carbon transition.

In 2023, our Company took the initiative to build a number of photovoltaic and wind power projects to significantly improve our clean energy self-sufficiency. By replacing oil and gas with electricity, we promoted electricity substitution, increased electrification rates, increased the capacity of green energy consumption, and gradually replaced fossil fuels with renewable energy. According to different local conditions, we expanded the use of geothermal power, industrial waste heat, and other types of clean energy, and embraced a diverse approach to clean energy substitution.



Yumen Oil Field 300,000 KW Photovoltaic Power Generation Project



FEATURE

LAYING OUT COMPREHENSIVE PLANS FOR NEW ENERGIES AND CREATING A NEW DRIVER FOR OUR TRANSITION TOWARDS A GREEN AND LOW-CARBON FUTURE

In 2023, the development of our new energy businesses gained speed

Year-on-year increase of geothermal heating area

42%

Year-on-year increase of newly installed capacity of wind and PV plants

210%

Year-on-year increase of high-purity hydrogen capacity

120%

Year-on-year increase of completed hydrogen refueling stations

91%

Year-on-year increase of completed battery charging (swapping) stations

122%

PetroChina considers the development of new energies to be a driver for the transition towards a green and low-carbon future. Leveraging our technological and geographical strengths, we laid out comprehensive plans to accelerate the expansion of new energy businesses such as geothermal energy, wind and solar power, hydrogen energy, and battery charging (swapping) stations. We also promoted the integrated development of our oil and gas and new energy businesses and established a “low-carbon energy ecosystem”. In 2023, the development of our new energy businesses gained speed and achieved fruitful results, with our overall capacity for developing and utilizing new energy amounting to 11.50 million tons of standard coal per year.

Six Major Bases for New Energies and New Businesses

Beijing-Tianjin-Hebei	Geothermal Heating Demonstration Base
Yumen	Clean Transition Demonstration Base
Jilin	Green and Coordinated Development Demonstration Base
Daqing	Green Low-Carbon Sustainable Development Base
Qinghai	Clean Power Generation Base
Xinjiang	Green Energy Industrialization Demonstration Base

Case Study

Accelerating Battery Charging (Swapping) Business Through Acquisition of Potevio New Energy

In 2023, PetroChina successfully acquired 100% of equity interest in Potevio New Energy Co., Ltd. (“Potevio New Energy”) and established PetroChina KunLun i-Charge Technology Co., Ltd. (“KunLun i-Charge”). Potevio New Energy is one of the pioneers in EV charging in China, owning more than 20,000 public charging stations and has extensive networks across areas including EV technology, EV battery, charging equipment, carbon trading, and value-added services. It can provide comprehensive solutions for the application, promotion, and operation of new energy vehicles in urban areas.

The acquisition constitutes an important initiative for our Company to improve the layout of our new energy network, create a “charging+” industrial ecology, as well as transition and develop into a comprehensive energy service provider. In the next three years, PetroChina shall seize the window of opportunity arising from the development of the new energy sector to complete the strategic planning in relation to our charging (swapping) station business in China, and strive to become one of the leading companies in the charging (swapping) industry.

Progress in New Energies and New Businesses in 2023

Geothermal



- Total geothermal heating area exceeded 35.00 million square meters, representing a 42% increase as compared to the previous year
- Actively expanded the geothermal heating markets, with a contracted area of more than 40.00 million square meters
- Completed the largest single medium-depth geothermal heating project in China in Jidong Caofeidian, with a total geothermal heating area of 7.47 million square meters; the first medium-depth geothermal heating demonstration project in Beijing was completed and put into operation

Wind and PV



- Annual wind and photovoltaic power generation amounted to 2.2 billion kWh
- Newly installed capacity of wind and photovoltaic power generators exceeded 3.7 million kW, representing a 2.1-times increase as compared to the previous year
- The Jilin Oil Field 150,000 kW Green Electricity for Self-Consumption Project and the Yumen Oil Field 300,000 kW Photovoltaic Project were connected to the grid at full capacity; the construction of a 1.10 million kW photovoltaic power plant was completed at Tarim Oil Field; the Golmud Natural Gas Power Plant in Qinghai Oil Field resumed operation, and a number of key projects related to new energy, such as auxiliary new energy projects, has commenced construction

Hydrogen



- Our total high-purity hydrogen capacity reached 6,600 tons/year, representing an increase of 120% as compared to the previous year
- Sichuan Petrochemical's hydrogen purification project was put into operation, providing clean hydrogen to the 2021 Summer World University Games held in Chengdu; an industrial trial of a thousand-ton-scale alkaline electrolysis water hydrogen production system was conducted at Dushanzi Petrochemical; the Yumen water electrolysis hydrogen production project was completed
- A total of 21 hydrogen refueling stations have been constructed, representing an increase of 91% as compared to the previous year

Charging (swapping) stations



- Acquired 100% of equity interest in Potevio New Energy Co., Ltd and established KunLun i-Charge
- A total of 923 charging (swapping) stations have been constructed, an increase of 122% from the previous year



Powering Xinjiang with Green Electricity

In May 2023, the Qiemo 100,000 kW Photovoltaic Power Generation Project in Tarim Oil Field was officially connected to the grid and put into operation. The project can supply 210 million kWh of green electricity to the local area, offering a strong guarantee of clean energy to improve the local energy structure and ecological environment, and drive the green development of the local economy.

Located in Qiemo Country, Bayingolin Mongol Autonomous Prefecture, Xinjiang, the Qiemo 100,000 kW Photovoltaic Power Generation Project is the largest centralized photovoltaic power plant in the Taklamakan Desert hinterlands, spanning a total area of 3,916 mu. It consists of 32 photovoltaic arrays and is equipped with 10MW energy storage devices and a 110 kV booster station. According to our estimations, the power transmitted by the project can meet the electricity demands of 250,000 residents on an annual basis, which is equivalent to replacing 25,000 tons of standard coal and reducing 140,000 tons of carbon dioxide.

ENVIRONMENTAL PROTECTION

The natural environment is fundamental to human survival and development. Only through respecting, accommodating, protecting, and co-existing harmoniously with nature, can human beings achieve sustainable development. We stay committed to minimizing our adverse impacts on the environment and optimizing our ecological and environmental protection management mechanism. We remain committed to the sustainable use of natural resources, conduct extensive pollution treatment and prevention, protect biological diversity and natural habitats, and actively build a green enterprise as we strive to achieve harmonious co-existence between energy and the environment.

The UN Sustainable Development Goals





ENVIRONMENTAL PROTECTION MANAGEMENT SYSTEM

Our Company actively responds to widely recognized international environmental protection conventions, such as the United Nations' 2030 Agenda for Sustainable Development, the Global Pact for the Environment, and the Convention on Biological Diversity. We strictly comply with relevant laws and regulations such as the Environmental Protection Law of the People's Republic of China ("Environmental Protection Law") and comply with national and industrial environmental protection standards. Actively adhering to our green development concept of "integration and coordination between development activities and environmental protection, giving priority to environmental protection", we have established and continued to enhance the "1+N" environmental protection management system that is based on our Regulations on Environmental Protection Management, which includes multiple specific management measures in relation to environmental protection management for construction projects, environmental information, environmental incidents, wastewater discharge permits, and online monitoring and management of pollution sources.

We implement a uniform HSE management system across our global operations and published and implemented an HSE management system standard with PetroChina characteristics (Q/SY08002.1), which fully covers the requirements of the Environmental Management System (ISO14001) in all technical aspects. Moreover, our Company conducts annual audits under the HSE management system on subsidiaries. For more relevant information on our HSE management system, please refer to the section headed "Improving HSE Management" on page 85 in this Report.

We have incorporated environmental protection into the performance assessment for key management team members of our Company's headquarters and branches (subsidiaries). We have established a system of accountability for environmental protection and lifetime accountability for ecological protection. We also have established an environmental protection incentive mechanism to recognize units and individuals who achieve outstanding results in environmental protection.

"1+N" Environmental Protection Management System

Guidelines

Opinions on Further Fighting and Winning the Battle Against Pollution
Notice on Measures for Further Strengthening Ecological Environmental Protection etc.

1

Core System

Regulations on Environmental Protection Management

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Management Measures and Standards

Management Measures for Ecological Environment Protection of Construction Projects
Management Measures for Environmental Incidents
Measures for Environmental Monitoring and Environmental Information Management
Management Measures for Implementation of Wastewater Discharge Permits
Assessment Rules for Safety Production and Environmental Protection Indicators
Technical Specifications for Environmental Statistics and Accounting
Standards for Reviewing and Addressing Potential Ecological and Environmental Hazards
Rules for Investigating Environmental Incidents
Rules for Implementing Environmental Monitoring and Environmental Information Management Measures

Environmental Management System Accreditation

Number of subsidiaries certified by Environmental Management System (ISO14001)

117



Our two subsidiaries, PetroChina Karamay Petrochemical Co., Ltd. and PetroChina Harbin Petrochemical Company, were nominated as 2023 Green Factories by the Ministry of Industry and Information Technology.

Building a Green Enterprise

Our Company incorporates environmental protection into every step of its corporate development. We made tremendous efforts to improve our environmental management in relation to our design and construction, production and operation, product sales and other business processes. We also optimize our production procedures by increasing our resource utilization efficiency, minimizing carbon and pollution emissions, to build a green enterprise in all respects.

We continued to carry out activities to build green enterprises. Every year, we assess our subsidiaries' green qualifications and grant green enterprise certifications to motivate and accelerate our subsidiaries' transition into green and low-carbon businesses. We issued the Guidelines for Building Green Enterprises, continuously enhanced the standards for obtaining green enterprise certification, and expanded the scope of certification to fully cover our major businesses of oil and gas production, refining and chemicals, and oil product sales. By the end of 2023, 84 subsidiaries have been included for certification, with 44 completed the construction of green enterprise, accounting for 52.4%.

CASE STUDY

A Green Project: Guangdong Petrochemical Refinery Complex

In May 2023, the Guangdong Petrochemical Refinery Complex fully entered into commercial operation. From its source design, construction management, clean production to its product performance, the Project constitutes a green, low-carbon and environmentally friendly enterprise in all respects.

The environmental protection amount invested into the Guangdong Petrochemical Refinery Complex accounts for more than 11% of our total investment, which is higher than that of similar types of projects in China. Subject to the compliance of special emission limits set by the Central Government and the Guangdong Provincial Government, the Project focused on improvements in six aspects of environmental protection, namely, enhancing the cleanliness of production processes, increasing the efficiency of resource utilization, optimizing our product mix, maximizing energy saving and carbon reduction, systemizing the pollution prevention and control processes, and adopting artificial intelligence in our environmental supervision system. As a result, it has significantly improved the levels of pollution prevention and control, environmental monitoring, energy saving and carbon reduction, and clean production.

The Project utilizes the most advanced environmental protection treatment technology in the world to achieve an 80% water reuse rate and a 100% solid waste treatment rate while complying with regulations. The amounts of sulfur dioxide, nitrogen oxides, volatile organic compounds, and other major indicators arising from the Project have been far lower than the national and regional limits. In the future, Guangdong Petrochemical Refinery Complex will leverage the abundant solar and wind energy in Guangdong to integrate clean energy into the development of the petrochemical industry. A hydrogen industry chain will be developed under high-purity hydrogen purification plans, using abundant hydrogen resources. Surplus hydrogen can be used as a new green energy source to support the production activities of neighboring petrochemical mid and downstream enterprises.



Proportion of environmental protection investment in Guangdong Petrochemical Refinery Complex of total investment



Guangdong Petrochemical Refinery Complex

ENVIRONMENTAL RISK PREVENTION

Our Company incorporates environmental risks into our overall risk prevention and control system. We conduct in-depth ecological and environmental risk identification, review and assessment and established an environmental risk monitoring system and identified “six major environmental risk factors”. We continue to improve our “three-grade prevention and control” system and our environmental risk categorization and evaluation system, and formulated the Categorization and Evaluation Standards for Environmentally Risky Enterprises (Trial) to monitor and control enterprises by categorization and level. Based on the environmental risk level and the environmental management performance of the region where the enterprise is located, we classify different types of enterprises into different risk categories to manage and control risks using targeted measures. We also formulated the Standards for Inspecting Ecological and Environmental Hazards, and continuously carry out our annual environmental hazard inspection and treatment procedures. To prevent the occurrence of major environmental risks, we make it our priority to rectify major ecological and environmental hazards. Moreover, we formulated the Special Emergency Response Plan for Environmental Emergencies, specifying respective responsibilities across all departments and levels of our Company, and improved the operability of the plan. We regularly carry out emergency response drills for handling environmental emergencies to constantly improve our environmental risk prevention and control capabilities. In 2023, no major or significant environmental pollution incidents occurred at our Company throughout the Year.



In 2023, neither the Company nor any of our branches (subsidiaries) were on the list of heavily polluting enterprises released by the Ministry of Ecology and Environment.

Three-level Environmental Risk Prevention and Control System







To prevent potential minor environmental pollution risks by establishing cofferdams, fire dikes in tank areas and their supporting facilities.

To prevent potential risks of more major environmental pollution by setting up rainwater cut-off systems, wastewater dams, overflow prevention and diversion facilities, necessary intermediate buffer facilities and supporting facilities.

To prevent potential risks of major environmental pollution by setting up terminal buffer facilities and their supporting facilities.



The “Six Major Environmental Risk Factors” Identified by the Company

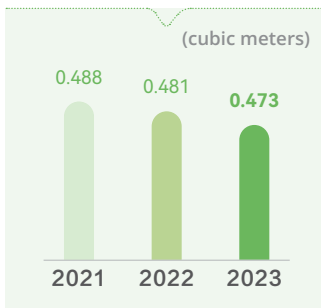
-  Risk of secondary environmental disasters events arising out of major safety accidents
-  Risk of personal injury and/or environmental damage due to leakage of hazardous chemicals
-  Risk of environmental pollution events caused by leakage of oil and gas
-  Risk of public security events arising from the loss, theft, loss-of-control or falling-into-well of radioactive sources
-  Risk of mass events caused by environment-related activities
-  Risk of environmental pollution events caused by discharge of “Three Wastes” in excess of standards

SUSTAINABLE UTILIZATION OF NATURAL RESOURCES

We greatly value the protection and rational use of natural resources. By formulating and implementing the Measures of PetroChina Company Limited for Energy and Water Conservation (“Company’s Measures for Energy and Water Conservation”), the Measures of PetroChina Company Limited for Land Management (“Company’s Measures for Land Management”) and other management systems, we have strengthened our protection of water resources, conserved freshwater resources, and rationally utilized land resources. We have improved the utilization efficiency of energies to minimize resource consumption and utilize our resources in a sustainable manner.

Water Conservation

Freshwater consumption for processing 1 ton of crude oil



Our Company fully implements the National Water Conservation Action Plan, the National Water Saving Action Plan, and other regulations. We conserve water by attaching equal importance to the reduction of water consumption at source and the recycling and reuse of water resources. Moreover, we strive to “increase the water resources utilization efficiency and realize the sustainable use of water resources” in all aspects of our production and business operation.

We established a three-tier water conservation management structure at our headquarters, specialized corporations and affiliates. To strengthen the water management process, we have incorporated water saving indicators into our performance review, and implemented a target responsibility system and an appraisal and evaluation system. Through the optimization of the production and operation of our water system, the application of advanced water saving and wastewater reuse technologies, and the improvement of the use of non-conventional water resources, our Company continued to increase our water efficiency and reasonably control our freshwater usage. In 2023, the total annual freshwater consumption of our Company was 771.23 million cubic meters, the freshwater consumption for processing 1 ton of crude oil was 0.473 cubic meters, and the amount of water saved was 8.14 million cubic meters, which exceeded our 2023 target⁴ and signified a continuous improvement in our water efficiency.





In 2023, our subsidiaries actively implemented water-saving measures and obtained the following achievements in the nationwide Water Efficiency Pacesetter Awards organized by the China Petroleum and Chemical Industry Federation for the petroleum and chemical industry:

- Dushanzi Petrochemical was recognized as a Pacesetter in water efficiency in the ethylene industry
- PetroChina Lanzhou Petrochemical Yulin Chemical Co., Ltd. was recognized as a Pacesetter in water efficiency in the ethane-fed ethylene industry
- Tarim Petrochemical, one of our subsidiaries, was recognized as a Pacesetter in water efficiency in the ethane-fed ethylene industry and the synthesized ammonia industry



[4] 2023 water saved target: 6.30 million cubic meters, freshwater consumption target for processing 1 ton of crude oil: 0.480 cubic meters.

Whole-Industry-Chain Water Resources Management

 <p>Oil, gas and new energy</p>	<ul style="list-style-type: none"> • Conducting analyses on reasonable water usage, promoting the application of wastewater recycling technology and other water conservation measures, proactively developing and utilizing unconventional water resources such as seawater, reclaimed water and rainwater in water scarce areas, improving water efficiency and effectively reducing freshwater consumption. In 2023, the treatment rate of wastewater arising from oil extraction in all oil and gas fields reached 100%, with a 99% reinjection rate • Carrying out plans to maintain and renovate our water systems and optimize our operation plan, reducing the discharge amount of produced water, improving our water compliance, separating oil from water and filtering recycled wastewater for oil recovery and water reinjection to avoid polluting groundwater and surface water. In 2023, the overall water compliance rate of our oil and gas and new energy businesses reached 100%
 <p>Refining, chemicals and new materials</p>	<ul style="list-style-type: none"> • Conducting balanced water testing, improving the monitoring and management of the leakage detection and repair of our water transmission system, optimizing the chemical water production procedures, promoting the recycling and reuse of condensate water, purified water, and spent steam from refineries, moderately purifying and processing wastewater to replenish recycled water, promoting the recycling of rainwater and reclaimed municipal water. In 2023, the reuse rate of wastewater at our Company's refining and chemical enterprises increased by 2.88 percentage points year-on-year
 <p>Sales</p>	<ul style="list-style-type: none"> • Preventing leaks in the underground storage tanks at our service stations by installing a 24-hour leak detection system to ensure soil and groundwater safety
 <p>Natural gas marketing</p>	<ul style="list-style-type: none"> • Implementing water quota management, and issuing the urban gas and auxiliary production system annually with the LNG factory and LNG receiving terminal production water index to ensure that the total water consumption is under control • Transforming the water supply pipelines of LNG plants to reduce leakage losses, and carrying out the transformation of purification and reuse of production and domestic wastewater to reduce discharge of wastewater; conserving, recycling and reusing cool-downed water and displaced water to reduce water usage

CASE STUDY

Use of Unconventional Water Resources

Our Company actively reduces freshwater consumption through the adoption of measures to utilize unconventional water resources such as reclaimed water, seawater and rainwater.

- From 2016 to 2023, Qingyang Petrochemical reused a total of 3.83 million cubic meters of reclaimed municipal water to replace approximately 2.49 million cubic meters of freshwater
- Dalian Petrochemical and Dalian West Pacific replaced freshwater with seawater and reclaimed municipal water. In 2023, a total of 343 million cubic meters of seawater and 8.31 million cubic meters of reclaimed municipal water was used
- Guangxi Petrochemical, Sichuan Petrochemical, Guangdong Petrochemical Co., Ltd, Yunnan Petrochemical, and other enterprises in the south actively collected and reused rainwater. In 2023, a total of 5.27 million cubic meters of rainwater was recycled and reused

Improving Energy Efficiency

We are committed to the principles of "conservation first" and that "energy conservation means an increase in production and saving means an improvement in efficiency", and incorporate energy conservation measures into every step of the production and operation cycle to continuously improve our energy efficiency.

Our Company signed the Energy Conservation and Carbon Reduction Initiative launched by the State-owned Assets Supervision and Administration Commission of the State Council, formulated management systems such as the Administrative Measures for Energy and Water Conservation, and actively carried out energy conservation work in accordance with the requirements of the Energy Conservation Law of the People's Republic of China, the Opinions on Strict Energy Efficiency Constraints to Promote Energy Conservation and Carbon



Our investment in upgrading energy and water saving technologies throughout the year

Energy efficiency management

Energy saved

0.83

million tons of standard coal

Total energy consumption

65.48

million tons of standard coal

Emission Reduction in Key Areas, the Guidelines for Transformation and Upgrading of Energy Conservation and Carbon Reduction in Key Areas of High Energy-Consumption Industries (2022 Edition), the Energy Efficiency Benchmarking Levels and Standard Levels in Key Areas of Industries (2023 Edition), and other regulations and policies, and strived to make continuous improvements in our total energy consumption control and our energy efficiency.

In 2023, our Company continued to adopt measures to increase the efficiency of its oil and gas production system, upgrade and transform our refining and ethylene equipment for better energy efficiency, optimize the energy system, improve our energy management and control system, and revamp our energy conservation technologies. We also improved our assessment on energy efficiency constraints, and significantly increased our energy management level. 0.83 million tons of standard coal was saved during the year of 2023, and the comprehensive energy consumption per unit of oil and gas equivalent production was 106 kilograms of standard coal/ton, both exceeded our 2023 target⁵.

