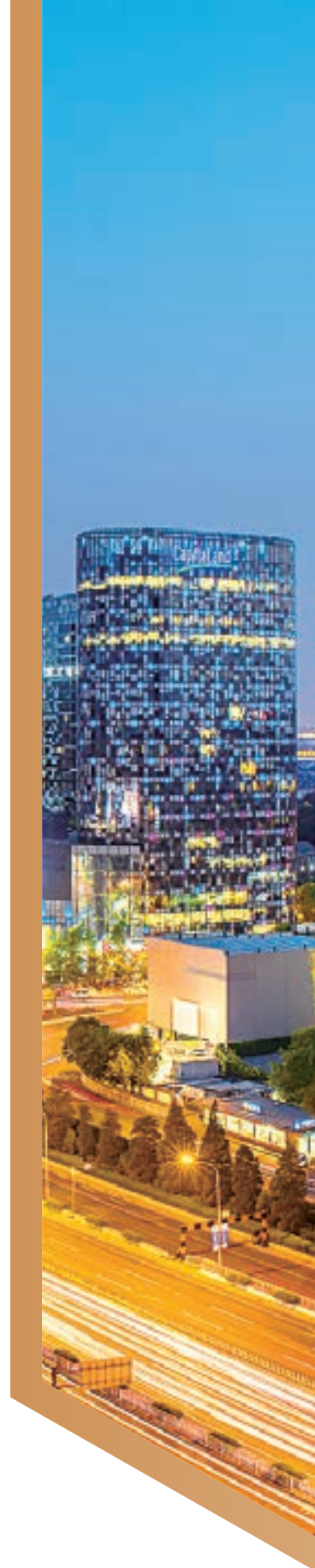
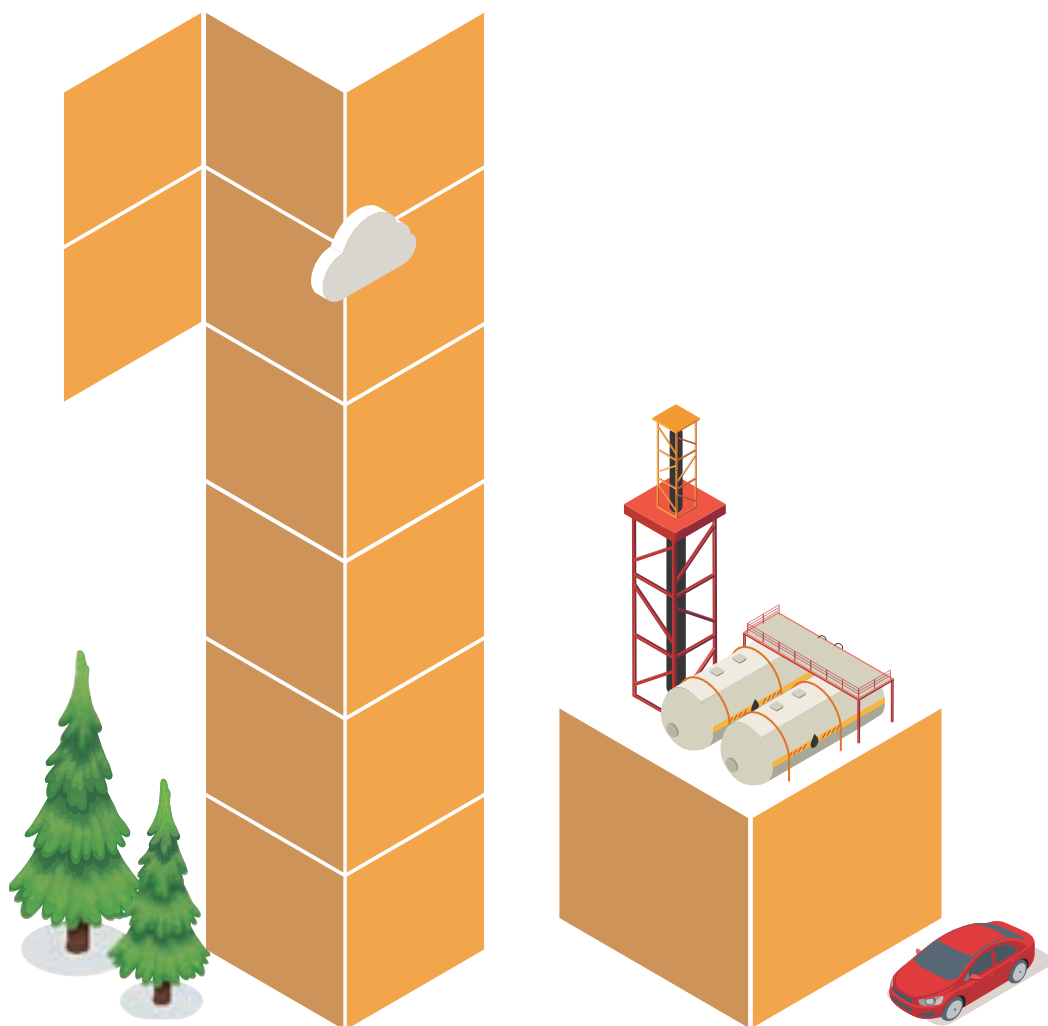


SUSTAINABLE ENERGY SUPPLY

It is CNPC's responsibility and mission to meet energy challenges and satisfy the ever increasing demand for low-carbon 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.





