



2024

Corporate Social
Responsibility Report

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CHAIRMAN'S MESSAGE

It's a pleasure to present this year's CSR report. In 2024, we made great achievements with our efforts and determination. Upholding "seeking progress while maintaining stability", we saw record-high performance in our operational results and high-quality development. Solid strides were also made towards the goal of building CNPC into a world-class company.

- **Due responsibility in ensuring national energy security**

In this year, we remained committed to securing oil and gas production towards the Chinese path to modernization. Our operational results showed steady growth, topping central state-owned enterprises in performance and benefits. A number of major domestic breakthroughs and discoveries were made in exploration, leading to record-high oil and gas production. The refining and chemical business accelerated its advancement towards the medium and high end of the industrial chain, with the Blue Ocean high-end polyolefin project starting construction, and the ethylene projects of Jilin Petrochemical, Guangxi Petrochemical and others being facilitated, basically forming an industrial chain consisting of refining, chemicals, bio-manufacturing, fine chemicals and new materials. The market share of refined oil sales steadily increased while the sales volume of natural gas and chemical products reached the best level in history. The resilience and security of the industrial and supply chains were continuously enhanced, ensuring no shortage of supply during key periods and in key regions during peak hours, hence cementing the foundation and capacity as the "stabilizer" of energy supply.

• The future driven by transformation development

In this year, we focused on developing new quality productive forces, actively explored new fields, and accelerated the development of emerging and future industries. The first large-scale centralized wind power project of Jilin Oilfield was connected to the grid for power generation, and a number of key new energy projects in Daqing, Xinjiang, Tarim and other places started construction, with the annual wind and solar power generation reaching 4.8 billion kWh, doubled that of the previous year. Geothermal and CCUS businesses were accelerated, and a new energy "ecosystem" featuring the integrated development of wind, solar, thermal power and hydrogen began to take shape. The development of new materials businesses were accelerated and intensified, with output maintaining a high growth rate of around 50% for three consecutive years. Substantive steps were taken in the layout of future industries. In line with the "Carbon Peak and Carbon Neutrality" goals, we promoted carbon emission reduction, pollution reduction, green development expansion and economic growth in a coordinated manner. We formulated an action plan to enhance methane emission control, further strengthened international and domestic cooperation on climate change, innovatively promoted biodiversity conservation, and continuously increased the "innovation" and "green" content of high-quality development.

• Development prospects from reform and innovation

In this year, we forged ahead in the face of difficulties and tackled challenges with determination. We systematically planned the overall blueprint for further comprehensive deepened reform, overfulfilled the phased tasks of the reform deepening and upgrading action, steadily and accurately advanced the reform of systems and mechanisms in key areas, and achieved new and important breakthroughs in the modernization of the corporate governance system and governance capacity. We were committed to scientific and technological innovation, with acceleration in major national science and technology projects as well as the construction of original technology sources, and we led and participated in the construction of multiple innovation consortia of central state-owned enterprises. Well Shenditake 1, drilled to a depth of 10,000 meters, marked an important milestone in deep-earth exploration. The "broad band, wide azimuth and high density" seismic prospecting techniques and equipment won the first prize of the State Science and Technology Award. Great results were made in IT Infrastructure Revamping and Digital Empowerment projects, boosting the building of a "digital CNPC". The "Kunlun Large Model" kept breaking through the upper limit of computing power. With reform and innovation, the Company's high-quality development was constantly boosted.

• Building a better CNPC featuring "modesty, honesty, responsibility, openness, and inclusiveness"

Upholding the principle of "harmony and shared prosperity" and being closely connected with people's pursuit for a better life, domestically, we supported over 1,100 assistance projects in 28 provinces, autonomous regions, and municipalities nationwide, with 650 provisional officials, resident first secretaries, and work team members dispatched, making our due contribution to comprehensive rural revitalization. Overseas, we insisted on integrating enterprise development with benefiting society, promoting the sharing of development achievements with local governments, partners and employees in resource regions. We valued people-oriented principles, created smooth career development paths, promoted localized operations, and contributed to the economic and social development of the host countries. In 2024, the employee localization rate of overseas investment business reached 92%, and the cumulative tax and fee realized overseas was RMB 89.57 billion. Meanwhile, we aligned with global energy development with BGP among other companies winning multiple international projects/contracts. We also successfully held the sixth Russian-Chinese Energy Business Forum (RCEBF), and the seventh CNPC International Cooperation Forum. We welcomed visits by nearly one hundred diplomatic envoys from all over the world to build up consensus on opening-up and win-win cooperation, starting the second golden decade of BRI energy cooperation. CNPC received wide recognition from the market, and topped the domestic oil and gas industry in the world's top 500 most valuable brands (Brand Finance Global 500 2025).

No matter how big the dream is, it can be achieved if pursued. 2025 marks the end of the 14th Five-Year Plan, as well as the 75th anniversary of CNPC. The world is still full of uncertainties and instabilities, bringing us opportunities and challenges along the way. We will stay committed to the principle of "seeking progress while maintaining stability", and implement the new development philosophy completely, accurately and comprehensively. We also will thoroughly implement the new energy security strategy, and pursue high-quality business development, making our due contribution to ensuring national energy security, as well as building China into a great modern socialist country in all respects and rejuvenating the nation through Chinese-style modernization.

Thank you for your long-term support to CNPC! As a global corporate citizen, we will leverage our strengths to meet social needs, address common challenges, explore potential for development, and create shared values with stakeholders. In our pursuit of harmonious and sustainable development among energy, environment and society, we are dedicated to building a community with a shared future for mankind.

Dai Houliang
Chairman

ABOUT US

As one of China's key state-owned enterprises (SOEs) and a major global oil and gas producer and supplier, CNPC is an integrated international energy corporation with businesses covering oil and gas exploration and development, new energies, refining and sales, new materials, technical support and services, and financial services. We possess oil and gas assets and interests in 33 countries/regions around the world. In 2024, CNPC ranked the 3rd among Energy Intelligence Top 100 Global NOC & IOC Rankings, and the 6th in the *Fortune* Global 500.

Our Vision

To become a world-class integrated international energy company built to last.

Our Values

Pursuing green development and providing reliable energy supply to fuel our customers' growth and power people's happy life.

Our guiding principle to prosperity

High-quality development, deeper reform and opening up, law and rule-based operation and management, as well as full and strict governance over the Party.

Our corporate governance principle

Specialized development, market-oriented operation, lean management, and integrated planning.

Our Strategies

Innovation. Resources. Market.
Internationalization. Green & Low Carbon.

FIGURES IN 2024

Assets & profits

Total assets	Total revenue
RMB 4,435.16 billion	RMB 3,136.22 billion
Total profits	Total taxes & charges
RMB 301.03 billion	RMB 505.43 billion

Resource reserve (domestic)

Newly proved oil reserves	Newly proved oil reserves (Exceeding 600 million tons for 19 straight years)
869 million tons	exceeding 600 million tons
Newly proved natural gas reserves	Newly proved natural gas reserves (Exceeding 400 billion cubic meters for 18 consecutive years)
996.9 billion cubic meters	exceeding 400 billion cubic meters

Oil/gas output

Domestic and global oil and gas equivalent production	Domestic and global oil and gas equivalent production (+2.3% YoY)
339 million tons	+2.3%
Domestic crude output	Domestic natural gas production
106.151 million tons	158.64 billion cubic meters
Domestic crude output (49.9% of the national total)	Domestic natural gas production (64.4% of the national total)
49.9%	64.4%

Oil/gas supply (domestic)

Refined products sales
119.22 million tons

Refined products sales
(with a market share of 31%)
31%

Natural gas sales
244.89 billion cubic meters

Natural gas sales
(with a market share of over 60%)
over **60%**

Global presence

Oil and gas investment in 33 countries and regions
33

Oil engineering and construction services in 80 countries and regions
80

Overseas oil and gas equity production
106.46 million tons

Environmental protection

Land saved
1,200 hectares

Methane emissions intensity
0.27%

VOC emissions from refineries: -9% YoY
-9%

Total GHG emissions
187 million tons of CO₂ equivalent

NO_x emissions: -2.14% YoY
-2.14%

COD emissions: -14.29%
-14.29%

New energies & new materials

New geothermal heating area (including O&M)
over **15** million square meters

Total installed wind/solar capacity (including visual progress)
over **10** million kW

Total geothermal heating area (including O&M)
over **50** million square meters

Production of new materials: +49.3% YoY
+49.3%

Technological progress

R&D investment
RMB **31.28** billion

Key/core technology breakthrough rate
72.2%

Employee development

Total employees
1,000,800

Annual training expenses
RMB **3.23** billion

Share of local employees in overseas projects
92%

Training coverage for front-line employees
100%

Public welfare

Total investments in rural revitalization and social welfare programs: RMB 669 million, benefiting 7.02 million people
RMB **669** million

Number of assistance programs: over 1,100, including 887 domestically
over **1,100**

Number of provisional officials, resident first secretaries and work teams
650

CORPORATE GOVERNANCE

CNPC is a wholly state-owned enterprise, and the State-owned Assets Supervision and Administration Commission (SASAC) performs the responsibilities of investor on behalf of the State Council in accordance with relevant laws, administrative regulations, and authorizations. The Company has been implementing the principle of “Two Consistencies” in line with the Party’s leadership with corporate governance and aligning the leading role of the Leading Party Members Group with the Board of Directors’ lawful fulfillment of its duties. A corporate governance mechanism has been established, with clearly defined powers and responsibilities, transparency and accountability, coordinated operations, and effective checks and balances. A modern enterprise system with Chinese characteristics has been evolving to support the modernization of governance systems and governance capabilities, with a focus on the development of mechanisms and institutions for building a world-class enterprise and the fulfillment of its economic, political, and social responsibilities.

»» The Party Leadership Group

As the leading body established by the Party in CNPC, the Leading Party Members Group has a legal status in the corporate governance structure, and it plays a leading role in guiding, supervising, and ensuring the implementation of major decisions. In line with the principle of “Two Consistencies”, the Leading Party Members Group strengthens the Party’s leadership in all aspects of corporate governance such as decision-making, execution and supervision. It fulfills the duties of decision-making or supervision in major matters of the Company, and decides on major matters such as Party building. It promotes the transformation of the Party’s propositions and major decisions into the Company’s strategic goals, work measures, and conscious actions of employees by conducting preliminary reviews of major matters concerning operation and management. It oversees the implementation of the Party’s theories, guidelines, policies, and national development strategies and upholds socialism in the Company’s reform and development.

In 2024, adhering to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we fully studied and implemented the major principles of the Party’s 20th National Congress, the Second and Third Plenary Sessions of the 20th CPC Central Committee, resolutely implemented the decisions and deployments of the CPC Central Committee and the State Council, upheld the underlying principle of seeking progress while maintaining stability, followed the new development philosophy, exercised the duties in full and strict governance over the Party, coordinated the deepening of reform, strengthened scientific and technological capabilities of strategic importance and accelerated the development of new quality productive forces. As a major central state-owned enterprise, CNPC made solid headway in enhancing the supply capacity of high-quality energy and chemical products, strengthening production safety and environmental protection, making important contributions to ensuring national energy security and bolstering the overall recovery of the Chinese economy.



» Board of Directors

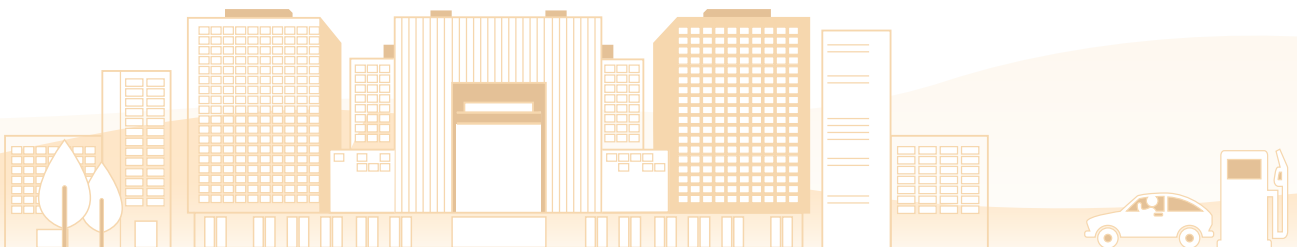
As the decision-making body, the Board of Directors plays the role in strategy defining, key decision making and risk prevention. In accordance with the *Company Law of the People's Republic of China* and the *Articles of Association of CNPC*, the Board of Directors makes important decisions on the Company's major management issues, major issues related to the Company's strategic development, organizes the formulation of the Company's strategic development plan and promotes its implementation. It supervises the implementation of such decisions by executive management; promotes the improvement of the Company's rules and procedures for risk management, internal controls, legal compliance, accountability and internal investigation; and identifies, analyzes, and oversees the prevention and mitigation of major risks.

In 2024, the Board of Directors focused on a systematic, rational and efficient approach in terms of performing its functions and duties, including revising the Company's Articles of Association in accordance with the Company Law to provide a solid foundation for its institutional framework; serving the overarching strategic goals of the Party and the nation and the national energy security; guiding reform and development from a strategic perspective based on the accurate insight into industry trends; promoting the steady implementation of the Company's strategic planning for core businesses; taking a precise, disciplined and cost-effective approach to investment based on rational and informed decisions; preventing and mitigating major risks through an enhanced mechanism for identifying, analyzing and responding to risks; and leveraging the Company's strengths in sci-tech innovation, industry dominance and energy security areas to build China into a great modern socialist country and advancing the rejuvenation of the Chinese nation through the Chinese path to modernization.





» Managers

As the executive body, the management is responsible to the Board of Directors, and the role of "planning for operation, ensuring implementation and strengthening management". Centering on the implementation of the Company's development strategy and planning, the management analyzes and judges the development situation, and plan for improving the production and operation strategies and schemes. The management is responsible for organizing the implementation of board resolutions, and rationally allocating resources, to ensure that the Company's business plans and objectives are effectively achieved. They are responsible for strengthening the internal management of the Company, optimizing the business process, preventing and resolving risks, and ensuring the standardized and efficient operation of the Company's management system. The management reports to the Board of Directors regularly on the implementation of authorized decisions and resolutions, to ensure the implementation of the Company's strategies.

In 2024, the management followed the underlying principle of "seeking progress while maintaining stability" and made headway towards high-quality development with a focus on enhancing core competitiveness and bolstering core functions. The Company's oil and gas operations and other businesses were running smoothly and efficiently and the new energies and new materials business grew rapidly. Significant progress was made in improving quality and performance, the technological innovation and the deepening of reform advanced steadily. The legal compliance management continued to improve and the QHSE performance remained stable. The Company's targets and tasks for the year were successfully achieved as the operating results reached all-time highs.



CNPC governance system

Corporate governance system	Goals
<p>Compliance management</p> 	<ul style="list-style-type: none"> ○ Strengthened compliance management structure ○ Optimized operational mechanism ○ Enhanced capabilities in key risk prevention ○ Enhanced awareness and ability
<p>Internal control</p> 	<ul style="list-style-type: none"> ○ Integrated system ○ Comprehensive control ○ Effective implementation
<p>QHSE</p> 	<ul style="list-style-type: none"> ○ Standardized operation ○ Controllable risks ○ Continuous improvement
<p>Anti-corruption</p> 	<ul style="list-style-type: none"> ○ Systemic and integrated ○ Synergized and efficient ○ Interconnected and converged

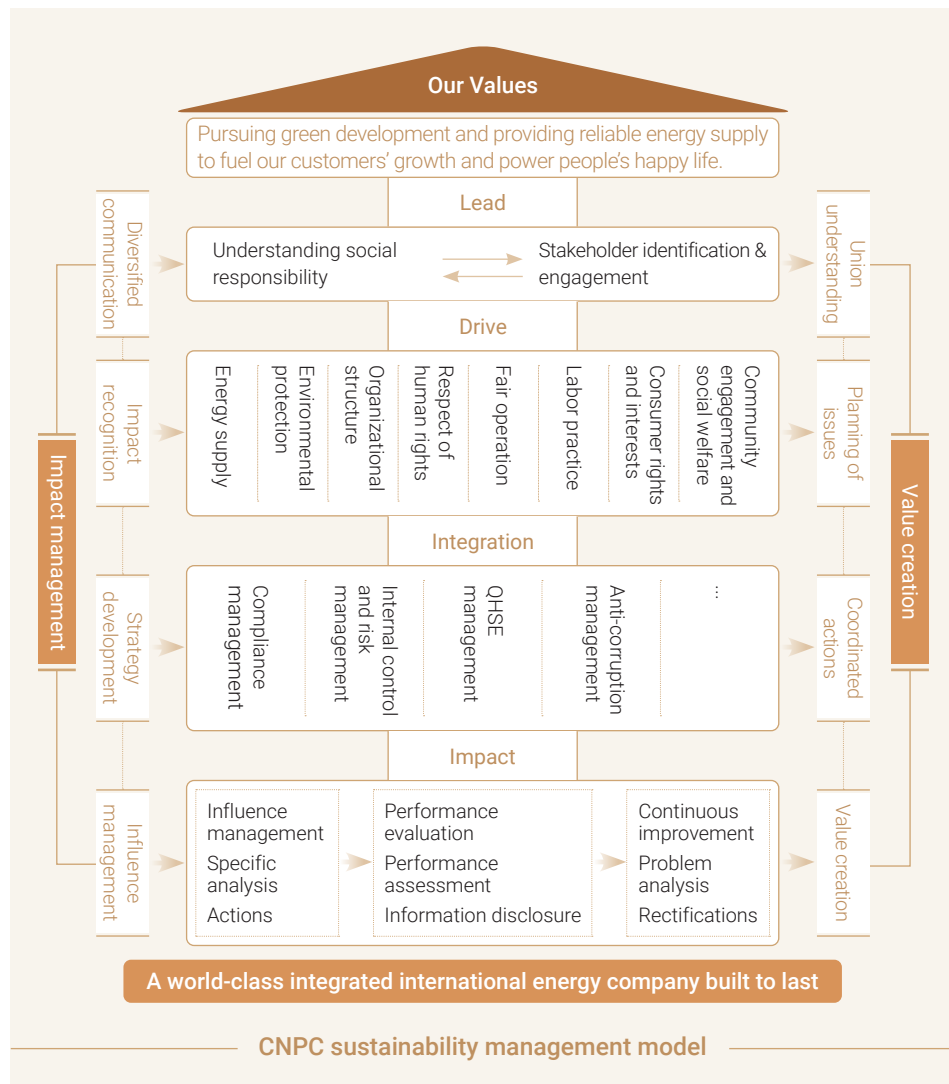
	Measures
	<ul style="list-style-type: none"> ○ Carried out the “Compliance Management Enhancement Year” campaign, clarified the key measures of “four enhancements and one reduction”, and organized enterprises to break down tasks and implement them effectively. ○ Strengthened the operation of the compliance committee, promoted the appointment of chief compliance officers, and gave full play to the role of compliance administrators in business departments. ○ Optimized the effectiveness evaluation indicators of the compliance management system, organized enterprises to carry out evaluations, and promoted the continuous improvement and effective operation of the compliance management system. ○ Strengthened the monitoring of administrative penalty information and promoted the rectification of enterprises. ○ Carried out risk and hidden danger investigations and special governance in key areas such as sales and trade, safety and environmental protection, bidding, finance, and anti-monopoly, promoted the implementation of the responsibility of “managing business and compliance”, and enhanced the ability to prevent and control risks. ○ Carried out special training on laws and regulations, with a focus on middle and senior management personnel, key position personnel, and legal compliance personnel. Organized various forms of publicity and implementation activities to enhance the compliance awareness and capabilities of management personnel at all levels.
	<ul style="list-style-type: none"> ○ Improved the internal control system. Issued standards in risk assessment and business process evaluation, carried out internal control traversal tests of the Company’s unified construction systems, strengthened the control of key links in business information systems, and enhanced the cultivation of internal control talents. ○ Strengthened risk management. Carried out in-depth risk assessment and monitoring as well as comprehensive risk analysis, strengthened research on risk early warning, and promoted the effective improvement of the ability to prevent and mitigate risks. ○ Strict process management. Separated the business and authority of the headquarters according to different legal entities, opened up cross-departmental compliance review channels, and strengthened the management of process time limits. Promoted the process standardization in specialized business fields and comprehensively sorted out the business processes of oil and gas exploration, development and production throughout the entire chain. ○ Strengthened internal control supervision and evaluation to promote law-based and compliant operation. Launched the internal control supervision and evaluation for 2024, organized the internal control management tests of the headquarters and 61 affiliated enterprises, and urged the rectification and implementation. A total of 1,626 audit projects were carried out throughout the year, and the rectification rate of internal audit issues was 99.8%.
	<ul style="list-style-type: none"> ○ Issued the Guiding Opinions on Deepening and Improving the QHSE Management System Audit, adhering to the audit requirements of “integration, differentiation and precision”, and implementing a hierarchical and classified, enterprise-specific, precise and effective audit. ○ Established an information database of senior auditors and technical experts, standardized the templates for audit plans, audit programs and audit report compilation uniformly, carried out audit quality assessment, and strived to improve audit quality and efficiency. ○ Completed audit for over 130 major production and operation enterprises (including overseas projects).
	<ul style="list-style-type: none"> ○ Unified promotion of not daring to be corrupt, not being corrupt, and not wanting to corrupt. Always maintained a high-pressure situation in the fight against corruption, and more effectively curbed the increase and eliminate the stock. ○ Accelerated the development of digital supervision to improve our ability and coverage. ○ Deepened three-supervision (business, function, and accountability) and promoted efficient synergy from other means of supervision.

SUSTAINABLE DEVELOPMENT MANAGEMENT

» Concept of Sustainable Development

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

Adhering to legal operation, we are honest and trustworthy, conserve resources and protect the environment, insist on the people-oriented principle and build a harmonious enterprise, in order to make returns to society and realize value sharing. We aim to achieve the organic unity of economic, environmental and social responsibilities, and strive to become an outstanding global corporate citizen with higher profitability, stronger brand influence, and a sound reputation in society.



» Management Mechanisms

Sustainable development management is an important part of CNPC's drive for deepening the modernization of its governance system and capabilities. At CNPC, we regard the establishment and improvement of the social responsibility management mechanism as a fundamental task in advancing sustainable development management. Focusing on system establishment, organizational structure and capability building, we have established a set of comparatively comprehensive sustainable development management mechanisms.

System Building

We have developed a "1+N" system, with the "Guideline of CNPC on Fulfilling Social Responsibility" as the guiding document for sustainable development management. Focusing on corporate governance, energy transformation, green and low-carbon, safety production, product quality, employee health, and social welfare, laying a solid foundation for sustainable development management (see corresponding chapters of this report for details).

Organizational Structure

The Social Responsibility Management Committee is responsible for making social responsibility strategies and plans. The Committee is composed of heads of headquarters functional departments, with a company leader as the director. Meanwhile, we have established an External Experts Committee and regularly hold meetings to solicit professional advice on social responsibility management and best practices, and to provide support for our decision-making. At the headquarters, we have set up the Social Responsibility Office for CSR implementation, which is responsible for organizing and coordinating the planning and implementation of our social responsibility work. A working mechanism has been established, in which the Committee takes the lead, departments in charge organize the work, business sectors take respective responsibilities and affiliates are fully engaged. This has effectively ensured the progress of our social responsibility standards and planning.

Capacity Building

We actively carried out research in the field of social responsibility, promoted CSR education and training, and boosted communication with relevant organizations at home and abroad, in order to continue enhancing CSR awareness and our capability to fulfill responsibilities among all employees.