	2021	2022	2023
Comprehensive energy consumption per unit of oil and gas equivalent production (kilograms of standard coal/ton)	116	109	106
Energy consumption per unit energy factor (kilograms of standard oil/[ton of energy factor])	7.89	7.89	7.77
Energy consumption per unit of ethylene production (kilograms of standard oil/ton)	651	604	595

Annual Progress of Energy Efficiency Management

Optimizing Energy Conservation Standards and System

- Prepared and revised 6 corporate standards including the Statistical Index and Calculation Method of Energy and Water Conservation to enhance monitoring and standardize our energy and water conservation processes
- Conducted special research on energy conservation statistics and optimized the energy conservation statistics reporting system

Strengthening Energy Saving Management

- Implemented an energy saving review system, standardized the energy saving review process of our projects, ensured that projects were constructed in accordance with the law
- Tested and evaluated the energy usage of more than 26,000 major water-consuming equipment such as oil pumps, heating furnaces and oil transfer pumps

Improving Energy Efficiency

- Improved the energy efficiency and increased the energy conservation rates of the oil refining and ethylene industries at Daqing Refining, Sichuan Petrochemical, Lanzhou Petrochemical and other refining companies

[5] 2023 energy saved target: 0.56 million tons of standard coal, comprehensive energy consumption target per unit of oil and gas equivalent production: 110 kilograms of standard coal/ton.

In 2023, our subsidiaries actively implemented energy saving measures and obtained the following achievements in the nationwide Energy Efficiency Pacesetter Awards organized by the China Petroleum and Chemical Industry Federation:

- Yunnan Petrochemical was recognized as a Pacesetter in energy efficiency in the crude oil processing industry
- Dushanzi Petrochemical was recognized as a Pacesetter in energy efficiency in the ethylene industry
- PetroChina Lanzhou Petrochemical Yulin Chemical Co., Ltd. was recognized as a Pacesetter in energy efficiency in the ethane-fed ethylene industry



ENVIRONMENTAL GOVERNANCE

Our Company strictly abides by the relevant laws and regulations in relation to environmental protection and pollutant prevention and control, and strictly implements discharge standards in relation to every type of pollutant. We also implemented in-depth measures to win the strategic fight of pollution prevention and control, systematically carried out key tasks on pollution prevention and control, standardized the implementation of pollutant discharge management procedures for enterprises, improved the quality and performance of pollutant prevention and control and treatment, and continued the combat against pollution to keep our skies blue, waters clear, and lands clean.



Environmental protection expenditure

Abided by and implemented national laws and regulations in relation to environmental protection



- The Environmental Protection Law of the People's Republic of China, the Water Law of the People's Republic of China, the Water and Soil Conservation Law of the People's Republic of China, the Yangtze River Protection Law of the People's Republic of China, the Yellow River Protection Law of the People's Republic of China, and other laws and regulations related to environmental protection
- The Law of the People's Republic of China on the Prevention and Control of Water Pollution, the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, the Soil Pollution Prevention and Control Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, the Regulation on the Administration of Permitting of Pollutant Discharges, and other relevant laws and regulations related to pollution prevention and control

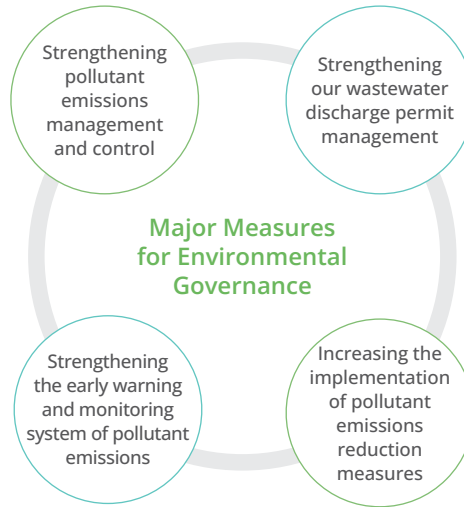
Met major national and industrial pollutant emission standards

- The Comprehensive Sewage Drainage Standards, the Atmospheric Pollutant Discharge Standards, the Hazardous Waste Storage and Pollution Control Standards, the Standards for Soil Environment Quality: Soil Pollution Risk of Construction Land, and other national standards
- The Emission Standard of Pollutants for Petroleum Refining Industry, the Emission Standard of Pollutants for Petroleum Chemistry Industry, the Emission Standard of Air Pollutants for Onshore Oil and Gas Exploitation and Production Industry, and other industry standards

Formulated regulations and standards in relation to pollutant management and control

- Measures for the Administration of Environmental Protection, Management Measures for Ecological Environment Protection of Construction Projects, Management Measures for Environmental Incidents, Measures for Environmental Monitoring and Environmental Information Management, Management Measures for Implementation of Wastewater Discharge Permits, Management Measures for the Operation of Online Monitoring Systems for Pollution Sources, Technical Specifications for Environment Statistics, Standards for Reviewing and Addressing Potential Ecological and Environmental Hazards

- Incorporating wastewater and exhaust gas pollutant indicators into the performance review of the key personnel of enterprises
- Issuing requirements in relation to the construction and management of wastewater outfalls, and carrying out comprehensive inspections on wastewater outfalls
- Analyzing the potential of reducing the wastewater discharge of enterprises, creating a list of wastewater discharge reduction projects, increasing our wastewater reuse rate, optimizing the operation and daily management of wastewater treatment facilities
- Conducting real-time monitoring of the pollutant emissions data of every enterprise using an online monitoring system for pollutant sources, and performing analysis on a daily basis and conducting assessments on a monthly basis, to ensure that all pollutants are discharged in accordance with the standards



- Issuing the Management Measures for Implementation of Wastewater Discharge Permits, establishing a wastewater discharge permit management platform for our Company, and implementing an report submission and information reporting system, and tracking and scheduling the status of the wastewater discharge permit on a monthly basis
- Improving the level of fine environmental protection management, and strengthening the operation and management of existing pollutant treatment equipment, to ensure that all pollutants are discharged in accordance with the standards
- Accelerating projects in relation to the upgrading and transformation of our wastewater treatment system and the transformation of our ultra-low emission exhaust gas treatment facilities

Real-time Online Monitoring

Our Company strictly monitors the pollutant discharge compliance of enterprises, analyzes and issues warnings for those with excessive and abnormal emissions, and carried out onsite inspection of the automatic monitoring equipment of the enterprises' pollutant sources. As of the end of 2023, 860 pollutant sources were monitored by PetroChina's network, and key sources of pollutants were monitored through comprehensive monitoring network. The scope of the automatic monitoring of pollutant sources covered major production equipment and pollutant sources of PetroChina. Data is transmitted to national and local regulatory platforms in real time.



Dalian Petrochemical actively carries out comprehensive action plans to treat VOCs and reduce pollutant emissions

3.19%

Year-on-year decrease of nitrogen oxides (NO_x) emissions

6.30%

Year-on-year decrease of volatile organic compounds (VOCs) emissions (from refining operations)

Air Pollutant Control

Our Company constantly strengthens the control of conventional air pollutants and characteristic air pollutants. In accordance with the Ozone Pollution Prevention and Control Action Plan (2022-2025), we deployed and implemented key missions to prevent and control the emissions of volatile organic compounds (VOCs), nitrogen oxides (NO_x) and other ozone precursors. We have also comprehensively conducted upgrading and remedial work on oil and gas fields, refining operations, sales of oil storage tanks and other key areas of air pollution such that new standards can be met. Moreover, we have continuously stepped up our efforts in the online monitoring of air pollution sources and standard compliance management and adopted emergency response measures for heavily polluted situations in key locations and key time periods, to further improve our air pollutant control performance.

	2021	2022	2023
Nitrogen oxides (NO _x) emissions (10,000 tons)	5.64	5.01	4.85
Volatile organic compounds (VOCs) emissions (from refining operations) (10,000 tons)	7.06	6.82	6.39

Note: Flaring emissions are included in the waste gas emission data

Prevention and Control of Water Pollution

Our Company strictly complies with applicable laws and regulations related to water resources protection and water pollution prevention and control, such as the Environmental Protection Law, the Water Law of the People's Republic of China, and the Law on the Prevention and Control of Water Pollution of the People's Republic of China ("Prevention and Control of Water Pollution"), and attaches equal importance to the prevention and control of water pollution and the recycling and reuse of water resources, to provide maximum protection for water resources.

We strengthened the standardized construction and management of wastewater outfalls and carried out a comprehensive inspection of our wastewater outfalls. Wastewater arising from our production activities is managed and controlled using a graded approach. We implemented wastewater pre-treatment and in-depth treatment measures for a smoother and more stable operation of our wastewater treatment facilities and to enhance our pollutant removal efficiency, to ensure an overall stable discharge of pollutants in accordance with relevant requirements. We also strengthened the control of wastewater sources, increased wastewater recycling rates, optimized the operation and daily management of wastewater treatment facilities, and ensured the attainment of wastewater prevention and control objectives.

	2021	2022	2023
Chemical oxygen demand (COD) emissions (10,000 tons)	0.53	0.50	0.49

Prevention and Control of Soil and Groundwater Pollution

Our Company fully adhered to the 14th Five-Year Plan for the Environmental Protection of Soil, Groundwater and the Ecological Environment of Rural Villages, the Implementation Plan for the Prevention and Control of Groundwater Pollution, and other requirements, and strived to strengthen our prevention and control measures in relation to soil and groundwater pollution. We continued to strengthen our capability to prevent pollution at source and to manage, control and remediate risks. We carried out investigations and assessments on groundwater quality, conducted environmental monitoring, and established a management system for groundwater pollution prevention and treatment, to minimize or eliminate the impact of our production and operation activities on water resources. We also launched projects in relation to the management and control of soil pollution sources, and urged key units responsible for soil pollution regulation to fulfill their hazard inspection and self-monitoring obligations, to accelerate the progress of soil pollution treatment at closed and relocated sites. In 2023, a total of 16 major national projects in relation to the management and control of soil pollution sources were promoted and implemented by our Company.

Solid Waste Disposal

Our Company attaches great importance to the compliance management of solid waste, especially hazardous waste, thus has comprehensively carried out the standardized management and control of the entire solid waste management process from waste generation, collection, storage, transportation, utilization to its disposal, and put our full efforts to reduce solid waste and turn it into non-hazardous resources. In 2023, our Company conducted a standardized monitoring and sampling inspection of the on-site management, asset ledger records, and information and statistics of solid waste by our enterprises. A special audit regarding the disposal of oily sludge was also carried out. As a result, we continued to consolidate the effectiveness of our hazardous waste treatment process and continued to improve the level of our solid waste management.

Solid Waste Disposal

General solid waste

3.555 million tons

Compliance rate of general solid waste disposal

100%

Hazardous waste

1.30 million tons

Compliance rate of hazardous waste disposal

100%

Note: The above data reflects the amount of solid waste disposed of by third-party institutions with relevant qualifications commissioned by the Company

Our Objective

Solid waste disposal compliance rate: **100%**

Disposal of Solid Waste in Compliance with Laws and Regulations

Key measures

- Our Company uses clean production technology and has greatly reduced the generation of solid waste, especially hazardous waste, by reducing the use of oil-based mud through layered drilling, applying technologies to dispose mud while drilling and remove oil down-hole, and carrying out above-ground "box-like" well repair operations and other clean production measures
- Our Company has built more facilities to comprehensively utilize and dispose of oil-bearing waste and other solid waste, and engaged third-party institutions to dispose of and utilize solid waste in accordance with relevant standards, to ensure the compliance of the whole process of solid waste disposal and utilization with laws and regulations
- Our Company has established a unified whole-process management and control platform for solid waste, thereby enabling the precise whole-process management and monitoring of general industrial solid waste and hazardous waste

PROTECTION OF THE ECOLOGICAL ENVIRONMENT

We actively respond to global initiatives and international conventions such as the 2030 Agenda for Sustainable Development and the Convention on Biological Diversity issued by the United Nations, and the Opinions on Further Strengthening Biodiversity Protection issued by the Chinese government, and have firmly established a concept of ecological civilization that respects nature, conforms to nature, and protects nature. We have integrated the concept of biodiversity conservation into the entire process of our business operations and actively participated in global biodiversity conservation. The Company protects wetlands, rainforests, oceans, deserts (including the Gobi Desert), and other natural ecological environments and endangered wild animals and plants, with the aim to increase the diversity, stability and sustainability of ecosystems, and help achieve the goal of “protecting, restoring and sustainably utilizing ecosystems and curbing biodiversity loss”.

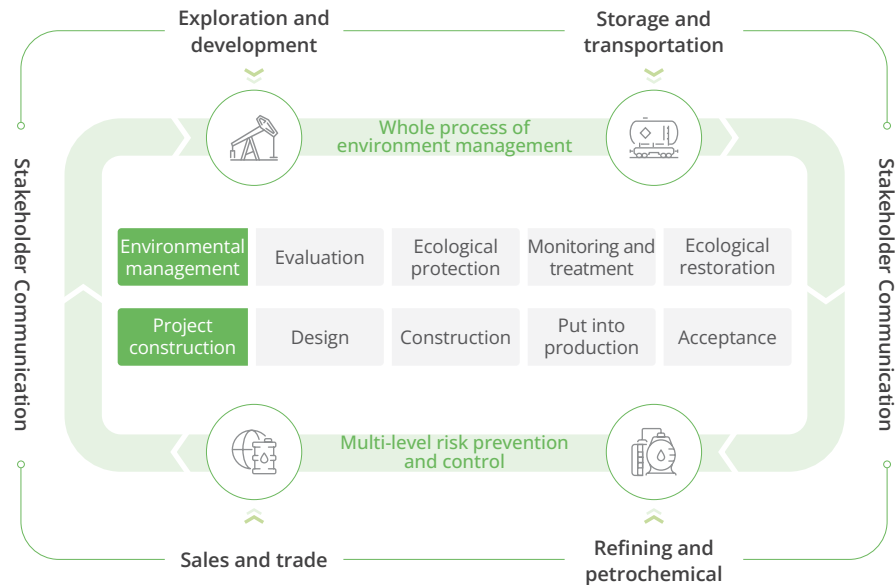
Our Commitments

We shall strictly abide by the relevant laws and regulations of China and other countries where our operations are located, and not conduct oil and gas development business in environmentally sensitive areas and natural ecological protection zones prohibited by law.


Whole-industry-chain Ecological Environment Management

Our Company is committed to reducing and eliminating the potential impacts caused by our production and operation to the ecological environment and biodiversity, insists on managing and controlling pollution at the source, and implements a whole-industry-chain and whole-life-cycle ecological environment management system.

Whole-process Eco-environmental Management of Whole Industry Chain



Ecological Environment Protection Throughout the Project Cycle

During the project design and planning stages	During the project construction stage	During the project operation stage	When a project is completed
<p>We create a strict access list for projects in accordance with the laws and regulations, carry out investigations on the types of wildlife and plants and the ecological environment, conduct environmental impact assessments, and propose targeted protection measures to avoid disturbance to wildlife as much as possible, require facilities and access routes to bypass natural, vulnerable, and important wildlife habitats, to prevent ecological damage at source</p>	<p>We make adjustments to our site and route selection or optimize project plans to avoid ecologically sensitive areas; we coordinate construction works to avoid sensitive times, such as breeding, wintering, and migration seasons and special protection periods for vulnerable species; upon project completion, we carry out ecological restoration in areas where ground vegetation has been destroyed</p>	<p>We adopt a wide range of environmental technologies, implement a multi-level risk prevention and control system, and take various measures to limit our disturbance to natural ecology in order to minimize our impact on biodiversity</p> 	<p>We carry out greening, ecological restoration and improvement work based on local ecological characteristics, prioritize the use of topsoil and species native to the area over invasive species to prevent ecological harm, and create plant communities that are compatible with the surrounding ecological environment to gradually restore impacted areas, ultimately forming self-sustainable ecosystems; we also carry out biodiversity offsetting activities in receptor sites</p>

Ecological Protection in Key Areas

The Company remains committed to protecting, restoring, and utilizing the ecosystem in a sustainable manner. We strictly abide by the red line of ecological protection, put in more efforts to adopt ecological protection and restoration measures, and continue to construct environmentally friendly mines.

The Company fully implemented the Yellow River Protection Law of the People's Republic of China, the Yangtze River Protection Law of the People's Republic of China, and the New Requirements for the Yangtze River and Yellow River Rectification Operation, strengthened the Enhanced Measures and Plans for Ecological Protection in the Yellow River Basin and the Yangtze River Economic Belt, focused on carrying out a three-year plan under the Action Plan for Strengthening Ecological Environmental Protection in the Yellow River Basin and issued the Notice on Further Implementing Requirements under the Action Plan for Ecological Environmental Protection in the Yellow River Basin and the Yangtze River Economic Belt. We also carried out further plans to investigate and rectify ecological environmental risks in key watersheds, and incorporated all new rectification measures into our management of pollution prevention and control projects in key watersheds, to effectively safeguard the environmental security of the Yellow River and the Yangtze River. In 2023, the Company completed a total of 111 pollution prevention and control projects in the Yellow River Basin and the Yangtze River Economic Belt.

In accordance with the latest national zoning of ecological conservation red line areas, our Company instructed its enterprises to carry out a massive inspection of production facilities that fall within ecological red lines. All enterprises located within the latest ecological red line zones ought to create an asset ledger based on the principle of "identifying zonings and classifications and gradually phase out businesses" and formulate exit plans to withdraw non-permitted businesses from the ecological conservation areas in an orderly manner.

We carried out environmentally friendly mine construction activities and released the Standard for Oil and Gas Field Enterprises to Construct Environmentally Friendly Mines. In 2023, a total of 252 oil and gas field enterprises or units were accepted as environmentally friendly mines at the national and provincial levels.



Protected egret habitat at Guangxi Petrochemical



Our Company has fully implemented non-polluting and clean drilling technology in 100% of our oil and gas exploration and production procedures, allowing us to effectively protect land resources.

Land Resource Management and Ecological Restoration

Attaching great importance to land resource protection, we formulated the Company's Measures for Land Management to implement the most stringent arable land protection system and land conservation system of China, and we endeavor to foster harmony and unity among the use of oil and gas resources, land resources, and environmental resources. We clarified the requirements for the sustainable use of land resources in terms of planning, development control, revitalization of existing land resources, structure optimization, land restoration and land withdrawal. We strive to guarantee the healthy and sustainable development of land used in our operations, with the aim to consume less land and to optimize our land structure.

Progress of Sustainable Use of Land Resources in 2023

Using land in an economical and intensive manner

- Applied technologies to construct cluster wells, horizontal wells, integrated stations and multi-layer oil fields, optimized our engineering designs, and used our newly-acquired land in an economical manner
- Made good use of land with low land use efficiency to build new energy projects, drilled new wells in abandoned well sites to revitalize existing land

Newly-acquired construction land used in an economical manner amounted to approximately

1,400 hectares

Temporary land used in an economical manner amounted to approximately

2,700 hectares



Returning unused or inefficient construction land

- Returned unused or scarcely-used land to the local government

Withdrew from approximately

77 hectares

of construction land throughout the year

Restoring land

- Actively restored unused construction land into arable land by ourselves and by commissioning third parties to strictly fulfill the obligation of restoring temporary land

Restored approximately

60 hectares

of construction land

Restored approximately

8,200 hectares

of temporary land throughout the year

Biodiversity Conservation

We have incorporated biodiversity protection into our Company's management system. Adhering to our principle of promoting the integrated protection and systematic management of mountains, rivers, forests, farmlands, lakes, grasslands, and deserts, we have adopted natural restoration measures or environmental-friendly restoration processes, carried out environmental protection activities in key watersheds such as the Yangtze River and Yellow River areas, created biosphere reserves and environmentally-friendly mines, and implemented a variety of biodiversity protection measures. Relying on nature-based solutions (NbS(s)), we have explored the development potential and direction of charitable tree planting, carbon sequestration forest building, ecosystem restoration and biodiversity conservation, as well as the establishment of biomass energy operations and ecological corridors. Aside from encouraging employees to actively participate in biodiversity conservation activities, we have also actively mobilized communities, the public, business partners and other stakeholders in our operation locations to collaborate with each other in contributing to biodiversity protection.

Key Measures and Actions Adopted to Protect Biodiversity

Measures	Major actions
<p>Incorporating biodiversity into our Company's management system</p>	<ul style="list-style-type: none"> • Formulated and issued the Ecological Protection Action Plan, the 14th Five-Year Plan for Green Development, the Ecological Ban, the Opinions on the Construction of PetroChina's Voluntarily Contributing Biosphere Reserves, and other regulations and management systems • Continuously improved our biodiversity protection system and incorporated biodiversity risk assessments into the whole-life-cycle management of our projects
<p>Carrying out a variety of biodiversity protection practices</p>	<ul style="list-style-type: none"> • Exploring nature-based solutions (NbS(s)), we built Other Effective Area-based Conservation Measures (OECMs). For more information, please refer to the case study titled "Building Voluntarily Contributing Biosphere Reserves" • Every year, we organize tree planting and afforestation activities to create multi-layered and mixed natural forests of different ages that align with biodiversity conservation goals. In 2023, a total of 808,000 people participated in different forms of voluntary tree planting activities, planting a total of 7.8414 million trees. We planted 1,190 hectares of carbon sequestration forests and carbon neutral forests in total in Daqing Oil Field, Changqing Oil Field, and Xinjiang Oil Field • Built a desert botanic garden to cultivate and grow diverse desert plants. For more information, please refer to the case study titled "Creating a Desert Botanic Garden" • Protected water and soil resources, restored vegetation, and strived to restore the ecological environment of areas where our operations are located • Carried out actions to protection biodiversity such as valuable and old trees and wildlife habitats
<p>Promoting the awareness of biodiversity protection</p>	<ul style="list-style-type: none"> • Encouraged staff to participate in educational events such as "World Wildlife Day" and "World Environment Day" to enhance their awareness towards biodiversity conservation • Organized activities for collecting excellent cases of biodiversity conservation to promote and share knowledge on biodiversity conservation

CASE STUDY

Building Voluntarily Contributing Biosphere Reserves

In April 2023, our Company issued the Opinions on the Construction of PetroChina's Voluntarily Contributing Biosphere Reserves, which designated the construction of voluntarily contributing biosphere reserves as an important task to increase our biodiversity conservation level. We are required to establish a sound system with rules and regulations for biodiversity conservation and management, set up a special fund for such purpose, and actively carry out special research on biodiversity conservation.