Energy and Future

Opportunities and Challenges

The growth of economy and population drives the growth of energy demand. By 2060, the world population is expected to be 10.07 billion, an increase of 26.2% over 2022. Technological progress and population growth are major drivers for the size of the world economy. By 2060, the world economy is expected to reach USD 236 trillion, 2.35 times more than that of 2022. In the long run, economic development and population growth will drive sustained growth in global energy demand and consumption.

Lack of equal access to energy is still a prominent issue. At present, over 1.2 billion people worldwide still lack access to affordable modern energy, and developing countries are still using large amounts of high pollution 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.

Accelerated transformation to clean and low-carbon energy is driven by addressing climate change. Climate change has become a major issue affecting the global and human destiny. A number of important consensuses were reached including “achieving a just and equitable transition from fossil fuels (oil and gas) to renewables” in the 28th United Nations Climate Change Conference. The clean and low-carbon transition is an irreversible trend, and non-fossil fuels will gradually dominate in the supply system, with an estimated proportion of 63% in the primary energy by 2060.

China is accelerating the construction of its clean and low-carbon energy system. Efforts are stepped up in building a new energy system driven by the national “Carbon Peak and Carbon Neutrality” goals, so as to peak demand for oil and gas in 2030 and 2040 respectively. Oil and gas will see a shift in their position in the new energy system, but will remain an important component. Demand for oil will highlight its attribute as a feedstock “to support economic and social development”, compared with “the pillar of energy supply for the transportation sector” in the past; while natural gas will gradually become an important source of energy to support the all-round green transformation of the economy and society.

✓ Changqing Oilfield in low-carbon transition



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. First, we leverage our rich gas resources and increase gas production, while stabilizing oil production. Second, we make good use of our abundant wind, solar and geothermal resources, promote the integrated development of wind, solar, gas and electricity and the industrialized utilization of hydrogen energy, and step up the large-scale development and comprehensive utilization of thermal resources, helping CNPC transition to become an integrated energy company specializing in "oil, gas, geothermal, electricity and hydrogen". Third, we promote the green action plan, 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 CCS/CCUS, strengthen the development of forestry carbon sinks, chemical utilization of carbon dioxide, etc., strive to achieve carbon removal, and actively contribute to the achievement of the "Carbon Peak and Carbon Neutrality" goals.

Green and Low-carbon Transition Path of CNPC

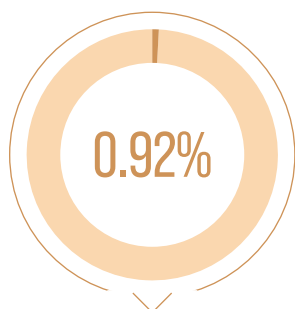
	Clean alternatives 2021-2025	Strategic replacement 2026-2035	Green transformation 2036-2050
Targets	▶ Striving to enable the new energies business to contribute to 7% of China's energy supply capacity by 2025	▶ Ensuring new energies to take up one-third of our business capacity, with oil and gas by 2035.	▶ Ensuring that new energies business makes up half of our business capacity
Measures	▶ To enhance the development and utilization of geothermal energy, solar energy, wind, hydrogen and other new energy sources, promote clean replacement 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	▶ 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 sequestration projects on a large scale to continuously reduce carbon emissions	▶ To continue to increase 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 CCS/CCUS strategic replacement industries, and promote the development of carbon circular economy

Technology and Innovation

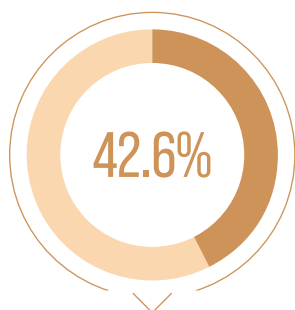
We put more emphasis on the innovation strategy. We endeavor to deploy innovation chains based on industrial chains, and enhance the value chains driven by innovation chains. We drive high-quality supply through innovation, and address global challenges such as equal access to energy, reduction of carbon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

CNPC's Goal for Technological Development

2021-2035 (stage 1)	➤ Basically tackling problems in core technological research in the oil and gas industrial chain. ➤ Basically building a national strategic scientific and technological force and a highland for energy and chemical innovation.
2035 - mid-century (stage 2)	➤ Comprehensively building national strategic science and technology capabilities and took energy and chemical innovation to new heights. ➤ Becoming a major scientific and technological innovation center and innovation hub in the industry