» CNPC and UN SDGs

The UN SDGs represent the greatest consensus of mankind on sustainable development. CNPC gives full play to its own advantages, and seeks opportunities through meeting social development and addressing common challenges, striving to contribute to the achievement of the United Nations Sustainable Development Goals.



We implemented rural revitalization projects to help eliminate poverty in all forms.

- We earmarked RMB 669 million for rural revitalization and social welfare

We took action to restore farmland, boost agricultural production and supply water to rural areas to promote local agricultural development.

- We provided assistance in spring plowing, summer planting, summer harvesting, summer field management and autumn harvesting
- Assisted the mushroom base in Barkol, the wheat processing factory in Qinghe and high-efficiency water-saving irrigation projects



We publicized a healthy lifestyle, and provided free medical services to the public. We paid great attention to employee health, and implemented the Employee Assistance Program (EAP).

- Our employee occupational health examination rate reached 100%
- Our overseas psychological hotline provided services for 1,000 hours
- For four consecutive years, township health centers have been built in the assisted areas, benefiting more than 20 ethnic minorities and over 120,000 people

While promoting traditional education projects, we explored new models to solve the problem of educational inequity.

- We granted CNPC Scholarships to 685 students
- "Xuhang Program" helped 3,951 high school students in poverty
- Implemented the "Youmiao Program" in targeted assisted counties



We upheld gender equality, respected and protected female employees' legal rights and interests, and paid attention to the demands of female in poverty-stricken areas, to help them enjoy a better life.

- We advocated an employment policy based on equality, and the proportion of female employees is 28%.

We improved water use efficiency, and strengthened water resource management and water pollution control. We supported and participated in projects to improve drinking water quality in poor areas.

- We implemented water resources management throughout the industry chain
- We implemented programs on drinking water safety

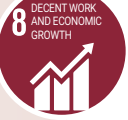


We developed new energies, improved energy efficiency, and enhanced our ability to supply natural gas.

- Additional geothermal heating area exceeded 15 million square meters (including operation and maintenance)
- Accumulative installed wind and solar capacity exceeded 10 million kW (including visual progress)
- A total of 26 hydrogen refueling stations were built
- Domestic natural gas sales volume reached 244.89 billion cubic meters

We created job opportunities for local people according to applicable labor standards and prioritized local contractors in economically underdeveloped areas.

- We had a total of 1,000,800 employees
- We recruited 10,327 fresh graduates



We attached great importance to technological innovation capability building, and supported infrastructure construction in economically underdeveloped areas.

- We invested RMB 31.28 billion in R&D

We had no child employment or forced labor, and no form of discrimination in terms of gender, region, religion, nationality, etc.

- We launched the “women employment training” program to increase the employment of women



We helped build inclusive, safe, and risk-resilient cities and communities.

- We assisted the building of the Qapqal agritourism industrial park
- We assisted the building of rural home stays in Hengfeng County, Jiangxi Province
- We assisted the building of the Yellow River ecotourism project in Fan County, Henan Province

We intensified our efforts in clean energy supply, sustainable management of natural resources, hazardous chemicals management and pollutant discharge reduction.

- Emissions of major pollutants continued to decline



We embraced and supported the goal of the *Paris Agreement* and actively responded to climate change.

- We formulated and released the Action Plan for Green and Low Carbon Development, put forward low-carbon circular economic development, and defined the path for carbon peaking and carbon neutrality
- Methane emission intensity for domestic operations registered 0.27%

We launched the environmental feature acquisition program, and carried out environmental control and monitoring projects, to protect local marine ecological environment and biodiversity.

- We protected the marine ecological environment in Brazil



We complied with local environmental protection policies, and animal and plant trading laws and regulations, and protected local rare species.

- We built 10 other effective area-based conservation measures (OECMs)

We promoted economic prosperity, and pursued peace and growth.

- We strengthened overseas security management. There were no security-related fatalities in our overseas projects



We cooperated with host governments and partners to address challenges in energy sustainable development.

- We have energy cooperation with BRI countries, and the annual oil and gas equity output in these countries accounted for 82.7% of the overseas total equity production
- Our total international oil and gas trade volume was 530 million tons in 2024

COMMUNICATING AND INTERACTING WITH STAKEHOLDERS

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

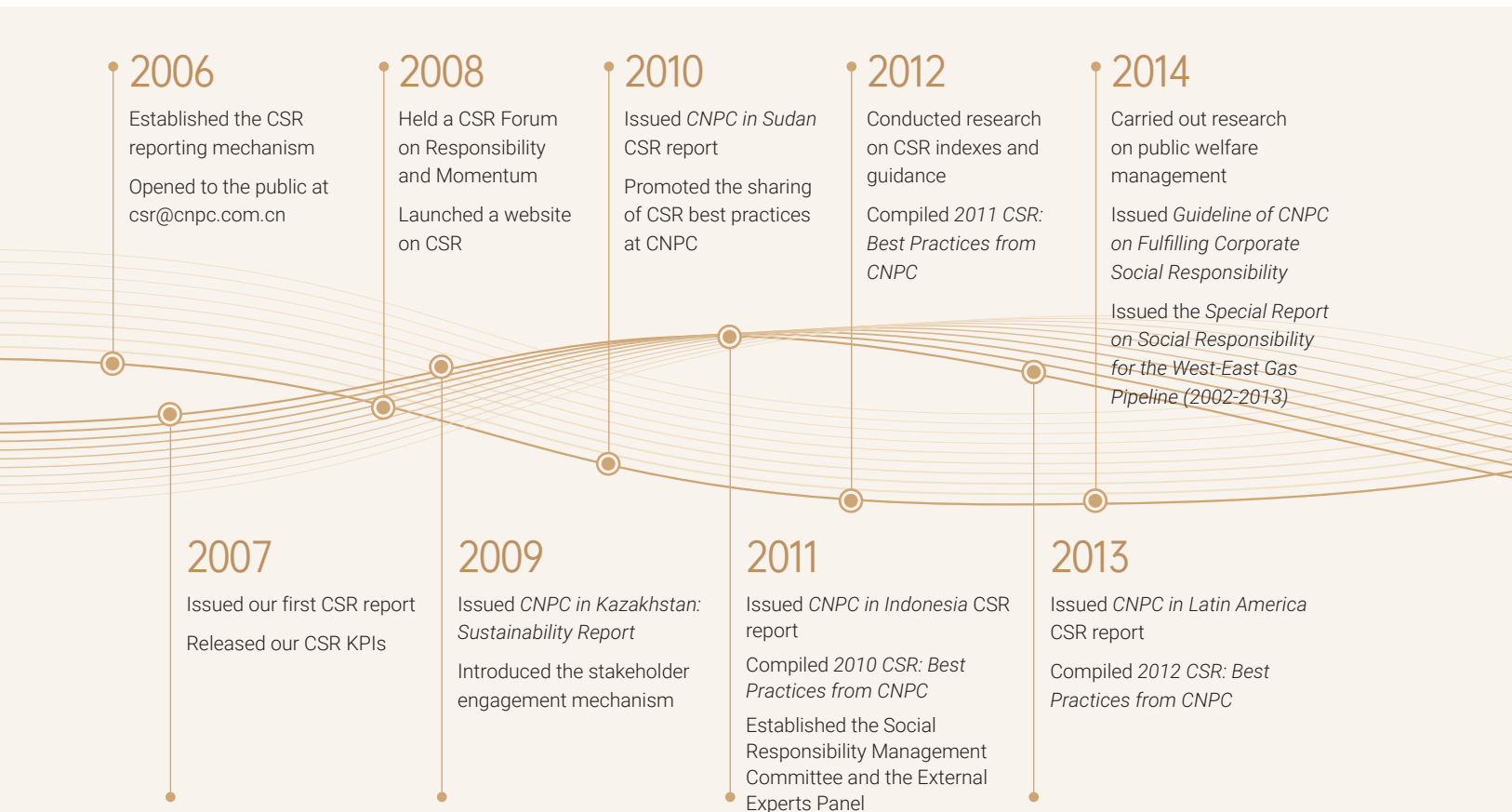
We adhere to the principles of honesty, interaction and equality, and actively establish and improve the mechanism of stakeholder participation. We introduce a variety of ways to collect and analyze the expectations and concerns of our stakeholders, enhance our communication with stakeholders, and invite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

Increasing Routine Disclosure

Through newspapers, the Company's website and its Weibo, WeChat, mobile reading and other new media, we enrich information disclosure channels on social responsibility in a timely manner and enhance the effectiveness of our communications.

Engaging Stakeholders

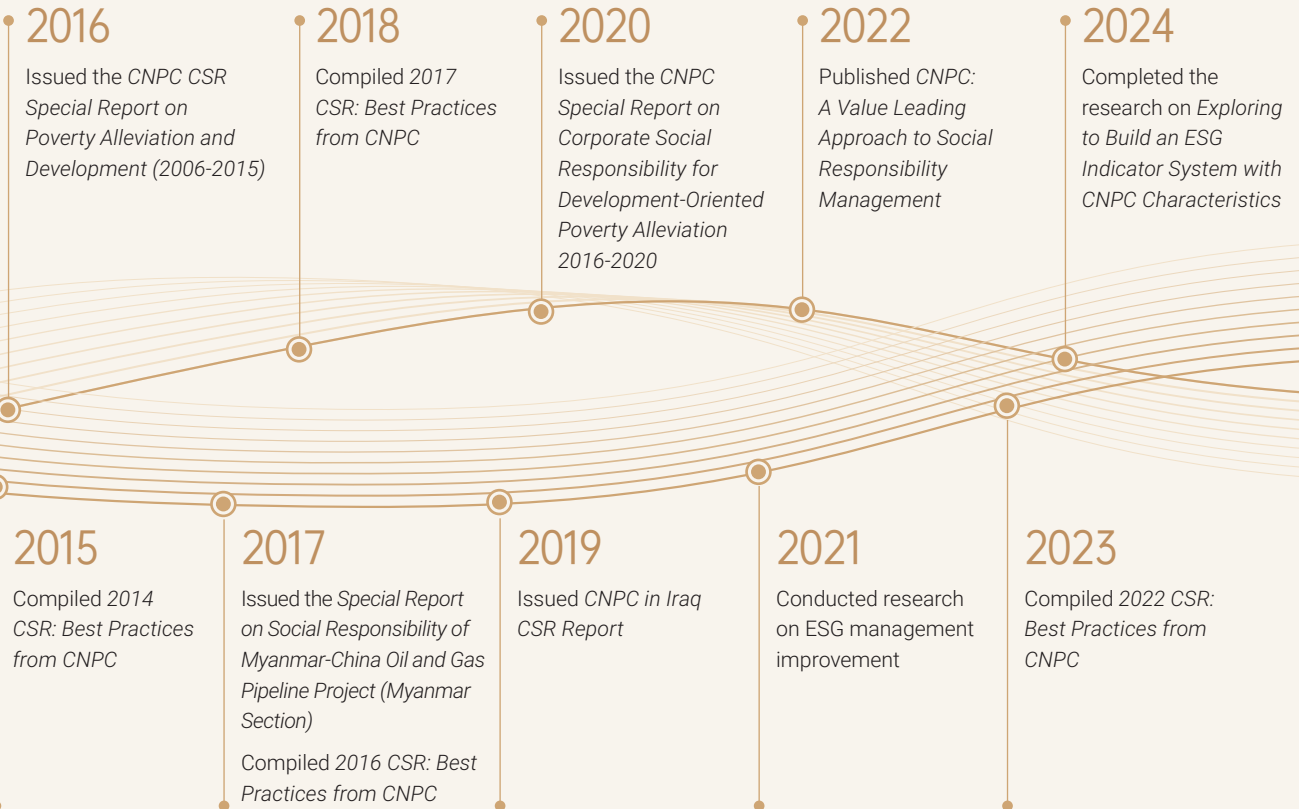
We actively engaged the stakeholders in our enterprises' major decision-making and associated activities, and kept the media and the public more informed of the group. We enhanced the communication with stakeholders by means of staff congress, information announcement/notification, seminars/workshops, and dialogues/exchanges, and through holding the events such as CNPC Open Day.



Case The seventh "CNPC open day"

We actively built platforms for communication with the public. In 2024, we held the seventh CNPC Open Day event, during which we invited government departments, media reporters, corporate clients, representatives of residents and other stakeholders to visit and learn about the whole petroleum industry chain. Channels for communication with the public, both online and offline, were built through various forms such as field visits and drills, science popularization events, games, special lectures and live streams. We are open to the public, and we promote petroleum culture.

Since 2018, the CNPC Open Day, which has been held for seven years in a row, has become an important platform showcasing CNPC to the outside world and strengthening its two-way communication with the public. The total number of online and offline visitors exceeded 78 million person-times.



CNPC and Stakeholders

	Government	Employees
<p>Goals and Concerns</p> 	<ul style="list-style-type: none"> ○ Guarantee energy security ○ Stabilize market supply ○ Fulfil social responsibility ○ Address climate change ○ Compliant operations ○ Build ecological civilization ○ Deepen corporate reform ○ Protect the rights and interests of investors 	<ul style="list-style-type: none"> ○ Guarantee employees' rights and interests ○ Employee career development ○ Employee value realization ○ Employee health and safety
<p>Mode of Communication and Engagement</p> 	<ul style="list-style-type: none"> ○ Legal operation, integrity and trustworthiness ○ Under government supervision ○ Contribute to the formulation of energy policies, laws and regulations, and industry standards ○ Enhance the quality of products, engineering and services ○ Improve environmental performance 	<ul style="list-style-type: none"> ○ Support trade unions at different levels ○ Hold staff congress ○ Reinforce staff training ○ Improve salary distribution system ○ Hold contents and evaluations
<p>Our Actions</p> 	<ul style="list-style-type: none"> ○ Change development mode, leverage resource potential, promote technological innovation, maintain sound operation, and increase the value of state-owned assets ○ Safeguard energy supply, optimize energy mix, in coordination with national energy strategy ○ Promote the building of national key laboratories and major sci-tech innovation projects 	<ul style="list-style-type: none"> ○ Implement human resource development program ○ Improve the staff development mechanism ○ Enhance employee training by hosting professional skills competitions ○ Protect the legitimate rights and interests of employees ○ Organize occupational health examination and employee assistance activities

	Customers and consumers	Business partners	NGOs and relevant organizations	Communities and the public
	<ul style="list-style-type: none"> ○ Provide safe, environmental-friendly, and high-quality products ○ Provide quality services ○ Improve customer satisfaction ○ Establish communication mechanism ○ Advocate sustainable consumption patterns ○ Protect consumer privacy ○ Improve consumer complaints mechanism 	<ul style="list-style-type: none"> ○ Comply with national laws, regulations and business ethics ○ Standardize HSE management ○ Promote fair competition and mutual benefits ○ Promote social responsibility throughout the value chain 	<ul style="list-style-type: none"> ○ Participate in discussion on public policy and industry standards ○ Keep track of industry trends and policy moves ○ Advance the sustainable development of enterprises and industries ○ Carry out cooperation in social development and environment protection 	<ul style="list-style-type: none"> ○ Promote community development ○ Protect community environment ○ Increase local employment ○ Support education, public health and other public welfare activities ○ Perform social investment ○ Enhance sustainable development capacity
	<ul style="list-style-type: none"> ○ Safeguard consumers' interests ○ Supervise product quality ○ Solicit the opinions of consumers and customers 	<ul style="list-style-type: none"> ○ Promote e-procurement through e-commerce platform ○ Share management experience and technical standards ○ Strengthen communication with suppliers and contractors 	<ul style="list-style-type: none"> ○ Share corporate experience ○ Attend related meetings, forums ... ○ Facilitate international exchanges and cooperation 	<ul style="list-style-type: none"> ○ Provide education, training and employment opportunities ○ Promote cultural exchange ○ Pay community visits
	<ul style="list-style-type: none"> ○ Promote the CNPC Quality Month Campaign ○ Provide quality, efficient and clean energy and products (natural gas) ○ Establish a unified service station management system and launch overall inspection ○ Implement customer satisfaction survey, conduct mystery customer visits 	<ul style="list-style-type: none"> ○ Advocate fair competition and standardized operations, and promote the use of e-procurement and management platform ○ Strengthen control over key processes including design, procurement, construction and supervision, and strengthen HSE management for suppliers and contractors 	<ul style="list-style-type: none"> ○ Exchanges with the public on their concerns ○ Participate in high-level strategic cooperation forums to discuss how to build an efficient, safe and competitive supply chain 	<ul style="list-style-type: none"> ○ Carry out disaster relief, poverty alleviation and donations to education, and support the reconstruction of disaster-stricken areas ○ Implement Rural Revitalization Project ○ Support and drive the development of local economies through major project construction ○ Support the development of SMEs and promote local procurement

TOPIC

EFFICIENT ENERGY SUPPLY CAPACITY UNDER THE NEW ENERGY SECURITY STRATEGY

Energy security is a comprehensive and strategic issue related to a country's economic and social development. It is of vital importance to the country's prosperity and development, the improvement of people's lives, and the long-term stability of society. As a key state-owned enterprise and the largest comprehensive energy and chemical enterprise in China, CNPC unswervingly implements the new energy security strategy of "Four Reforms and One Cooperation", fully enhances the capacity for efficient energy supply, and contributes to ensuring national energy security and advancing the Chinese path to modernization.

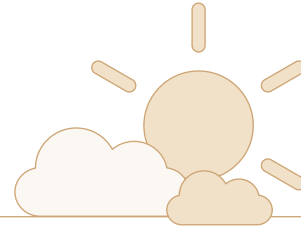
Solid Progress in Implementation

The Company emphasizes safety and efficiency, and comprehensively enhances the supply capacity of diversified energy resources

We thoroughly implemented the new round of strategic actions for breakthroughs in mineral exploration, continuously intensified risk exploration and concentrated exploration efforts, scientifically organized the production and operation of oil and gas, and vigorously developed unconventional oil and gas businesses. Efforts have been made to strengthen the construction of the oil and gas reserve system. Domestic crude oil production has remained stable with a steady increase, and natural gas production has grown rapidly, with its equivalent exceeding that of crude oil. The task of ensuring natural gas supply has been accomplished with high quality, and the domestic market share has exceeded 60%. We accelerated the development of new energy business, and optimized and expanded the layout of green industries. Aiming at green and intelligent development and moving towards the medium and high end of the industrial chain, we orderly promoted the construction of a number of world-class and landmark projects in oil refining and chemical industry transformation and upgrading. Adhering to the philosophy of "molecular refining" and the "product giant" strategy, we have vigorously implemented the new materials acceleration project. The output of major oil refining and chemical products has continued to grow, and the proportion of high-end and high value-added products has been constantly increasing. The sales volume of refined oil products accounts for about one-third of the domestic market share.

The Company focuses on energy conservation and consumption reduction, and vigorously promotes green and low-carbon development

Following the roadmap to energy conservation and green and low-carbon development, we further advance the three major actions (Green Enterprise Construction Leader, Clean Energy Contributor, and Carbon Circular Economy Pioneer) and the ten major projects to promote energy conservation and carbon reduction. We continued to intensify efforts in energy efficiency compliance, energy conservation and carbon reduction, improved incentive and restraint policies, and promoted the Company's transformation from "dual control of energy consumption" to "dual control of carbon emissions". Despite the continuous growth of its oil and gas business and the expanding scale of new refining and chemical materials, the Company has achieved no increase in total greenhouse gas emissions and has been awarded the title of "Low-carbon Case" for consecutive years.



The Company highlights independent innovation, and intensifies scientific and technological research in the fields of energy and chemical engineering

We have built an open and innovative ecosystem and promotes the in-depth integration of the industrial chain, innovation chain and value chain. It has deployed and implemented two 10,000-meter preliminary prospecting wells, advancing into deep Earth exploration. Well Shenditake 1 has broken the 10,000-meter mark and set a new record for the deepest vertical well in Asia. We vigorously promoted the construction of a “digital CNPC”, implemented the information technology reinforcement project to accelerate the empowerment of management. Over the past ten years, we have won a total of 30 national-level science and technology awards. The number of authorized patents ranks among the top of central SOEs. Our independent innovation capabilities have basically transformed comprehensively and became a leader in some areas.

The Company emphasizes stimulating vitality and comprehensively deepens reforms in key areas

In line with the central government’s deployment and requirements for deepening the reform of the systems and mechanisms of state-owned enterprises and the oil and gas industry, we vigorously carried out the three-year action plan for state-owned enterprise reform and the new round of deepening and upgrading actions for state-owned enterprise reform. We improved the top-level design of corporate governance and established four sub-groups: oil and gas and new energy, refining, chemical sales and new materials, support and service, and capital and finance. We have fully implemented the business-specific reform, further advanced professional reorganization, continuously intensified the reform of three systems, and improved the market-oriented operation mechanism. As a result, the quality of the Company’s organizational operation, the efficiency of resource allocation, and the vitality of enterprise development have been constantly enhanced.

The Company emphasizes mutual benefit and win-win results and actively and steadily conducts international energy cooperation

Adhering to the principle of “openness, inclusiveness, cooperation and win-win”, with countries along the Belt and Road Initiative as the focus, we strengthened mutually beneficial cooperation in overseas energy and resources, and strived to optimize the overseas asset structure, business structure and regional layout. We continued to optimize the global trade network and resource channels, deepen the construction of cross-border oil and gas channels, built a community of shared interests in energy cooperation, and completed a number of high-standard landmark projects and engineering. We maintained stable benefits in terms of overseas oil and gas equity production equivalent.

Driver and Leader in Energy Reform

The Company has been deeply promoting the energy supply revolution to function as a stabilizer in ensuring national energy security

We fully implemented the new round of strategic action for breakthroughs in mineral exploration, significantly enhanced domestic oil and gas exploration and development efforts, accelerated the development of unconventional oil and gas businesses such as shale oil and gas and deep coal-rock gas, and comprehensively increased domestic oil and gas production and consolidated the foundation of energy security. We continued to deepen the large-scale development and comprehensive utilization of non-fossil energy sources such as wind, solar and geothermal energy, and accelerated the transformation of enterprises towards the production and supply of integrated energy sources including oil, gas, geothermal, electricity and hydrogen. We spared no effort to promote the transformation and upgraded of the refining and chemical business, striving to increase the production of efficient refining products and high value-added chemical products, and accelerated the shift towards the medium and high end of the industrial chain consisting of "refining, chemicals, bio-manufacturing, fine chemicals, and new materials".

The Company has been deeply promoting the energy consumption revolution and taking the lead in energy conservation and carbon reduction

Following the philosophy that "energy conservation means increased production and saving means enhanced efficiency", we vigorously promoted the implementation of source control projects such as clean substitution of fossil energy, optimization of raw materials and processes, and upgrading of the industrial structure. We also explored and developed the circular economy of oil and gas, and orderly promoted the transformation of the energy consumption structure towards clean, green and low-carbon. Efforts were made to innovate energy-saving technologies, deepen the integration of next-generation digital and information technologies with the energy industry, strengthen the research and development of efficient energy-saving technology and equipment, and improve energy use efficiency driven by innovation. We strengthened energy conservation management, established and improved the system for energy conservation and efficiency improvement, intensified constraints on fossil energy consumption, and strived to win the battle in energy conservation and carbon reduction.