On 15 August, the first National Ecology Day, PetroChina's first three voluntarily contributing biosphere reserves were unveiled and inaugurated in Guowu Lake and Laohu Mountain at Daqing Oil Field, as well as Arshandong Lake Wetland at North China Oil Field. The total area of the Guowu Lake Reserve at Daqing Oil Field is 1.98 million square meters, while that of the Laohu Mountain is approximately 2.17 million square meters. The reserves are now home to many nationally-protected animal and plant species, and dozens of provincially-protected birds, thus creating a good foundation for biodiversity. The Arshandong Lake Wetland Reserve at North China Oil Field has a total area of approximately 15,000 square meters and is the habitat and breeding ground for many types of aquatic birds, making it an area with high ecological value.

Before the establishment of the reserves, our subsidiaries at Daqing Oil Field and North China Oil Field had actively collaborated with relevant universities or scientific research institutes to survey the natural environment and the flora and fauna in the areas. Conservation plans and management systems were then formulated, and a conservation team was established. Upon the establishment of the reserves, our two subsidiaries continued to strengthen their ecological monitoring, improve ecological environments, and actively explore a new synergistic management model in which oil and gas production and ecological conservation are intertwined, mutually reinforcing and mutually beneficial.

Pursuant to our 14th Five-Year Plan for Green Development, PetroChina shall create 10 voluntarily contributing biosphere reserves by 2025. It shall also constantly enhance and improve the stability and sustainability of the ecological structure and functions of these voluntarily contributing biosphere reserves. The first three reserves constructed received great attention from the China Office of the International Union for Conservation of Nature (IUCN), which expected that the reserves will "serve as role models in China, and also provide Chinese wisdom and Chinese solutions to the global development of OECMs".



Guowu Lake and Wetland, Daqing Oil Field

CASE STUDY

Creating a Desert Botanic Garden

Located in Tazhong Oil Field in the Taklamakan Desert hinterlands, Tazhong Desert Botanic Garden is the first botanic garden established in a large shifting sand desert in the world. As one of the key technology development projects implemented to build a green shelter belt along the Taklamakan Desert Highway to fight against desertification, the Tazhong Botanic Garden has a great and far-reaching social significance.

The construction of the over 400-kilometer-long shelter belt along Taklamakan Desert Highway commenced in 2002. To select suitable plants and supply germplasm resources for the construction of the shelter belt, and at the same time, construct a research base for studying off-site conservation strategies and diversity, our subsidiary at Tazhong Oil Field collaborated with the Xinjiang Institute of Ecology and Geography (XIEG) of the Chinese Academy of Sciences to build a Tazhong Desert Botanic Garden in the middle of the Taklamakan Desert.

Spanning an area of 100 mu, the Botanic Garden is divided into the saline plant zone, the calligonum zone, the tamarisk zone, the desert plant zone, and the economically important desert plant zone. Over the years, more than 400 plant species from provinces and regions such as Xinjiang, Ningxia, Gansu, Qinghai, and Africa have been introduced into the region by researchers, and at present, more than 200 species of desert plants have been preserved. Many plant species selected for breeding have been subsequently transported to various operating areas of the Tarim Oil Field and used for the shelter belt. These plant species were also successfully used for the anti-desertification programs along the Southern Xinjiang Railway.

The construction of the Tazhong Desert Botanic Garden greatly enhanced the scientific value and biodiversity of the shelter belt project, and ensured the sustainability and long-term stability of our business base at Tazhong Oil Field and the ecological system of the Taklamakan Desert Highway shelter belt.



Coverage of the Tazhong Desert Botanic Garden



Plants introduced by researchers



Tazhong Desert Botanic Garden

EMPLOYEE RIGHTS AND DEVELOPMENT

Employees are our most valuable assets. Promoting the all-round development of employees is one of our primary objectives. We protect employees' rights and interests, place great emphasis on their physical, mental health and safety, and provide a platform for their career development. We continue to promote localization of employees, create a diverse, inclusive, equal, mutually trusting, and collaborative working environment, and align employee values with our own.

The UN Sustainable Development Goals





RIGHTS PROTECTION AND EMPLOYEE DEVELOPMENT



Percentage of employees who took maternity/paternity leave returned to work and kept their posts in 2023

100%



In 2023, the Company recorded no cases of non-compliance regarding employment that had a significant impact on its business.

EMPLOYEE RIGHTS

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

Safeguarding Employee Human Rights >>

We conscientiously abide by international conventions, 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, the labor Contract Law of the People's Republic of China, and the Trade Union Law of the People's Republic of China, relevant laws, rules and regulations of the host countries, and support the Human Rights Action Plan of China (2021-2025). We have formulated and implemented regulations such as the Measures for the Management of Employment Contracts and the Measures for the Management of Overseas Business Employment and established an employment management system to regulate employment practices according to the law. The system covers all employees and its content includes labor contract management, remuneration insurance and benefits, leave, performance appraisal and vocational training. We inspect and examine our employment compliance on a regular basis, to regulate the process of recruitment, promotion and the termination of employee contracts, safeguarding the human rights of our employees.

We strictly abide by the Forced Labor Convention 1930, the Abolition of Forced Labor Convention 1957, the Minimum Age Convention, and the Worst Forms of Child Labor Convention promulgated by the International Labor Organization, and the Law on the Protection of Minors and the Provisions on the Prohibition of Child Labor promulgated by the State and similar legal requirements of countries and regions where we operate our overseas businesses. We prohibit the employment of child labor and reject all forms of forced or compulsory labor. The Company has established an employment examination and supervision mechanism under which the recruitment of new employees, the daily management of human resources, supplier/contractor access and other processes are verified to prevent and control related risks. The Company has never used any child labor or forced labor.



The Company protects and safeguards the rights of all employees in a practical manner

Improving Remuneration and Benefits >>

The Company deeply understands the needs and expectations of its employees. We have formulated a remuneration and benefits policy that aligns with our employees' actual needs, established a scientific performance review system, and consistently ensured that the distribution of remuneration and benefits is fair and just, in order to motivate employees to work enthusiastically and creatively.

We constantly improve our market-oriented remuneration and distribution mechanism. We ensure that our pay raises align with the labor market and are linked to the economic efficiency and labor productivity of our enterprises. We have established a wage determination mechanism that takes into consideration and operates based on wage efficiency, efficiency benchmarking and salary reviews, and perfected our core talent recruitment policy and other supportive policies to enhance innovation and talent protection. We have also optimized our remuneration structure, improved our internal distribution system, and continued to give further priority of distribution to grassroots frontline personnel, personnel working in key challenging positions, and professional and technical personnel. We have provided specific incentives to key employee groups, and continuously increased incentives for high-end operation and management personnel, core technology R&D personnel, and high-skilled leaders. We actively fulfil the relevant requirements of the Social Insurance Law of the People's Republic of China, fully pay our employees' various social insurance fees in a timely manner, improve enterprise annuities and supplementary medical insurance system, improve the production and living conditions of our frontline staff, in order to safeguard the immediate interests of our employees.



Employee Communication and Engagement >>

The Company fully respects our employee's democratic rights and lawful interests. We attach great importance to the role of employees in democratic management, democratic participation, and democratic oversight. Apart from establishing and improving labor unions, we have put in place a democratic style of management and a transparent system to deal with matters at our plants through the Employees' Congress system, to protect employees' rights to information, participation, expression, and supervision. We have further standardized the content, procedures, and model of our open system for matters at our plants by clarifying the duties and authorities, organizational system, and working processes for the Employees' Congress.

The Company has established multiple channels to communicate with employees and 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, in order to encourage employees to participate in the management of production and operations.

EMPLOYEE DEVELOPMENT

We address our employees' need for career development at different stages, paying close attention to their career planning. We continuously improve the system and mechanism for talent cultivation, and optimize the environment for talent cultivation, attach great importance to the construction of a resource system for talent cultivation and provide a big platform for employees to develop their personal potential.

Strengthening the Company Through Talent >>

Talent is the most important resource for the Company's development. We vigorously implement strategic measures to strengthen the enterprise through talents, and focus on the nurturing, introduction, and utilization of talents, stimulate the Company's creativity and vitality, and enhance the overall value of talents.

In 2023, we fully launched activities related to our "Year of Strengthening the Company Through Talent" project. We formulated opinions on talent development during our 14th Five-Year Plan, and also developed ideas and measures for the Company to build a strategic talent force. We conducted assessments and established detailed assessment criteria related to the Strengthening the Company Through Talent Project, formulated our annual Implementation Plan and Operation Schedule, and implemented key tasks under the project in detail. We also carried out 36 key initiatives, such as organizing special training programs for nurturing sales and marketing talents, and young talents in science and technology. As a result, we have built a strong and large team of talents for our key business areas, thus making steady progress in our Strengthening the Company Through Talent Project.



Employee Training >>

Adhering to modern enterprise training concepts, the Company has sought to tap the potential of our human resources through the combination of "Internet + Training" approaches, based on our objectives of "setting up standards, establishing a system, and creating values". We continued to develop training methods to carry out diversified and differentiated vocational trainings for employees to constantly improve the overall quality and professional skills of our employees, in order to drive both employee and business growth through positive correlations. A total of RMB 2.84 billion was invested in more than 53,000 training programs during the Year, providing 2.592 million participation instances and achieving a 100% employee training rate, which are record-high numbers, thus fully satisfying the needs for employee development.

In 2023, the Company organized a variety of training programs based on the different development needs of our employees

Employee Training

Total training time

22.23

million hours

Average training time per person

59 hours

Employee trained coverage

100%

Training projects implemented throughout the year

53,000⁺

Training for business managers

- Focused on nurturing high-quality and professional management talents, established a standardized system for management positions, formulated the Trial Management Measures for the standardized Certification of Managerial Positions, and further standardized our working procedures and improved our management system
- Provided job-title specific training for our chief technical officer, chief accountant, chief legal advisor, safety director, and full-time and part-time directors and supervisors etc. to improve their job performance
- Organized training courses for managers to improve their sales and marketing abilities

Training for professional technicians

- Implemented the International Thousand Talents Plan, established an exchange platform for international talents and a system for experts to exchange learning experiences, and sent selected technical personnel to study and train at foreign enterprises, colleges and scientific research organizations
- Nurtured leaders in exploring and developing new energy technologies, organized customized key training programs for technological leaders and middle-level technical personnel to improve their professional skills and dedicated capacity for engineering technology, arranged for middle and high-level experts to visit Tsinghua University and other colleges and conduct research and exchange technical knowledge
- Provided further training to nurture talents in relation to our carbon peak and carbon neutrality goals and our new energy, new materials and new businesses, tentatively established a CCUS business training system, organized our first demonstration class related to CCUS technical training, and organized specialized training programs in relation to new energy and new materials, including clean thermal power development and utilization, carbon dioxide flooding and carbon dioxide sequestration technologies, and ethylene engineering

Training for operators

- Focused on updating knowledge and enhancing skills, we organized training courses to enhance various types of working skills
- Comprehensively enhanced the technical skills of highly-skilled talents and frontline team leaders by means of cooperative training, project collaboration, and team building

Young employee training

- Accelerated the nurturing of young talents majoring in petroleum and petrochemical engineering, accelerated the creation of talent reserves in relation to new energies, digitalization, artificial intelligence, big data, and other emerging industries, and collaborated with Peking University, Zhejiang University, the University of Science and Technology of China, the China University of Petroleum-Beijing, the China University of Geosciences (Wuhan), and other colleges to establish a system for enterprises and schools to jointly nurture full-time working engineering doctorates
- Accelerated the growth and development of new employees, conducted research and formulated a three-year competency model for identifying the specific competencies required by new employees in their roles, assessed new employees' competency based on their positions, provided centralized training courses to new employees, and helped new employees define their career plans and development path

CASE STUDY

Nurturing talents with green skills and striving for a fair and people-focused transition

In the process of green and low-carbon transformation, the Company actively attracts external outstanding talents, and at the same time strongly emphasize training for current employees on new energy businesses. In doing so, the Company embarks on the path of green and low carbon development together with the talents in green technology that we nurture and develop, in an effort to achieve a fair and people-focused transition.

With the help of the College of Artificial Intelligence at the China University of Petroleum-Beijing and other faculties, we have established a customized training program, under which we select outstanding talents for further study at colleges and enterprises. We also reassigned key professional employees engaging in the exploration and development of resources to new roles related to wind, electricity, PV, hydrogen and AI, trained a batch of technical talents for key positions in electricity power, hydrogen and other clean alternative energy sources, and accelerated the nurturing of a number of high-level talents that can adapt to the energy transition needs of enterprises.

Unimpeded Career Development Paths >>

We attach great importance to the career planning of employees and endeavor to expand their career paths to help them realize their self-worth. We have developed a selection process that is democratic, open, competitive and merit-based. We have also established and improved the talent development mechanism in order to create a positive atmosphere that enables the recognition and best use of talent.

In 2023, the Company focused on building strategic scientific and technological strengths, implemented key Special Projects, and continuously cultivated key talent teams such as leaders in science and technology, a scientific and technological innovation team, young talents in science and technology, and a team of outstanding engineers. We also implemented a thorough reform of the Seniority System for Professional and Technical Positions, provided guidance to 109 affiliated enterprises to formulate an action plan for implementing such reform, and organized conferences for people in professional and technical positions in oil and gas fields, refineries, sales, and other industries to exchange ideas and experiences on carrying out the reform. Moreover, we signed 98 agreements with other enterprises to create a platform for facilitating mutual learning and growth, broadened the development pathway for science and technical talents, to ensure that a smoother nine-level career path is accessible in the Company, ranging from technicians to the chief expert.

As of the end of 2023, the Company has

15

Academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering

6

newly nominated national experts

197

Senior Experts

95

Skilled Expert Studios, including

209

experts entitled to the Special Government Allowance

16

newly appointed corporate chief experts

6

newly nominated corporate senior experts

26

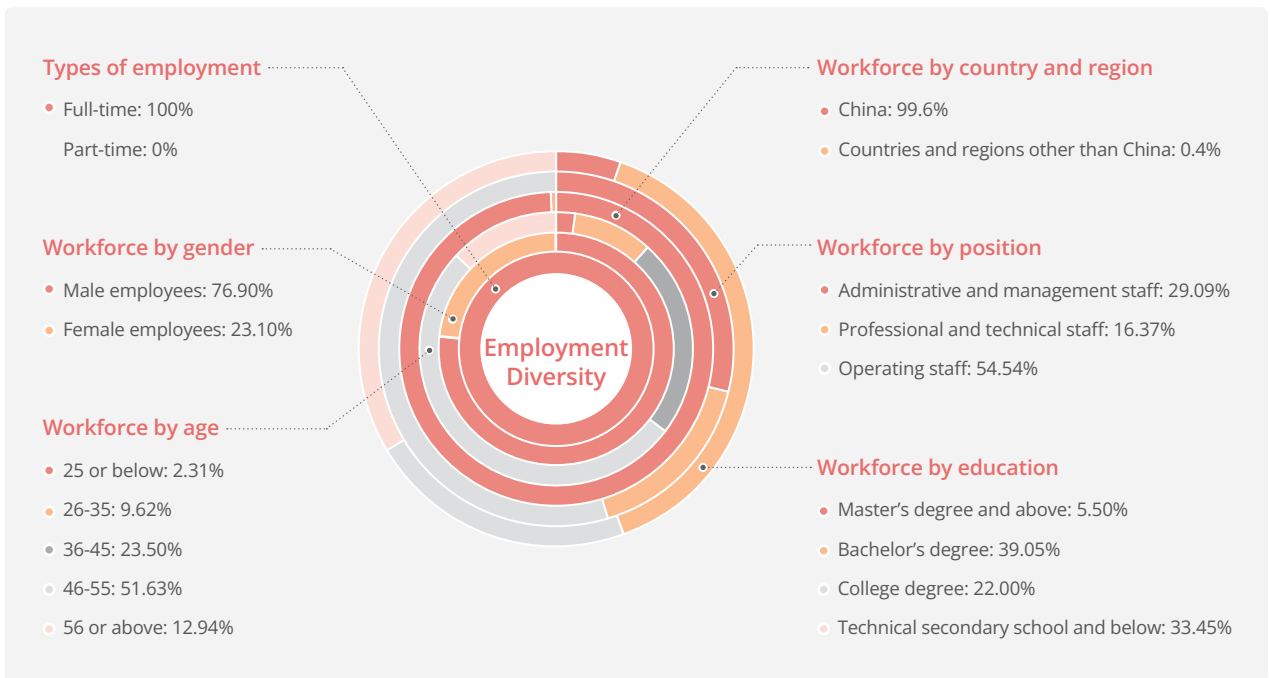
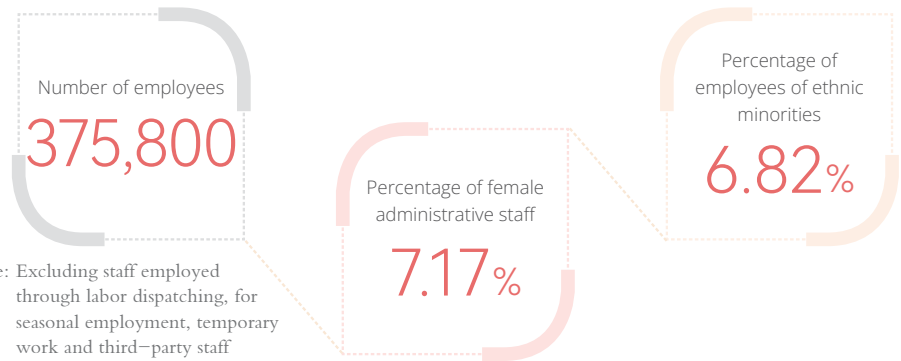
National Skilled Expert Studios

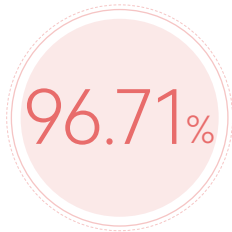
DIVERSITY, EQUALITY, AND INCLUSIVENESS

The Company advocates a corporate culture of diversity, equality, and inclusiveness, and ensures that every employee receives fair and just treatment regardless of nationality, ethnicity, gender, religion, or cultural background in all aspects of recruitment, training, and career development, in order to create a harmonious development environment for the growth of our employees.

Equal Employment

The Company upholds an equal and non-discriminatory employment policy and provides the right to equal development to every employee. We emphasize and advocate better employment opportunities in areas with ethnic minorities and less economically developed areas by actively creating job positions. Moreover, we pay attention to and actively safeguard women’s rights by strictly implementing maternity leave provisions relating to pregnancy, childbirth, and breastfeeding, thus ensuring that our female employees can enjoy equal pay and benefits, as well as equal opportunities for career development.





Percentage of
foreign employees in
overseas projects

Local Hiring in Overseas Operations

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 comply with all relevant laws and regulations of countries where our operations are located. We have established an optimal system for recruitment, deployment, performance appraisal, incentives and penalties. We strive to attract and train local talents and to provide them with a working environment conducive to their growth.

We actively recruit and train local employees and do not discriminate against outstanding local candidates, providing local people with job opportunities. Professionals employed in our overseas projects involve multiple disciplines, such as environmental protection, ESG management, exploration and development, refining and chemicals, pipeline operation, international trade, finance, accounting, and human resources management. With continuous efforts, the Company has gradually established localized, regionalized and internationalized career development channels.

CASE STUDY

Nurturing local talents in project locations to achieve sustainable development

At our Rumaila project in Iraq, PetroChina attaches great importance to the nurturing of local Iraqi talents. Training objectives are therefore incorporated into our annual KPI assessment. Every year, we utilize our special funds to upgrade education and training facilities and launch an Outstanding Talent Scholarship Program to provide customized, multi-level and multi-field professional training to employees in Iraq on a continuous basis. At present, we have provided more than 2.60 million hours of professional training to the local employees. Many of them have become oil field managers and senior technical personnel. To help impoverished but outstanding Iraqi students to finish their studies, the Company has set up an education fund, under which a total of USD15 million has been awarded. Thanks to the continuous training offered by our Rumaila subsidiary to its local employees, the percentage of local employment at Rumaila Oil Field is one of the highest among oil fields of similar types.

Besides providing systematic training to local employees, the Company also collaborated with local schools to provide training to students. We collaborated extensively with the Mayssan Oil Training Institute (a branch of Basrah Oil Training Institute) to nurture young Iraqi students. To improve tertiary education rates, the Company provides international education opportunities and scholarships for local teenagers. Currently, 6 students have obtained a PhD degree, 27 students have obtained a Master's degree, and 24 students have obtained a Bachelor's degree. Moreover, we also helped the Iraqi Ministry of Oil to establish an integrated training center, which provides professional training in language, engineering and health and safety to the Ministry's employees.



Promoting Cultural Integration

We fully respect the cultural diversity of different nations and peoples as well as local customs. We create an environment of multicultural integration, and promote communication and exchanges between employees with different cultural backgrounds and respect for different values and traditions, in order to foster collaboration in a culturally diverse workplace.

CASE STUDY

Building friendships through cultural exchanges

Over the years, PetroChina's United Arab Emirates (UAE) Project has recognized the importance of strengthening corporate culture building, mutual understanding and friendly relations through facilitating exchanges between different cultures. On Chinese New Year, Mid-Autumn Festival, and the PRC National Day, our project company would jointly organize a series of social activities with local employees and business partners to celebrate the traditional Chinese festivals to share the experience of traditional Chinese culture together. Meanwhile, we also respect the local culture. On Eid al-Adha, Eid al-Fitr, the UAE Flag Day, and the UAE National Day, we would host and organize a series of celebrations and social events to integrate into the local culture, bring Chinese and local employees closer together, and build a stronger relationship with the local enterprises.



Health and safety of our workers is the top priority of the Company. We have established a health and safety management system that covers all employees of the Company and enterprises within our supply chain. We attach great importance to production safety, and continue to improve labor conditions, as well as the physical and mental well-being of our employees, in order to ensure the continuous enhancement of corporate health and safety management.

Improving HSE Management

Our Company pursues the goal of “zero accident, zero pollution, zero harm” and always regards HSE as a precondition for successful business development. We implemented a uniform HSE management system across our global operations and have established a globally integrated HSE working platform and risk control platform, to continuously strengthen supervision and safety training, in order to enhance our HSE management performance.

The Company attaches great importance to the establishment of a HSE management system. We lead China's petroleum industry in publishing and implementing an HSE management system standard specific to China's petroleum industry (Q/SY08002.1), which fully covers all the requirements of the Environmental Management System (ISO14001) and Occupational Health and Safety Management System (ISO45001) in all technical aspects. All subsidiaries of the Company have implemented the HSE management system based on Q/SY08002.1. Based on the principle of “integration, specialization, differentiation”, the Company conducts a comprehensive audit under the HSE management system on

HSE Management System Accreditation

Number of subsidiaries certified by HSE Management System (Q/SY08002.1)

109

its subsidiaries every year. In 2023, the HSE system auditing results verified that our employees fulfilled their duties and our operating procedures aligned to standards. To promote reform using audit results, we improved the audit tracking and coordination processes, with an aim to achieve full audit coverage by ensuring strict supervision and taking a zero-tolerance approach and a high-handed stance, thereby improving and enhancing HSE performance.

The Company advances the standardization of the HSE management system at grassroots positions. To this end, we continue to organize and implement the “Hundred-Thousand Demonstration Project” at grassroots positions to lead and demonstrate by example. We have formulated and published the Guidelines on Standardizing and Improving the Preparation and Application of the “Two Lists” at Grassroots Positions, and directed our subsidiaries to organize and improve their HSE responsibility list and HSE risk list for grassroots positions, as well as provide enhanced and customized training and to effectively implement and utilize the two lists. We have continuously improved the implementation of safety and environmental measures at different positions, and enhanced our ability to prevent and control risks precisely.

CASE STUDY**A hero born out of safety culture**

In 2023, Esker Hesen was given the first “Touching PetroChina Award” for his courageous rescue of a drowning child at a moment of crisis. Staying calm in the face of danger, Esker utilized first aid knowledge and skills that he acquired from our workplace safety training to perform CPR on a drowning child non-stop for 17 minutes, which ultimately saved the child from the verge of death.

In addition to his own courage and ability to stay calm, knowledge that he accumulated from PetroChina’s culture of safety production and the adequate training that we had provided on a regular basis also played an important role in Esker Hesen’s heroic rescue.

PetroChina has always placed great importance to safety management, for we believe that “all accidents can be prevented and avoided” with safety production principles. Hence, we have extensively organized activities such as safety production seminars, centralized lectures, and educational trainings, to effectively enhance employees’ awareness of safety responsibilities and risks and to strengthen their practical skills. At Tarim Oil Field, where Esker Hesen works, all types of work have corresponding training courses and certifications, skill evaluations, and skill competitions. Knowing CPR and other emergency procedures and self-rescue skills is an essential criteria of a worker’s performance review. The Company has carried out rotational training, on-the-job training, and skill competitions for many years, where our employees focused on learning safety and emergency skills by gaining practical experiences, and further enhanced their emergency response skills. We assign mentors and learning partners to employees at grassroots positions to ensure that they can understand, acquire, use, and master the necessary knowledge and skills to rescue themselves and others in emergencies.

Employee Health

The Company strictly complies with the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases and the Law of the People's Republic of China on Basic Medical and Health Care and the Promotion of Health, implementing the Outline of the "Healthy China 2030" Plan and accelerating the creation of a healthy enterprise, in order to provide a safe and healthy working environment to our employees and ensure their physical and mental well-being.

Occupational Health >>

The Company continued to standardize our occupational health management measures, improved the implementation rules in relation to the creation of a healthy enterprise, focused on the prevention and control of occupational hazards, and conscientiously implemented occupational hazard prevention measures such as anti-virus, dust removal and noise reduction procedures. We also enhanced our employees' awareness of occupational health and protected their occupational well-being in all respects.

Occupational Health

Number of subsidiaries certified by the Occupational Health and Safety Management System (ISO45001)

120

Percentage of health records created for employees

100%

Detection rate of occupational health hazards in the workplace

100%

Percentage of employees exposed to occupational health hazards receiving health checks

99.66%

Key Actions Related to Occupational Health in 2023

Occupational health promotion

- Organized the "Occupational Disease Prevention" publicity campaign
- Enhanced occupational health awareness by organizing a competition that called for entries which showcase excellent occupational health awareness
- Held an "Occupational Health Guru" competition where more than a hundred "Occupational Health Gurus" were selected as role models in spreading occupational health awareness

Building a healthy enterprise

- Improved the implementation rules for the establishment of a healthy enterprise according to specialization
- Conducted quality inspections to evaluate enterprises' healthiness, with a total of 40 enterprises and units passing the inspection

Health management of employees

- Strived to compile statistics every week, prepare reports every month, and conduct analyses on a regular basis to improve our management and control of unproductive deaths of employees
- Conducted differentiated health checks, carried out health assessments and disease prevention of high-risk groups, and implemented a more rigorous management of the list of unhealthy practices at special job positions

Health management of overseas employees

- Revised the Management Measures for Health Checks and Assessments for Personnel Going Abroad, and completed health assessments for a total of 23,859 employees going abroad, representing a year-on-year increase of 35%
- Provided more support for overseas employees with sudden illnesses, treated 11 overseas employees through remote emergency medical treatment, and successfully saved 2 employees through cross-border medical transfer
- Commenced the establishment of a "four-in-one" overseas medical protection system that consists of monitoring, early warning, prevention and treatment

CASE STUDY

Improving the health of employees in the Plateau Areas

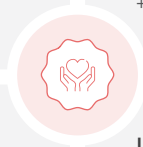
Our main production area at Qinghai Oil Field is located at the Qaidam Basin of the Qinghai-Tibetan Plateau, which has a landscape dominated by mountains, deserts (including the Gobi Desert) and swamps. With an average altitude of 3,000 meters, it is a remote region. Our Company cares about the physical and mental well-being of our frontline workers and set out to improve the physical environment and mental health conditions related to their health, which promoted their well-being and increased their happiness significantly.

Building health centers which are configured for the characteristics of the plateau.

We devoted strong efforts to build health centers at our frontline operation sites, which are equipped with equipment such as health monitors and oxygen therapy devices, in order to help employees prevent and mitigate altitude sickness effectively.

Expanding the scope of our online smart services.

Personal health assessment report viewing, health check, and video medical consultation, and other services have been made accessible on the Company's healthcare station app, thereby creating a new "internet + healthcare" service model.



Launching a personalized outfield "Mobile Health Check" service.

To accommodate the needs of our dispersed outfield workforce, the Company has equipped employees on field duty and construction workers with a personalized "Mobile Health Check Kit" that enables them to monitor their weight, body fat, blood pressure and other vital signs anytime and anywhere. We have also launched "timely health intervention" management measures for employees with abnormal test results, in order to provide extra health protection for our outfield employees.

Improving the first aid skills of frontline workers.

To ensure that our workers are confident in performing standard cardiopulmonary resuscitation (CPR) and using AED and other first aid equipment correctly, our subsidiary at Qinghai Oil Field formulated employee training plans and commissioned professional rescue teams, the Red Cross, and other organizations to provide first aid training courses to our employees. Currently, 2,665 employees at Qinghai Oil Field have obtained an entry-level first aid certification.

Mental Health >>

We pay close attention to our employees' mental health and have incorporated mental health into the overall planning of our establishment as a healthy enterprise. A hotline and a website have been set up for psychological counseling, and various mental health training programs have been carried out, in order to help employees develop a positive and healthy state of mind.

Overseas Mental Health Services in 2023

Service hours of the counselling hotline throughout the year

1,618 hours

Counselling cases

992

Number of mental health assessments for overseas employees

4,682

Key Actions Related to Mental Health in 2023

Mental health service protection system

- Set up a counselling hotline for our Company's employees and their family members
- Continuously improved the service platform of the Employee Assistance Program (EAP), and continuously improved the training of counsellors
- Expanded our team of volunteer counsellors

Mental health knowledge promotion

- Organized various types of lectures and special trainings on mental health knowledge to better educate employees on mental health issues

Mental health services

- Alleviated psychological stress of employees effectively through mental health checkups, seminars, psychological services, and provided counselling and talk therapy services
- Equipped employees with mental health management aids

Mental health management of overseas employees

- Established a comprehensive overseas mental health service system
- Conducted mental health assessments for overseas employees, and documented the mental wellbeing of every employee using cloud storage
- Provided psychological intervention for employees who went through major emergencies, and organized mental health workshops and group counselling sessions

Safety and Security

Safety is one of the major focuses of the Company's management system. The concept of production safety is incorporated in all aspects and processes of our production and operational activities, bringing the safety of employees of our project contractors under management. By continuously improving our safety management system, comprehensively strengthening our management and supervision, and enhancing our security, we ensure the safety and health of all employees.

Strengthening Safety Management >>

The Company actively promotes the building of a longstanding production safety system. In 2023, we revised the Management Measures for Production Safety Accidents, the Management Measures for Safety and Environmental Protection Accidents and Hazards, the Management Measures for Contractor Safety Supervision, and other rules and regulations. We also revised and arranged for our subsidiaries to sign a safety and environmental protection liability statement, formulated a stricter assessment framework related to safety and environmental protection, and strengthened our assessment on safety and environmental protection processes.

In 2023, the Company organized and carried out activities under the “Year of Strengthening Safety Management” campaign, in order to continuously strengthen our safety management

Security Hazard Management

- Maintained our commitment to both hazard prevention and mitigation, and established a long-term hazard management mechanism
- Carried out special investigations and rectifying actions in relation to major incidents and hazards, launched special rectifying actions in relation to hazardous chemicals and urban gas safety, and focused on rectifying production safety in key areas such as well control, oil and gas pipelines, and gas storage facilities
- Established a “weekly scheduling, monthly summary, quarterly advancement” work mechanism, continuously increased efforts in safety hazard management, implemented graded supervision for hazard management projects to ensure that major hazards are investigated and addressed, in order to continuously improve the Company’s safety level

Safety Risk Management

- Fully implemented the dual safety prevention mechanism where we classify safety risks into different categories for control and management and investigate and mitigate hazards, and strived to prevent and resolve major safety risks
- Strengthened efforts in safety risk research and identification, issued timely notice or risk reminders in response to seasonal climate changes and critical periods such as holidays, and supervised the implementation of risk prevention measures
- Continuously strengthened the supervision and inspection of production safety, and carried out safety diagnosis and assessment of key projects

Safety Production Emergency Management

- Maintained the dual principle of prioritizing emergency preparedness and combining emergency preparedness and emergency response, continued to improve our emergency response plans, and enhanced our emergency response capability
- Carried out drills for emergencies such as natural gas pipeline leaks and fires and well blowouts, in order to improve our emergency response capability

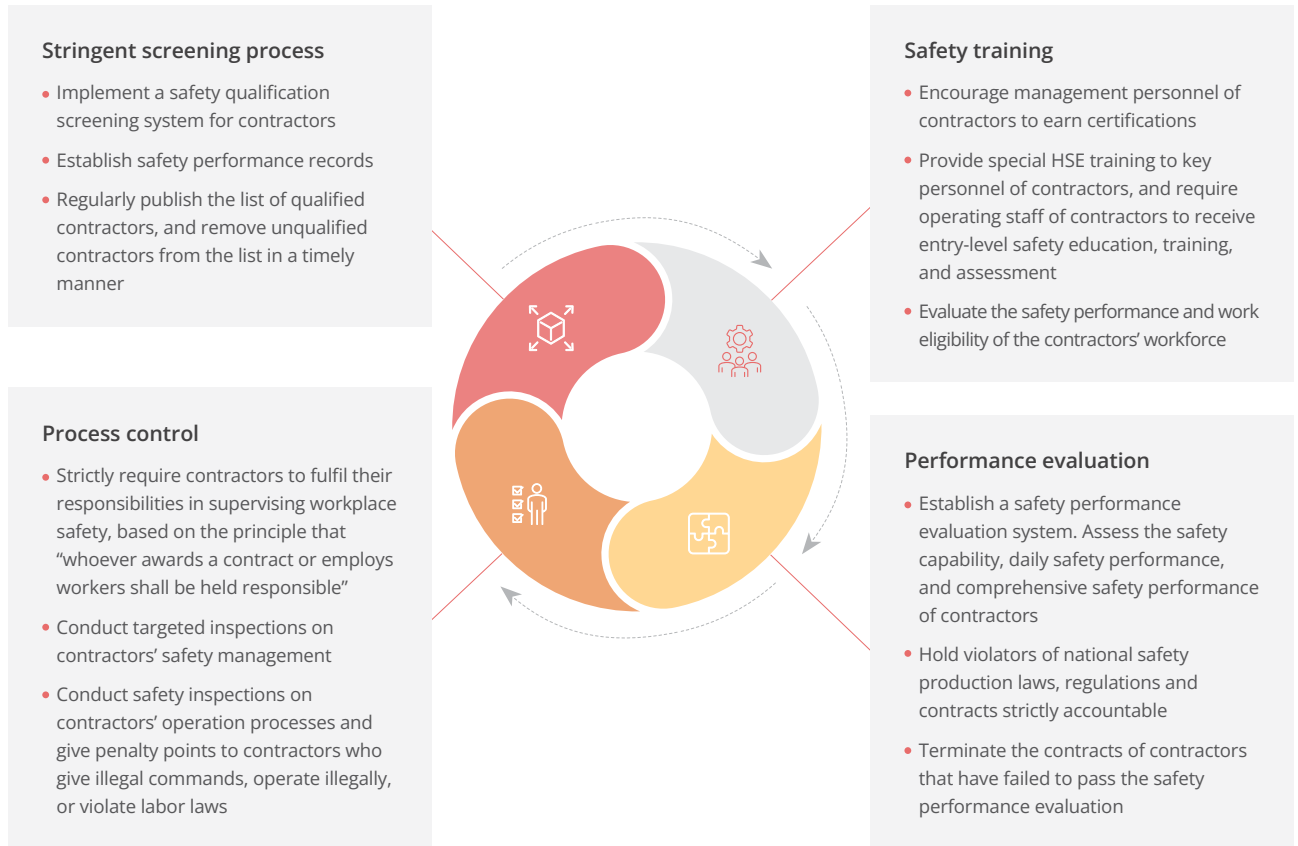
Offshore Oil Safety

- Carried out special rectifying actions in relation to offshore oil safety risks, and strived to establish a long-term mechanism for supervising offshore oil safety levels
- Improved the compliance management of new offshore projects that had been reconstructed and expanded, in order to strictly control the safety risks of offshore oil
- Increased supervision and capability of offshore safety intermediaries, and comprehensively carried out special supervision and inspection of offshore safety levels

Contractor Safety

- Adopted contractor safety management procedures, where we manage the entire process of contractor recruitment, from their admission, selection, training, hiring, rating to evaluation, in an effort to prevent and reduce the occurrence of contractor accidents
- Improved selection of quality contractors, applied a policy of “zero tolerance” in relation to unqualified contractors, provided safety trainings to staff in key positions

PetroChina's contractor safety management process



Enhancing Security Capability >>

We remain committed to a people-first, prevention-oriented, symptoms-and-root-causes-tackling, and safety-safeguarding philosophy and established a comprehensive social security management system to comprehensively enhance our social security risk prevention and control capabilities, continuously improve our emergency response plans, to safeguard employees' lives and ensure a smooth operation of our production business. In 2023, the Company did not have any fatal incidents related to social security throughout the year.

The Company strictly abides by the relevant laws and regulations and safety standards of China and other countries where our overseas projects are located. We have formulated and revised special emergency plans to address security issues, regularly conduct emergency drills, enhanced employees' security awareness through education and trainings, established an information platform for security operations, and established, improved, and promoted the regular operation of a joint meeting mechanism for performing security work. In addition, we have actively established and launched a security management system for our domestic businesses in accordance with the requirements under the Design Guidelines for the Security Management System Framework (Domestic Businesses), and incorporated security risk management and control measures into the production and operation business management and control processes and relevant system regulations organically. Through the continuous improvement of the PDCA cycle, we constantly enhance our risk prevention, control, and management capability. We have also established an overseas security prevention and management system, and constantly enhanced the system by revising the Regulations on the Social Safety Management of International Businesses, and further enhanced our abilities to ensure the safety of employees in overseas projects.

SOCIAL CONTRIBUTION

Rooted within society, PetroChina has a duty to return. Our vital goal is to promote socioeconomic development, so we attach great importance to the well-being of people and social advancement. We enhance local development capabilities and fulfil product social responsibility. We actively participate in activities such as rural revitalization, community building, environmental protection and social welfare. Through our efforts, we strive to build a harmonious society.

The UN Sustainable Development Goals





MAINTAINING POSITIVE COMMUNITY RELATIONS

We actively maintain good relations with the community through responsible operations, by enhancing communication, creating employment, contributing taxes, participating in community welfare, and other actions to protect the rights of community residents and facilitate the improvement of local self-development capabilities.

Project full cycle community relations management



Maintaining good community relations

For our cases in practice, please refer to the sections headed "Rural Revitalization and Social Welfare" and "Overseas Community Construction" on pages 96 and 100 in this Report, respectively.

Enhancing community engagement

- In places where we operate, we have set up environmental protection and community relations coordination agencies and established a variety of forms of communication with local governments, non-governmental organizations and community representatives
- We published corporate information through various channels, continuously enhanced engagement with communities and handled community complaints properly

Community human rights protection

- We strictly complied with international conventions and laws and regulations concerning labor rights, ecological environment, and consumer rights, and maintained our respect for local customs and cultural traditions, thus protecting the basic human rights of community residents
- We developed a framework for forging and maintaining a harmonious relationship with aboriginal communities located in our asset project and site areas, understanding the grievances of local community residents
- We invited surrounding residents and social environmental protection volunteers and professionals to visit our sites, learning about and supervising our environmental protection efforts
- Closely monitor human rights risks of our security contractors

Participating in community building and development

- Based on the local socio-economic development plan and the needs of community residents, we will plan community investment projects in a reasonable manner, supervise the progress and implementation of public welfare projects, regularly evaluate the effectiveness of social welfare projects, and make necessary improvements
- Be a good neighbor to the community, support community capacity-building projects, and invest in public welfare projects related to the environment, hygiene, education, public facilities, and other areas
- Give priority to hiring local talent, provide skills training, arrange for participation in project construction, and increase the income of community residents
- Relying on local social resources, actively support local businesses, emphasize the procurement of products and services from the local area, and strengthen cooperation with local businesses in areas such as technical services, thereby driving and promoting the development of relevant small and medium-sized enterprises





Key Mechanisms and Measures for Enhancing Community Engagement

The Company complies with Free, Prior and Informed Consent (FPIC) principles, establishing various engagement mechanisms with local governments, NGOs and community representatives to conduct active communication and to ensure that the rights of locals are respected.

- Formulate, comply with and implement customized standards and management regulations on maintaining relationships with local communities based on the conditions of the place of our operations
- Establish environmental protection and community relationship coordination agencies and conduct environmental and social impact assessment at various stages on a sustained basis, in order to ensure normalized smooth communication channels
- Convene regular meetings with government officials, local companies and community representatives, communicate and manage relationships with stakeholders and address pressing concerns of local communities
- Hold topical conferences or consultations with local communities in the event of major incidents affecting the community, in order to identify together relevant risks and opportunities to the community and discuss resolutions
- Actively fulfil disclosure obligations, formulate notification procedures for major events and emergencies for timely publication of relevant information to local communities
- Invite local media to report on our activities and publish materials and videos to allow the communities to gain a better understanding of the Company
- Formulate community relations complaint handling mechanism, properly handle complaints from the community, provide timely feedback and protect identity and safety of complainants
- Organize Company open day and actively participate in local social cultural events to build positive and friendly relationships with local communities

Key Measures to Ensure Security Contractors' Protection of Human Rights

- Observe relevant standards and laws of the places of our operations on human rights and controlling violent confrontations, formulate Company's human rights protection policies and management and implementation methods and require compliance and implementation by security contractors
- Conduct due diligence to assess human rights protection competence of security contractors
- Regularly engage with security companies or personnel to understand and address issues encountered in security work as well as their grievances and resolve such issues and grievances through timely negotiations
- Strengthen professional ethics education, indoctrinate professional ethics throughout the entire training program for security personnel and established professional ethics as priority criteria in evaluating personnel caliber
- Conduct human rights protection training for security contractors as well as education on legal issues and warning measures
- Improve management of standards of security contractors through conducting audits and evaluations of security contractors and monitor the implementation of human rights protection policies
- Maintain a strong stance against violence, prohibit violent and inhumane treatment of local employees and residents

RURAL REVITALIZATION AND SOCIAL WELFARE

PetroChina has actively responded to the initiatives of the UN 2030 Agenda for Sustainable Development. In an era dominated by the issue of shared wealth, our goal is to help local communities develop sustainable growth capabilities through our community welfare endeavors, in order to build a bright new future and accomplish shared of social values. Focusing on areas such as industry, talent, culture and ecology, we join efforts with our parent company, CNPC, to carry out poverty alleviation based on local conditions and follow up with rural revitalization, thus promoting local economic sustainable development.