The Company has been deeply promoting the energy technology revolution and playing its role in achieving high-level self-reliance and independence in science and technology as a key SOE

Taking innovation as the top strategy, we accelerated the layout of scientific research and the improvement of the innovation system in accordance with "rapid breakthroughs" and "sustained efforts". We accelerated the layout of scientific research and the improvement of the innovation system, continuously strengthened the research and development of key core technologies, equipment and software in exploration and development, new chemical materials, etc., promoted in-depth collaboration among industry, academia, research and application, and advanced digital transformation and intelligent development. We continued to optimize the governance system for science and technology, accelerated the cultivation of petroleum scientists and strategic talents in the fields of energy and chemical engineering, and strived to build a national strategic scientific and technological force and an innovation highland for energy and chemical engineering.



The Company has been deeply promoting the reform of the energy system and playing its role as a model in the reform of state-owned enterprises and strengthening management

We fully implemented the action plan for deepening and upgrading the new round of state-owned enterprise reform and consolidated the achievements of the three-year action plan for state-owned enterprise reform. We continued to deepen the reform of the organizational system, improved the three-level management structure with the headquarters, business sectors (sub-groups)/specialized companies as the main body, and improved the management structure that combines "vertical" and "horizontal" management. We continued to deepen the reform of the market-oriented operation mechanism and improved the market-based price transmission mechanism of the industrial chain. Focusing on the three main lines of "business development, management transformation, and technological empowerment", we strived to promote the reconstruction of business models, the transformation of management models, and the innovation of business models. We supported the Company's high-quality development with high-level digital transformation and strived to build a "digital CNPC".

The Company has been deeply engaged in all-round international cooperation and is determined to be the "main force" in the high-quality development of the Belt and Road Initiative (BRI)

We resolutely implemented major national strategies, served the overall situation of national diplomacy, focusing on the BRI, comprehensively deepened mutually beneficial cooperation in overseas energy and resources, and ensured the effective and stable production of overseas oil and gas. We continued to improve the construction of cross-border energy channels to ensure the safe, efficient and stable operation of overseas oil and gas pipelines. We further expanded international cooperation, continuously increased the scale of oil and gas trade, and enhanced the resilience and security of the oil and gas industry chain and supply chain. Adhering to the principle of mutual benefit and win-win results, we drove and promoted the economic and social development of the countries where the projects are located, enhanced people's well-being, strengthened the international communication capabilities, promoted cultural integration, and built a community of shared interests in energy cooperation.



TOPIC

DETERMINED TO CONDUCT DEEP-EARTH EXPLORATION AT 10,000 METERS AND BEYOND

Well Shenditake 1, completely drilled at 10,910 meters, becomes China's first scientific exploration well at depth over 10,000 meters, and Asia's first and world's second deepest vertical well. The well has set five records: the world's deepest liner cementing, the world's deepest cable imaging logging, the fastest onshore drilling exceeding 10,000 meters, Asia's deepest vertical well, Asia's deepest onshore core sampling. It is a major breakthrough in deep earth exploration after achievements made in deep space and deep sea exploration.

10910_{meters}

China's first scientific exploration well of over 10,000 meters

Scientific exploration and hydrocarbon discovery
Engineering and technological upgrading and progress

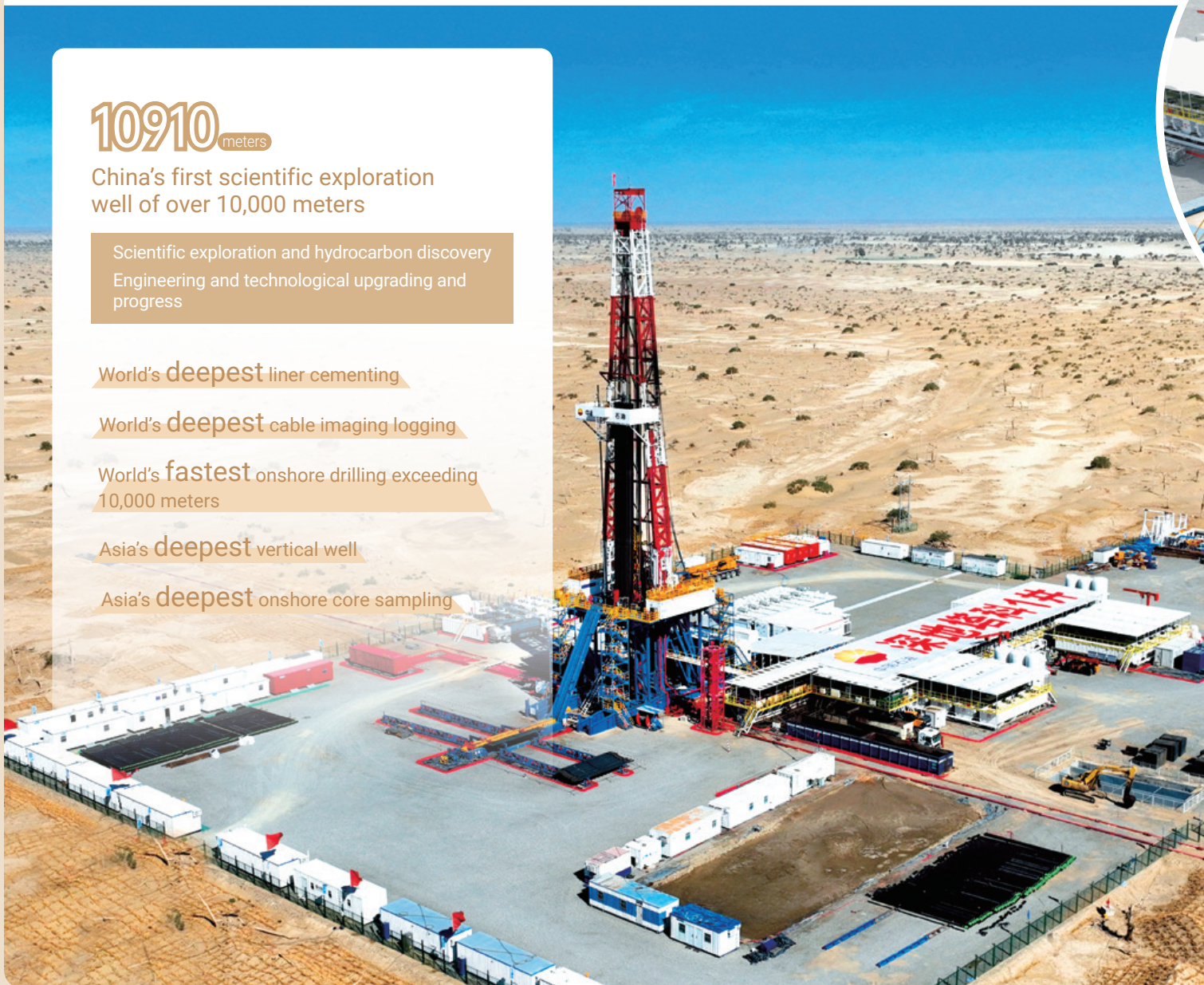
World's **deepest** liner cementing

World's **deepest** cable imaging logging

World's **fastest** onshore drilling exceeding 10,000 meters

Asia's **deepest** vertical well

Asia's **deepest** onshore core sampling





The drilling of Shenditake 1 started on May 30, 2023, and has been committed to scientific exploration and hydrocarbon discovery, as well as engineering and technological iteration and upgrading, based on the important instructions of President Xi Jinping on “deep earth exploration”, “energy security”, and “energy supply stabilizer”, etc. It is a landmark project for building a national strategic scientific and technological force, and is in the high ground of world energy and chemical innovation.

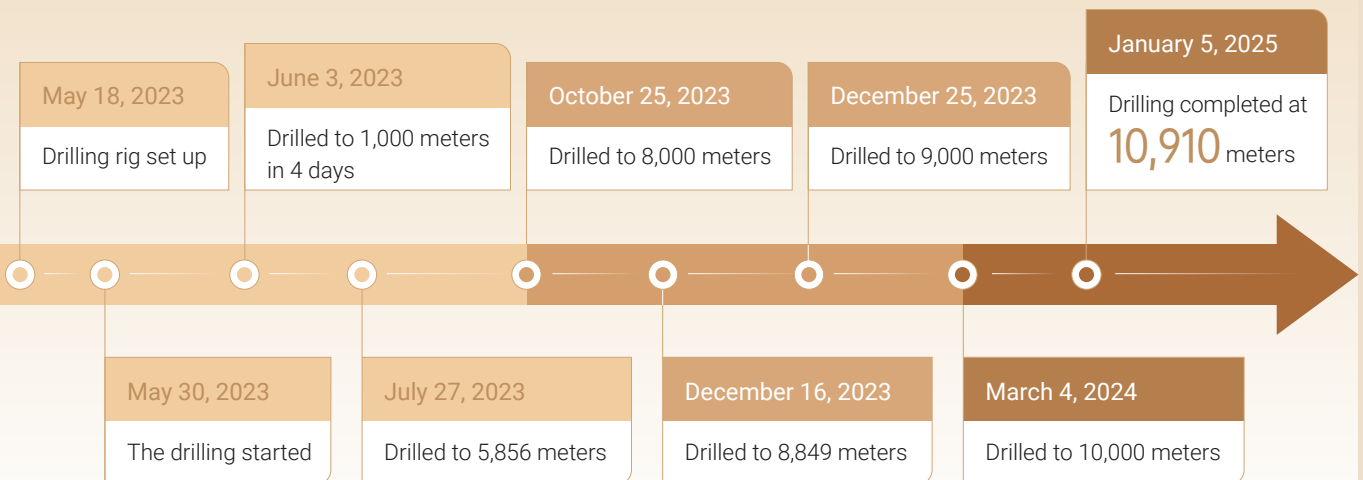
Well Shenditake 1 successfully drilled the first core sample in China from a depth of over 10,000 meters. The world’s first discovery of oil and gas at a depth of 10,000 meters on land also enriched and improved our geological understanding of deep earth oil and gas resources.



“The successful completion of Shenditake 1 represents significant progress in the entire chain of basic theories and key core technologies in China’s deep earth ‘well engineering’, which is a great breakthrough leading the world forward.”

——CAE Academician Sun Jinsheng

Drilling progress of Well Shenditake 1



It took 279 days to drill to 10,000 meters, and nearly another 300-plus days to drill the last kilometer. We faced challenges such as overloading, wellbore instability, tool failure and formation leakage. In particular, the drill pipe was seriously weakened as conventional drilling tools and sensors failed due to the extreme hardness of the formation, resulting in a load into the well as high as 665 tons.

Shenditake 1: World's fastest 10,000-meter drilling

Designed well depth: **11,100** meters

Designed drilling & completion cycle: **457** days

Drilled through **12** strata

Every meter (after reaching 10,000 meters) is met with unprecedented difficulties

It took humans **300** years to drill only about **0.2%** towards the core of the earth

Wells at a depth of over **6,000** meters are called ultra-deep wells

It took us **29** years to drill to 8,000 meters from 7,000 meters

A **15**-year period was used from 8,000 meters to 9,000 meters

Only **3** years were taken from 9,000 meters to 10,000 meters and beyond



Facing these world-class challenges and extreme challenges, CNPC has joined hands with tens of thousands of people from both domestic and foreign enterprises, research institutions, and universities to develop ten technological tools, including the world's first 12,000-meter automated drilling rig on land and the integrated design technology of geological engineering, and formed an independent and controllable key and core technology system for 10,000-meter exploration, boosting the iteration and upgrading of a series of key equipment, tools and materials for deep earth drilling in the country.

Meanwhile, with these key and core technologies and equipment, CNPC has successfully handled numerous complex underground situations, continuously drilling through 12 strata of different lithologies and pressure systems, and eventually encountering rocks dating back over 500 million years. This has established CNPC's leading position internationally in the field of engineering technology at depths of 10,000 meters.

According to Wang Chunsheng, chief expert of Tarim Oilfield and well manager of Shenditake 1, "The successful drilling of a 10,000-meter well is of so much importance. It marks that China's key and core equipment and technologies for ultra-deep well drilling have passed the test of the extremely harsh working conditions at 10,000 meters. It not only enriches the engineering technology series in China's drilling engineering field, but also provides a solid equipment guarantee for pushing the limits of deep earth exploration and developing ultra-deep oil and gas resources."

CNPC unswervingly cultivates new quality productive forces and accelerates the breakthrough in deep earth oil and gas exploration and development. By the end of 2024, the Company has drilled 191 wells at depths of 8,000 meters in the Tarim Basin, fully ensuring national energy security.

What does it mean to have the first discovery of hydrocarbon indication at 10,000 meters?

"According to traditional theory, in very deep and very old strata, there is no reservoir space and oil and gas cannot exist stably. But the discovery of oil and gas in a 10,000-meter well proves the opposite. This will greatly enhance our determination and confidence to advance deep into the Earth, which is of great significance for ensuring national energy security."

—CAS Academician Hao Fang





SUSTAINABLE ENERGY SUPPLY

It is CNPC's responsibility and mission to meet energy challenges and satisfy the ever increasing demand for low-carbon and clean energy. To this end, we enhance technological innovation to continuously increase our efficiency in hydrocarbon development and utilization. We boost the natural gas industry, expand new energies and new materials business, and raise the proportion of clean energy in our energy supply. With these efforts, we strive to make contributions to the construction of a diversified, clean energy supply system and the prosperity of human society.



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Energy and Future

» Opportunities and Challenges

Total energy demand keeps growing. Technological innovation is the key to promoting energy development. There is still considerable room for reduction in the cost of efficient and clean energy technologies. With the economic development of developing countries and the promotion of advanced energy technologies, energy poverty will be gradually eliminated and energy accessibility will be improved. By 2060, global primary energy demand will increase to between 26.2 billion and 29.4 billion tons of standard coal, an increase of 37% to 54% compared with 2020.

Lack of equal access to energy remains prominent. At present, over 1.2 billion people worldwide still lack access to affordable modern energy, and developing countries are still using large amounts of highly polluting and high-carbon energy. Helping this group obtain equal access to clean, low-carbon and affordable energy is not only a requirement for achieving the Sustainable Development Goals (SDGs) of the United Nations, but also the key to achieving global temperature control goals.

Response to climate change is challenging. At the 29th United Nations Climate Change Conference, countries committed to submitting new voluntary emissions reduction contributions. However, the annual investment promised by developed countries in addressing climate change was far lower than the required USD 1.3 trillion, resulting in insufficient investment in energy transition and a slowdown in technology diffusion, hindering the global response to climate change.

China accelerates the building of a new energy system. Under the construction of the new energy system, energy development has entered a new stage. On the one hand, the capacity to ensure energy supply has continued to improve. Energy output will increase from 5 billion tons of standard coal in 2024 to 6 billion tons of standard coal in 2060, and the energy self-sufficiency rate will steadily rise to 95%. On the other hand, the clean development of energy consumption is accelerating. Fossil energy demand will peak around 2028, and energy-related carbon emissions will reach their peak. Non-fossil energy is growing rapidly and gradually becoming the main body of energy supply. By 2060, it is expected to exceed 5 billion tons of standard coal, accounting for 78% of primary energy.

CNPC's green and low-carbon transition path



Measures

- To enhance the development and utilization of geothermal energy, solar energy, wind, hydrogen and other new energy sources, promote clean substitution of energy in production, and promote the coordinated development of new energies and oil and gas industry chain.
- To actively promote the integrated development of natural gas power generation and new energy power generation to provide clean energy products for society.
- To actively deploy technological breakthroughs and pilot demonstrations in resource replacement fields such as hydrogen energy industry chain and clean conversion and utilization of fossil energy, and strive to complement CCUS measures to actively explore the clean development and utilization of fossil energy at lower cost.
- To vigorously promote synergy in energy conservation, carbon reduction and pollution reduction, steadily promote clean alternatives to self-consuming energy, and step up cleaner production and pollution control.

» Strategic Response

The world is undergoing a profound and rapid energy transition towards a cleaner, low-carbon, more efficient and diversified energy structure. Especially at a time of sluggish global economic growth and an intensified backlash against globalization, energy companies should work together to overcome difficulties, explore new opportunities and seek sustainable development. As a major player in the oil and gas industry and China's largest oil and gas producer and supplier, CNPC has been actively cooperating with the government and companies in the industry chain, and strives to provide clean, low-carbon, safe and efficient energy while meeting future energy demand, in an effort to jointly build a sustainable energy future.

Committing ourselves to the value pursuit of "pursuing green development and providing reliable energy supply to fuel our customers' growth and power people's happy life", we have been accelerating the green and low-carbon transition. We incorporate "green and low-carbon development" into the five strategies in the three-step plan "clean alternatives, strategic replacement, green transformation". First, we leverage our rich gas resources and increase gas production, while stabilizing oil production. Second, we make good use of our abundant resources and infrastructure to promote the integrated development of wind, solar, gas and electricity, with a focus on geothermal, electricity and hydrogen, accelerating the transition to become an integrated energy company covering "oil, gas, geothermal, electricity and hydrogen". Third, we promote the green action initiative, and implement energy conservation, emission reduction and clean energy replacement in production, to reduce fossil energy consumption and CO₂ emissions from the source, and achieve carbon reduction; we accelerate the industrial layout of CCUS/CCS, strengthen the development of forestry carbon sinks, chemical utilization of carbon dioxide, etc., striving to achieve carbon removal, and contribute to the achievement of the "Carbon Peak and Carbon Neutrality" goals.

Strategic replacement (2026-2035)

- To promote the coordinated development of new energies and new businesses with the oil and gas business. To allow new businesses such as clean electricity, hydrogen energy industry chain and clean transformation of fossil energy to initially form a strategic replacement pattern for oil and gas resources.
- To promote the implementation of CCUS and carbon sink projects on a large scale to continuously reduce carbon emissions.

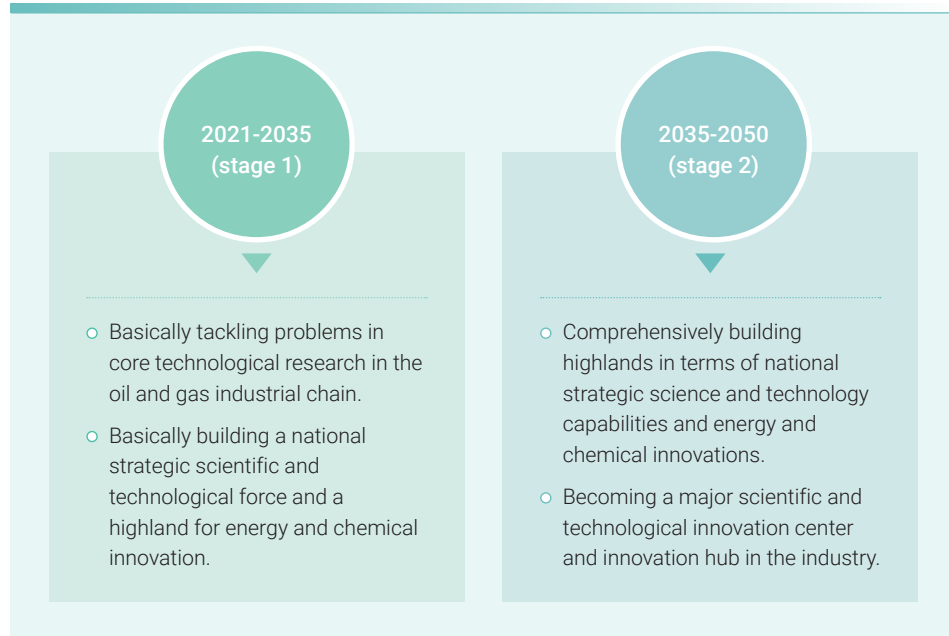
Green transformation (2036-2050)

- To continue increasing the development and utilization of new energies and strategic replacement of oil and gas resources, and improve the five major energy platforms of "oil, gas, geothermal, electricity and hydrogen" energy.
- To intensively implement electrification transition, develop CCUS/CCS strategic replacement industries, and promote the development of carbon circular economy.

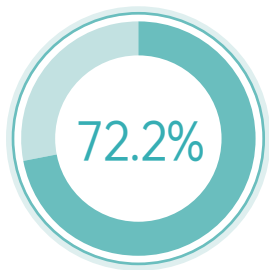
Technology and Innovation

We put more emphasis on the innovation strategy. We endeavor to deploy innovation chains based on industrial chains, and enhance the value chains driven by innovation chains. We drive high-quality supply through innovation, and address global challenges such as equal access to energy, reduction of carbon emissions, and improved energy efficiency.

CNPC's goals for technological development

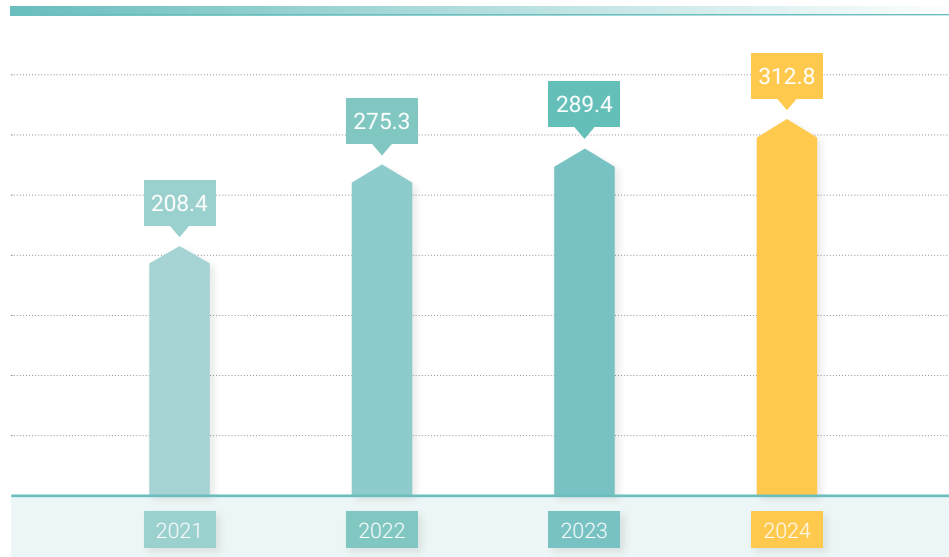


Proportion of R&D in total revenue



Key/core technology breakthrough rate

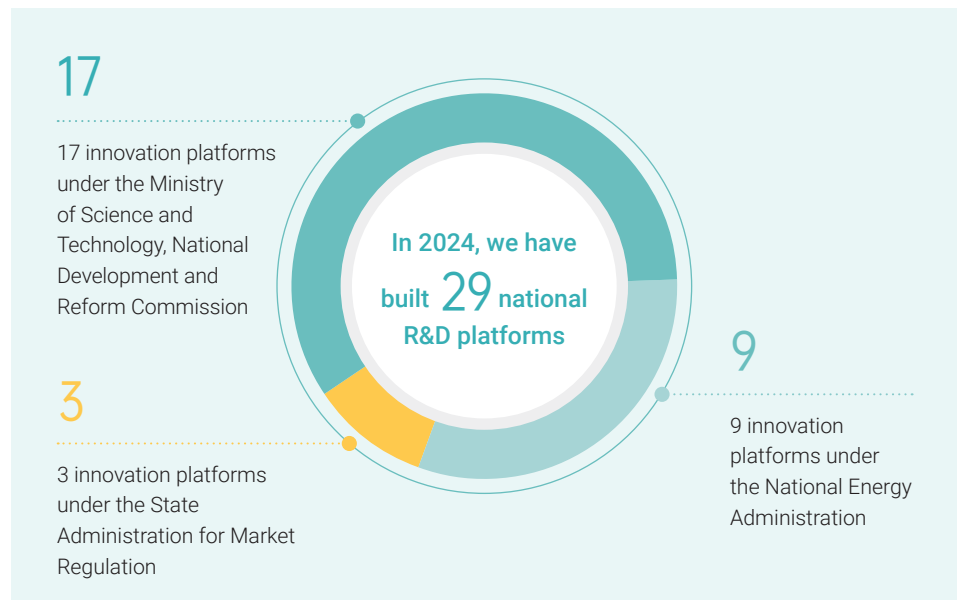
R&D investment (RMB 100 million)



» Innovation Platforms

CNPC has 91 research institutions and departments, with 13 directly affiliated to the Company and 78 enterprise-level scientific research institutions. CNPC also has 29 national R&D platforms and 57 CNPC key laboratories and experimental bases, covering the upstream, midstream and downstream sectors, and supporting and leading the Company's sustainable development.