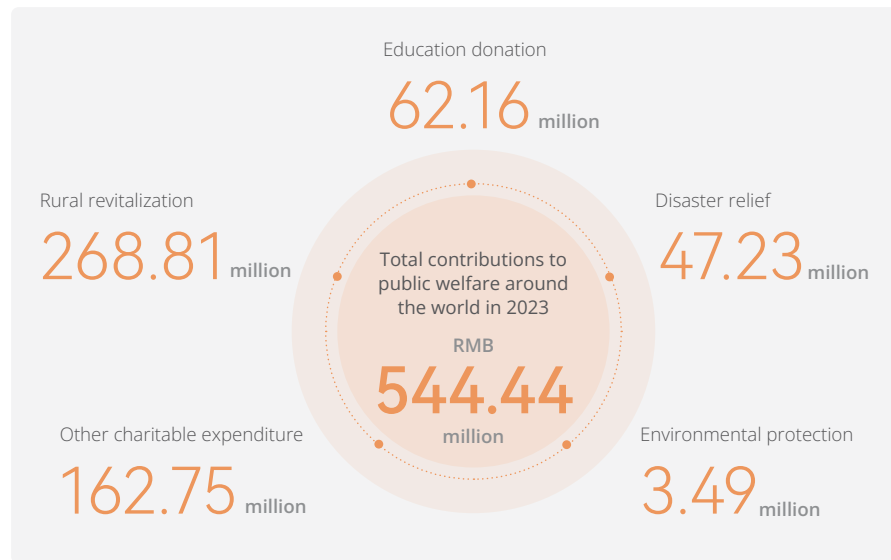
In 2023, with the goal of increasing the endogenous development momentum of impoverished areas and households, we carried out 1,110 rural revitalization projects such as the Special Industry Improvement Project, the “Village Craftsmen” Training Project, and the Helping and Empowering People through Consumption Project, which benefited more than 5 million people. Moreover, the Company partners with various sectors of society in active participation of charitable work by making use of its brand influence, creating charity models, utilizing its platform and bringing together different advantages and resources. We have launched over 380 charitable programs both on our own and with our partners.

Rural revitalization projects during the year

1,110

Number of charity projects of our own initiative or in partnership

380⁺



The Company completed the construction of PetroChina's Hundred Flower Highway in Hengfeng, Jiangxi, helping to revitalize the rural village

Enhancing Sustainable Development Ability

Promoting industrial growth is fundamental to addressing the problem of economic backwardness in underdeveloped regions. PetroChina actively undertakes community projects in areas such as agricultural products processing, unique rural industries, rural recreation and tourism industries and rural new service industries. We implement localized policies, heavily invest funding, manpower, materials and technology to facilitate agricultural industrialization and integrated development of agricultural industries, promote rural innovation and development. By combining our own general advantages and local resources and advantages, we helped rural communities improve their capabilities in industrial and business operation, allowing them to increase their income.

In 2023, the Company leveraged its wealth of resources, industrial structure, and comparative advantages to support the construction of a black bee industrial park in Nileke County, Xinjiang. This project involved reconstructing honey production lines, research and development centers, and storage workshops, as well as the acquisition of high-standard production equipment. Actively supporting rural tourism, we supported the development of guesthouses and supporting projects in Chabuhaer County in Xinjiang, Hengfeng County in Jiangxi, and Fan County in Henan. Using an industrial chain perspective, we helped to plan and develop a number of rural industry projects. Focusing on food security, we also devoted efforts to increasing production and efficiency, integrating agricultural techniques and agronomy, and ensuring ecological harmony in agricultural production. In Qinghe County, Xinjiang, we supported the construction of high-standard farmland and a fodder processing factory project, ensuring food security and raw material supply.

CASE STUDY

Building a "Happy Village"

Ruoergai County in Sichuan Province is a crucial water conservation area and ecological security barrier for the upper reaches of the Yangtze and Yellow Rivers. For many years, PetroChina has been providing targeted assistance to the area, advancing the construction of "happy villages" and devoting efforts towards the revitalization of rural industries, talent, culture, and ecology. Today, Ruoergai County has seen an improvement in its employment environment, a significant increase in resident income, strong industrial development momentum, and remarkable achievements in rural revitalization.

We helped to build various projects across different industries such as tourism service centers, Tibetan pig farms, "Oilman's Home" Tibetan homestays, and high-altitude organic vegetable planting bases in the local area, continuously creating more industrial synergies and driving forces for industrial development. By developing projects in planting, breeding, tourism services and employment assistance, we help local villagers increase their income and embark on the road to wealth. Making full use of online channels and leveraging marketing advantages, we have expanded the sales reach of distinctive products of the assistance areas, allowing the unique agricultural products from the Tibetan plateau and remote mountain areas to be sold across the country and reach thousands of households, enhancing local wealth-generating capabilities. We also relocated gas stations outside of protected areas as part of our efforts to develop high-altitude ecological and environmentally friendly gas stations, actively participating in the protection of high-altitude wetlands and the Yellow River basin.

Creating beautiful villages through rural tourism demonstration projects

Since 2017, PetroChina, in collaboration with the China Foundation for Poverty Alleviation and local governments, has implemented the "PetroChina Rural Tourism Demonstration Project" in Xishui, Guizhou; Taiqian and Fan County, Henan. The project leverages local tourism resources to invest in and build distinctive homestays, utilizing a cooperative society model among villagers to develop a tertiary industry led by rural tourism, which would ultimately lead to the formation of a multi-industry system that integrates farming, processing, tourism, cultural and creative industries, and leisure vacations, creating harmoniously coexistent and sustainably developed beautiful villages.

The "Wutong Mountain" rural tourism demonstration project, located in Tianba Village, Xishui County, Guizhou, fully capitalizes on the local cultural and natural environment. It reconstructs the original appearance and structure of buildings in the style of northern Guizhou residential architecture. On the original foundation of Tianba Village, 10 homestay courtyards were built, integrating seamlessly with nearly 30 well-preserved ancient wooden residential buildings in the village. This created a high-end homestay "Wutong Mountain" brand, forming a comprehensive rural tourism complex that includes rural homestay experiences, field life experiences, and natural art education.

Since the project became operational, it has brought tangible dividend income to over 600 villagers of Tianba Village each year. Additionally, the project addressed employment issues for more than 30 households, boosted the sales of agricultural and sideline products, and helped surrounding farmers increase their income.

Improving Rural Infrastructure

Improving rural infrastructure and living conditions is key to enhancing the sense of gain, happiness, and security among the population in underdeveloped areas. Our goal is to achieve basic modern living conditions for rural villages, ranging from living facilities, public services, ecological environment to rural landscape, striving to improve the comprehensiveness of rural infrastructure and the convenience of public services, and support villages stepping up from clean and tidy to beautiful and livable conditions.

In 2023, the Company supported the improvement of the living environment in Jimunai County, Nileke County, Balikun County, and Qinghe County in Xinjiang, as well as Xishui County in Guizhou. We promoted the "rural toilet revolution", management of domestic sewage and garbage, and the overall improvement of village appearance. In the Xinjiang region, we continued to build "zero-carbon villages", exploring the "biomass+" model for the complementary use of multiple energy sources to create a beautiful home that is suitable for living and working. In Henan's Taiqian County, we supported the construction project of Binhu School, constructing new teaching buildings, a comprehensive building, a library, etc., comprehensively improving the teaching environment.

Enhancing Employment Skills of Employee

Raising the skill levels of the local population is essential to achieving sustainable development in underdeveloped regions. PetroChina makes use of our advantages in resources to provide and create employment opportunities, build employment platforms and launch various skills training programs, in our efforts to provide specialized training to address the requirements of different regions and talents. By raising the population skill level, we motivate and help the local population to find employment and start businesses.

In 2023, the Company enhanced the Rural Revitalization Workshop training system, adding professional courses such as psychological counselors, nutritionists, and carbon emission management that are certified by the Ministry of Human Resources and Social Security examinations. We cooperated with institutions such as the China Rural Development Foundation, China Charity Federation, Beijing Normal University Education Foundation, and China Rural Development Association, to carry out projects like the Village Mechanic Project, Taking Moms to Work, Digital Villages and Enhancing Rural New Media Publicity Capabilities. These projects provide comprehensive skill training for the inheritance of traditional handicrafts, rural women returning to hometowns for employment, and the construction of rural informatization. Throughout the year, 34 offline training sessions were conducted and 200 online courses were offered with a total of approximately 128,500 participation instances.

Intensifying the Assistance to Consumption

Consumption assistance is a key measure in our support for promoting the consumption of products and services in underdeveloped areas and advancing rural revitalization. PetroChina has vigorously implemented consumption assistance initiatives, significantly increasing the procurement of products from designated support counties. By leveraging our nationwide network of over 20,000 gas stations, we have been able to distribute rural specialty products across the country. This strategy not only helps increase income and wealth among rural populations but also aims to enhance the quality and efficiency of specialty industries, thereby stimulating the internal driving force for revitalization and development.

In 2023, the Company organized the 3rd PetroChina uSmile Shopping Festival" as part of the "Central SOE Consumption Assistance Campaign, achieving a record-high in consumption assistance purchase and sales intentions of RMB 502 million. By leveraging the advantages we have with our internal network and development of non-oil products, we helped to support and develop leading county-level agricultural enterprises, thus enhancing the precision processing of agricultural products and the comprehensive development and utilization of agricultural processed products, as well as creating distinctive local brands.

Upgrading Medical and Health Care

Improving healthcare standards is essential to eliminating potential public health risks in underdeveloped regions. The Company takes an active role in improving clinic infrastructure and healthcare employment conditions in rural townships in remote regions, strengthening the abilities of healthcare professionals, conducting mobile clinical visits, raising general awareness of health and sanitation knowledge, promoting higher standards of local healthcare services and healthy lifestyles, striving to explore innovative ways of healthcare assistance and actively encouraging participation of other social forces to provide healthcare insurance and subsidies for treatment and rehabilitation of serious cases to families in difficult economic conditions in order to alleviate their burden.

In 2023, leveraging the superior resources of Beijing hospitals, the Company provided major disease re-diagnosis and "Internet + healthcare" services across 10 designated support counties, conducting 2,990 doctor training sessions with 11,960 participation instances. We continued to support the Kids Care children's health charity project to alleviate the healthcare burden for rural children and families that the project engaged with. Furthering rural hospital construction, we supported the development of the Kupu Township Health Clinic project in Toli County, Xinjiang, constructing a new integrated building with a GFA of 2,500 square meters, for both outpatient hospitalization services. In Qinghe County, we supported the construction of a new medical building with a GFA of 1,000 square meters for the China-Mongolia Border Hospital project, significantly enhancing hospital service quality.

Promoting the Development of Education

Promoting education development is key to ensuring that basic development opportunities are available to people in underdeveloped regions. From improving education environment and quality and teacher training to fostering good family environment, PetroChina makes use of our own social influence and network to establish specialist schools, innovate student support models and connect various forms of education resources, to help youths in underdeveloped areas access equal education opportunities and to promote social concern as well as joint efforts in addressing the issue of fair education.

In 2023, as part of our efforts to address issues such as education imbalance in poverty alleviation regions, we continued our "Teacher Training Program" for the 9th consecutive year, which focuses on improving the capabilities of teachers in designated poverty alleviation regions. Throughout the Year, we organized training for educators in 10 of these regions with over 20,000 participation instances. We provided student grants and scholarships to high school students with family economic difficulties, helping them to complete their studies and achieve their dreams of further education. In 2023, our "Xuhang Program" donated RMB 11 million, which went to grants supporting 3,313 students across 24 high schools.

Scholarship program

23 consecutive years

Amount of scholarship provided for 685 excellent university students in 17 higher education schools including the China University of Petroleum in 2023
RMB

4.47 million

Employee Volunteer Program

The Company encourages our employees to demonstrate the volunteer spirit of contributing, caring, helping and progress. We organized the Rosette Youth Volunteer service campaign, focusing on securing energy supply, ecological civilization, rural revitalization, combating natural disasters, community services, etc.

In 2023, the Company has a total of 3,103 youth volunteer service teams consisting of over 108,000 youth volunteers, conducting various youth volunteer service activities 8,828 times. In the "Children with the Elderly, Warmth for the World" elderly assistance event, volunteers and employees' children visited nursing homes and communities to carry out long-term volunteer services for the elderly. Since the launch of the "Shandong Blue" volunteer service project, the volunteer teams have widely conducted a variety of volunteer activities more than 3,100 times, including gas usage safety campaigns, services for special groups, tree planting and greenery protection, and emergency rescue operations, benefiting close to 4 million people.

OVERSEAS COMMUNITY CONSTRUCTION

We maintain our concept of “cooperating in development to achieve win-win for all” in conducting international cooperation. We respect the cultures and conventions of the countries in which we operate, and we are committed to establishing long-term and stable cooperative relations with the host countries. We take an initiative to incorporate our development into local socioeconomic growth and create economic and social value to jointly promote the development and prosperity of local communities together with host governments and business partners.

We actively participate in overseas community construction

- Comply with all applicable international and local laws related to community affairs and social responsibility and dynamically adjust the Company's policies and procedures to comply with the relevant laws and regulations
- Respect, defend and protect human rights and respect local customs and cultural traditions
- Conduct all activities in an ethical, fair, transparent and responsible manner, and commit to the protection of local ecological environment to promote social development
- Formulate community development plans and carry out relevant activities to continuously improve the well-being of local people and promote harmonious development of the community
- Notify the community prior to the implementation of the community development projects, regularly assess the results and make necessary improvements
- Provide the stakeholders with timely information about the projects and activities relating to community construction and call on all employees to participate in such activities
- Promulgate the Company's ESG philosophy and policy to our suppliers/contractors and encourage them to actively participate in the implementation of projects and activities relating to community development

Conducting Overseas Community Engagement

We adhere to the principles of Free, Prior, and Informed Consent (FPIC), actively engaging in community communication efforts, focusing on local livelihoods and social progress. This enhances mutual trust and friendship with local residents and communities, fosters mutual understanding, and encourages joint participation in sustainable community development.

CASE STUDY

Enhancing engagement and communication with local communities

PetroChina's Halfaya company in Iraq continues to carry out environmental and social impact assessments as well as engage and communicate with local community residents at various stages on a sustained basis.

In 2023, the Company held several meetings with local residents, social groups, and relevant institutions on topics such as environmental monitoring, biodiversity conservation plans, buffer zone environmental and social impact assessments, and Halfaya Airport's environmental and social impact assessments. These meetings aimed to solicit and record the concerns, opinions, and suggestions of local residents.

With the goal of promoting mutual understanding, forging a mutually beneficial and win-win relationship, and establishing a harmonious oilfield community, our Halfaya company regularly visits oil field communities to understand the demands of community residents. We assist them in addressing their practical difficulties to the extent possible, promoting mutual understanding, increasing trust, and enhancing friendships.

In 2023, the Company organized events such as Media Open Day, University Open Day, and Iraq's Ministry of Oil Open Day. Over 100 representatives, including Iraqi media, university students and faculty, and the Ministry of Oil, were invited to visit the oil field base, learn about oil field production and operations, and understand the social welfare projects undertaken by the Halfaya company. These activities further deepened the local population's understanding of the oil field.

CASE STUDY

Fully understanding community concerns and safeguarding community rights

PetroChina's Indonesia company follows the guidelines and policies related to community development issued by Indonesia's Upstream Oil and Gas Regulatory Special Task Force (SKK Migas) in carrying out project operations. The Company conducts community development and corporate social responsibility (CSR) activities to fully understand community demands and safeguard community rights.

Community development is included as part of the Company's annual work plan and budget, which is approved by the government before implementation according to the plan.

The Company has external communication departments, such as community relations and government relations, at the oilfield site. These departments proactively engage in community communication, understand residents' demands, and pre-emptively identify potential issues. The Company ensures timely, effective, and accurate communication and problem-solving with all stakeholders through one-way or two-way communication methods such as focus group discussions (FGD), group workshops, individual visits, and press conferences.

Before undertaking major infrastructure construction, the Company hires professional third-party research institutions to conduct preliminary research on stakeholders regarding livelihood, environment, and economic aspects. Based on the feedback and onsite conditions, the Company adjusts community development projects to maximize community welfare.

Protecting the Local Environment

We strongly believe in the importance of striking a balance between business development and environmental protection. Therefore, we strictly comply with the environmental protection laws and regulations of countries where we operate and international standards on environmental protection and carefully protect the local ecological environment and historical and cultural heritage during operations.

CASE STUDY

Protecting the ecological environment in Canada

PetroChina's Canada company is committed to becoming a demonstration enterprise for unconventional resource development, achieving long-term safe, and green development in Canada through responsible production and business operations.

PetroChina's MacKay River oil sands project and the Duvernay shale gas project in Canada have implemented systematic environmental management, incorporating all requirements of the Environmental Protection and Enhancement Act (EPEA) into their environmental management systems. During the construction and operational phases, we strictly implemented EPEA requirements related to the construction and commissioning of environmental protection facilities, implementation of environmental protection measures, environmental monitoring, and reporting. This resulted in stable treatment and standard discharge of waste gases, a wastewater reuse rate of over 99.5%, legal and compliance disposal of solid waste, and the protection of soil, wetlands, groundwater, surface water, the atmosphere, and biodiversity. Our approach has minimized the impact of production and operations on the ecological environment to the greatest extent possible.

CASE STUDY

Effective Restoration of Soil in Flooded Areas at Rumaila Oil Field, Iraq

Rumaila Oil Field is the world's second largest oil producing field and was put into operation in 1953. Since PetroChina's participation in the development of Rumaila Oil Field in 2009, we have strived to address two historical problems: the treatment of produced water and the treatment of soil contamination in areas flooded by produced water, and has achieved remarkable results.

Changing the open management practices originally adopted in oil fields

The Company installed a series of produced water treatment facilities, including an electric dewatering machine, a pre-dewatering device, a produced water re-injection facility, a produced water treatment facility, a used oil recycling station, and a produced water evaporation pond. These facilities help us optimize our existing production process, reduce discharge of produced water, and increase water re-injection rate. Once processed, produced water is transported to the water injection station and re-injected into the field, which will gradually reduce the amount of water injected from the Shatt al-Arab.

Commencing soil restoration work

The Company established a dedicated soil restoration team, and mobilized a large fleet of heavy-duty vehicles to carry out soil separation, turf laying, soil transfer and backfilling activities. Through detailed planning and efficient organization, we successfully completed the scheduled soil restoration work and met inspection standards. As at the end of 2023, we have recovered more than 5 million barrels of crude oil and restored 4 million square meters of contaminated land at Rumaila Oil Field.

Safeguarding Community Human Rights

We strictly comply with the legal regulations and human rights protection requirements of the countries where we operate. Before project commencement, we assess the social, environmental, and economic conditions of local communities, including their needs, human rights protection, natural environment, and cultural heritage. We operate in accordance with regulations, develop compensation plans based on the opinions of local governments, partners, and community residents, compensating before using land, promptly releasing information on land acquisition compensation to ensure transparency, and fully protecting the legal rights and interests of community residents.

Human Rights Protection In Relation To Overseas Security Personnel >>

The Company strictly manages security contractors, requiring them to conduct their security duties responsibly and in accordance with ethical standards to prevent the misuse of violence or infringement of human rights.

For details on measures to ensure human rights protection with security contractors, please refer to page 95 in this Report.

CASE STUDY

Strict control over ethical risks with security contractors of the project company in Peru

Our project company in Peru conducts rigorous screening before hiring security contractors to ensure they have a good reputation and human rights record. The contract explicitly provides for the human rights standards and practices that the security contractors must adhere to, including prohibiting any form of discrimination, abuse, or violation of human rights. Security contractors are required to train their employees on human rights and ensure they understand and comply with the Company's human rights policies. Furthermore, the Company regularly monitors the contractor's performance, checks the implementation of their human rights policies and procedures, and their communication and cooperation with employees and other stakeholders, conducting an annual evaluation of the contractor's performance. The Company ensures that its overseas security contractors respect and protect human rights.

Promoting Localized Operations

We actively promote localization, strictly comply with the laws and regulations in the places of our operations, observe tax transparency, promote local hiring, prioritize procurement and usage of local products and services, provide opportunities for local suppliers, contractors and service providers to participate in our projects, and support the development of local small and medium-sized enterprises as well as community entrepreneurs.

Tax Payments According to Law >>

The Company 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, our local companies actively participate in the multi-stakeholder groups and timely publish information on our tax payments with more details than the minimum disclosure requirements prescribed by the EITI. We support the anti-Base Erosion 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 PetroChina Tax Policy, please visit the Company website.



Promoting Local Employment >>

PetroChina makes continuous improvements to our international business management standards. We promote local employment, respect local working culture and facilitate cultural integration. We provide training programs for local employees to enhance their growth, so that local society and economy can grow and develop with us. The Company's subsidiary in Canada continues to promote localization of its workforce. The MacKay River oil sands project and the Duvernay shale gas project operated by the Company have achieved fully localized operations with all on-site employees from Canada. In 2023, the proportion of foreign employees in the Company's overseas projects was 96.71%.

For more information on employee localization, please refer to the section headed "Local Hiring in Overseas Operations" on page 84 of this Report.

Local Procurement >>

The Company gives priority to local products and services in our procurement process. We consider localization of procurement as a contractual obligation. Provided that there is fair competition, we give priority to using local materials, equipment and consumables, providing an opportunity for local suppliers, contractors and service providers to participate in our projects and supporting the development of local small and medium-sized enterprises and community entrepreneurs. In Kazakhstan, Mangistaumunaigaz (MMG) strongly supports local suppliers, with key materials such as oil casing, oil extraction machines and oil pumps all being purchased locally. The localization rate of material procurement was 65%, and the localization rate for services and engineering was as high as 90%.

CASE STUDY

Company in Chad Enhances Cooperation with Local Businesses

The upstream project of the Company's subsidiary in Chad continues to strengthen cooperation with local suppliers and service providers.

- Increasing the number of local companies on the Company's lists of contractors, service providers and suppliers
- For services such as road construction, transportation, water well drilling and local trade, only local companies are invited to bid
- Actively help to develop local service providers and suppliers, offer bid tendering training to contractors, service providers and suppliers, providing as many opportunities as possible to local companies during the bidding process
- In 2023, 78 service contracts and purchase orders were signed with local companies

Engaging in Community Welfare

We actively help to improve the production and living conditions of community residents. Based on the actual needs of local communities, we provide support in areas such as the environment, health, education, public facilities and community activities. By actively undertaking social responsibilities, we inject new vitality into community economic development and the improvement of people's livelihoods. We actively participate in community welfare activities in the surrounding areas, share the achievements of corporate development with the neighboring residents, maintain long-term harmonious relationships with the community, and support the sustainable development of the community.



In 2023, we carried out a variety of community welfare activities overseas

Chad	<ul style="list-style-type: none">Continued the implementation of the "Sweet Water Community" charity project, solving the clean drinking water issue for community residents around the oil field operation areaDonated desks, chairs, and learning materials to the elementary school in Gudawa Town nearby the oil fieldMaintained 35 kilometers of community roads near the oil field area, improving the travel conditions for surrounding residentsImproved community healthcare conditions by donating mosquito nets and antimalarial drugs for malaria prevention
Iraq	<ul style="list-style-type: none">Handed over three projects to the government of Missan Province, relating to community substation construction, lighting system construction, and power grid upgrade and renovation
Peru	<ul style="list-style-type: none">Supported multiple community development projects, including facility renovations and book donations for local schools, participation in local afforestation and land restoration projects, and organizing a variety of cultural communication activities such as football matches and concerts, as well as improving local medical conditionsAssisted communities affected by the El Niño phenomenon in road recovery, providing safe drinking water, disinfection agents, and epidemic prevention equipment, which is widely appreciated by community residents
Kazakhstan	<ul style="list-style-type: none">Donated to charitable, educational, artistic, sports, and media organizations in Kyzylorda Region and Almaty City of the Republic of Kazakhstan, promoting local cultural development
Singapore	<ul style="list-style-type: none">Jointly organized a volunteer activity "Flying Towards Our Dreams" with the Movement for the Intellectually Disabled of Singapore (MINDS), strengthening communication with intellectually disabled individuals and helping them better integrate into social life
U.S.	<ul style="list-style-type: none">Participated in the Texas Bicycle Charity Ride 2023 to raise funds for patients with multiple sclerosis

CASE STUDY

Our "Business Card" – the Sweet Waters Community charity project in Chad

PetroChina's company in Chad actively fulfills its corporate social responsibility, always caring for the communities surrounding our oil field. Over the years, the Company has consistently implemented the Sweet Waters Community charity project to address the difficulties faced by residents of communities near the oil field in accessing drinking water. We drilled 129 wells for free for the surrounding communities, addressing the clean drinking water issue for approximately 40,000 community members across 47 villages (tribes) around the oil field operational area, which has also attracted more and more people to settle in the surrounding communities.

The Sweet Waters Community charity project is now hailed by the local government as "the most popular public welfare project". At the 11th China Corporate Global Image Summit, PetroChina submitted the case practice "Sweet Waters Community: Safe and Sweet Water Flowing into Hearts". It was selected as one of the top ten outstanding cases in the "Building the New Silk Road" category of the 2023 China Corporate International Image Building Cases.



FEATURE

IN-DEPTH PARTICIPATION IN BRI CONSTRUCTION AND CREATING A MODEL OF COOPERATION BASED ON MUTUAL CONSULTATION, JOINT CONSTRUCTION AND SHARED BENEFITS

2023 marks the 10th anniversary of the Belt and Road Initiative (the “BRI”). Over the past decade, we have consistently practiced the principle of mutual consultation, joint construction and shared benefits in the BRI countries. We focus on energy cooperation, green development, people's welfare, and cultural integration as part of the ESG practices, forging a sustainable development path for the BRI oil and gas cooperation.



Actively Participating in Climate Governance to Protect the Local Ecological Environment

We strongly value the protection of the local ecological environment as part of our concept to develop green oil fields. Over the past 10 years, the Company has received more than 30 environmental protection awards in BRI cooperation countries, forging a path of clean, low-carbon, circular, and sustainable green cooperation. In Iraq, the Company has initiated flare gas reduction efforts in accordance with local environmental policies and regulations as well as international oil industry environmental standards, comprehensively reducing the energy consumption and carbon emissions of oil field development. We have also been devoting efforts to advance environmental restoration and protection work such as oil field water discharge treatment as part of our green oil fields concept. Moreover, we are a committed participant of international energy governance dialogues and exchanges, fully collaborating with members and partners of the Oil and Gas Climate Initiative (OGCI), contributing PetroChina's strength to address climate change and achieving a low-carbon transformation in the oil and gas industry.



Advancing Employee Localization and Diversity to Promote Local Employment

We actively provide employment opportunities for local residents, continuously advancing our talent team localization strategy, creating over 100,000 job positions in BRI cooperation countries. In Indonesia, we actively implement a localization development strategy, with 1,920 local employees, achieving a localization rate of over 99%. In Iraq, we focus on training and motivating local employees, establishing training, promotion, and incentive mechanisms, enhancing the sense of belonging and pride among local employees, providing the Iraqi Ministry of Oil and Missan Oil Company with technical and management training totaling 938 participation instances, offering scholarships for overseas studies to more than 40 local students, and achieving over 4,300 instances of job and rank promotions among local employees.





**Actively Participating in
Local Community Building
to Promote Socio-Economic
Development**

As part of our concept for a shared future for humanity, we are fully committed to fulfilling our social responsibilities. We recognize the significance of the concerns of our host countries and relevant stakeholders. Over the past decade, we have actively carried out various public welfare activities, building bridges and roads for local communities, improving medical facilities, donating funds for education, training talents, and supporting the construction of cultural and living facilities, benefiting millions of people.



**Operations in Legal
Compliance**

The Company strictly follows international practices and maintains compliance operations to ensure the stable and rapid development of overseas projects. In Kazakhstan, PetroChina maintains legal and compliance operations while establishing a complete upstream, midstream and downstream industry chain that incorporates oil and gas exploration and development, pipeline construction and operation, refining and sales. We have established a corporate legal person governance structure and control system that complies with local laws and regulations and international practices, demonstrating ourselves as a successful case practice of the Belt and Road Initiative.



CUSTOMER SERVICE

The Company practices a "quality first" principle, with "zero accidents and zero defects, leader in domestic and world markets" as our goals. We continuously improve our quality management system to provide consumers with clean, safe, and high-quality products and services that satisfy them. The Company strictly adheres to guidelines on consumer rights and privacy protection, constantly enhancing our customer service capabilities.

Product Quality and Safety

We provide consumers with products that meet legal requirements and standards in a responsible manner. The Company strictly complies with the Law of the People's Republic of China on Product Quality, the Regulations of the People's Republic of China on Certification and Accreditation, the Regulations of the People's Republic of China on Administration of Production License of Industrial Products and other applicable laws and regulations concerning quality management and formulated the Quality Management Manual, the Administrative Rules on Supervision and Random Inspection of Product Quality, and the Rules on Quality Supervision of Purchased Materials, and other specific management regulations and implementation rules covering all enterprises, all employees and the entire process. Through the establishment and accreditation of the quality management system, we can gradually delegate the responsibility of quality control to employees at every level, enhance control over process quality, monitor end-product quality and adopt a quality management approach where we take "all employees, all factors, all processes, and all data" into consideration.



All subsidiaries under the Company have established and implemented a quality management system in accordance with the ISO9001 standard. As of the end of 2023, the number of subsidiaries certified by the Quality Management System (ISO9001) reached

296

Product Quality and Safety

Passing rate of third-party accreditation performed under the quality management system

100%

Products recalled for safety and health reasons

0%

Major Progress in Quality Management in 2023

Improving the quality management system

- Published and implemented the Plan for Quality Improvement which sets out medium- and long-term quality development goals, main tasks, important measures and development paths
- Published and implemented the Quality Management Manual and focused on strengthening quality control over all employees, the entire process, all elements, and all data around the main business

Conducting audits of the quality management system

- Conducted QHSE system audits to enhance the monitoring and review of company quality management system

Launching special campaigns for quality management improvement

- Launched special campaigns for quality management improvement in three areas: upgrading and innovating chemical products, improving the quality of procurement products, and controlling the quantity and quality of transportation links

When providing products to consumers, we consider the Company's overall impact on consumers and ensure products quality and safety. We perform product quality inspections that cover raw materials, intermediate products and end products. We place high emphasis on the importance of the communication with customers, providing detailed information about the performance and physical and chemical indicators of products to customers. We also established a strict set of procedures for disposing recyclable products, to prevent adverse effects on the environment.

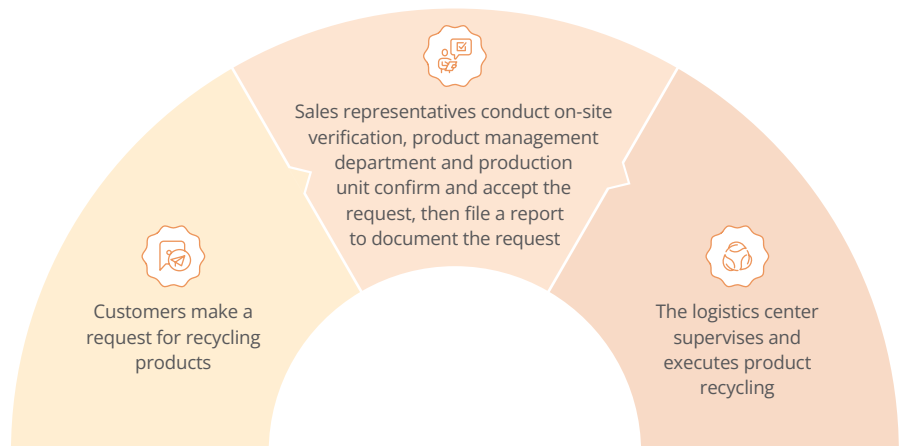
Product Quality Testing



Qualified rate of our outgoing products



Recycling Process of Lubricant Products



Consumer Rights Protection

We strictly comply with the Consumer Rights Protection Law of the People's Republic of China, the United Nations Guidelines for Consumer Protection, and other applicable laws, regulations, and international standards, demonstrating our commitment to a customer-centric philosophy. We continuously strengthen our service awareness to protect consumers' legal rights and interests. The Company employs various service supervision methods such as the 956100 customer service center, mystery customer visits, remote video inspections, and internal on-site inspections to optimize customer service operations. We have established a rapid response mechanism for complaints, to organize, summarize, and analyze user feedback, so that customer complaints are handled in a timely and proper manner, thus improving customers' feeling of satisfaction.



Satisfaction rate towards PetroChina's 956100 customer service hotline

Properly Handling Customer Complaints >>

The Company's 956100 customer service center adopts an "integrated collaboration, hierarchical responsibility" customer service model, providing customers with consultation, inquiry, transaction handling, complaint handling, value-added services, and other services. The service center is responsible for handling customer complaints and conducting follow-up visits. We have detailed handling procedures to coordinate and handle complaints based on the impact and urgency of the relevant complaint, with customer needs as the guiding approach, so as to improve the experience of our customers across the entire service process.

Customer Complaints Resolution and Service Improvement

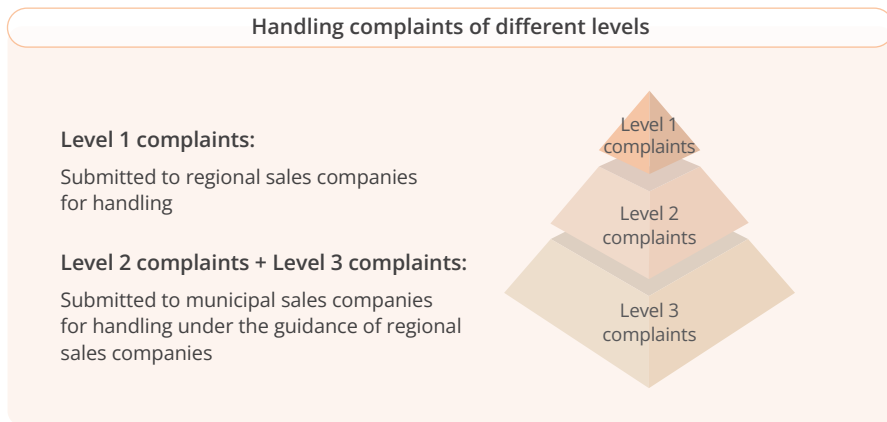
Handling Customer Complaint

Number of customer complaints

678

Customers complaint response rate

100%



Customer complaints and feedback on issues

- Analysis of customer complaints
- Visits by mystery customer
- Video surveillance of stations

Analysis of issues

- Conducting service quality benchmarking
- Conducting customer satisfaction survey
- Analyzing the issues identified

Improvements

- Supervising the rectification of issues
- Summarizing lessons learned on a regular basis
- Conducting service training
- Implementing more rigorous service standards
- Improving service quality

Safeguarding information security and customer privacy >>

The Company has established a strict information security management system and formulated the Cybersecurity Management Measures, which clearly stipulate access restrictions on various types of information, usage regulations and confidentiality systems, strictly prohibiting the disclosure of customer personal information. We have developed and implemented strict privacy policies and data protection measures to safeguard consumer data security and privacy.

Customer Data Security and Privacy Protection



Data collection

- Except for necessary personal information that we use to offer better services and improve customers' experience, no other data is collected from customers
- Clearly inform customers on our dedicated app (“中油好客 e 站”), the Company website, and other channels about our methods of personal data collection, usage and sharing with customers' explicit consent



Data storage

- All information collected is technically encrypted and transmitted to a database located in a central data center at the Company's headquarters for storage. The database uses security components to encrypt and store information
- Information on the database is secured by an internal management system; it can only be retrieved and managed by authenticated and authorized personnel; personal privacy information is redacted in the enquiry and display screen of customer information



Raising data security awareness of data management personnel

- Formulated the Measures for the Administration of Cybersecurity of the Company
- Established a cyber security management system headed by senior management staff, managed by specialized personnel, and operated by a special team on a regular basis. Customer information is therefore protected to the greatest extent by multiple layers of security
- Conducted regular training sessions for employees on information security awareness, information protection regulations, and information security operating procedures, in order to enhance employee awareness on customer privacy protection



According to the 2023 China Brand Power IndexSM (C-BPI) brand ranking and analysis report released by Chnbrand, a renowned brand rating institute, PetroChina came

2nd
in the overall brand rating

Trademark and Intellectual Property Protection >>

The Company strictly complies with laws and regulations such as the Trademark Law of the People's Republic of China and the Patent Law. We place great importance on the protection of trademarks and intellectual property rights, conducting monthly monitoring and risk assessments on core and key trademarks. Based on the results, we submit trademark applications for registration, invalidation, and objections to the national trademark administration department. We take corresponding measures to protect rights against trademark infringement and unfair competition, safeguarding our exclusive rights to use trademarks.

For more information related to the protection of intellectual property rights, please refer to the section headed “Intellectual Property Rights Protection and Management” on page 36 in this Report.

SUPPLY CHAIN MANAGEMENT

The Company maintains global sourcing, open cooperation, resource sharing, mutual benefit and win-win relationships as the basis of our supplier management philosophy and adheres to the principles of compliance, quality, efficiency and effectiveness, continuously optimizing the supply chain dynamic adjustment mechanism and implementing full cycle closed loop management from access to exit.

The Company believes in the importance of supply chain management system. We formulate and constantly improve the Regulations on the Management of Engineering Construction Projects, the Regulations on the Management of Material Supply, the Regulations on the Management of Tendering and other relevant regulations, as well as a series of implementation measures and standards, so as to strengthen the compliance management of suppliers. We practice responsible procurement and incorporate green and low-carbon development into our entire materials supply chain management, fully identify and control the possible environmental and social risks in the supply chain, such as safety and health, labor rights, environmental protection and business ethics, and constantly improve the quality of suppliers.

Supply chain management system

Supplier access

- We enhance the supplier access mechanism and continue to improve supplier access management. We provide guidance to our suppliers on strengthening lawful and ethical business operation, as well as observing business ethics and corporate social responsibility. We require suppliers to comply with the relevant policies and regulations on anti-commercial bribery, conduct necessary due diligence on suppliers and include compliance performance in the contract as a prerequisite for access
- During the year, we have formulated and revised over 90 supplier access basic conditions, requiring suppliers to comply with our unified quality, environmental, health and safety standards, to obtain requisite nationally recognized quality management system accreditations, occupational health and safety management accreditations and environmental management system accreditations, so as to continuously improve product and service reliability as well as environmental sustainability
- Suppliers are required to protect labor rights and human rights, satisfying people's development needs
- We organize on-board training on business ethics, prevention and control of integrity risks and QHSE for all new suppliers and promote the Company's operation and management concepts
- We require suppliers to sign a commitment letter for access, covering 100% of our suppliers



In 2023, we conducted random quality inspection of 896 batches of material procured and took strict measures against non-compliance suppliers and products.

In 2023, we completed 268,311 orders with 100% dynamic quantitative assessment rate

Supplier supervision

- We used various tools such as contractual agreement, supplier self-assessment and on-site inspection to supervise our suppliers, thus establishing a routine management supervision and assessment mechanism for our suppliers, in order to strengthen identification and prevention of environmental and social risks and to promote the performance improvement of suppliers
- We continued to optimize the whole-process management of suppliers with 100% dynamic quantitative assessment of our suppliers

Supply Chain Management

Number of materials suppliers

22,845

Number of Tier 1 manufacturers

2,369

Percentage of Tier 1 manufacturers certified by the Quality Management System (ISO9001)

98.44%

Percentage of Tier 1 manufacturers certified by the Environmental Management System (ISO14001)

94.98%

Percentage of Tier 1 manufacturers certified by the Occupational Health and Safety Management System (ISO45001)

94.13%

Note: Data does not include suppliers involved in our international business.

Supplier exit management

- We have revised the General Merchant Blacklist Management Measures⁶ and the Bidder Integrity Management Measures. Suppliers who are found to have engaged in behaviors such as fraud, breach of trust or falsification during the tender, product supply, product quality, project service, and contract settlement processes will be blacklisted. Depending on the case, the blacklist period may range from 3 years, 5 years, up to permanent period
- To manage suppliers who experience issues related to the quality, compliance, integrity and corruption, we may punish the supplier with four types of exit treatment from suspension of product trading rights, suspension of trading rights of the supplier, revocation of product access to revocation of supplier access depending on severity

Supplier communication

- We enhanced our mutual communication and connectivity, and maintained effective communication channels. We actively used various channels to understand the concerns and demands of our suppliers
- We continued to strengthen strategic procurement relationships with key suppliers, enhanced the cooperation areas and levels with suppliers, and carried out active communication in various aspects such as green and low-carbon, and sustainable development, and release potential for cooperation
- We paid attention to the health, safety, environmental protection and compliance operations of suppliers and communicated with suppliers in a timely manner, enhancing the synergy level of the supply chain

Supplier Compliance Management

We always actively advocate the concept of integrity and compliance, making compliance a prerequisite for partnering with the Company. We track, inspect and supervise suppliers' business ethics, compliance operations, and performance, incorporating relevant indicators into the supplier assessment and tendering processes. We have established a blacklist system for suppliers with violators subject to various restrictions. Information of violators are published for dishonest behavior on PetroChina's bidding and tendering website. We continuously strengthen the deterrent effect on illegal and non-compliance suppliers. We improve the business environment by conducting special inspections, signing integrity cooperation agreements, and commitment letters etc.