CNPC maintains a two-level (national-level and provincial/industry-level) talent cultivation platform, and has formed an excellent team of 234 scientific and technological experts, 749 core research fellows, and 1,000 young scientific and technological candidates.



» Scientific and Technological Achievements

Guided by the construction of national strategic scientific and technological forces, CNPC intensified efforts in its major scientific and technological projects for technological innovation and formed a batch of innovative theories and new technologies/new products with proprietary intellectual property rights. CNPC also accelerated efforts in breakthroughs in a number of key and core technologies, in order to provide strong technological support for the high-quality development of the Company.

In 2024, CNPC

- Applied for **11,381** invention patents at home and abroad, with **3,850** granted.
- Formulated and released **6** international standards and **4** advanced foreign standards. Of which ISO/TS20790:2024 *Oil and gas industries including lower carbon energy – Guidelines for green manufacturing and lower carbon emission of oil and gas-field equipment and materials* was the first standard of its kind led by the Chinese oil and gas sector; also a new model for cooperation was set up for countries like Benin by helping to build national oil pipeline standard systems.
- Two experts from CNPC Tubular Goods Research Institute (TGRi) won the ISO Excellence Award for their contribution to ISO's technical work in standardization in pipeline transportation system.



On June 24, at the national science and technology award conference, BGP's "Key technology and equipment of wide azimuth, broadband, and high density seismic prospecting" was awarded the First Prize of the State Technological Invention Award.

**CNPC's Top 10
Scientific and
Technological
Achievements
in 2024**

- 1 Significant progress in key technologies for deep earth drilling into formations below 10,000 m
- 2 Industrial application of China-developed metallocene catalysts
- 3 Official release of the Kunlun Large Model with 70 billion parameters
- 4 Domestic substitution and industrial application of large geological engineering integrated fracturing software system
- 5 The first set of mobile "NMR-Laser-CT" integrated measuring equipment for rock samples at the well site
- 6 The 3000-m oSeis OBN supports oil and gas exploration in ultra-deep water
- 7 Innovative geological theory of the whole petroleum system promoted the discovery of insource reserves in the Fengcheng Formation, Northwest China's Junggar
- 8 Major breakthrough in nylon 66 complete technology with benzene as a single raw material
- 9 Development and commercialization of gas-phase polyolefin elastomer (POE) technology
- 10 1-MW downhole electrically heating steam dryness enhancement technology facilitates effective recovery of deep heavy oil

» Digital Empowerment

The Company has incorporated "digital CNPC" as its fifth major strategic initiative. In line with the principle of "value orientation, strategic guidance, innovation-driven development, and platform support", it implements digital transformation through three pillars of business development, management reform, and technological empowerment. By building an industrial internet technology system and an application ecosystem centered on cloud platforms, the Company continuously extends its transformation from individual domains to the entire production and operation chain.

In 2024, we accelerated the progress in IT Reinforcement, Digital Empowerment and Intelligent Operation. Significant achievements were made in the building and application of the Service Station 3.0 Program, the Unified Office Platform, and the Engineering Intelligence Support Center etc. The Kunlun Large Model released two updates; the pilot projects of digital transformation were burgeoning; the Yunmengze Smart Platform was up and running; network security and new infrastructure support capabilities were further enhanced. All this demonstrates significant progress in the transition to a "digital CNPC" with a digital ecosystem for the intelligent energy and chemical operations, providing strong support for the Company's efforts in deepening reform and building into a world-class enterprise.

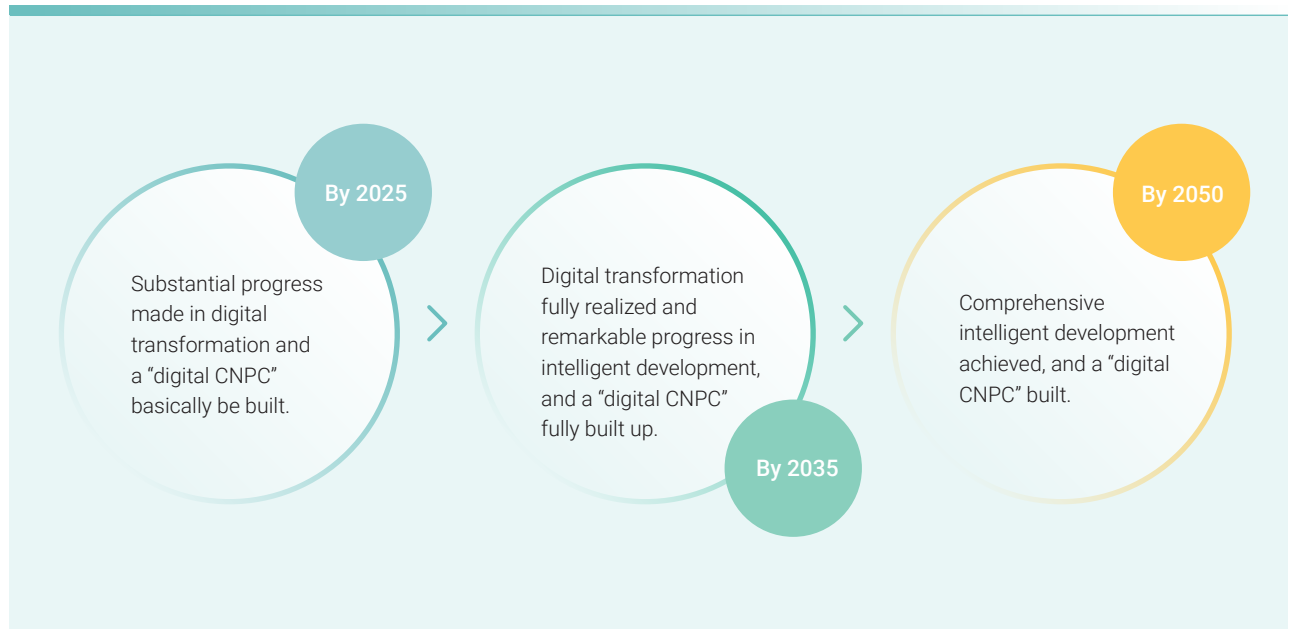
Case | Launch of 70-billion-parameter Kunlun Large Model

In 2024, the Company launched the 70-billion-parameter Kunlun Large Model, presenting 43 specialized and general-purpose application scenarios designed for the petroleum industry. The Kunlun Large Model has passed China's generative AI service registration, becoming the first registered large model in China's energy and chemical industry. Jointly developed by CNPC, China Mobile, Huawei and iFLYTEK, the model was trained across 8 iterations, with 18 application scenarios developed. It established extensive industry-specific datasets, and built a customized AI mid-office, and an intelligent computing environment. This has led to the preliminary formulation of a methodology for implementing large models in major enterprises.




Case | Pilot Launch of the Yunmengze Smart E-commerce Platform

In September, 2024, the pilot version of Yunmengze Smart Platform, CNPC's first e-commerce service platform for the energy and chemical industry was launched. This platform aims to streamline all aspects of the industrial chain, including production, trading, and distribution. Employing an "Agile + Waterfall" implementation strategy, it leverages CNPC's existing digital infrastructure to rapidly integrate across systems, providing comprehensive ecosystem-based services such as trading, logistics, finance, data, and technology to the energy and chemical industry chain. On December 31, 2024, the pilot phase included 743 functionalities, covering three core operations, i.e., marketing and sales of chemicals, logistics, and finance. The platform has been open to internal and external users through a unified enterprise portal and App, demonstrating a leading role in bolstering the online, standardized, and digital transformation of CNPC's trading operations.

Development map for a "digital CNPC"



Goals and achievements in CNPC digital transformation

Areas	Goals
<p>Business development</p> 	<p>Coordinated and optimized oil and gas businesses</p> <p>To achieve overall benefits and maximum value for shareholders, we made synergized efforts in resources allocation optimization, business performance coordination, and emergency response.</p> <hr/> <p>Transformation and upgrading of main businesses</p> <p>Industrial transformation and upgrading was driven by integrating Internet of Things, big data, AI etc. into the Company's businesses.</p>
<p>Management reform</p> 	<p>By digital transformation in decision-making, operation and management, collaboration OA, R&D, and service sharing, we promoted the modernization of corporate governance systems and governance capabilities.</p>
<p>Technological empowerment</p> 	<p>To build first-class industrial Internet system of energy and chemicals, and empower digital transformation technologies.</p>

Achievements

- The Company made steady headway in building its production and operation platform. Engineering Intelligent Support Center (EISC) introduced an engineering management model, featuring “Headquarters EISC for coordinated remote support, regional center for whole-process management, and direct instructions for on-site operations”. New functionalities such as intelligent fracture risk identification and real-time oil testing monitoring were added, achieving comprehensive coverage of geophysical exploration, drilling, logging, fracturing, and oil testing operations. New features of intelligent production safety management were added, including safety management scenarios for well sites, stations, oil depots, and refineries and petrochemical facilities etc. The safety management interface expanded to cover production sites, significantly enhancing the capability to prevent disruptive risks.
 - The Service Station 3.0 was fully launched, introducing the industry’s pay-by-palm scenario. Innovative applications such as e-fueling, one-click shift closing, volume-based performance, and intelligent risk control were being deeply integrated, significantly reducing single-customer service time.
 - The intelligent operation system was further streamlined by incorporating key data monitoring for natural gas uploading, new energy power generation, and all drilling rig operations. The scope of production and operation monitoring further expanded to enable daily tracking of the company’s full-chain production and operation plan execution and improve resource allocation capabilities in support of natural gas supply scheduling.
 - The industrial vision system was fully deployed, substantially enhancing visual insights in production processes and emergency control capabilities. The centralized carbon asset management platform was up and running, effectively facilitating the transition to facility-level carbon emission accounting.
- **Intelligent Oil and Gas Fields:** A new model designed to facilitate the transformation of our domestic oil and gas fields was introduced, featuring unmanned operation of key production sites, real-time sensing of equipment status, integrated exploration and development collaboration, intelligent connectivity and automatic optimization of the entire production process for wells, stations, plants, and equipment on the production site; and streamlined organizational and personnel structures. For overseas operations, a digital management and control mechanism for capacity construction and ground engineering was introduced; the pilot projects of unmanned operation rapidly advanced; and the management efficiency of oil and gas well production operations further improved. Changqing Oilfield passed the Level 4 Maturity Evaluation for Digital Transformation, and Tarim Oilfield was included in SASAC’s List of Digital Transformation Pilot Projects in State-owned Enterprises.
 - **Intelligent Refining & Chemicals:** The next-generation production and operation models were established, enabling comprehensive sensing, real-time monitoring, predictive alerts, intelligent response, collaborative optimization, and precise execution. Dushanzi Petrochemical and Guangdong Petrochemical passed the Level 4 Maturity Evaluation for Intelligent Manufacturing, and Lanzhou Petrochemical was included in SASAC’s List of Digital Transformation Pilot Projects in State-owned Enterprises.
 - **Intelligent Sales & Marketing:** Accelerating platform-based ecosystem development, the Service Station 3.0 system and the uSmile Mall fully supported the Company’s sales and marketing operations. The comprehensive management system of crude oil production and marketing was upgraded to support the unified management of crude oil by-product sales. The Sales & Marketing IOT achieved the full-coverage monitoring of all national-level key oil depots.
 - **Intelligent Natural Gas Sales & Marketing:** New achievements included an integrated model for online and offline sales, an omni-channel intelligent customer service system, an efficient response mechanism, and intelligent stations with 24-hour monitoring.
- The key IT Reinforcement projects advanced with high quality. In line with the four major goals of integrating logistics, capital flow, information flow, and workflow; integrating business and finance; coordinating production and operation; and coordinating upstream and downstream operations, the Company completed the blueprint design, centralized system implementation, and integrated testing with high quality with a focus on data, process and standardization. The full-chain verification of the first participating units achieved overall success with desired results.
 - The Unified Office Platform was launched, providing a collaborative and personalized workbench based on the “platform + application” approach and enabling “one-click login and unified to-do list”, and solving the problem of users logging into multiple systems, to promote the shift of work mode from “people-driven” to “task-driven”.
 - The global shared service system continued to expand, featuring a comprehensive quality management system with “risk management, regulatory compliance, standardization, and customer satisfaction” for shared financial services and the visualization of talent management and in-depth talent mining for shared HR services.
- The Kunlun Large Model released two versions, forming an industry large model with 70 billion parameters for language, 300 million parameters for vision, and 16 billion parameters for multi-modal processing. As the first nationally registered large model in China’s energy and chemical industry, the Kunlun Large Model is named one of the exemplary cases by the Ministry of Industry and Information Technology.
 - Based on its four data centers, the Company continued to improve the complementary and integrated network and strengthen the IT infrastructure support capabilities.
 - The Three-Year Data Governance Action Plan was completed, effectively improving data standards, consolidating the unified control foundation of data resources, and ensuring the integrity, efficiency and security of data transmission. The data catalog of CNPC was created, achieving “data retrieving on demand” across all data domains; the standardization of public data made progress, significantly improving the quality of operational management data.

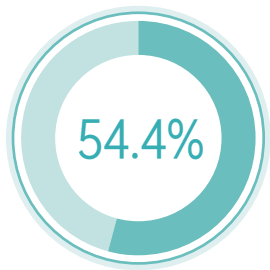
Clean Energy

In order to secure the sustainable supply of clean energy in the future, we have been vigorously developing natural gas. Particularly, we accelerate the development and utilization of unconventional natural gas, and deploy the new energies and new materials businesses in a faster manner to meet market demand for clean and high-quality energy and products.

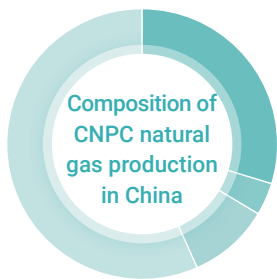
» Natural Gas

As natural gas is a bridge from fossil energy to clean energy, its development and utilization is fundamental to green and low-carbon transition. Taking natural gas as a strategic, growing and value-added project, CNPC keeps strengthening natural gas exploration and development, developing unconventional natural gas such as tight gas, shale gas and coalbed methane, and importing overseas natural gas to build a diversified energy supply system.

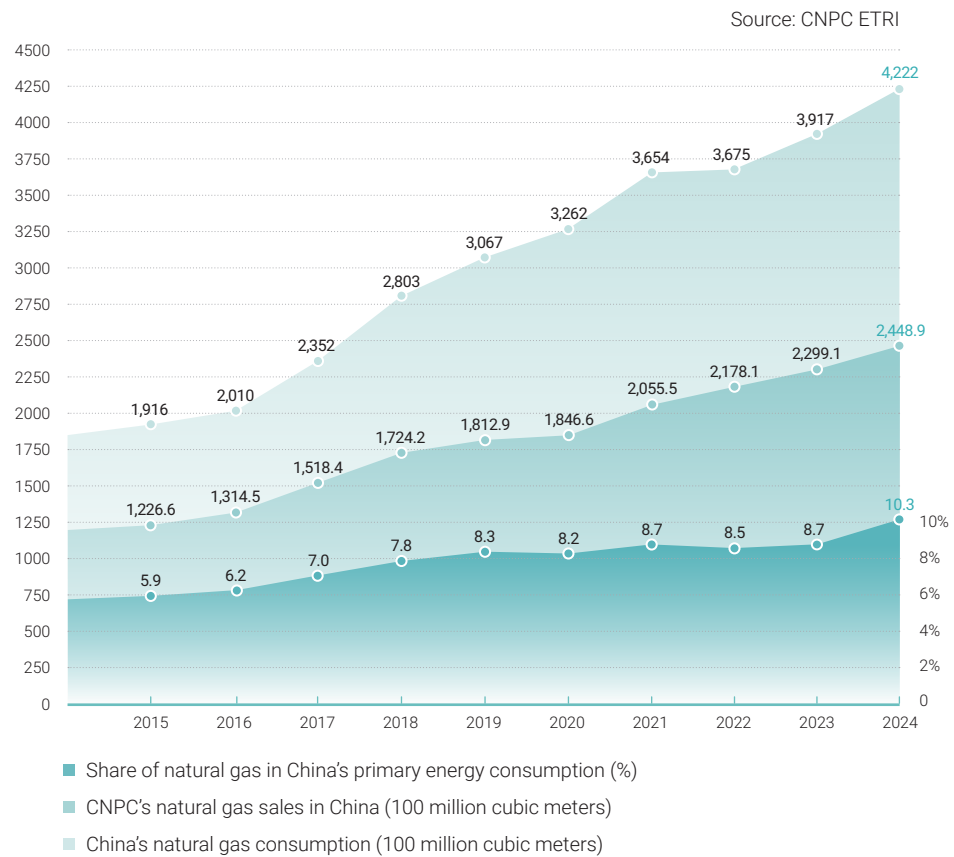
Optimized green energy structure



Share of domestic natural gas output in CNPC total oil and gas production equivalent



■ Tight gas	29.9%
■ Coalbed methane	3.8%
■ Shale gas	9.7%
■ Conventional natural gas	56.6%






In 2024, CNPC's natural gas output was 190.5 billion cubic meters, of which 158.64 billion cubic meters were produced domestically, an increase of 3.8% over the previous year, accounting for 64.4% of the national total. Throughout the year, the Company increased domestic natural gas production, intensified the introduction of overseas pipeline gas, and strived to enhance supply capacity. It supplied 244.89 billion cubic meters of natural gas to the domestic market, an increase of 6.5% compared with the previous year.

Case Ensuring gas supply for residential heating in winter

1. We deployed in advance domestic key production capacities and the capacity building of gas storage and peak-shaving during the heating season. By tapping our production potential of domestic gas, imported gas and gas storage, we saw a steady increase in the total gas supply in the 2024-2025 heating season.
2. We actively coordinated to stabilize and increase the gas supply from Russia, and made every effort to secure an earlier incremental supply for winter heating. On December 1, 2024, we reached the contracted daily supply of 38 billion cubic meters per year for 2025 ahead of schedule.
3. We gave priority to ensuring the gas injection resources of gas storage facilities, guaranteed the completion of the national annual injection task, and consolidated the resource foundation for peak shaving and supply guarantee during the 2024-2025 heating season.
4. We worked flat out to ensure stable supply by signing new contracts, carrying out the verification of the gas consumption structure of urban gas users, ensuring the full coverage of gas for people's livelihoods, and striving to meet the new demand such as the "coal-to-gas" transformation in Hebei and Shaanxi provinces. We also formulated contingency plans for reducing supply interruptions and enhancing our abilities in comprehensive coordination and emergency response.

Unconventional natural gas

		
<p style="text-align: center;">Shale gas</p> <ul style="list-style-type: none"> ○ Five shale gas fields: Changning, Weiyuan, Luzhou, western Chongqing, Zhaotong. ○ Total output: 15.32 billion cubic meters, an increase of 510 million cubic meters from last year. 	<p style="text-align: center;">Coalbed methane</p> <ul style="list-style-type: none"> ○ Two coalbed methane bases: southern Qinshui Basin, eastern Ordos Basin ○ Total output: 6.03 billion cubic meters, an increase of 1.72 billion cubic meters from last year. 	<p style="text-align: center;">Tight gas</p> <ul style="list-style-type: none"> ○ Tight gas fields: Sulige (Changqing Oilfield), eastern Ordos Basin (Coalbed Methane) ○ Total output: 47.43 billion cubic meters, an increase of 2.33 billion cubic meters from last year.

Utilization of Natural Gas as an Alternative Energy Source

We accelerated the construction of the production, supply, storage and marketing system, as well as the comprehensive utilization of clean energy projects. We continued to promote the comprehensive utilization of natural gas as urban gas, industrial fuel, chemical raw materials, and vehicle and vessel fuels, and in power generation. We accelerated the implementation of renovation projects using natural gas as an alternative to coal, and continuously promoted projects such as gasification in Longjiang, Gansu, Yunnan, and Xiong'an (Hebei), enabling clean energy to benefit thousands of households. In 2024, the total domestic terminal sales of natural gas increased by 14.0% year-on-year.

Case Green transportation

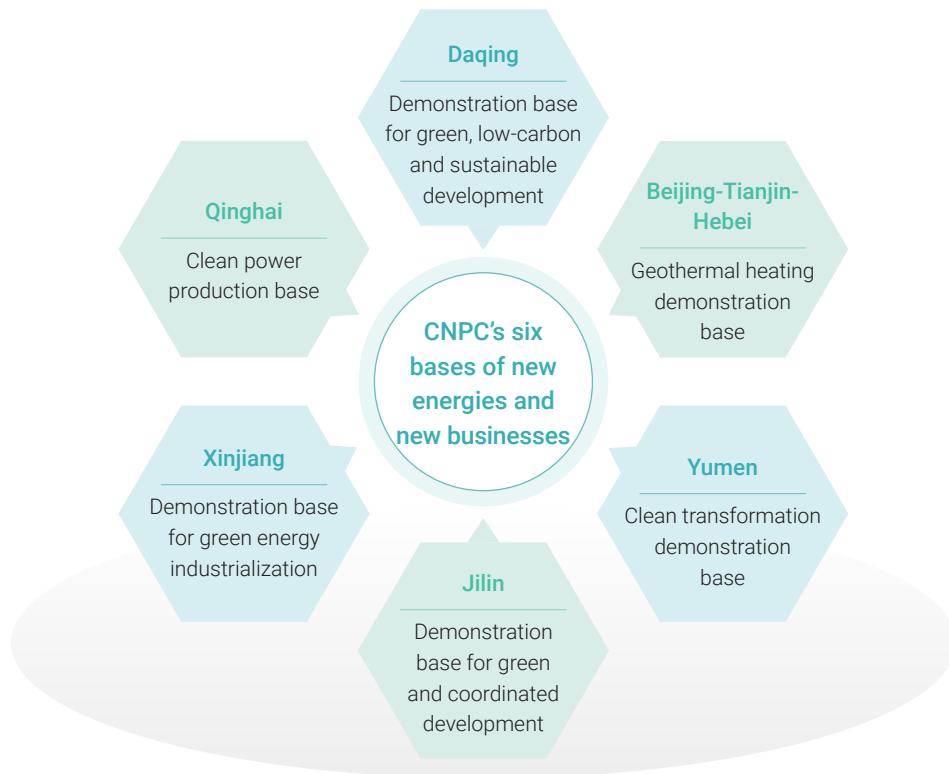
CNPC is committed to LNG application in shipping, by giving full play to the advantages of industrial synergy to fulfill social responsibilities. As one of the three domestic operators with offshore LNG refueling capabilities, CNPC has achieved regular refueling in Shenzhen and Zhoushan since it completed the first LNG refueling at Yantian Port (Shenzhen) in November 2022, providing clean and low-carbon LNG fuel for international ocean-going vessels.