Building a Green Supply Chain

To put our concept of green development into action, we strive to build a green supply chain by strongly promoting green procurement. We have formulated the Green Procurement Management Measures, which clearly stipulate priority access for energy-saving and environmentally friendly products and the preference for purchasing energy-saving, environmentally friendly, and low-carbon materials. We actively encourage suppliers to engage in green manufacturing and use environmentally friendly packaging. Extra consideration is given to green procurement plans.

[6] General merchants refer to materials suppliers, construction contractors and service providers.



PERFORMANCE DATA

Category	Indicator	2021	2022	2023
Governance	Board Diversity			
	Independent directors (%)	41.7	36.4	41.7
	By gender			
	- Male (%)	91.7	90.9	91.7
	- Female (%)	8.3	9.1	8.3
	By professional background			
	- Legal (%)	8.3	9.1	0.0
	- Finance/accounting (%)	16.7	9.1	8.3
	- Economics (%)	16.7	18.2	25.0
	- Petrochemical (%)	58.3	63.6	66.7
	Compliance Management and Integrity Risk Control and Management			
	Coverage rate of compliance training (%)	100	100	100
	Coverage of integrity risk prevention training for staff (including members of the Board and all employees) (%)	100	100	100
Safety	Fatality rate (persons/100 million working hours)	0.09	0.09	0.30
	- Company staff (persons/100 million working hours)	0.12	0.06	0.33
	- Contractor/service provider (persons/100 million working hours)	0.00	0.16	0.25
	Total accident rate (incidents/million working hours)	0.0541	0.0191	0.0222
	- Company staff (incidents/million working hours)	0.0707	0.0237	0.0326
	- Contractor/service provider (incidents/million working hours)	0.0108	0.0079	0.0025
	Work-related fatalities (persons)	2	2	7
	- Company staff (persons)	2	1	5
	- Contractor/service provider (persons)	0	1	2

Category	Indicator	2021	2022	2023
Safety	Loss of working days due to work-related injury (days)	8,651	5,146	11,772
	- Company staff (days)	8,417	2,574	2,767
	- Contractor/service provider (days)	234	2,572	9,005
	Number of subsidiaries certified by the HSE Management System (Q/SY08002.1)	-	116	109
GHG				
Climate Change	Total GHG emissions ¹ (Scope 1 and Scope 2) (million tCO ₂ e)	159.54	160.56	171.18
	- Direct GHG emissions ² (Scope 1) (million tCO ₂ e)	121.39	119.68	124.66
	- Indirect GHG emissions ³ (Scope 2) (million tCO ₂ e)	38.15	40.88	46.52
	- Oil and gas and new energy businesses (million tCO ₂ e)	54.00	53.39	56.67
	- Refining, chemicals and new materials businesses (million tCO ₂ e)	97.16	98.81	107.21
	- Other businesses (million tCO ₂ e)	8.38	8.36	7.30
	Domestic GHG emissions per unit of oil and gas production ⁴ (tCO ₂ e/toe)	0.25	0.24	0.24
	Methane emission (10,000 tons)	42.81	40.09	37.12
	Methane emission intensity (%)	0.45	0.40	0.34
	Recovery from gas venting (100 million m ³)	-	15.5	21.1
	Transition to Low-Carbon Energy Sources			
	Investment in new energies and new businesses (RMB 100 million)	21.8	76.7	197.6
Water Resources				
Environment	Freshwater consumption (10,000 m ³)	75,004	74,688	77,123
	Year-on-year change in freshwater consumption (%)	-2.59	-0.42	3.26
	Freshwater consumption for processing 1 ton of crude oil (m ³)	0.488	0.481	0.473
	Water saved (10,000 m ³)	969	871	814

【1-4】 GHG emissions are direct emissions (Scope 1) and indirect emissions (Scope 2) arising within the Company's operational boundary. Our domestic projects mainly comply with the Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Oil and Gas Producers (Trial) (No. 2920 [2014] on Climate, National Development and Reform Commission ("NDRC")), the Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Petrochemical Companies (Trial) (No. 2920 [2014] on Climate, NDRC), the Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Chemical Production Enterprises (Trial) (No. 2526 [2016] on Climate, NDRC) and other relevant industry guidelines and national accounting standards; while for overseas projects, local accounting standards and requirements of the countries where the operations are located take precedence over the PRC laws. Where there are no specific requirements from an overseas country, overseas projects are accounted for using a combination of PRC standards and the relevant parameters of such country.

Category	Indicator	2021	2022	2023
Environment	Land Resources			
	Newly acquired construction land used in an economical manner (hectares)	1,120	1,280	1,400
	Energy Consumption			
	Total energy consumption ⁵ (10,000 tons of standard coal)	6,273	6,245	6,548
	Total raw coal consumption ⁶ (10,000 tons)	1,327	1,232	1,108
	Total crude oil consumption ⁷ (10,000 tons)	168	159	156
	Total natural gas consumption ⁸ (100 million m ³)	175	177	181
	Total electricity consumption ⁹ (100 million kWh)	525	564	623
	Energy saved (10,000 tons of standard coal)	70	71	83
	Comprehensive energy consumption per unit of oil and gas equivalent production (kilograms of standard coal/ton)	116	109	106
	Energy consumption per unit energy factor ¹⁰ (kilograms of standard oil/ ton of energy factor)	7.89	7.89	7.77
	Energy consumption per unit of ethylene production ¹¹ (kilograms of standard oil/ton)	651	604	595
	Pollutant Management and Control¹²			
	Amount of general solid waste ¹³ (10,000 tons)	260.3	248.5	355.5
	Amount of hazardous waste ¹⁴ (10,000 tons)	139.6	94.3	130.0
	Compliance disposal rate of general solid waste (%)	100	100	100
	Compliance disposal rate of hazardous waste (%)	100	100	100
	Chemical oxygen demand (COD) emissions ¹⁵ (10,000 tons)	0.53	0.50	0.49

[5-9] Total energy consumption is calculated by converting the actual amount of physical energy consumed in the production and daily operation of the enterprise according to the calculation methods and conversion factors as stipulated in the PetroChina's Corporate Standards (Q/SY09061-2023), using the following formula: total energy consumption (tons of standard coal) = Σ the actual amount of physical energy consumed in the production process of the enterprise \times the conversion factor. For example, the conversion factor is 0.7143 tons of standard coal/ton for raw coal, 1.4286 tons of standard coal/ton for crude oil, 13.3 tons of standard coal/10,000 cubic meters for natural gas, and 1.229 tons of standard coal/10,000 kWh for electricity. The total amount of energy consumption is calculated through multiplying the actual physical energy consumption of the enterprise by the conversion factor.

[10-11] In 2021, the Company adjusted the statistical methods for two indicators, the "unit energy factor consumption" and "consumption for producing ethylene products per unit", in accordance with the national standards, the Norm of Energy Consumption Per Unit Product for Petroleum Refining (GB30251) and the Norm of Energy Consumption Per Unit Product of Ethylene Plant (GB30250). In 2022, according to the definition of national standard, we renamed "fuel and power consumption for producing ethylene products" to "consumption for producing ethylene products per unit", the analysis and calculation of them are the same.

[12] As a result of the constant upgrading of measures to treat exhaust gas pollution in recent years, sulfur dioxide emissions have been significantly reduced, and is no longer the primary target of the Company's pollution control. Information related to this indicator will no longer be disclosed in this Report.

[13-14] The amount of solid waste disposed of by third-party institutions with relevant qualifications commissioned by the Company.

[15] Since 2018, the Company has been implementing the national requirements to win the strategic fight against pollution. Since then, we have been vigorously upgrading our wastewater treatment standards, improving our exhaust gas emissions to meet ultra low emissions standards, applying clean production methods, substituting fossil fuels with cleaner fuels, and implementing other engineering and structural projects to reduce carbon, and significantly reduced our pollutant emissions. At the same time, in accordance with the results of the Second National Census on Pollution Sources and the specific standards for pollutant emissions accounting stipulated in the Technical Specifications for Application and Issuance of Pollutant Permits for industries relating to the Company's business, starting from 2021, the Company's pollutant emission statistics has been calculated using the preferred accounting method of using online monitoring data of pollution sources. The exhaust emission data includes flaring emissions.

Category	Indicator	2021	2022	2023
Environment	Nitrogen oxides (NO _x) emissions ¹⁶ (10,000 tons)	5.64	5.01	4.85
	Volatile organic compounds (VOCs) emissions (from refining operations) ¹⁷ (10,000 tons)	7.06	6.82	6.39
	Environmental Protection			
	Environmental protection expenditures (RMB 100 million)	39.2	38.9	31.4
Employee	Number of subsidiaries certified by the Environmental Management System (ISO14001)	-	105	117
	Number of employees ¹⁸ (10,000)	41.72	39.84	37.58
	Employee Diversity			
	Percentage of female administrative staff (%)	7.21	7.17	7.17
	Percentage of ethnic minority employees (%)	6.63	6.70	6.82
	Percentage of foreign employees in overseas projects (%)	95.21	96.69	96.71
	By employment type			
	- Full-time employees (%)	100	100	100
	- Part-time employees (%)	0	0	0
	By gender			
	- Male employees (%)	73.95	75.46	76.90
	- Female employees (%)	26.05	24.54	23.10
	By age			
	- 25 years old or below (%)	1.60	1.99	2.31
- 26-35 years old (%)	11.39	10.32	9.62	
- 36-45 years old (%)	25.11	23.88	23.50	
- 46-55 years old (%)	50.10	50.89	51.63	
- 56 years old or above (%)	11.80	12.92	12.94	

【 16-17 】 Since 2018, the Company has been implementing the national requirements to win the strategic fight against pollution. Since then, we have been vigorously upgrading our wastewater treatment standards, improving our exhaust gas emissions to meet ultra low emissions standards, applying clean production methods, substituting fossil fuels with cleaner fuels, and implementing other engineering and structural projects to reduce carbon, and significantly reduced our pollutant emissions. At the same time, in accordance with the results of the Second National Census on Pollution Sources and the specific standards for pollutant emissions accounting stipulated in the Technical Specifications for Application and Issuance of Pollutant Permits for industries relating to the Company's business, starting from 2021, the Company's pollutant emission statistics has been calculated using the preferred accounting method of using online monitoring data of pollution sources. The exhaust emission data includes flaring emissions.

【 18 】 Excluding market-oriented, temporary, and seasonal employment.

Category	Indicator	2021	2022	2023	
Employee	By position				
	- Administrative staff (%)	28.88	29.06	29.09	
	- Professional and technical staff (%)	14.63	15.41	16.37	
	- Operating staff (%)	56.49	55.53	54.54	
	By education				
	- Master's degree and above (%)	4.55	4.99	5.50	
	- Bachelor's degree (%)	36.00	37.39	39.05	
	- College degree (%)	22.57	22.31	22.00	
	- Technical secondary school and below (%)	36.88	35.31	33.45	
	By country and region				
	- China (%)	99.7	99.7	99.6	
	- Countries and regions other than China (%)	0.3	0.3	0.4	
	Employee Health				
	Number of subsidiaries certified by the Occupational Health and Safety Management System (ISO45001)		-	107	120
	Creation of occupational health records for employees (%)		100.00	100.00	100.00
Detection rate of occupational health hazards in the workplace (%)		99.22	100.00	100.00	
Percentage of employees exposed to occupational health hazards receiving health checks (%)		100.00	99.15	99.66	
Employee Training					
Average training time per person ¹⁹ (hour)		30.5	37.9	59.0	
- Average training time per administrative staff (hour)		20.7	37.5	63.2	
- Average training time per professional and technical staff (hour)		10.5	11.2	23.1	
- Average training time per operating staff (hour)		40.7	45.5	67.8	
- Average training time per male employee (hour)		36.7	38.9	63.5	
- Average training time per female employee (hour)		12.9	34.8	44.7	
Training rate of employees (%)		100	100	100	
- Training rate of administrative staff (%)		100	100	100	
- Training rate of professional and technical staff (%)		100	100	100	
- Training rate of operating staff (%)		100	100	100	

[19] In 2021, the Company changed the formula of the indicator "Average training time per person" from "Average training time per person = Total training time/Number of trainees" to "Average training time per person = Total training time/Number of employees", in keep line with HKEx's ESG Reporting Guide.

Category	Indicator	2021	2022	2023
Employee	- Training rate of male employees (%)	100	100	100
	- Training rate of female employees (%)	100	100	100
	Staff Turnover Rate			
	Staff turnover rate (%)	0.22	0.14	0.15
	- Turnover rate of male employees (%)	0.21	0.14	0.14
	- Turnover rate of female employees (%)	0.23	0.16	0.16
	- Turnover rate of employees aged 25 or below (%)	2.38	1.34	1.77
	- Turnover rate of employees aged 26-35 (%)	0.81	0.49	0.49
	- Turnover rate of employees aged 36-45 (%)	0.22	0.15	0.18
	- Turnover rate of employees aged 46-55 (%)	0.06	0.05	0.03
	- Turnover rate of employees aged 56 or above (%)	0.05	0.06	0.03
Employees who returned to work and kept their posts after taking maternity/paternity leave (%)	100	100	100	
Society	Tax Payment According to Law			
	Taxes and fees (RMB 100 million)	3,536	4,618	4,639
	- Overseas taxes (RMB 100 million)	375	574	518
	Supply Chain			
	Number of material suppliers ²⁰	20,527	21,890	22,845
	- Suppliers registered in China ²¹	19,885	21,331	22,428
	- Suppliers registered in countries/regions other than China ²²	642	559	417
	Percentage of Tier 1 manufacturers certified by the Quality Management System (ISO9001) ²³ (%)	98.01	98.03	98.44
	Percentage of Tier 1 manufacturers certified by the Environmental Management System (ISO14001) ²⁴ (%)	93.16	94.14	94.98
	Percentage of Tier 1 manufacturers certified by the Occupational Health and Safety Management System (ISO45001) ²⁵ (%)	91.49	93.14	94.13
Procurement expenditures (RMB 100 million)	1,806	2,015	2,103	

【 20-25 】 Data does not include suppliers involved in our international business.

Category	Indicator	2021	2022	2023
Society	Products and Services			
	Passing rate of third-party accreditation performed under the quality management system (%)	100	100	100
	Number of subsidiaries certified by the Quality Management System (ISO9001)	-	296	296
	Number of customer complaints	4,111	2,075	678
	Customers complaint response rate (%)	100	100	100
	Products recalled for safety and health reasons (%)	0	0	0
	Public Welfare			
	Total contributions to public welfare (RMB 10,000)	62,580	58,272	54,444
	- Rural revitalization (RMB 10,000)	38,984	30,274	26,881
	- Educational donations (RMB 10,000)	4,851	4,530	6,216
	- Donations to disaster relief (RMB 10,000)	3,992	5,133	4,723
- Environmental protection (RMB 10,000)	216	781	349	
- Other contributions to public welfare ²⁶ (RMB 10,000)	14,537	17,554	16,275	

【 26 】 Including social public welfare investment such as medical and health care, culture and sports, construction of social public welfare facilities, donations for disabled people's undertakings, other public welfare relief, and donations for public welfare undertakings.

Note: Conversion standards. 1 barrel of oil equivalent = 1 barrel of crude oil = 6,000 cubic feet of natural gas = 169.9 m³ of natural gas; 1 m³ of natural gas = 35.315 cubic feet of natural gas; 1 ton of crude oil = 7.389 barrels of crude oil (assuming an API gravity of 34 degrees)

INDEPENDENT PRACTITIONER'S ASSURANCE REPORT

2024/SH-0140
(Page1/3)

English Translation for Reference Only

Independent practitioner's assurance report

To the Board of Directors of PetroChina Company Limited

We have been engaged to perform a limited assurance engagement on the selected 2023 key data as defined below in the 2023 Environmental, Social and Governance Report ("ESG report") of PetroChina Company Limited (the "Company").

Selected Key Data

The selected key data in the Company's 2023 ESG report that is covered by this report is as follows:

- Fatality rate
- Total accident rate
- Work-related fatalities
- Percentage of employees exposed to occupational health hazards receiving health checks
- Total GHG emissions (Scope 1 and Scope 2)
- Direct GHG emissions (Scope 1)
- Indirect GHG emissions (Scope 2)
- Chemical oxygen demand (COD) emissions
- Nitrogen oxides (NO_x) emissions
- Total energy consumption
- Energy saved
- Freshwater consumption
- Water saved
- Number of employees
- Percentage of female administrative staff
- Percentage of female employees

Our assurance was with respect to the year ended 31 December 2023 information only and we have not performed any procedures with respect to earlier periods or any other elements included in the 2023 ESG report.

Criteria

The criteria used by the Company to prepare the selected key data in the 2023 ESG report is set out in the basis of reporting of the key data (the "basis of reporting") after this assurance report.

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(Page2/3)

Management's Responsibilities

The Management of the Company is responsible for the preparation of the selected key data in the 2023 ESG report in accordance with the basis of reporting. This responsibility includes designing, implementing and maintaining internal control relevant to the preparation of the selected key data in the 2023 ESG report that is free from material misstatement, whether due to fraud or error.

Our Independence and Quality Management

We have complied with the independence and other ethical requirement of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's Responsibilities

It is our responsibility to express a conclusion on the selected key data in the 2023 ESG report based on our work.

We conducted our work in accordance with the International Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information". This standard requires that we plan and perform our work to form the conclusion.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion about whether the Company's 2023 selected key data in the 2023 ESG report has been prepared, in all material respects, in accordance with the basis of reporting. Our work involves assessing the risks of material misstatement of the selected key data in the 2023 ESG report whether due to fraud or error, and responding to the assessed risks. The extent of procedures selected

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(Page3/3)

depends on our judgment and assessment of the engagement risk. We have performed the following procedures:

- 1) Interviews with relevant departments of the Company involved in providing information for the selected key data within the ESG report, undertaking site visits to the Head Office of the Company and Daqing Oil field Branch; and
- 2) Analytical procedure;
- 3) Examination, on a test basis, of documentary evidence relating to the selected key data on which we report;
- 4) Recalculation; and
- 5) Other procedures deemed necessary.

Inherent Limitation

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

Conclusion

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the 2023 selected key data in the 2023 ESG report is not prepared, in all material respects, in accordance with the basis of reporting.

Restriction on Use

Our report has been prepared for and only for the board of directors of the Company and is not to be used for any other purpose. We do not assume responsibility towards or accept liability to any other parties for the content of this report.

PricewaterhouseCoopers Zhong Tian LLP

Shanghai, China

March 25, 2024

Basis of Reporting

Fatality rate (persons/100 million working hours):

Fatality rate disclosed herein refers to the ratio of fatalities in industrial production safety accidents to total working hours of PetroChina Company Limited in 2023.

Total accident rate (incidents/million working hours):

Total accident rate disclosed herein refers to the ratio of the number of industrial production safety accidents to total working hours of PetroChina Company Limited in 2023.

Work-related fatalities (persons):

Work-related fatalities herein refer to the number of people who died in industrial production safety accidents of PetroChina Company Limited in 2023.

Percentage of employees exposed to occupational health hazards receiving health checks (%):

Percentage of employees exposed to occupational health hazards receiving health checks herein refers to the ratio of the number of completed occupational health examinations for employees exposed to occupational disease hazards to the planned number of occupational health examinations for employees exposed to occupational disease hazards of PetroChina Company Limited in 2023.

Total GHG emissions (Scope 1 and Scope 2) (million tCO₂e):

Total GHG emissions disclosed herein refers to the sum of direct GHGs emissions and indirect GHGs emissions produced by subsidiaries of PetroChina Company Limited in 2023.

Direct GHG emissions (Scope 1) (million tCO₂e):

Direct GHG emissions disclosed herein refers to the total direct GHGs emissions from fuel combustion emissions, process emissions, fugitive emissions, etc. produced by subsidiaries of PetroChina Company Limited in 2023.

Indirect GHG emissions (Scope 2) (million tCO₂e):

Indirect GHG emissions disclosed herein refers to indirect GHGs emissions from consumption of purchased electricity, purchased steam, etc. produced by subsidiaries of PetroChina Company Limited in 2023.

Chemical oxygen demand (COD) emissions (10,000 tons):

Chemical oxygen demand (COD) emissions disclosed herein refers to the total amount of COD in the wastewater discharged during the production process by subsidiaries of PetroChina Company Limited in 2023.

Nitrogen oxides (NO_x) emissions (10,000 tons):

Nitrogen oxides (NO_x) emissions disclosed herein refers to the total amount of NO_x emissions discharged during the production process by subsidiaries of PetroChina Company Limited in 2023.

Total energy consumption (10,000 tons of standard coal):

Total energy consumption disclosed herein refers to the total amount of energy converted into standard coal and consumed by subsidiaries of PetroChina Company Limited in 2023, excluding energy consumed as raw materials for production and energy supplied outside the company.

Energy saved (10,000 tons of standard coal):

Energy saved disclosed herein refers to the sum of the year-on-year savings on energy consumption saved by subsidiaries of PetroChina Company Limited in 2023, under the premise of producing the same products and completing the same processing or workload, and the amount of energy consumption saved various energy-saving projects.

Freshwater consumption (10,000 m³):

Freshwater consumption disclosed herein refers to the amount of water used for the first time by subsidiaries of PetroChina Company Limited in 2023, from tap water, surface water, groundwater sources, excluding seawater, bitter brackish water, sewage, reclaimed water, and water supplied outside the enterprise.