Case Green power drives regional development


In 2024, CNPC supplied 40.7 billion cubic meters of natural gas in the Beijing-Tianjin-Hebei region. The supply in the Yangtze River Delta region reached 32.89 billion cubic meters, with a year-on-year increase of 5.0%. It supplied 12.5 billion cubic meters in the Pearl River Delta region, with a year-on-year increase of 11.7%.

» New Energies

We incorporated new energy into our main operations and formulated a special plan for the development of new energies and new businesses. We vigorously promoted the integrated development of geothermal energy, wind, solar PV, gas, and electricity, advanced the fullindustry-chain development of hydrogen production, transportation, storage and utilization, and pushed forward the transformation of CNPC into an integrated energy service provider of "oil, gas, geothermal, electricity and hydrogen", striving to become the backbone of supplying clean energy and building a beautiful China. In 2024, Jilin Oilfield's first large-scale centralized wind power project has been connected to the grid, and a number of key new energy projects in Daqing, Xinjiang, Tarim have started construction.




Progress in new energies and new businesses in 2024




Geothermal

- New geothermal heating area exceeded 15 million square meters (including operation and maintenance), and the cumulative heating area exceeded 50 million square meters (including operation and maintenance).
- Signed a new geothermal heating agreement covering 75.12 million square meters.
- The geothermal heating project in Caofeidian New Town, eastern Hebei Province, has set a new record for the largest single geothermal heating project in the middle and deep layers in China.




Wind and solar

- The cumulative installed capacity of wind and solar power generation has exceeded 10 million kilowatts (including visual progress).
- Jilin Oilfield Angge 550 MW wind power project, Qinghai Oilfield Golmud 1-million-kW power projects has been connected to the grid for power generation.
- The Korla 1.3 million kilowatt photovoltaic power generation project was completed in Tarim Oilfield.



Hydrogen

- The total annual production capacity of high-purity hydrogen reached 8,100 tons, an increase of 23% compared with the previous year.
- 813 tons of high-purity hydrogen were produced, an increase of 136.3% compared with the previous year.
- The drilling for CNPC's first "hydrogen-to-oil" project in Sulige, Changqing Oilfield - has started.
- A total of 26 hydrogen refueling stations were built, representing an increase of 24% from the previous year.



Charging (swapping) stations

- 3,803 charging (swapping) stations (47,000 charging guns) were in operation.

» Green Products

We optimized the energy consumption structure by upgrading energy products. In 2024, our hydrogen production capacity has been further enhanced. The high-purity hydrogen project of Qingyang Petrochemical with five sets of operating facilities has been put into operation. The annual production capacity of high-purity hydrogen has reached 8,100 tons, and the output has increased by 136.3% year-on-year.



8,100 tons per year

High-purity hydrogen production capacity

813 tons

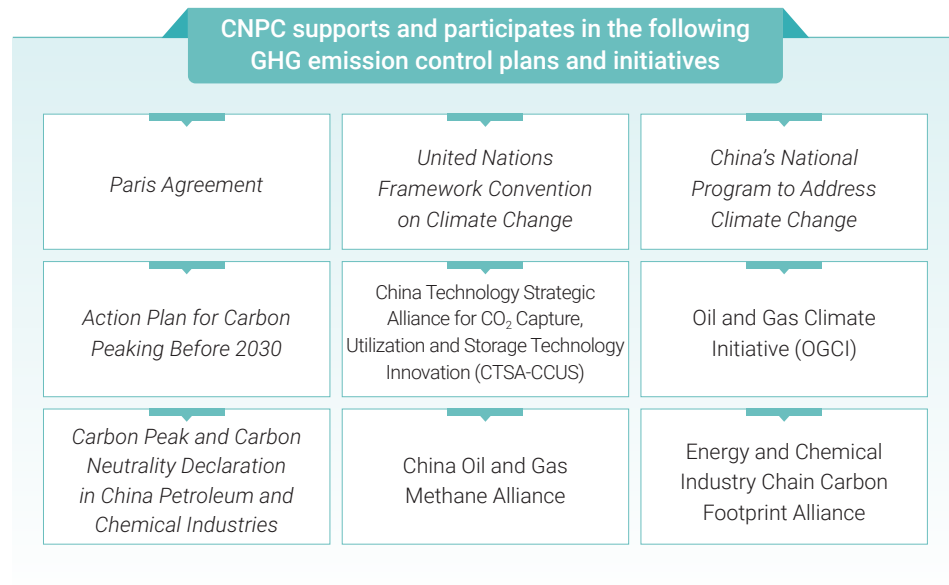
High-purity hydrogen output

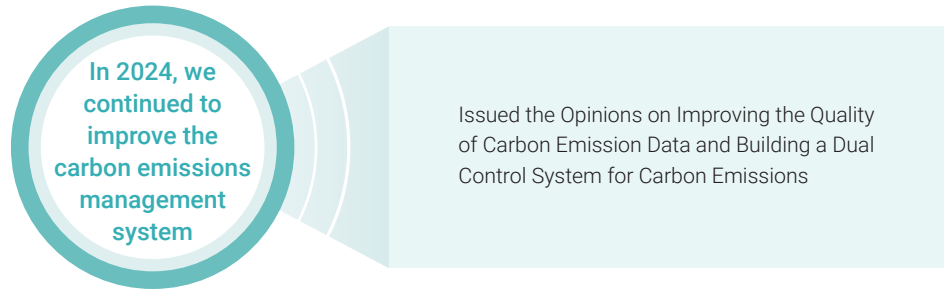
Climate Change

We respond to the *Paris Agreement*, and actively contribute to China's efforts to peak CO₂ emissions. We take the initiative in international climate governance, and actively respond to climate change.

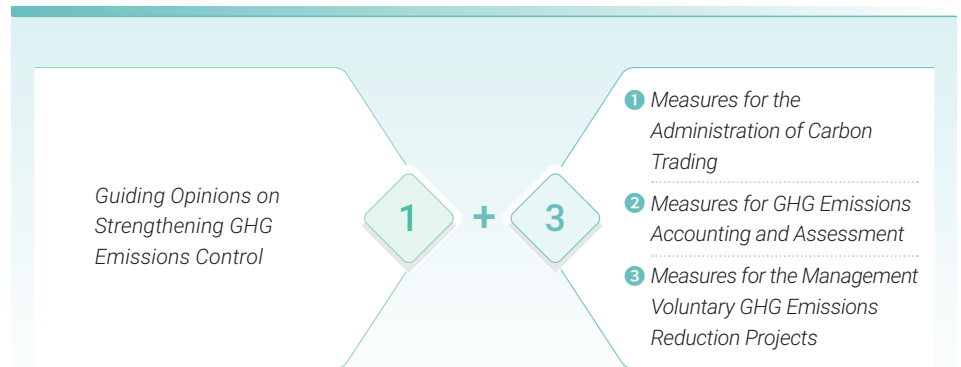
» Carbon Emission Management

We pay close attention to greenhouse gas (GHG) emissions. We continually improve our carbon emission control system, strengthened methane emission reduction management and control, take an active part in the building of the carbon market, and deeply participate in cooperation with the global oil and gas industry to cope with climate change. In 2024, the Company's total GHG emissions from domestic and international businesses amounted to 187 million tons of carbon dioxide equivalent, with a methane emission intensity of 0.27%. It has been recognized as a "Low-carbon Case" for thirteen consecutive years.





CNPC “1+3” mechanism for carbon emissions



In 2024, we advanced methane emission control, achieving industry-leading performance

- Led the formulation of ISO standard on Methane Leak Detection and Repair from Oil and Gas Operation.
- Formulated and implemented the Action Enhancement Plan for Methane Emission Control, held work promotion meeting, to stress the requirements for methane emission control, and carried out monitoring and control of methane leakage from shut-in wells.
- As the chair of China Oil and Gas Methane Alliance, appointed six domestic experts as first advisers to jointly carry out exchanges and discussions on cutting-edge technologies.
- In line with international standards to carry out the construction and application of methane MRV, organized key enterprises to implement methane leakage detection and repair at stations, built a pilot methane three-dimensional monitoring network by deploying cloud platforms/handheld laser methane gas monitoring, etc., and used satellite remote sensing to identify flares and high-emission sources in pilot enterprises.

» Global Climate Governance

CNPC has been engaged extensively in international cooperation in addressing climate change, joining hands with global peers in promoting green and low-carbon transformation of the oil and gas industry. In 2024, CNPC organized the COP29 side event themed “China’s Efforts, Progress and Opportunities on Methane Emissions Abatement”, and co-organized the side event themed “China’s SOEs towards Green Development” with the Bureau of Social Responsibility, SASAC. CNPC also took an active part in global climate governance and OGCI cooperation.

» Clean Substitution

While providing clean oil products to society, we also pay attention to optimizing our own energy consumption structure. We pay attention to carbon emissions and carbon footprints in production and operation, striving to reduce the consumption of fossil energy and lower the intensity of energy consumption. In 2024, the Company continued to develop low-carbon oil and gas fields. With the continuous increase in oil and gas production, energy consumption and carbon emission intensity decreased by 2.8% and 3.2% respectively. Among them, the Hudson Oilfield in the Tarim Basin has successfully built the first megaton oilfield with zero fossil energy consumption. Xinjiang and Liaohe oilfields have actively promoted the clean substitution of heavy oil thermal recovery, improving and the green and low-carbon operation of oil and gas fields.

» Participating in Carbon Emission Trading

We actively participate in the national carbon emissions trading market. We increased our carbon assets reserves and enhanced our performance by purchasing carbon emission allowance (CEA) and China Certified Emission Reduction (CCER). In 2024, the Company fully completed the annual carbon allowance compliance.

Case Biomass+gas power carbon trading

Through its subsidiary PetroChina International, CNPC has established dedicated power trading and global carbon trading teams to support its green and low-carbon development strategy.

Carried out carbon credit trading in the natural gas industry chain

In 2021, we signed the world's first five-year carbon-neutral LNG agreement with Shell to conduct full life cycle greenhouse gas emission accounting for some of the cargos. At the same time, we purchased high-quality nature-based solutions carbon credits to offset the calculated emissions. By the end of December 2024, 19 LNG carbon-neutral long-term trade agreements have been executed, and approximately USD 800 million worth of carbon-neutral LNG transactions have been completed. We also used international carbon credits (VCU) to the carbon compensation of the pipeline natural gas industry chain to assist the building of "zero-carbon factories" for green energy enterprises in Sichuan Province.

Expanded the green power business in Australia

In March 2024, we signed a memorandum of understanding on wind power trade cooperation with Pacific Blue, a wholly-owned subsidiary of the State Power Investment Corporation Limited in Melbourne, Australia. This is the Company's first green power trading project in Australia. Based on the MoU, the two sides signed a two-year 60-megawatt wind power purchase agreement for the Portland Wind Power Plant in Victoria, Australia.

Steadily advanced the biofuel trade

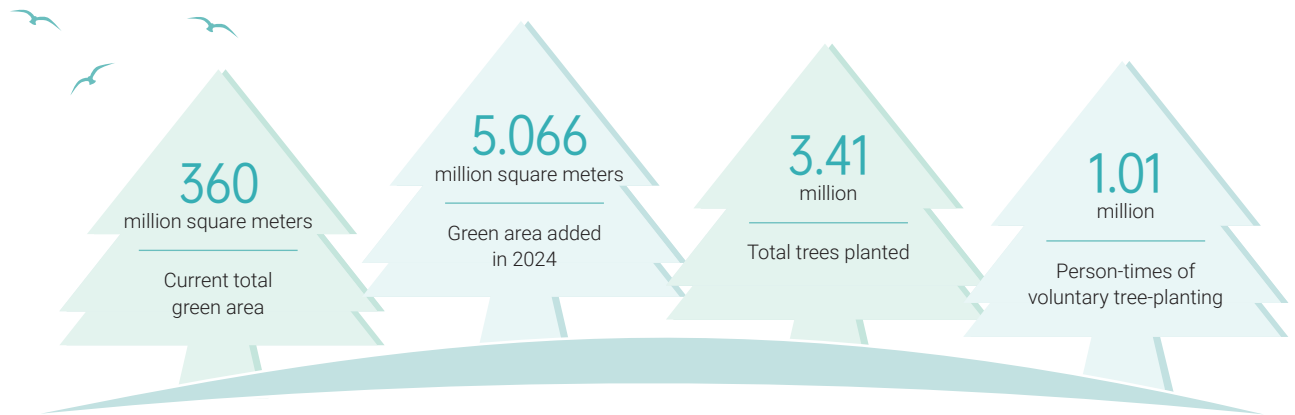
The Company is deeply involved in the European biofuel market and the European carbon emissions trading, and closely follows the dynamics of the European bio-jet fuel market. In April 2024, we completed our first bio-jet fuel transaction on the Argus Europe Biofuel Open Market Platform. This was the world's first physical window transaction for bio-jet fuel. In June, a shipment of bio-jet fuel was successfully delivered to KLM Royal Dutch Airlines, completing the world's first bio-jet fuel transaction settled overseas in RMB.

» Developing Forestry Carbon Sinks

We actively developed carbon sinks and carbon neutral forests to accelerate carbon neutrality goals. In 2024, our workforce contributed 3.41 million tree plantings through 1.01 million employee participations in voluntary initiatives.

In 2024, CNPC

- Participated in the campaign "Planting a Tree for Carbon Neutrality". RMB 47 million has been raised and 4,550 mu of forestry carbon sinks has been built since 2022.
- Supported the World Economic Forums' One Trillion Trees Initiative. Through its "Tree-Planting in 10,000 Well Sites" campaign in oil and gas field companies, 1.624 million trees have been planted at 8,724 well sites and stations since 2023.



▲ Carbon-neutral ecological park at Daqing Oilfield

Energy Cooperation

Adhering to the philosophy of “mutually beneficial, win-win cooperation and development”, we give full play to our advantages in integration as well as in finance, technology and management, and work with host governments and partners to address local energy challenges, meet local energy demand and maintain regional energy security.

» International Energy Cooperation

In the face of the complex and volatile situation in the world, we work with host governments and partners to ensure the smooth operation of cooperation projects. We carried out all-round cooperation with the BRI countries in the fields of upstream, downstream, trade & marketing, technical support, etc., and signed cooperation agreements on the purchase and sale of natural gas, pipeline transportation, etc. In 2024, the Company completed an oil and gas operation production of 187.106 million tons in oil equivalent terms overseas. The overseas oil and gas equity production maintained stable and cost-effective, making due contributions to meeting the energy supply of the host countries and supporting local economic development.

Key international energy cooperation projects in 2024



- In December, at the fifth anniversary of the China-Russia East-Route natural gas pipeline, the milestone of full-load operation of 38 billion cubic meters per year was achieved ahead of schedule.
- In September, CNPC signed a PSC with Staatsolie on the Blocks 14 and 15, the first offshore operator project in ten years.
- In July, CNPC signed a Strategic Cooperation Agreement with ADNOC, further elevating partnership and contributing to a comprehensive energy cooperation pattern.
- In January, CNPC became lead contractor of West Qurna-1 oilfield, deepening cooperation with the Ministry of Oil of Iraq and promising more opportunities for China-Iraq energy cooperation.

In 2024, our achievements in BRI

48 oil and gas investment projects in 19 countries, of which oil and gas equity production accounted for 82.7% of the total overseas production.





▲ Bangladesh Single Point Mooring (SPM) and Dual-Pipeline project, Bangladesh's first mega sea-land oil storage and transportation system built by CNPC

» E&P Cooperation in China

We continued to make steady progress in cooperation with international partners in developing oil and gas resources in China. While deepening cooperation in conventional areas, we reinforced cooperation with IOCs in unconventional resources. The E&P projects including the Changbei Project, the South Sulige Project and the Northeast Sichuan Project achieved steady progress. Our domestic oil and gas production in cooperation with international partners amounted to 12.668 million tons in 2024.

» International Trade

We coordinated and optimized global resource allocation, and made every effort to promote high-quality development of international trade. Based on our overseas oil & gas operation centers and trading network, we traded with over 120 countries and regions in the forms of joint venture or cooperation etc., hence enhancing our abilities in optimizing and allocating global resources. In 2024, the total global oil and gas trade volume reached 530 million tons, with the revenue of USD 283.7 billion.



RESPONSIBLE OPERATIONS

We are always committed to the principle of “people-centered, quality foremost, safety first, environment prioritized” to achieve “zero accidents, zero pollution and zero injuries”. We regard minimizing the environmental impact, reducing emissions and providing high-quality products and services as the strategic foundation of the Company’s sustainable development. We continue to improve the quality management of products and services, and promote safe, environmentally-friendly and resourcesaving operations, in order to promote the construction of ecological civilization, and a resource-saving and environmentally-friendly enterprise.



Safe Operation	➤ 48
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Safe Operation

We coordinated development and safe operation, promoted the building of a long-acting work safety system, and comprehensively enhanced our work safety management. In 2024, the Company recorded no major safety or environmental incidents, and maintained a stable improvement in QHSE performance.



» QHSE System Audit

In 2024, the Company further promoted the standardized operation of the QHSE management system, vigorously implemented measures such as deepening and enhancing the system audit and carrying out the HSE standardization improvement action for grassroots enterprises, completed the annual full coverage of enterprise system audits at grassroots and the achievement of HSE standardization, hence consolidating the foundation of HSE management.

<p>Formulated and issued Opinions on Deepening the QHSE Management System Audit, and over 130 enterprises were covered.</p>	 <p>In 2024, CNPC's efforts in promoting QHSE management system standardization</p>	<p>Formulated and issued the Action Plan for Enhancing HSE Standardization Construction at Grassroots, and selected 20 CNPC demonstration teams.</p>
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» Management System and Performance Assessment

The Company continued to improve the rules and regulations for safety production management. In 2024, a number of regulations were rolled out, such as the *Measures for the Supervision and Administration of Contractor Safety*, *Measures for the Supervision and Administration of Safety and Environmental Protection Hazard Investigation and Governance*, *Measures for the Selection and Reward of Advanced Units in Quality, Health, Safety, Environmental Protection and Energy Conservation*, *Measures for the Statistics and Administration of Production Safety Accidents and Incidents*, *Detailed Rules for Fire Safety Management of Units in Beijing*, *Measures for the Administration of Ship Safety*, *Measures for the Administration of Safety Production and Environmental Protection in Offshore Oil*.

 <p>Work safety debriefing and inquiry</p>	<p>To strengthen safety capabilities, the Company formulated and issued the "Knowledge and Skills on Work Safety for Management", and conduct work safety performance evaluations and job reports for newly appointed management, general managers, and safety directors at different levels.</p>
 <p>Safety and environmental protection performance assessment</p>	<p>HSE performance assessment: to strengthen the proportion of assessment on employees' performance in safety and environmental protection (process + results), and incorporate the assessment results into the performance evaluation.</p> <p>HSE performance capacity evaluation: to strengthen the assessment of the safety and environmental protection capabilities of newly appointed or transferred (or changed) key positions, and use the assessment results as the basis for on-the-job assessment.</p> <p>Work safety scoring: Opinions on Further Strengthening the Management of Safety Production Scoring was formulated and issued to comprehensively strengthen the management of safety production scoring for all staff and the application of the results, promoting the fulfillment of safety duties at all levels. The cumulative score for the whole year was 164,000 points, and corresponding measures were taken to deal with 61,000 people. Particular emphasis was placed on strengthening safety production scoring for contractors, linking the scoring results to the performance of the contractor teams and their respective companies.</p>

» Hazard Control

We attached equal importance to both prevention and control of hazards, and built a long-acting mechanism for hazard control. In 2024, we launched the three-year action plan for addressing the root causes of work safety, clarified the tasks of eliminating potential hazards, conducting risk and hidden danger investigations and rectifications of key facilities and equipment, and promoted the dynamic elimination of major accident hazards. We promoted the special campaign in urban gas pipelines operating with problems and carried out a full-chain safety rectification. We encouraged employees to proactively identify and report potential accident hazards, enhancing their safety awareness, and continuously improving the overall safety performance of the Company.

» Safety Risk Management

We improved the dual-prevention mechanism covering hierarchical control of safety risks and hazard identification & treatment. In 2024, we carried out HSE activities for "Risk identification and hidden danger investigation", providing "one enterprise, one policy" risk warnings for key enterprises, conducting risk identification, and putting control measures in place.

In 2024, we held CNPC companies at all levels accountable for work safety

- We have continuously carried out safety production supervision and inspection in key regions and enterprises. Throughout the year, we inspected and spot-checked over 80 enterprises (times). All problems reported have been rectified.



▲ Tower hoisting with a safety supervisor



▲ Emergency drill

» Safety Risk Management

Always being prepared through drills and training, CNPC conducted comprehensive large-scale drills to train rescue teams and enhance emergency response capabilities. In 2024, emergency drills for unexpected incidents in road transportation of hazardous chemicals and for control and rescue of fire wells due to the leakage of production wells of artificial island gas storage facilities were organized and carried out. The capacity for emergency response and preparedness continued to improve.

In 2024, CNPC

Participated in the emergency rescue drills for oil and gas pipeline accidents between China and the five Central Asian countries, as well as the fire rescue emergency drills for central SOEs, and received praise from the Ministry of Emergency Management, the State-owned Assets Supervision and Administration Commission, and the five Central Asian countries.

» Offshore Oil Safety

In 2024, we paid close attention to the identification and warning of major offshore oil safety risks, deepened the special rectification of safety risks in offshore oil, strengthened the process control of high-risk operations on-site in offshore oil, continuously enhanced our capacity for emergency response, and effectively guaranteed the stable operation of offshore oil and gas production.

» Contractor Safety

We implemented the full-process supervision of contractors before, during and after the event, intensified the rectification of subcontractors by incorporating contractors into the safety production scoring management, and strictly applied the “zero tolerance for unqualified contractors”, in order to reduce the occurrence of safety accidents involving suppliers and contractors.

Environmental Protection

We have implemented the overall plan to deepen the battle against pollution, committed to precise, scientific and law-based pollution control, and advanced all tasks and measures to protect our blue sky, clear water and clean land to high standards. We take the initiative to evaluate the environmental impact of our management and activities, and make efforts to reduce adverse effects on the environment and climate. We endeavor to enhance resource utilization efficiency, deepen our efforts in the battle against pollution, promote energy conservation and emission reduction, strive to achieve environmentally-friendly and resource-saving operations, and vigorously advocate ecological civilization, in order to achieve harmonious development with the environment.



» Strengthening Risk Prevention and Control

We implemented an environmental risk management system dominated by hazard control, with efforts focusing on the prevention and control of ecological and environmental risks and hazard control. In 2024, the Company deepened the construction of the mechanism for classifying and controlling ecological and environmental risks and identifying and managing hidden dangers. The ability of risk prevention and control has steadily improved, and no major environmental pollution incidents occurred throughout the year.