Water saved (10,000 m³):

Water saved disclosed herein refers to the sum of the amount of fresh water saved by subsidiaries of PetroChina Company Limited in 2023, under the premise of producing the same products and completing the same amount of treatment or workload, and the amount of fresh water saved by various water-saving projects.

Number of employees (10,000):

The number of employees disclosed herein refers to the registered personnel employed by PetroChina Company Limited in 2023 who have signed labor contracts with the company, excluding labor dispatch, seasonal employment, temporary employment, and third-party personnel.

Percentage of female administrative staff (%):

Percentage of female administrative staff disclosed herein refers to the ratio of female employees working in management positions to the total number of employees employed by PetroChina Company Limited in 2023.

Percentage of female employees (%):

Percentage of female employees disclosed herein refers to the ratio of the number of female employees hired by PetroChina Company Limited in 2023 to the total number of employees.

HONG KONG STOCK EXCHANGE ESG REPORTING GUIDE

CONTENT INDEX

Aspect	Mandatory Disclosure Indicator	Page Number
Governance Structure	A statement from the Board containing the following elements: (i) a disclosure of the Board's oversight of ESG issues;	9, 14-19
	(ii) the Board's ESG management approach and strategy, including the process used to evaluate, prioritize and manage material ESG-related issues (including risks to the issuer's businesses); and	
	(iii) how the Board reviews progress made against ESG-related goals and targets with an explanation of how they relate to the issuer's businesses.	
Reporting Principles	A description of, or an explanation on, the application of the following Reporting Principles in the preparation of the ESG report: Materiality: The ESG report should disclose: (i) the process to identify and the criteria for the selection of material ESG factors; (ii) if a stakeholder engagement is conducted, a description of significant stakeholders identified, and the process and results of the issuer's stakeholder engagement.	1
	Quantitative: Information on the standards, methodologies, assumptions and/or calculation tools used, and source of conversion factors used, for the reporting of emissions/energy consumption (where applicable) should be disclosed.	
	Consistency: The issuer should disclose in the ESG report any changes to the methods or KPIs used, or any other relevant factors affecting a meaningful comparison.	
Reporting Boundary	A narrative explaining the reporting boundaries of the ESG report and describing the process used to identify which entities or operations are included in the ESG report. If there is a change in the scope, the issuer should explain the difference and reason for the change.	Inside front cover

Subject Area	Aspect	Comply or Explain Indicator	Page Number	
Environmental	Aspect A1: Emissions	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	40, 66	
		KPI A1.1	The types of emissions and respective emissions data.	115-117
		KPI A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	115
		KPI A1.3	Total hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	116
		KPI A1.4	Total non-hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	116
		KPI A1.5	Description of emission target(s) set and steps taken to achieve them.	10-11, 47-53, 66-69
		KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them.	69









Subject Area	Aspect	Comply or Explain Indicator	Page Number	
Environmental	Aspect A2: Use of Resources	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials.	63-65	
		KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	116
		KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	115
		KPI A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them.	10-11, 63-66
		KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.	11, 63-64
		KPI A2.5	Total packaging material used for finished products (in tons) and, if applicable, with reference to per unit produced.	-
	Aspect A3: The Environment and Natural Resources	General Disclosure Policies on minimizing the issuer's significant impacts on the environment and natural resources.	60-75	
		KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	60-75
	Aspect A4: Climate Change	General Disclosure Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer.	40	
		KPI A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.	40-47
Social	Aspect B1: Employment	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	78-79, 83-85	
		KPI B1.1	Total workforce by gender, employment type (for example, full- or part-time), age group and geographical region.	117-118
		KPI B1.2	Employee turnover rate by gender, age group and geographical region.	119
	Aspect B2: Health and Safety	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	85-91	
		KPI B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	114-115
		KPI B2.2	Lost days due to work injury.	114-115
		KPI B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored.	85-91
	Aspect B3: Development and Training	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	80-82	
		KPI B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	118-119
		KPI B3.2	The average training hours completed per employee by gender and employee category.	118






Subject Area	Aspect	Comply or Explain Indicator	Page Number
Social	Aspect B4: Labor Standards	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labor.	78
		KPI B4.1 Description of measures to review employment practices to avoid child labor and forced labor.	78
		KPI B4.2 Description of steps taken to eliminate such practices when discovered.	78
	Aspect B5: Supply Chain Management	General Disclosure Policies on managing environmental and social risks of the supply chain.	112-113
		KPI B5.1 Number of suppliers by geographical region.	119
		KPI B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	112-113
		KPI B5.3 Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	91, 112-113
	Aspect B6: Product Responsibility	KPI B5.4 Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	112-113
		General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	108-111
		KPI B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	120
		KPI B6.2 Number of products and service related complaints received and how they are dealt with.	110
		KPI B6.3 Description of practices relating to observing and protecting intellectual property rights.	36, 111
		KPI B6.4 Description of quality assurance process and recall procedures.	109
	Aspect B7: Anti-corruption	KPI B6.5 Description of consumer data protection and privacy policies, and how they are implemented and monitored.	111
		General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	28-29
		KPI B7.1 Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	28
		KPI B7.2 Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	28-29
	Aspect B8: Community Investment	KPI B7.3 Description of anti-corruption training provided to directors and staff.	114
		General Disclosure Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	94-107
		KPI B8.1 Focus on areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport).	94-107
	KPI B8.2 Resources contributed (e.g. money or time) to the focus area.	120	

This report is in compliance with the "comply or explain" provisions under the HKEx's ESG Reporting Guide. The undisclosed indicators in KPI A2.5 and some of the disclosed indicators in KPI B1.2 are explained as follows:

1. Clause A2.5 does not apply to the Company due to its product nature.
2. The Company employs a small percentage of its employees outside of China. In consideration of the principle of materiality, employee turnover data in terms of geographical region is not disclosed in this Report.

PETROCHINA AND UNITED NATIONS (UN) 2030 AGENDA SUSTAINABLE DEVELOPMENT GOALS (SDGS)

UN SDGs	Our Initiatives and Performance
	<ul style="list-style-type: none"> • Revitalizing rural areas with a focus on industry, talent, culture, ecology, and other areas to improve the self-development capacity of poverty alleviation regions and to promote the sustainable development of local economies. In 2023, we launched 1,110 rural revitalization projects
	<ul style="list-style-type: none"> • Assisting farmers in spring plowing, planting, harvesting and field management in the summer, and the fall harvest, to provide energy security for agricultural development • Focusing on food security and providing funding and technical support for the agriculture, husbandry and food processing industries in remote regions to guarantee food security and the supply of raw materials
	<ul style="list-style-type: none"> • Safeguarding the occupational, physical, and mental health of employees, establishing healthy enterprises and maintaining the percentage of health records created for employees at 100%, the detection rate of occupational health hazards in the workplace at 100%, and the percentage of employees exposed to occupational health hazards receiving health checks at 99.66% • Undertaking several initiatives including helping remote regions improve rural clinic infrastructure, arranging for medical institutions to conduct mobile clinical visits and training rural healthcare professionals, in order to improve healthcare conditions in remote regions • Innovating healthcare assistance models and launching Kids Care children's health charity project and other healthcare projects to provide healthcare insurance and subsidies for treatment and rehabilitation of serious cases to families in difficult economic conditions in order to alleviate their burden
	<ul style="list-style-type: none"> • Helping youths in underdeveloped regions access equal education opportunities by establishing specialist schools, innovating student support models and connecting various forms of education resources, leading joint efforts in addressing the issue of fair education • Providing assistance to students in difficulties and training educators based on our "Xuhang Program" and "Benefiting Teachers Program", so as to improve cultural development and growth potential in remote areas • We established our own "Rural Revitalization Workshop" training platform and launched skills training programs specific to different regions and talents, in order to help people in remote areas find local jobs and start businesses. During the year, our training platform recorded 128,500 visits
	<ul style="list-style-type: none"> • Observing the principle of gender equality and treating employees of different genders equally. Our female employees accounted for 23.10% of the total workforce • Strictly complying with the relevant provisions relating to maternity leave and lactation leave and protecting the rights and interests of female employees • Providing skills training courses to women in areas where our businesses were located and remote areas to improve female employment rate
	<ul style="list-style-type: none"> • Providing assistance to communities in the construction of the water-saving irrigation projects and promoting agricultural development • Implementing the "Sweet Community" and other clean drinking water projects, and addressing difficulties of drinking water in the communities
	<ul style="list-style-type: none"> • Making full use of the role of natural gas as a bridge energy in energy transition, and making strong efforts in securing oil and increasing natural gas production to contribute to China's energy structure optimization • Laying out comprehensive plans to accelerate the expansion of new energy businesses such as geothermal energy, wind and solar power, hydrogen energy, and battery charging (swapping) stations, promoting the integrated development of our oil and gas and new energy businesses, and establishing a "low-carbon energy ecosystem"
	<ul style="list-style-type: none"> • Maintaining a "people first" approach, treating each and every employee with respect and fairness, optimizing our remuneration and welfare system, improving the living and working conditions of frontline employees, and safeguarding the legal rights of our employees • Making strong efforts in implementing our strategy of strengthening the enterprise through talents and providing smooth promotion paths for employees to develop their careers. 100% of our employees attended training programs • Fostering local suppliers and contractors during our construction and operation to create jobs in our business locations

UN SDGs	Our Initiatives and Performance
	<ul style="list-style-type: none"> Implementing innovation strategies extensively, optimizing our R&D innovation system, strengthening key core technology research to achieve breakthroughs, develop technology innovation capabilities and talents, employing 30,483 R&D personnel, with an R&D expenditure amounting to RMB 30.477 billion during the year, representing a 6.1% year-on-year growth, and accounting for 1.0% of our operating revenue Focusing on technological collaboration and exchanges, standards setting, the protection of intellectual property rights related to technology and the transformation, promotion and application of research results, as well as continuously increasing the percentage of invention patents and applications for invention patents under the Patent Cooperation Treaty (PCT) Promoting digitalization transformation and intelligent development based on the three major lines of business development, management reform and technology empowerment, and supporting industrial transformation and upgrading
	<ul style="list-style-type: none"> Prohibiting child employment and forced labor. There has been no incidents of child employment and forced labor Opposing any form of discrimination in gender, region, religion, nationality, etc. The proportion of ethnic minority employees and foreign employees in overseas projects reached 6.82% and 96.71% respectively
	<ul style="list-style-type: none"> Maintaining a good relationship with the community, helping to create job opportunities, contributing to tax revenue and growing together with the community Improving infrastructure in remote areas and developing unique industries to promote local economic and social development
	<ul style="list-style-type: none"> Incorporating environmental risks into our internal risk control system to enhance our pollution prevention and control level, and to eliminate potential and material incidents related to environmental pollution and ecosystem destruction Using natural resources on a sustainable basis and improving energy usage efficiency. During the year, we saved 8.14 million cubic meters of water and 830,000 tons of standard coal of energy Making strong efforts to develop green procurement and striving to establish a green supply chain
	<ul style="list-style-type: none"> Establishing a three-step path to green and low carbon transition, which consists of the “clean energy substitution, strategic succession and green transition” stages Actively tackling climate change by strengthening our carbon emission management and response to carbon risks, promoting the use of CCS/CCUS technologies in business settings, and endeavoring to build carbon sequestration forests and carbon neutral forests Maintaining deep involvement in activities of the OGCI and China Oil and Gas Methane Alliance Attending the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28), where we hosted and participated in China Corner's side event titled “China's Efforts, Progress and Opportunities on Methane Emissions Abatement”, and introduced to the audience PetroChina's work and achievements in green and low-carbon transition and the management and methane emissions control
	<ul style="list-style-type: none"> Adhering to the environmental protection philosophy of clean development, continually carrying out environmental management and monitoring projects to protect the ecological environments and biological diversity in business locations
	<ul style="list-style-type: none"> Strictly complying with local environmental protection laws and regulations governing the prohibition of poaching, picking, and trading of nationally protected wild animals and plants and wildlife products as well as the protection of local rare species and biological diversity Continuously improving the biodiversity protection system and incorporating biodiversity risk into our project life cycle management, launching a wide range of biodiversity protection projects to protect wildlife habitats, exploring nature-based solutions (NbS(s)), and building voluntarily contributing biosphere reserves
	<ul style="list-style-type: none"> Fully implementing the Anti-commercial Bribery Manual, the Integrity and Compliance Manual, the Employee Handbook and the Corporate Culture Manual together with other systems and regulations, abiding by business ethics, adhering to the principles of honesty and trustworthiness, equal consultation, mutual benefits, promoting “Trading under the Sunshine” and striving to maintain fair and just competition order in business activities
	<ul style="list-style-type: none"> Strengthening the ESG management of the supply chain, and conducting adequate risk identification, management and control for environmental and social risks that may exist within the supply chain, such as risks in relation to safety and health, labor rights, environmental protection and business ethics, to create a sustainable supply chain Fostering in-depth collaboration with industries addressing climate change, and partnering with OGCI member companies to share technology and experiences in order to promote the activities of the China Oil and Gas Methane Alliance

TCFD RECOMMENDATIONS INDEX

TCFD Framework	Page Number
Governance	
a) Describe the Board's oversight of climate-related risks and opportunities.	40-41
b) Describe management's role in assessing and managing climate-related risks and opportunities.	41
Strategy	
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	42-43
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	42-46
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios.	42-46
Risk Management	
a) Describe the organization's processes for identifying and assessing climate-related risks.	40-41
b) Describe the organization's processes for managing climate-related risks.	40-41
c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	47
Metrics and Targets	
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	10-11, 47, 115
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	10-11, 50, 115
c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	10-11, 47, 115

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, we are committed to observing and supporting the Ten Principles of the UN Global Compact in the areas of human rights, labor rights, environmental protection, 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 in the Global Compact	Corresponding Sections Herein
Human Rights	4.1 Rights Protection and Employee Development 5.1 Maintaining Positive Community Relations 5.2 Rural Revitalization and Social Welfare 5.3 Overseas Community Construction
	4.1 Rights Protection and Employee Development 5.1 Maintaining Positive Community Relations

Ten Principles in the Global Compact		Corresponding Sections Herein
Labor Standards	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	4.1 Rights Protection and Employee Development
	4. Businesses should uphold the elimination of all forms of forced and compulsory labor	4.1 Rights Protection and Employee Development
	5. Businesses should uphold the effective abolition of child labor	4.1 Rights Protection and Employee Development
	6. Businesses should uphold the elimination of discrimination in respect of employment and occupation	4.1 Rights Protection and Employee Development 4.2 Diversity, Equality, and Inclusiveness
Environment	7. Businesses should support a precautionary approach to environmental challenges	2 Climate Change and Energy Transition 3 Environmental Protection
	8. Businesses should undertake initiatives to promote greater environmental responsibility	2 Climate Change and Energy Transition 3 Environmental Protection
	9. Businesses should encourage the development and diffusion of environmentally friendly technologies	1.7 Technological Innovation and Digital Empowerment 2 Climate Change and Energy Transition 3 Environmental Protection
Anti-Corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery	1.3 Management in Accordance with Laws and Compliance 1.4 Internal Control and Risk Management System 1.5 Business Ethics and Integrity Risk Prevention 5.5 Supply Chain Management

GRI AND IPIECA/API INDEX

For the purpose of disclosing ESG information, we make references to the Oil and Gas Industry Guidance on Voluntary Sustainability (2020) co-published by the International Petroleum Industry Environment Conservation Association (IPIECA) and the American Petroleum Institute (API), and the GRI Sustainability Reporting Standards (2021) published by the Global Sustainability Standards Board.

Contents		IPIECA/API (2020)	GRI (2021)
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	Contents	IPECA/API (2020)	GRI (2021)
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	Internal Control and Risk Management System	GOV-1, GOV-2	
	Business Ethics and Integrity Risk Prevention	GOV-3, SOC-8	2-25, 2-26, 2-27, 205-2, 205-3
	Communicating and Interacting with Stakeholders	SOC-10, SOC-12	2-16, 2-28, 2-29
	Technological Innovation and Digital Empowerment	CCE-3	
Climate Change and Energy Transition	Response to Climate Change	CCE-1, CCE-2, CCE-4, CCE-5	201-2, 305-4, 305-5
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	Green and Low-Carbon Transformation	CCE-1, CCE-3	
Environmental Protection	Environmental Protection Management System		
	Environmental Risk Prevention		403-1, 403-2
	Sustainable Utilization of Natural Resources	CCE-6, ENV-1, ENV-8	302-1, 302-3, 302-4, 303-3, 303-5
	Environmental Governance	ENV-2, ENV-5, ENV-7	303-2, 305-7, 306-2, 306-5
	Protection of the Ecological Environment	ENV-3, ENV-4, ENV-8	304-3
Employee Rights and Development	Rights Protection and Employee Development	SOC-1, SOC-4, SOC-5, SOC-6, SOC-7	401-2, 401-3, 404-1, 404-2, 408-1, 409-1
	Diversity, Equality, and Inclusiveness	SOC-5, SOC-15	2-7, 2-8, 405-1
	Health and Safety	SHS-1, SHS-2, SHS-3, SHS-6, SHS-7, SOC-3, SOC-4	403-1, 403-3, 403-5, 403-6, 403-7, 403-8, 403-9
Social Contribution	Maintaining Positive Community Relations	SOC-1, SOC-3, SOC-9, SOC-10, SOC-11, SOC-12, SOC-13	410-1, 413-1
	Rural Revitalization and Social Welfare	SHS-2, SOC-9, SOC-13, SOC-15	201-1, 203-1, 203-2, 413-1
	Overseas Community Construction	GOV-4, ENV-8, SHS-1, SHS-2, SOC-1, SOC-3, SOC-4, SOC-5, SOC-7, SOC-9, SOC-10, SOC-11, SOC-12, SOC-13, SOC-14, SOC-15	203-1, 203-2, 204-1, 207-1, 410-1, 413-1
	Customer Service	SHS-5, SHS-6	416-1, 416-2, 417-1, 418-1
	Supply Chain Management	SHS-1, SOC-2	308-1, 308-2, 414-1, 414-2
	Performance Data	GOV-1, GOV-3, GOV-4, CCE-4, CCE-5, CCE-6, CCE-7, ENV-1, ENV-2, ENV-5, ENV-7, SHS-1, SHS-2, SHS-3, SHS-5, SOC-5, SOC-7, SOC-13, SOC-14, SOC-15	2-7, 2-8, 201-1, 203-1, 205-2, 302-1, 302-3, 302-4, 303-3, 303-5, 305-1, 305-2, 305-4, 305-5, 305-7, 306-5, 401-1, 401-3, 403-1, 403-2, 403-3, 403-8, 403-9, 403-10, 404-1, 405-1, 416-2
	Independent Practitioner's Assurance Report		2-5



APPENDIX

We strictly complied with applicable laws and regulations. Taking into account the Company's situation, we established rules and regulations related to employment, branding, material procurement, quality, safety, environmental protection, health, and other aspects that cover all production units, staff and processes relevant to the Company, including but not limited to:

1	Measures of PetroChina Company Limited for Management of Labor Contract
2	Measures of PetroChina Company Limited for Performance Evaluation of Company Leaders
3	Administration Measures of PetroChina Company Limited on Production Safety and Environmental Protection Accountability System
4	Administrative Measures of PetroChina Company Limited for Supervision and Inspection of Product Quality
5	Administrative Measures of PetroChina Company Limited for Appraisal of Staff Safety and Environmental Performance
6	Regulations on Environmental Protection Management of PetroChina Company Limited
7	Measures for Environmental Monitoring and Environmental Information Management of PetroChina Company Limited
8	Regulations of PetroChina Company Limited on Environmental Protection Concerning Project Acquisition
9	Management Measures of PetroChina Company Limited for Implementation of Wastewater Discharge Permits
10	Management Measures of PetroChina Company Limited for Ecological Environment Protection of Construction Projects
11	Administrative Measures of PetroChina Company Limited for Energy and Water Conservation
12	Measures of PetroChina Company Limited for Land Management
13	Regulations of PetroChina Company Limited on the Management of Industrial Water of Refining Enterprises
14	Regulations of PetroChina Company Limited on Quality Supervision of Procured Materials
15	Regulations of PetroChina Company Limited on Detection of Occupational Hazards at Workplace
16	Regulations of PetroChina Company Limited on Occupational Health Surveillance
17	Regulations of PetroChina Company Limited for the Administration of Engineering Construction Projects
18	Regulations of PetroChina Company Limited for the Administration of Materials Supply
19	Regulations of PetroChina Company Limited for the Administration of Bid Invitation
20	Administration Measures of PetroChina Company Limited for the Suppliers

All data disclosed in this Report regarding quantitative indicators of emissions, energy consumption, and other aspects are calculated in accordance with the relevant standards issued by the Chinese government, including but not limited to:

1	Statistical Report on Energy Saving and Eco-environmental Protection in Central Enterprises
2	Communique on the Second National Pollution Census
3	Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Oil and Gas Producers (Trial)
4	Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Petrochemical Companies (Trial)
5	Guide to Accounting Methods and Reporting of Greenhouse Gas Emissions by China's Chemical Production Enterprises (Trial)
6	General Rule for the Calculation of Comprehensive Energy Consumption
7	Statistical Index and Calculation Method of Energy and Water Conservation
8	Unit Product Energy Consumption Quota for Petroleum Refining
9	Unit Product Energy Consumption Quota for Ethylene Plants
10	Technical Specification for Application and Issuance of Pollutant Discharge Permit
11	Inspection Guide for Identifying VOCs Pollution Sources of the Petrochemical Industry

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