Main work and progress in 2024



» Pollution Prevention and Control

Atmospheric Environment Management

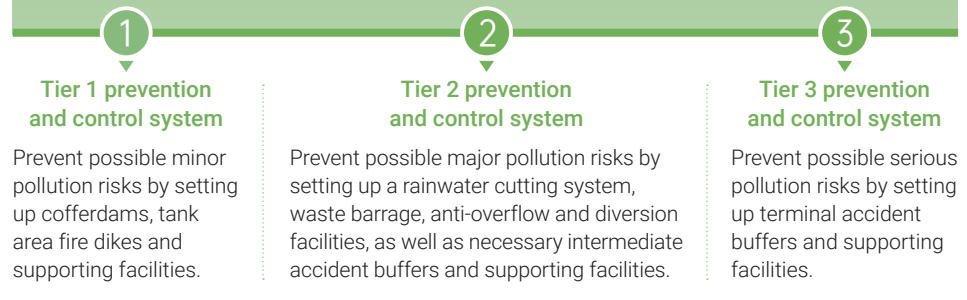
We continued to improve the comprehensive treatment of air pollution and strived to reduce the discharge of air pollutants. In 2024, we carried out the investigation and rectification of VOCs, formulated and implemented the Intensified Action Plan for Air Pollution Prevention and Control, and deployed 276 key projects and 5 major projects, of which 85 have been put into operation. The completion of the Air Quality Assurance Plan for Key Periods was commended by the Ministry of Ecology and Environment. The total emissions of NO_x and VOCs decreased by 2.14% and 9% respectively year-on-year, and the performance of emissions control continued to improve.

Control of Waste Water Discharge

We have strengthened the control of total wastewater discharge and implemented 14 key wastewater discharge reduction projects. Early warning prompts were issued to enterprises with large emissions. The wastewater discharge of 21 enterprises, including Jilin Petrochemical and Lanzhou Petrochemical, decreased year-on-year. We continued to strengthen the standardized rectification and on-site spot checks of key sewage outlets, and promoted the rectification of identified problems as planned. In 2024, the total emissions of COD and ammonia nitrogen decreased by 14.29% and 26.01% respectively compared with the previous year.

Three-tiered Water Pollution Risks Prevention and Control System

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



Soil and Groundwater Risk Management

We have intensified efforts to prevent and control soil pollution. The Action Plan for the Prevention and Control of Soil and Groundwater Pollution was implemented. Among the 16 soil pollution source control projects of the Ministry of Ecology and Environment, 8 projects including Lanzhou Petrochemical and Tuha Oilfield have achieved completion acceptance. Five pilot enterprises conducting "production and control simultaneously" have comprehensively carried out pollution investigations and risk assessments.

Solid Waste Control

We continuously promote the compliance management throughout the entire process of solid waste generation, collection, storage, transportation, utilization and disposal. In 2024, on-site inspections of solid waste compliance management were carried out in 104 enterprises, and the ability of solid waste control has been continuously improved.

Ecological Zoning Control and Management

We have implemented refined and differentiated control over relevant enterprises in the Yangtze River Economic Belt, the Yellow River Basin, the Songliao River Basin, and the Beijing-Tianjin-Hebei region. We have established control lists for wastewater and waste gas discharge outlets in key river basins and areas, strengthened monitoring and early warning of excessive emissions, and ensured stable and compliant discharge of industrial wastewater.

» Sustainable Utilization of Resources

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

Water Resources Management

We put saving first and implement energy saving and efficient utilization throughout all aspects of production and operation. By strengthening water utilization process management, adopting technologies for water-saving and wastewater treatment and recycling, and integrating water-saving indicators into performance evaluation and other measures, we saved up 8.24 million cubic meters of water in 2024.

Full-chain Water Resources Management

Exploration & development



- In oil and gas development activities, we attach equal importance to water pollution prevention and control and water recycling. After oil and water separation and filtration treatment oil recovery and water re-injection are achieved to avoid the pollution of groundwater and surface water. By the end of 2024, the treatment rate and reinjection rate of wastewater from oil production in oil and gas fields reached 100% and 98.5% respectively.
- We carried out maintenance and renovation of water systems, improved the rate of water up to standards, and optimized operation plans. We upgraded wastewater discharge and treatment processes, reduced the discharge of produced water, promoted new water treatment technologies and processes, and saved water to the maximum. In 2024, we reached 93.3% for the national standards for wastewater discharge.

- We promoted cleaner production technology, saved water from the source, optimized water utilization system, and improved water use efficiency. We increased the concentration ratio of circulating water, reduced the amount of supplementary water, and enhanced the recovery of steam condensate water to realize water saving. Paying attention to sewage treatment and reuse, we reduced sewage discharge, improved the reuse rate of industrial water, strengthened groundwater pipeline network leakage detection and plugging, and reduced groundwater leakage rate. In 2024, the sewage recycling rate of the Company's refining and chemical enterprises increased by 1.84 percentage points year-on-year.

Refining & chemicals



Refined products sales



- The leakage-proof transformation of the underground storage tank of gas stations is carried out for all-weather online monitoring of leakage and a safe soil and groundwater environment.

- We implemented water quota management, issued annual water consumption targets for urban gas and auxiliary production systems, LNG plants and LNG receiving terminals, and made the total water consumption under control.
- We renovated water supply pipelines for LNG plants to reduce leakage losses; carried out purification and reuse transformation of production and domestic sewage to reduce sewage discharge; saved and recycled cooling water and replacement water to reduce water consumption.

Natural gas sales



Engineering construction



- We focused on managing the impact of engineering construction on water resources and the risk of leakage accidents during operation. We also carried out environmental impact assessment including water environment, and integrated water conservation and water resource protection into the entire process of construction and operation.

Land Resources Management

We adhere to the harmonious unity of oil and gas resources with land resources and environmental resources, and incorporate the implementation of the land protection system and the intensive and efficient land use into all aspects of production and operation, so as to produce more oil and gas and provide more energy, but also save precious land resources. In 2024, the Company saved 1,200 hectares of land.

In 2024, we took the lead in the compilation of the Control Indicators for Land Use in Oil and Gas Engineering Projects (TD/T 1099-2024), which is released and implemented by the Ministry of Natural Resources as an industry standard. It emphasizes green environmental protection, land conservation and intensive use, and efficient resource utilization, and will play a guiding role in land conservation and intensive use in the oil and gas industry.

In 2024, CNPC

- **Intensive and efficient land use:** By adopting technologies such as cluster well groups, optimizing engineering design, innovating land-saving technologies and management models, land can be saved and intensively utilized in the process of oil and gas production operations. The new, renovated and expanded projects of refining and chemical enterprises fully tapped the potential of the existing space and land. In 2024, approximately 1,200 hectares of new construction land was saved.
- **Land reclamation:** we promoted the reclamation of idle construction land into cultivated land, ensured that the funds for the reclamation of temporary land were in place, and strictly fulfilling the obligations of land reclamation through various means such as self-reclamation. Approximately 7,300 hectares of temporary land was reclaimed in 2024.
- **Exiting from inefficient and ineffective land:** land that is no longer in use or has a low utilization rate shall be returned to the local government for alternative use. 132 hectares of land was withdrawn in 2024.

Energy Management

We put conservation first and incorporate energy conservation and consumption reduction throughout the entire process of our production and business operations. We continued to improve energy utilization by improving the efficiency of oil and gas production systems, implementing energy system optimization, promoting the construction of energy control, and strengthening the transformation of energy-saving technologies. In 2024, the Company saved energy of 780,000 tons of standard coal.

Improving energy efficiency

Top-level design	➤	Formulate and implement the "Action Plan for Energy Conservation and Carbon Reduction (2024-2025)", to form a "1+7" system for energy conservation and carbon reduction.
Source control	➤	On-site inspections of energy assessment were carried out for 38 oil and gas fields and refining and chemical enterprises, and technical reviews of internal energy conservation reports were conducted for 14 key projects with an energy consumption of over 20,000 tons of standard coal.
Standard alignment	➤	We steadily advanced eight energy efficiency improvement and upgrading projects for six refining and chemical enterprises, and completed the energy efficiency improvement and upgrading of the refining project of Dushanzi Petrochemical and the 700,000-ton/year ethylene project of Jilin Petrochemical.
Technological upgrading	➤	An investment of RMB 902 million was made to implement energy-saving and water-saving technological transformation projects such as improving the efficiency of the mechanical mining system, achieving a savings of 152,800 tons of standard coal.
Equipment monitoring	➤	The energy utilization status of over 14,700 sets of key energy-consuming and water-using equipment such as pumping units and heating furnaces, as well as 22,500 meters of steam insulation pipelines, was tested and evaluated.



Pacesetter

In 2024, we won 8 honors for our key products in the selection of "Pacesetters" in Energy Efficiency and Water Efficiency in China's Petroleum and Chemical Industries.

- Jinzhou Petrochemical: "Pacesetter" in energy efficiency of crude oil processing products
- Guangdong Petrochemical: "Pacesetter" in energy efficiency of ethylene products
- Dushanzi Petrochemical: "Pacesetter" in energy efficiency and water efficiency of ethylene products
- Lanzhou Petrochemical: "Pacesetter" in energy efficiency of ethane-to-ethylene products
- Jiangsu LNG: "Pacesetter" in energy efficiency of LNG receiving station (mixed gasification process) products
- Tarim Petrochemical: "Pacesetter" in water efficiency of ethylene production from ethane and synthetic ammonia products

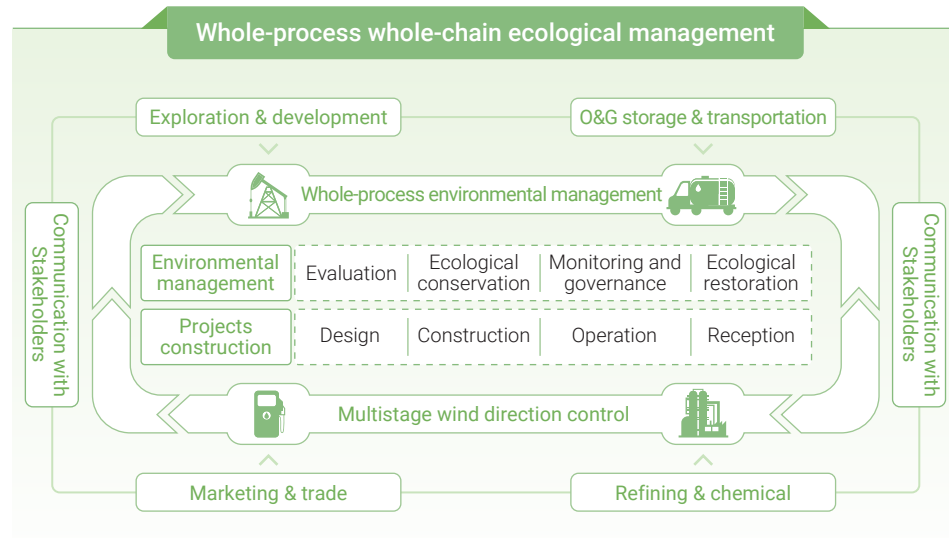
» Conservation of Biodiversity and Natural Habitats



We incorporated biodiversity conservation into the management system of the Company. Persisting in the solution of integrated protection and systematic management of mountains, rivers, forests, fields, lakes, grass and sand, we adopted natural restoration measures or green restoration technology, carried out ecological and environmental protection in the Yangtze River, Yellow River and other key river basins, biodiversity conservation areas and green mines, and implemented a variety of biodiversity conservation practices. Through Nature-based Solutions (NbS), we explored and tapped the development potential of public welfare tree planting and carbon sequestration, ecosystem restoration and biodiversity conservation, and ecological corridor construction. We encouraged employees to actively participate in biodiversity conservation actions, and mobilize their communities, the public, partners and other stakeholders to jointly build a multi-party cooperation system for biodiversity conservation. In 2024, the Company registered no biodiversity damage incidents.

Case | Building a special biodiversity conservation model with CNPC characteristics

- Innovatively formulated the guidelines for corporate other effective area-based conservation measures (OECMs), and became the world's first identification and screening tool for enterprise OECMs.
- Launched the second batch of OECMs (7). A total of 10 OECMs have been established across the country, covering an area of 4,018.8 hectares.
- Comprehensive monitoring of biodiversity has been carried out, five green shared cabins have been built, and nine volunteer service teams have been established, forming a "four-in-one" model for biodiversity conservation of CNPC.
- The cases of the Guowu Lake and Laohushan protected areas in Daqing Oilfield were included in the IUCN research report and released globally.
- The area 6 of Sulige Gas Field in Changqing Oilfield was selected as one of the first batch of potential cases of China's OECM and is the only case from central SOEs to be included. It was also showcased at the Convention on Biological Diversity (COP16).
- The International Union for Conservation of Nature (IUCN) praised CNPC as the world's first internationally renowned enterprise to carry out OECMs practice and commented that "CNPC's OECMs practice has provided Chinese wisdom and solutions for the global development of OECMs."



» Accelerated the Construction of Green Companies

We accelerated our efforts in building green companies, achieving full coverage of our production operations. In 2024, the Action Plan for Enhancing the Construction of Green Enterprises and six certification and re-examination standards was issued, improving the indicator system, unifying certification standards, and optimizing work processes. Adhering to the principle of performance-based selection, we strictly assess, certify, and re-examine qualification. We strengthen grassroots initiatives, select and highlight advanced models, and leverage their exemplary and leading role. We have carried out the construction of green mines, green factories and green grassroots in a coordinated manner, comprehensively enhancing the actions and quality of green enterprises.



Products and Services

Following the quality target of “zero accident, zero defect, domestically leading and world-class”, we strengthened the quality management system and improved process control to create excellent brand products. In addition, we consistently promoted the quality of products, projects and services, so as to achieve high-quality development of the Company.

» Quality Control




We pushed forward efforts in quality-driven enterprise construction by issuing Quality-driven Enterprise Plan. Taking the improvement of wellbore quality and the “Three Quality Actions” as the starting point, we took problem-oriented, goal-oriented and result-oriented approaches, strengthened process control and supervision and inspection, and continuously improved the quality of products, projects, services and purchased materials. No major quality accident was reported in 2024.

<p>QMS pilot</p>	<p>➤ In 8 pilot enterprises for digital transformation, a pilot project of the “Four-All” quality management system centered on digital quality control was carried out.</p>
<p>Product internal control indicator</p>	<p>➤ 29 refining and chemical enterprises have set 3,998 internal control indicators for product quality, covering over 90% of the total product output, with an internal control compliance rate of over 90%.</p>
<p>Purchase supervision</p>	<p>➤ A total of 338,000 batches of materials were inspected and tested for warehousing throughout the year, with a qualification rate of 99.95%. Regional companies organized random inspections of 13,834 batches, with a pass rate of 99.7%. The headquarters departments and professional companies conducted random inspections of 740 batches, with a pass rate of 95.5%.</p>
<p>List of unqualified suppliers</p>	<p>➤ Issued the Opinions on Further Strengthening the Quality Supervision and Random Inspection of Purchased Materials, unifying the penalty standards for unqualified suppliers in the three-level supervision and random inspection at the headquarters departments, professional companies and regional companies, and exposed 205 unqualified suppliers.</p>

» Quality Products and Services

Providing Quality Products. By strengthening technological innovation and optimizing the product mix, we provide safe, reliable, high-quality and environmentally friendly products for our customers. In 2024, we further increased the proportion of high-end, high-performance products, continuously promoted the new material production acceleration project, and took the initiative in scientific research, planning and layout, production capacity construction, joint venture cooperation, etc. We produced 2.045 million tons of new materials, an increase of 49.3%, and 1.448 million tons of new chemical products, an increase of 18.6%.

Promoting Service. We constantly improve consumer experience and provide consumers with convenient and efficient services. By the end of 2024, the 3.0 version of CNPC gas station management system has been fully launched, enabling pure online operation of business scenarios such as outlets, payment, and membership. The Company built 2,880 charging (swapping) stations, 5 hydrogen refueling stations and 1,386 photovoltaic stations throughout the year. There are 22,441 gas station service outlets across the country, covering 31 provinces (autonomous regions and municipalities) and Hong Kong Special Administrative Region (HKSAR).

		
<p style="text-align: center;">Service network</p> <ul style="list-style-type: none"> ○ A coverage of 31 provinces (municipalities and autonomous regions) and HKSAR ○ Our annual sales capacity exceeded 124 million tons ○ We provided more than 7 million person-times services every day 	<p style="text-align: center;">Service category</p> <ul style="list-style-type: none"> ○ Domestic service stations: 22,441 ○ uSmile convenience store: 19,700 ○ Kunlun refueling cards issued: 235 million 	<p style="text-align: center;">Customer satisfaction</p> <ul style="list-style-type: none"> ○ Joint inspection and anonymous customer visits: 35,449 times ○ Customer satisfaction rate: 99.5%

Case Providing services in busy farming seasons

In 2024, CNPC set up 6,901 service stations to benefit and assist farmers, opened 7,798 priority refueling channels for agricultural machinery, issued 430,000 agricultural machinery cards, added 180,000 new customers for agricultural machinery oil, and cumulatively supplied 2.4 million tons of agricultural machinery oil. We also set up rest areas for agricultural machinery operators and delivered oil to rural areas 67,000 times. A total of 1.1 million tons of agricultural supplies such as fertilizers have been sold, and non-oil discounts have exceeded RMB 20 million.

<p style="text-align: center;">Spring farming season</p> <p>A total of 7,119 priority refueling channels for agricultural machinery have been opened across the country, with 13,000 vehicle trips delivering oil to rural areas. A cumulative supply of 970,000 tons of oil for agricultural machinery has been achieved.</p>	<p style="text-align: center;">Summer farming season</p> <p>In the nine major wheat-producing provinces of Hebei, Shanxi, Jiangsu, Anhui, Shandong, Henan, Hubei, Sichuan and Shaanxi, 4,346 priority refueling channels for agricultural machinery have been opened, 2,190 vehicle trips of oil have been delivered to rural areas, and a total of 192,000 tons of oil for agricultural machinery have been supplied.</p>	<p style="text-align: center;">Summer farming season</p> <p>In the main production areas of early and late rice in Guangdong, Guangxi, Jiangxi and Hunan provinces, a total of 674 green channels have been set up and opened, 511 oil delivery trips have been made to rural areas, and 22,000 tons of agricultural machinery oil have been supplied.</p>	<p style="text-align: center;">Autumn farming season</p> <p>A total of 8,644 priority refueling channels for agricultural machinery have been opened across the country. 43,000 vehicles have delivered oil to rural areas, and a cumulative supply of 1.016 million tons of oil for agricultural machinery has been achieved.</p>
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Supply Chain Management

Upholding the supplier management philosophy of “global sourcing, open cooperation, resource sharing, mutual benefit and win-win results”, CNPC exercises a life cycle closed-loop management of suppliers from admission to withdrawal, continuously optimizes the supplier resource structure, and gives priority to green, low-carbon, energy-saving products and suppliers with independent intellectual property rights. The Company includes QHSE and occupational health system certification into the supplier admission standards. We actively guide suppliers to strengthen legal operation, abide by business ethics and fulfill social responsibilities.

We attach great importance to the construction of an ecosystem with our suppliers and strive to build a mutually beneficial, win-win, interconnected and innovative supply chain ecosystem. We use various means to understand their concerns and claims via a well-established communication mechanism. We strengthen multi-field and deep-level cooperation with suppliers, carry out active exchanges in environmental protection, sustainable development and other aspects, tap the potential for mutual cooperation. Paying attention to HSE and compliance operations of suppliers, we communicate with suppliers in a timely manner for quality and enhanced coordination in the supply chain.



98.71%

Tier 1 manufacturers passed ISO9001 certification

95.68%

Tier 1 manufacturers passed ISO14001 certification

94.95%

Tier 1 manufacturers passed ISO45001 certification

Full-process supplier management

Social responsibility fulfillment

- Suppliers must have a good commercial reputation and compliance performance, and have no record of violations of laws and regulations affecting procurement transactions in their business activities in the past three years. They are also required to accept all legal due diligence work done by CNPC to verify their eligibility for admission.
- All new suppliers and contractors are required to receive trainings on business ethics, anti-corruption, safety and environmental protection, etc., and sign a letter of commitment for admission.

- In access: All manufacturers are required to pass an on-site inspection, pass the HSE and CSR audits, and provide complete information for the outsourcing of raw materials and ancillary products.
- Daily management: We track and evaluate the performance of suppliers, focusing on health, safety, environmental protection and compliance operations. Daily performance is an important part in evaluating of suppliers.

Supply chain risk identification

Eco-products/ services selection

- The “Green Procurement Management Measures” was issued, selecting green technologies, green processes and green products from the design stage.
- In making procurement schemes, “Green Procurement Management Measures” must be executed to letter.
- In scoring, priority is given to environmentally friendly products and services that have passed environmental label product certification, energy-saving product certification or other national recognized certifications.



EMPLOYEE DEVELOPMENT

Employees are the most valuable resource and wealth, and the development and success of the Company are attributed to the concerted efforts of all employees. We always put people first in our operations and management, safeguarding employees' legitimate rights and interests. We have built a sound platform for employee development; we promote local recruitment and employee diversity; and we care about the mental and physical health as well as the quality of life of our employees; in so doing, we are sharing our development and innovation results with all employees, and achieving growth together.



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Employee Rights and Interests

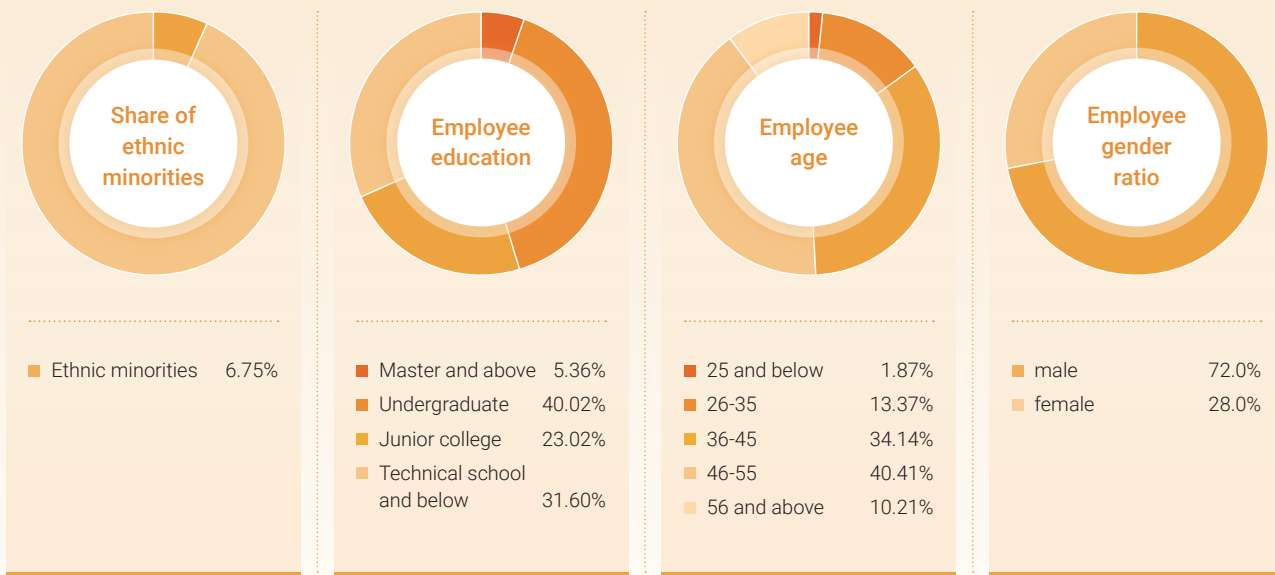
We observe international conventions on labour and human rights, respect and protect employees' legal rights and interests, and create a fair and harmonious working environment with democratic mechanisms, equal and non-discriminatory policies, and sound benefits for all our employees.

» Employment Policies

We put people first, respect and safeguard the legal rights and interests of our employees. We abide by 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*, as well as the relevant international conventions ratified by the Chinese government and the relevant laws, regulations and systems of the host countries. We adopt equal and non-discriminatory employment policies, treating every employee from different nationalities, races, genders, religions and cultures in a fair manner. We never hire child labor or forced labor. We pay attention to employment in ethnic minority areas and poverty-stricken areas, and actively create job opportunities within our business capacity. We take concrete actions to protect the rights and interests of female employees, providing them with maternity and breastfeeding leave, while maintaining equal compensation and benefits and career development opportunities as their male counterparts. By the end of 2024, the Company had 66 female senior managers and 1,411 female middle-level managers.

In 2024

- Over 40% of the fresh graduates (10,327) we recruited are from western China.





▲ Geothermal device check

» Compensation and Incentives

We closely link the Company's compensation and incentive scheme with its reform and innovation, quality and efficiency improvement, and Talent Thriving Enterprise activities, stimulate vitality, improve efficiency, promote market-oriented salary reform, and continuously improve the differentiated distribution mechanism. We have improved the total salary determination mechanism, which is composed of efficiency-based salary design, as well as the performance-linked benchmarking method and salary adjustment system. We continue to optimize the incentive and guarantee system for science and technological innovation activities, and adopt supportive policies for introducing high-level talents. Meanwhile, we have optimized the salary structure, giving priority to front-line workers, key and harsh environment working staff and technical professionals. With all these efforts, the compensation and incentive scheme is continuously and precisely oriented towards high-end management talents, key R&D talents, and high-skilled talents.

» Democratic Participation

We fully respect the democratic and legitimate rights and interests of employees, and value the role of our employees in democratic management, democratic participation and democratic supervision. A democratic management system and an open bulletin system based on the trade union and workers' congress are in place to ensure employees' right to know, participate, express and supervise. By clarifying the various powers, organizational systems, and work systems of the workers' congress, we will further standardize the content, procedures and forms of disclosure.

We have established multiple channels to communicate with employees, and continued to implement democratic procedures. We carried out multi-level communication and exchanges through employee representative groups and online interactions, encouraging employees to participate in the production, operation and management of the Company.



Coverage of employment contracts signed



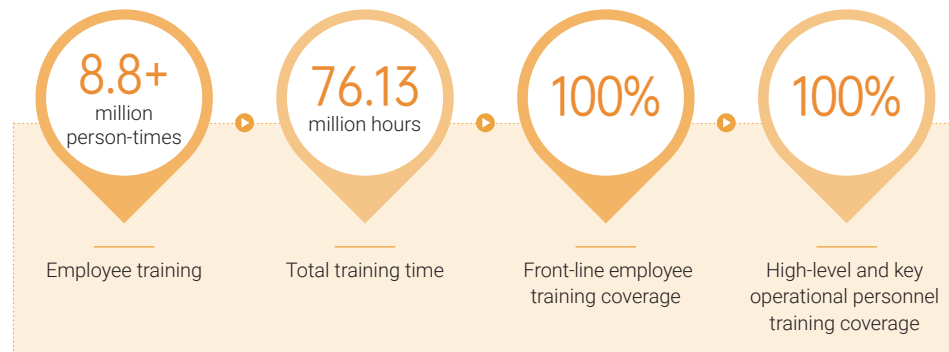
Coverage of social insurance

Career Development Platform

We pay attention to the needs of employees at different development stages, employee education and training and career planning, constantly innovate the environment and mechanism for the growth of talents, and make efforts in providing resources and ensuring conditions for the growth of talents, in order to establish a broad platform for them to realize their self-worth.

» Education and Training

Focused on the goal of becoming a world-class integrated international energy company, we adhere to a modern corporate training vision, gather high-level talents for the main business as well as emerging and future industries, strengthen the top-level design of training, and have timely formulated and implemented the CNPC Leading Party Group's Opinions on Further Strengthening Education and Training. We have improved the linkage mechanism of training and talent selection for "post certification, on-the-job empowerment, promotion and performance", implemented the special empowerment promotion plan for renowned universities, and trained more than 1,100 people jointly with Tsinghua University and other universities. We highlight the internationalization strategy, and carried out six sessions of international talent training cooperation. Annual investment in training reached RMB 3.23 billion, and the Company and its affiliated enterprises implemented 68,000 training projects and more than 113,000 sessions throughout the year, covering more than 8.8 million person-times in total, providing strong support for talent development.



Diversified training programs for different employees' development needs in 2024:



» Career Development

We attach great importance to the career planning of employees and support their career development to realize their value. In 2024, we carried out “the Year of Talent Thriving Enterprise” activity, implemented the national talent program, and continuously promoted the development of young science and technology talents. Meanwhile, the mechanisms for job rotation, evaluation, selection/appointment, and remuneration incentives were further optimized to provide employees with barrier-free and well-paced career paths.

By the end of 2024, we had 234 senior experts, as well as 334 skilled masters and technical experts. We have set up 128 Skilled Expert Workshops, including 38 National Skilled Expert Workshops.



Case

CNPC won 2 honors at the “National Engineer Awards”

The ceremony of the National Engineer Awards was held in Beijing on Jan 19, 2024. Zhang Laiyong, from China Huanqiu Contracting & Engineering, was awarded the title of National Outstanding Engineer, and the chemical flooding R&D team in Daqing Oilfield was named as the National Outstanding Engineering Team.

CNPC attaches great importance to scientific and technological innovation and the construction of a talent team. It constant improves the scientific and technological innovation system, and continuously cultivates and gathers top and leading talents. CNPC strives to build a talent team capable of undertaking world-class missions.

» Remuneration and Incentives






In order to reward and motivate employees spiritually and materially, we conduct wide selection of model workers, advanced workers, technical experts, and academic leaders, and encourage employees to compete for domestic and global awards, etc. We attach great importance to the growth of scientific and technological personnel, selecting young talents to undertake national and CNPC major scientific and technological projects from key projects at home and abroad, major programs, and important scientific research bases.

Individual/Group winners of national awards

	2	National May 1 Labor Certificates	12	National May 1 Labor Medals
	17	National Workers Pioneer	36	Advanced Collective of Central Enterprises
	60	Model Workers of Central Enterprises	7	National Model Worker Unit
	4	National Model Worker Team	8	National Outstanding Labor Union Workers

We improve employees' vocational skills and professional competencies through the combination of trainings and competitions such as vocational skills competitions. Through these measures, we promote the development of front-line employees. In 2024, we hosted 4 national category II competitions and 14 CNPC competitions; we also organized over 70 competitions among enterprises.

CNPC 2024 competition awards

National competition	CNPC competition
National/industry	CNPC Technical Skills Competition
<ul style="list-style-type: none">  gold award 53  silver award 69  bronze award 99 	<ul style="list-style-type: none">  gold award 148  silver award 222  bronze award 357
ranking first among central enterprises in the industry	CNPC Technical Masters 162

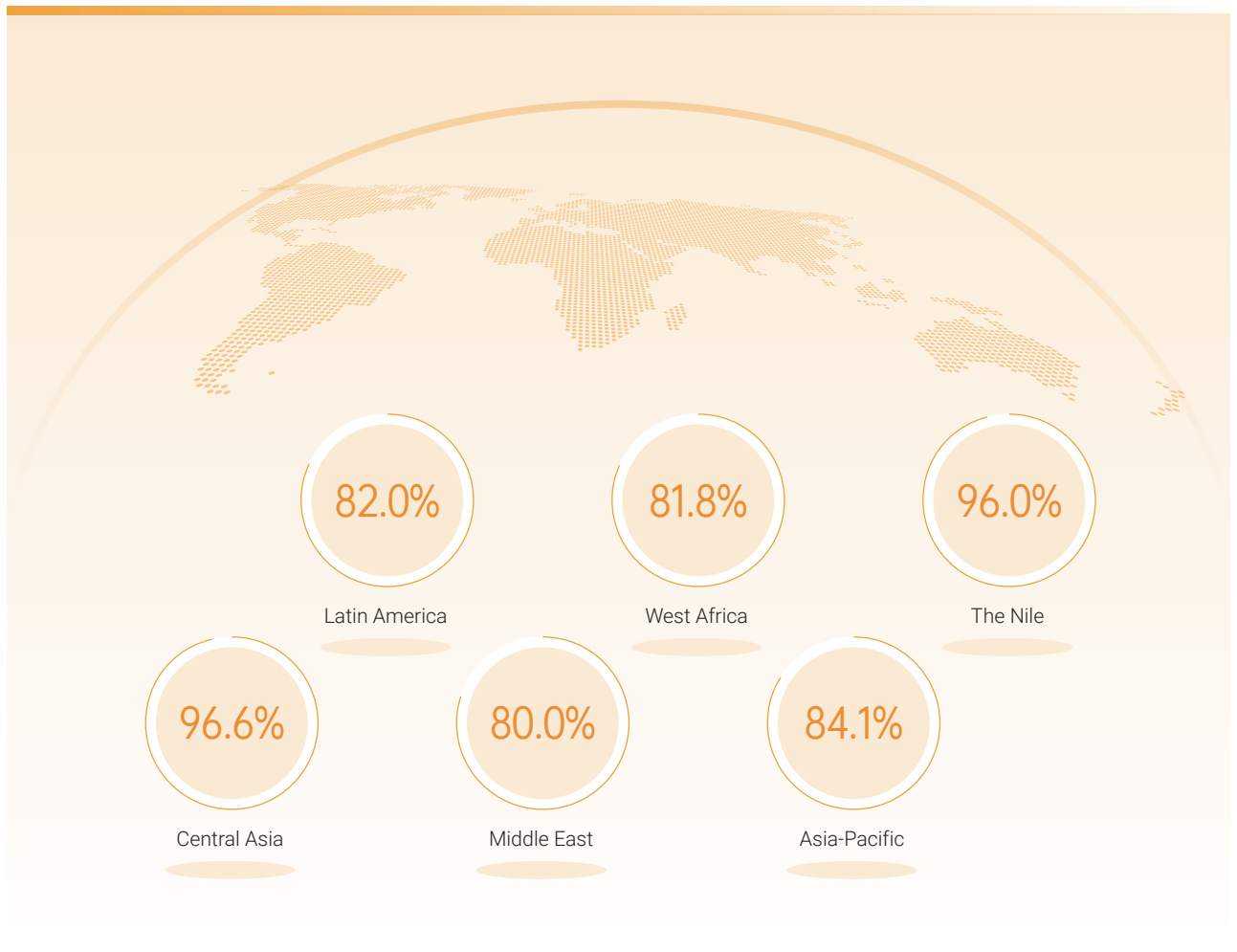
Localization and Diversity

We advocate a culture of respect, openness and inclusiveness, adhere to the hiring principle of "localization, specialization and marketization of overseas talents", and follow the laws and regulations of the host country. We formulated the Measures for the Management of Overseas Local Employees. In so doing, we promoted the innovation and practice of overseas employment management, and established a sound system for the recruitment, use, performance assessment, rewarding and punishment of employees. We also made great efforts to attract and cultivate excellent local talents and create a platform for their career growth.

» Local Employment

We create job opportunities, employ and train local people, and promote local employees to management positions. Our overseas operations are hiring professional talents in E&P, refining and chemicals, pipeline operation, international trade, finance, accounting and human resources management, etc. In 2024, the localization rate of employees in overseas investment business was 92%.

Share of localized employee in overseas business cooperation zones



Case **CNPC helps training talents for N'Djamena Refinery in Chad**

On May 30, 2024, CNPC carried out a three-month technical training for 30 local employees of N'Djamena Refinery. The deputy general manager of the refinery, Mohammed Guyrit Khan Mouqi said, "For 16 years, Yumen Oilfield has been a part of the design, construction and operation of the refinery, and now we have reached a consensus for strategic collaboration in skilled personnel cultivation, making the refinery a cradle of petrochemical talents for Chad."

» Cultural Diversity

We respect our employees' personality, ability and background, and value their diversified talents. We oppose occupational and employment discrimination, strive to create a relaxing and inclusive working environment, and promote mutual respect and understanding among employees from different ethnic groups, nationalities and cultural backgrounds.

Case **Closer bonds based on cross-cultural communication and integration**

CNPC promoted multicultural integration through the Mid-Autumn Festival activity in the Rumaila and West Qurna-1 projects in Iraq, which saw the thoughtful preparation of ingredients and molds for making moon cakes, as well as decorations such as festive jade rabbits and lanterns. Participants were taught how to make moon cakes step by step, including material selection, kneading, filling, molding and impression. While waiting for the baking process, the participants wrote festive blessings on rice paper and greeting cards in traditional Chinese calligraphy in different languages.

» Multicultural integration



Physical and Psychological Health

Attaching great importance to our employees' health, we continuously rolled out a series of policies and measures to provide a favorable working environment and ensure that employees can work in good physical conditions and a sound state of mind.

» Occupational Health

We give priority to improving the occupational health of our employees. We held the publicity week of the *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases*, among other efforts, to build a healthy CNPC. The occupational health examination rate reached 100%, the screening rate of occupational hazard factors reached 100%, and the coverage of occupational health records was 100%.

Key Actions for Occupational Health in 2024

<p>Occupational health knowledge popularization</p>	<ul style="list-style-type: none"> Organized the publicity week of the <i>Law of the People's Republic of China on Prevention and Control of Occupational Diseases</i>, engaging more than 930,000 participants.
<p>Health-caring enterprise enhancement</p>	<ul style="list-style-type: none"> Issued the Health-caring Enterprise Enhancement Plan, optimizing review procedure, establishing a dynamic management mechanism. Conducted health-caring enterprise certification and review, with 52 companies passed the health-caring enterprise review; 20 health-care enterprise cases of 17 companies were promoted by the National Health Commission (NHC), ranking top among central enterprises.
<p>"Weight management year" campaign</p>	<ul style="list-style-type: none"> Issued the Implementation Plan for Weight Management Year, specifying targets and key tasks. Issued the Guide Book for Weight Management, improving organizational-wide health literacy in weight management.
<p>Occupational health enhancement</p>	<ul style="list-style-type: none"> Implemented the pilot program of classified assessment and management of occupational hazard, taking differentiated measures to manage and control occupational hazards. Executed NHC's three-action work plan of occupational disease control, conducting self-examination/correction of occupational hazards projects, summer heat hazards and prevention. Issued the Health Risk Group Classification and Health Intervention Guidelines, offering technical support for sound targeted classification and management of health risk groups. Issued the Guiding Opinions on Strengthening Health Management of Employees in Plateau Areas, establishing management framework for employee health in high-altitude localities.
<p>Overseas employee health management</p>	<ul style="list-style-type: none"> Revised the Administrative Measures for Health Examination and Assessment before Going Abroad, completed 24,000 health checks in the year. Enhanced supports on overseas sudden disease response, with 22 person-times remote medical treatments and 1 severe myocardial infarction cured. Established CNPC overseas medical system pilot in Africa, building a three-level medical structure of "Center+Intensive+General" in Chad, upgrading medical facility, enhancing personnel ability and open medical resources/channels for sharing, and forming functions of monitoring, warning, prevention/control, treatment. Set up an emergency medical fund of RMB 5 million for the emergency treatment of critically ill employees.

» Mental Health

We take measures to continuously improve the employee vacation system, continue to implement the Employee Assistance Program (EAP), set up a hotline and a website for psychological counseling, and carry out various forms of training on mental health improvement, in order to build a positive and healthy state of mind among employees.



Caring for Employees

We advocate a work-life balance, help employees in difficulty, enrich the cultural life of employees, and strive to create a healthy and comfortable environment for employees to work and live happily.

» Employee Assistance

We continuously carried out employee assistance activities, focusing on solving various difficulties facing employees, including retirees, employees' family members and family dependents of deceased employees.

Case | Staff care for a happy family

In order to enhance the sense of gain, happiness and security of overseas employees and enhance the sense of belonging of employees' families, CNPC launched the Health Month campaign "Healthy Mood, Warm Life".

Before the national examination for senior high schools and colleges, China Petroleum Technology and Development Corporation (CPTDC) held lectures on adolescent psychology themed "Face the Exam With You". Employees in Iraq watched the lecture online. "I talked with my child in the way the lecturer instructed, and we opened our heart for closer conversation. I realize that I can walk in the shoes of my child in that way."

At the eve of Father's Day, CNPC Bohai Drilling Engineering (BHDC) hosted a special online course themed "happy parents", attracting over 800 overseas employees and families. Active interactions were conducted, and the lecturer shared examples of fathers' role in families, and taught how to express love and care, helping fathers to build warmer and stronger family bonds. Also, in offline activities, overseas employees returned home to spend time with their families and solved problems in family relationships and parenting together, giving children opportunities to feel and reach out to their beloved fathers by story-sharing and letter-writing.

CNPC Chad conducted the one-week campaign of "staff care overseas", in which Chinese psychological experts gave lectures and one-on-one counseling to employees at oilfields and camps, receiving wide attention and active participation. Employees enhanced their abilities in emotion and stress management.

Even when employees work away from home, love and care are always there. With various staff-caring activities, we help our overseas employees to build and maintain happy families.

» Cultural and Sport Activities

We carried out wonderful and diversified cultural and sports activities through the establishment of cultural and sports associations, organization of cultural activities, sports and intellectual competitions, etc. to enrich the spare time of our employees and improve their comprehensive ability and team cohesion.

Case

Building a healthy CNPC, enhancing cohesion abroad

CNPC hosted the first sports festival themed “together for a healthy win-win life” in the Middle East. The one-month festival covered a variety of events, including the “Striver Cup” football game, basketball, badminton and ping pong games, as well as tug-of-war, engaging over 260 Chinese and foreign participants (employees). Employees strengthened their physical fitness and enhanced their collaborative abilities, hence improving team cohesion substantially.





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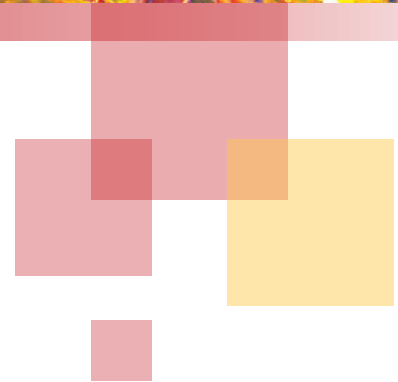


PUBLIC WELFARE

We have been always integrating corporate development with the sustainable development of the regions where we operate, sharing development opportunities and resource value with the local communities, actively participating in community building, paying attention to people's livelihoods and social progress, promoting the harmonious development of regional economies and societies, making our contribution as an excellent corporate citizen.

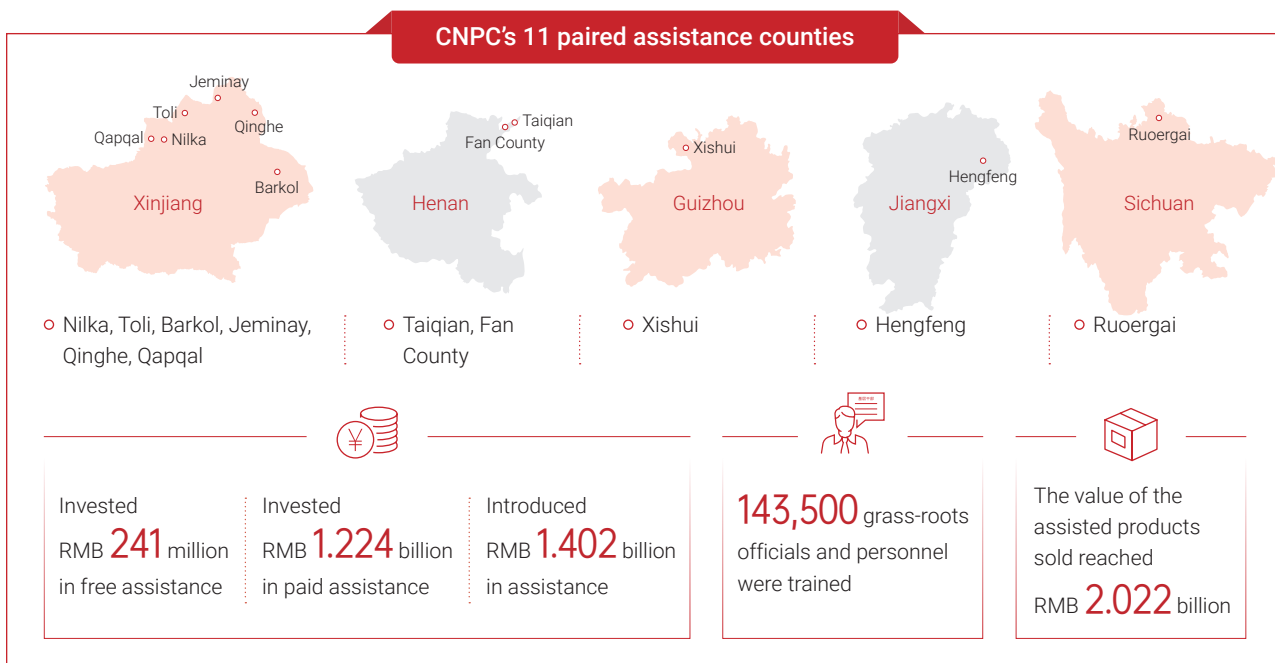


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Rural Revitalization

We have responded positively to the initiatives of the United Nation’s 2030 Agenda for Sustainable Development and the national requirements on comprehensively promoting rural revitalization. Fully leveraging our business advantages and based on the characteristics of resources in the recipient areas, we have taken a variety of measures to enhance the capacity of the local economy for self-development and effectively align efforts to consolidate and expand the achievements in poverty alleviation with efforts to promote rural revitalization, including deepening support for signature industries and helping local areas create more jobs. We strive to explore solutions in terms of rural revitalization and make positive contributions as an oil company. In 2024, we earmarked RMB 669 million for over 1,100 assistance projects for rural revitalization and public welfare, covering 350 villages in 28 provinces, with 650 provisional posts, resident work team members and first secretaries dispatched.



Signature industry enhancement

Invested **RMB 120 million** in “Guisu” village tourism, “Yuanju” industrial parks, “Wotu” food safety programs, promoting the integrated development of culture and tourism, building industrial clusters, and optimizing the industrial structure.



Happy Village building

Invested **RMB 15 million** in “zero-carbon courtyard”, renovating **100** courtyards, and implementing waste recycling to set example for building low-carbon villages, i.e., **three** traditional farming villages in Xinjiang were transformed into the beautiful ecology as depicted in the popular Chinese drama *To the Wonder* (adapted from the essay *My Altay* by Li Juan).



Supporting Education

Education is an important cornerstone for national revitalization and social progress. We regard supporting education as an important part of our social responsibility to help young people gain fair educational opportunities and realize their ideals and self-worth. We set up scholarships and grants among other means.

We are actively exploring new modes to draw the attention of society as a whole to the issue of educational equity. Through the development of public assistance programs, we help more students in poor areas to realize their dreams of studying.

"Xuhang" program	CNPC scholarship	"Yishi" program	"Youmiao" program
Benefiting 3,951 senior high students in difficulties	Granting RMB 4.47 million to 685 outstanding students	With a total of 250,000 teachers trained	The first 69 assisted graduates in Xinjiang joined CNPC, demonstrating the successful model of "targeted training+employment".

"Xingnong" lecture



Invested **RMB 53 million** in "Sannong fair", "village craftsman", "Yishi", "Youmiao", "Xuhang" programs, with **143,500 people** trained, boosting talent development for rural revitalization.

Consumer assistance

Carried out more than **140** affiliates online and offline consumption assistance programs, and the annual sales amount exceeded **RMB 2 billion**, increasing farmers' income by creating famous local products such as Qinghe seabuckthorn and Nilek horse meat.



Health guard

Invested **RMB 43 million** in "Come on, Baby" health insurance, "Yunyi" remote medicare, "Kangyuan" rural hospital program, benefiting over **80,000 people** by establishing a long-term mechanism to resolve difficulties caused by poverty and illness.



Grass-roots Party building

Partnered with **33** village Party organizations of the paired assisted counties, and **36** villages were lifted out of poverty. **28,000** grassroots officials were trained in the "village official" training program, and **67** leading local enterprises and **41** new agricultural business entities were assisted and cultivated, promoting the comprehensive rural revitalization with high-quality Party building activities.



Promoting Local Development

CNPC's development is inseparable from the support of local governments, communities and the general public. We embrace openness, cooperation, mutual benefit and win-win results, expanding collaboration with local governments and enterprises in upstream, midstream and downstream operations, cultivating local suppliers and contractors in construction and operation, creating jobs in related industries, and realizing the integrated development of industries and cities.

Case

Supporting development in old revolutionary base areas

We provided all-round support for Ruoergai in Sichuan, a key county to receive assistance in pursuing rural revitalization, to develop old revolutionary base areas.

Modern industry building with local characteristics

We invested RMB 36 million in building traditional Chinese and Xizang medicine industrial parks, Xizang sheep wool processing plants, and plateau granary industrial bases, promoting the integration and upgrading across the industrial chain of “planting/breeding - deep processing - end products”.

Realities-based consumer assistance

We designated special fund in place with professional institutions to develop local brand products such as Xizang mutton/beef jerky, highland barley biscuit, and the assisted sales amount totaled more than RMB 18 million.

Chinese-Tibetan training to empower local farmers/herdsmen with practical skills

The first online Chinese-Tibetan bilingual training courses had a total coverage of 5,257 grass-roots officials, professional/technical personnel and farmers/herdsmen.

► The South Xinjiang natural gas project has supplied over 64 billion cubic meters of gas to over 8 million people in 42 counties/cities, boosting the development of over 1,100 local enterprises.



Volunteer Activities

We carry forward the spirit of volunteerism, focusing on ecological civilization, rural revitalization, community service and other aspects of the "Gem Flower" youth volunteering activities. In 2024, a total of 97,000 young volunteers from 4,119 organizations carried out 16,000 times of youth volunteering activities.

By setting up recycling boxes in service stations, PetroChina Sichuan Marketing's "Yipinghuilao" program for seniors use raised funds to cover medicare expenses for elderly people living alone and in difficult circumstances in rural areas.





PetroChina Lanzhou Petrochemical's "Sunshine poverty relief" scholarship, "winter clothing" donation, "gem flower" student care station, and summer camp for rural students, have transformed development results into tangible benefits for local people.



Contributions to the Development of Overseas Communities

We respect the local culture and customs where we operate, and are committed to establishing long-term and stable cooperative relationships with the host countries, integrating our corporate development into local economic and social development, actively creating social and economic value, building a community of shared destiny, and jointly promoting the prosperity and development of local communities.

Managing our Community Impact

	Potential positivity	Potential negativity
 <p>Natives</p>	<ul style="list-style-type: none"> ○ Employment 	<ul style="list-style-type: none"> ○ Land use, removal, environmental impact
 <p>Local enterprises and industries</p>	<ul style="list-style-type: none"> ○ Business opportunities ○ Capacity enhancement ○ Technology transfer 	<ul style="list-style-type: none"> ○ Neglect of local products and services, without sharing advanced technologies
 <p>Community consultation and engagement</p>	<ul style="list-style-type: none"> ○ Equal access to voice concerns and know the potential impact 	<ul style="list-style-type: none"> ○ Neglect of community concerns
 <p>Social investment</p>	<ul style="list-style-type: none"> ○ Initial consultation and negotiation with communities to meet actual needs and bring long-term benefits. 	<ul style="list-style-type: none"> ○ Investment in plan and execution may not built on the real conditions, thus it may not generate long-term benefits.

» **Managing our Community Impact**

We strive to make a positive impact on community development through responsible operations. This impact is not only represented in creating jobs, paying tax revenues and generating business opportunities for local suppliers, but also in protecting the natural environment, safeguarding the human rights of local residents, and carrying out public service programs.

	Coping strategies
	<ul style="list-style-type: none"> ○ We conducted impact assessment on local residents, human rights, cultural heritage, and other involuntary resettlement, etc. beforehand, protecting their legal rights and interests. ○ We responded to the requests and needs of local people, and protected their rights and interests. We made reasonable land compensation plans by considering the views of local governments, partners, and villagers. Compensation first and land use later. We released timely land use and compensation information, ensuring transparency in every step. ○ We preferred local hiring and made technical training for specific projects, increasing their income. ○ We strictly followed HSE rules, and set up relevant HSE requirements for stakeholder engagement. We implemented whole-process supervision, and made timely restoration, minimizing our impact on the local ecology.
	<ul style="list-style-type: none"> ○ We supported local enterprises by purchasing locally and collaborating in technical services, boosting development of local SMEs. ○ We supported in talent training programs in the resource countries.
	<ul style="list-style-type: none"> ○ We established community committee to provide public welfare assistance, and supervise the progress and implementation. ○ We built corporate-government management committee, corporate-community association, and corporate-employee committee, to ensure strengthened and smooth communication.
	<ul style="list-style-type: none"> ○ Make reasonable plans for community investment based on the actual conditions and real needs of local residents and local economic development.

» Enhancing Communication with Local Communities

The Company attaches importance to communication with all social parties, especially stakeholders, in the countries where it operates, and has set up environmental protection and community relations coordinating agencies in many overseas regions. Also, we have established various forms of communication mechanisms with local governments, non-governmental organizations, community representatives, etc., to strengthen communication and coordination, enhance mutual understanding, and achieve win-win cooperation by means of meetings, reports and visits.

Case Charming cultural exchange activities

CNPC (Iraq) Halfaya embraces a corporate culture of openness and inclusiveness, fully respects different beliefs and customs, and promotes cultural exchanges through humanized care.

The company organized various cultural activities during Chinese and foreign festivals. For example, making Jiaozi (Chinese dumplings), holding a dinner party and writing Spring Festival couplets during the Chinese Spring Festival; holding celebrations for the Eid Festival and Id al-Adjha; and lots of fun games at the New Year. Employees got closer to different cultures, bridging the gap in between.

Besides, the company held Open Day activities, inviting community representatives to visit the Halfaya oilfield base, and the oil processing center/station, and provided technical explanations during the tour. As a result, the Halfaya oilfield has become an educational base for local young students in Iraq. Many college students have expressed their interest in joining the company upon graduation.

Case Building a harmonious community in Made Island

As the first stop of the Myanmar-China Oil Pipeline, Made Island has been transformed into a large modern crude oil terminal from a primitive island in Myanmar. While building an interconnected energy infrastructure, we made efforts in improving people's livelihoods on the island, forming the "Made Island effect" by building harmonious island-wide communities.

Under the principle of openness and innovation, various communication mechanisms, such as in friendly matches, open day activities, regular visits and surveys, were established to understand and meet the actual demands and difficulties of the local communities, connecting the company with local opinion leaders such as village heads, officials and temple abbots.

► Chinese food festival in Chad



» Community Welfare

We help local residents to improve their production and living conditions, and provide support to neighboring communities in the areas of environment, health and education every year according to their actual needs, contributing to the sustainable development of the community.









▲ CNPC introduced hydroponic vegetable cultivation in Peru



▲ CNPC fosters localized talents training in Chad

Our community-based public welfare activities overseas in 2024:

 <p>Venezuela</p>	<ul style="list-style-type: none"> ○ Jointly organized activities such as “Women in Community” and “Virgin of the Valley Day” with local associations and communities, popularizing women protection policies and conducting skills training and health consultation. ○ Donated fitness square to oilfield communities. ○ Held lecture on fire safety for local primary schools.
 <p>Chad</p>	<ul style="list-style-type: none"> ○ Donated and built 10 wells, and maintained 47 wells for local communities. ○ Donated 100 sets of desks and chairs, and renovated classrooms for local primary schools. ○ Provided medicines, mosquito repellents and other specialized medical supplies for the prevention and treatment of Malay fever to the local community.
 <p>Iraq</p>	<ul style="list-style-type: none"> ○ Provided Ramadan gift packages to families with financial difficulties in the community. ○ Visited and consoled children with cancer and elderly people in nursing homes, giving traditional costumes, daily necessities and festival cards during Muslim traditional festivals. ○ Donated medical equipments such as ophthalmology and stomatology to the community hospital and carried out public welfare activities such as renovating the office building of the community court.
 <p>Kazakhstan</p>	<ul style="list-style-type: none"> ○ Supported local schools, sports organizations, media organizations, festivals and celebrations, as well as local welfare homes, charitable foundations, etc. ○ Donated money to over 20 vulnerable groups/families, such as families with multiple children, families with disabled members, and families impoverished due to illness.
 <p>Singapore</p>	<ul style="list-style-type: none"> ○ Co-organized the Lunar New Year Luncheon for the Elderly and themed volunteer activity with Singapore Women’s Association (SWA) to care for and support over 300 seniors.
 <p>Indonesia</p>	<ul style="list-style-type: none"> ○ Actively participated in infrastructure development in neighborhood around the oilfield operation areas. ○ Invested to build eco-tourism areas, creating local employment, contributing to the local economy. ○ Joined hands with local governments in disaster relief and rescue efforts.



CNPC participated in the charity cycling race in Texas, USA.



CNPC drilled water wells for local villagers in Chad



CNPC held open day event at Halfaya Oilfield



CNPC built exercise square in Venezuela



CNPC sponsored football games in Peru



CNPC conducted volunteer activities in Kazakhstan



CNPC made popcorn and marshmallow for local children in Panama



CNPC organized a tree-planting campaign in Singapore

» Local Environmental Protection

Case | Safe water, sweet life

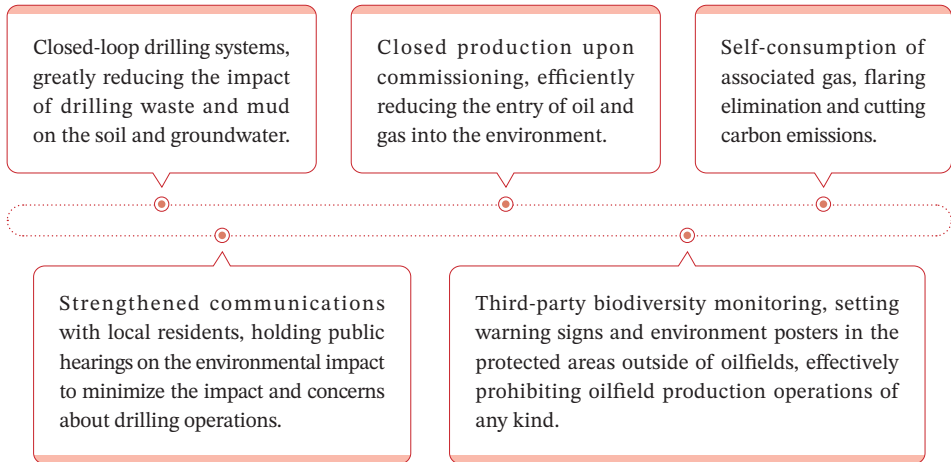
CNPC Chad Company has been implementing the “sweet community” welfare program, drilling wells for communities near the oilfield. People have access to safe drinkable water, attracting more and more people to live nearby.

The program is hailed as “the most popular welfare program” by local officials, which showcased CNPC’s fulfillment of corporate social responsibilities, while bringing development opportunities, and sharing win-win results with communities. Through the program, the company has continuously made efforts to solve the livelihood problems of local residents, improve drinking water conditions, enhance the quality of life, and gradually expand the coverage to benefit more people. In 2024, the company has donated to drill 10 wells, and maintained 47 wells for local communities.

We strictly abide by the environmental protection laws and regulations, as well as relevant international standards in host countries. We adhere to the “development and protection go hand in hand” principle of sustainable development, and minimize the impact of our production activities on the local ecology.

Case | Development and protection go hand in hand

CNPC Kazakhstan follows the low-carbon and green philosophy in development, while paying attention to environmental protection and achieving harmony and sustainability. For years, the company has taken measures to strengthen ecological and environmental conservation.



Case | CNPC’s “green and low-carbon” development philosophy

SPI implemented “green belt” program along the Uzbekistan-China gas pipeline, turning pipelines and stations into oases in the vast desert. Currently, SPI has planted over 10,000 trees, sequestering around 370 tons of carbon, efficiently improving the surrounding environment as well as the living conditions of employees.

» Promotion of Localization

We actively implement our localization strategy, giving priority to the procurement and use of local products and services, providing opportunities for local contractors and service providers to participate in projects, supporting the development of local small and medium-sized enterprises (SMEs) and community entrepreneurs, and creating local employment opportunities.

Transparent Tax Payment

We comply with the laws and regulations of the countries in which we operate, and pay taxes to local governments in a transparent manner, contributing to the development of the local economy. In countries where the Extractive Industries Transparency Initiative (EITI) is implemented, such as Iraq and Mongolia, we actively collaborate with stakeholder groups and disclose our projects and tax payments to the government and the community, conforming to the disclosure requirements of the EITI. We support and respond to anti-base erosion and profit shifting (BEPS), and commit to paying taxes in accordance with the law in the places where our economic activities take place and where value is created, in order to realize the sustainable development of the Company while making due contributions to socioeconomic development. In 2024, the Company's overseas cumulative tax payments and fees amounted to RMB 89.57 billion.

Local Employment

While continuously improving our international operations and management, we promote the localization of employees. We respect the culture of local employees, promote cultural integration, and carry out training programs for local employees, to facilitate the growth of local employees, and give an impetus to local socioeconomic development while realizing our own development. We actively promote the localization development strategy in Indonesia by formulating the annual localization training goals and talent development plans, strengthening the business knowledge training of local employees, and enhancing the business quality and management ability of employees. In 2024, a total of 182 business training sessions were carried out, with 633 participants and a training duration exceeding 20,000 hours.

Case CNPC trains local talents

CNPC trained local talents for the Halfaya project based on the realities of local human resources in the petroleum industry.

For fresh graduates, professional instructors were hired to conduct targeted training for 15 to 20 months, in order to equip them with necessary skills for the company. By the end of 2024, the company has conducted recruits and training for 422 Iraqi graduates in four sessions. Many trainees have now become business backbones in different departments.



Meanwhile, in line with the requirements of training and the Technology Transfer Support Fund (TTSF), the company provided designated personnel of local petroleum enterprises in Iraq with opportunities for on-the-job training and studying abroad. In 2024, the company conducted 31 sessions of technical and management training for 345 people from Iraqi Ministry of Oil and Missan Oil Company; 37 local Iraqi students were funded to pursue studies in oil and business in the UK. Also, the company organized Iraqi youth delegation to visit China, promoting deep understanding of Chinese modernization, CNPC's corporate culture and management practices.

Local Procurement

We give priority to local products and services in project procurement, and regard localization as our contractual obligation. On the basis of fair competition, we give priority to the procurement of local materials, equipment and consumables, in order to provide opportunities for local suppliers, contractors and service providers to participate in projects, and support the development of local SMEs and community entrepreneurs. In 2024, CNPC's Chad project expanded 31 local companies and signed a total of 78 service contracts with local companies. We have continuously strengthened support for local contractors and suppliers through various measures such as strengthening and focusing on training in the bidding process and HSE management for local companies, increasing their bidding opportunities, and helping them enhance their competitiveness. At present, 480 localized contractors, service providers and suppliers constitute 53% of total procurement entities.

Respecting the Rights of Local Residents

Prior to the commencement of projects, we assessed the social, economic and environmental impacts, including the needs of the local people, human rights, cultural heritage and involuntary immigrants, and formulated a compensation plan with reference to the views of the local government, our partners and the local people, in order to maximize the protection of the legitimate rights and interests of the local community.

Case

CNPC Kazakhstan's security efforts

CNPC Kazakhstan follows international practices in personnel security and human rights protection, such as the *UN's Guiding Principles on Business and Human Rights*, regulations of the International Labor Organization (ILO), as well as the legislation of Kazakhstan, respecting human rights in security activities, and minimizing the impact on local communities. When dealing with problems such as land use disputes, strikes, the company engaged in active communications with community representatives, prevented security personnel from taking violent action against people involved, and sought to gain mutual understanding from local residents. In 2024, the company reported no such security incidents violating the above-mentioned regulations and requirements.

OUTLOOK

The world today is in a new era of profound changes and volatility. Facing the complexities at home and abroad, we uphold high-quality development and implement our development strategies of innovation, resources, market, internationalization, and green and low-carbon. We are also committed to enhancing our capacity in sustainable and high-quality development, hence making our new contribution to the global energy transition, and ensuring the energy security of China.





PERFORMANCE DATA

Performance indicators	2020	2021	2022	2023	2024
Finance and Operations					
Total assets (RMB 100 million)	40,887	41,924	43,951	44,756	44,352
Owner's equity attributable to parent company (RMB 100 million)	19,786	19,902	21,188	21,974	22,684
Sales revenues (RMB 100 million)	20,871	28,073	34,000	31,608	31,362
Taxes and fees payable (RMB 100 million)	3,158	3,980	5,305	5,311	5,054
Newly-added proved oil reserves (10,000 tons)	6,670	7,979	10,149	10,190	9,464
Newly-added proved gas reserves (100 million cubic meters)	1,409	1,383	1,803	1,843	1,778
Crude oil production (including overseas equity output) (10,000 tons)	17,864.2	17,943.5	18,203.7	18,435.2	18,722.4
Natural gas production (including overseas equity output) (100 million cubic meters)	1,603.5	1,692.4	1,772.0	1,846	1,905.0
Crude oil processed (including overseas crude oils processed) (10,000 tons)	19,182.7	20,080.9	20,346.0	22,701.5	22,608.5
Output of refined products (including overseas output) (10,000 tons)	13,067.4	13,444.7	13,441.6	15,015.5	14,823.4
Ethylene output (10,000 tons)	634.5	671.3	741.9	800.1	865.2
Lubricant output (10,000 tons)	157.5	196.4	167.9	223.8	240.6
Sales of refined products (domestic sales) (10,000 tons)	10,650.7	11,125.6	10,423.0	12,361.9	11,922.0
Number of service stations (domestic)	22,612	22,684	22,655	22,755	22,441
Safety					
Total number of accidents	176	176	73	70	72
Fatality rate (person/million working hours)	0.0018	0.0014	0.0009	0.0021	0.0012
Fatality rate (person/million working hours)-employee	0.0023	0.0014	0.0007	0.0022	0.0007
Fatality rate (person/million working hours)-contractor	0.0008	0.0015	0.0014	0.0018	0.0019
Fatality rate per thousand vehicles in traffic accidents (%)	0.0569	0.0431	0.0393	0	0.0426

Performance indicators	2020	2021	2022	2023	2024
Environment					
Total GHG emissions (Scope 1 and Scope 2) (million tons of carbon dioxide equivalent)	–	1.79	1.80	1.88	1.87
COD emissions (10,000 tons)	–	0.57	0.53	0.52	0.45
VOC (refining) (10,000 tons)	–	7.06	6.82	6.39	5.82
NO _x emissions (10,000 tons)	--	10.8	10.0	9.72	9.51
Energy saved (10,000 tons of TCE)	79	74	74	86	78
Water conserved (10,000 cubic meters)	1,033	1,049	923	854	824
Land saved (hectare)	1,190	1,120	1,280	1,400	1,200
Employee					
Percentage of female staff (%)	31.3	30.43	29.5	28.7	28
Percentage of ethnic minority employees (%)	6.4	6.51	6.57	6.68	6.75
Localization rate of overseas employees (%)	88	86.67	78.8	83.29	78.4
Occupational health examination ratio (%)	99.23	100	99.31	99.41	100
Hours of mental health counseling hotline service (hour)	2,017	1,228	1,624	1,618	1,000
Training funds spent (RMB 100 million)	14.5	15.2	16.7	28.4	32.3
Total training time (10,000 hours)	2,100	2,662	3,838	5,715	7,613
Public					
Number of material suppliers	23,699	20,257	21,890	22,845	22,327
Purchase expenditure (RMB 100 million)	1,683	1,806	2,015	2,103	1,930
Total contributions (RMB 10,000)	71,795	80,779	66,666	65,881	66,885

GLOSSARY

Proven reserves > According to China National Standards, proven reserves are estimated quantities of hydrocarbon deposits possibly to be recovered from reservoirs proved by appraisal drilling during the period of reservoir evaluation, with a reasonable certainty or a relative difference of no more than $\pm 20\%$.

Proved reserves > According to the guidelines of the US Securities and Exchange Commission, proved reserves refer to, against current economic and operating circumstances, the quantity of oil, natural gas or liquid natural gas which can be reasonably identified and recovered from a known oil & gas layer in the future according to geological and engineering documents. Their price and cost are based on the reality in evaluation. Price changes will only consider the changes of the current price specified by the contract agreement rather than escalations. Proved reserves include developed and undeveloped proved reserves.

Reserve replacement ratio > The reserve replacement ratio refers to the value of the amount of oil and gas reserves added in a year divided by the amount of oil and gas produced during that same year.

Recovery ratio > The percentage of oil/gas in place that is recoverable from underground.

Horizontal well > A class of nonvertical wells where the wellbore axis is near horizontal (within approximately 10 degrees of the horizontal), or fluctuating above and below 90 degrees deviation. A horizontal well may produce at rates several times greater than a vertical well, enhance recovery efficiency and prolong the production cycle, due to the increased wellbore surface area within the producing interval. Meanwhile, the environmental costs or land use problems that may pertain in some situations, such as the aggregate surface "footprint" of an oil or gas recovery operation, can be reduced by the use of horizontal wells.

Liquefied natural gas (LNG) > Liquefied natural gas is produced by dewatering, deacidifying, dehydrating and fractionating the natural gas produced from a gas field and then turning it into liquid under low temperatures and high pressure.

New energies > New energies refers to unconventional energy and renewable energies, mainly including CBM, shale gas, oil sands, oil shale, fuel ethanol, biodiesel, geothermal energy, wind energy, solar energy, hydrogen energy, water-soluble gas and NGH.

Low-carbon economy > A low-carbon economy is an economic development model characterized by low energy consumption, low pollution and low emissions. Its essence is efficient energy consumption, development of clean energy and pursuit of green GDP. The core of this model is the optimization of the industrial structure, low-carbon technology and institutional innovation. A low-carbon economy is developed by means of energy conservation, emissions reduction and the development of clean energy.

Greenhouse gas (GHG) > Greenhouse gases are gases in an atmosphere that absorb solar radiation from the surface and then emit radiation, such as water vapor, CO_2 and most refrigerants. Their effect is to make the Earth's surface warmer, as the "greenhouse effect" sequesters solar radiation and increases the temperature of the air. Greenhouse gases in the Earth's atmosphere mainly include CO_2 , CH_4 , N_2O , HFC_s , PFC_s and SF_6 .

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

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APPROACH TO REPORTING

Definition Process of the Contents

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



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

**Pursuing green development and
providing reliable energy supply**

to fuel our customers' growth and
power people's happy life



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