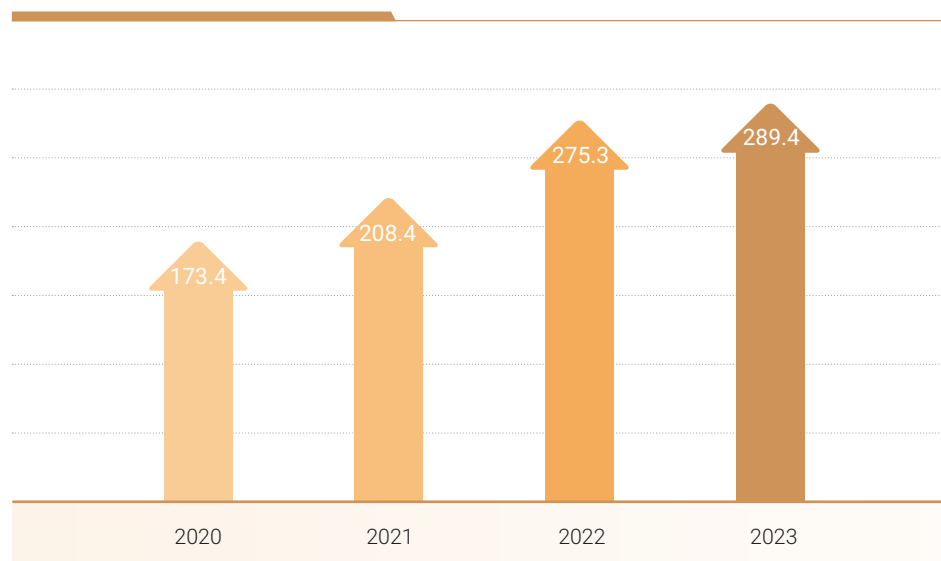


R&D investment ratio in revenues



Breakthrough in key core technologies

R&D investment (RMB 100 million)



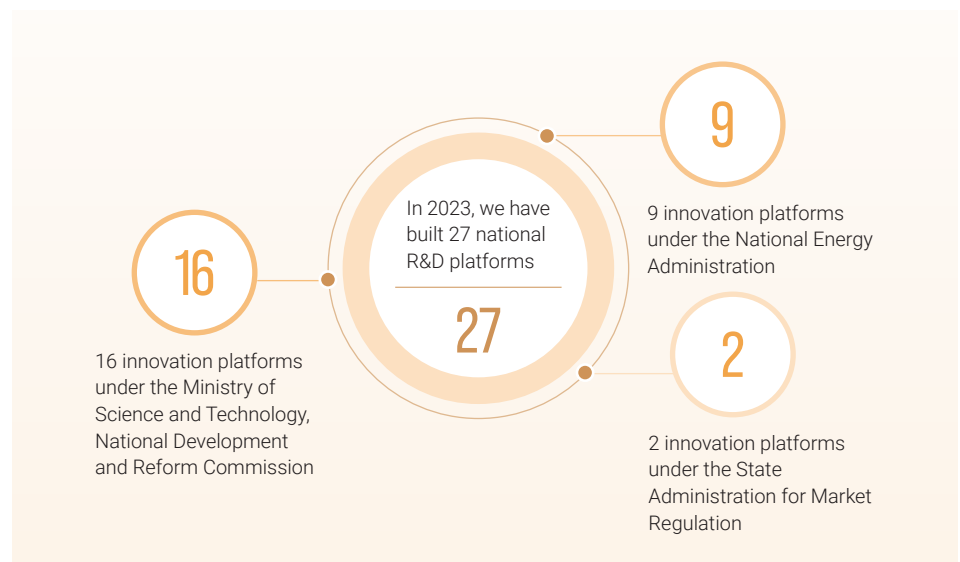
Innovation Platforms

CNPC has 92 research institutions and departments, with 12 directly affiliated to the Company and 80 enterprise-level scientific research institutions. CNPC also has 27 national R&D platforms and 56 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 257 scientific and technological experts, 494 young scientific and technological candidates, and 146,000 researchers.



Daqing Oilfield pools national technological talents together to build a research and experiment platform



Scientific and Technological Achievements

Guided by construction of original technology bases, 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 2023, CNPC

- Applied for **10,071** invention patents at home and abroad, with **2,933** granted.
 - Led the compilation and launch of **3** international standards, **2** international advanced standards; led the revision and launch of **6** international standards.
- Released the first international standard on shale gas in China, and led the compilation of the Global Enhanced Oil Recovery Standard.
- Made to the list of 2023 Most Innovative Companies of Top 50 by Boston Consulting Group (BCG).

CNPC 2023 top ten scientific and technological advances

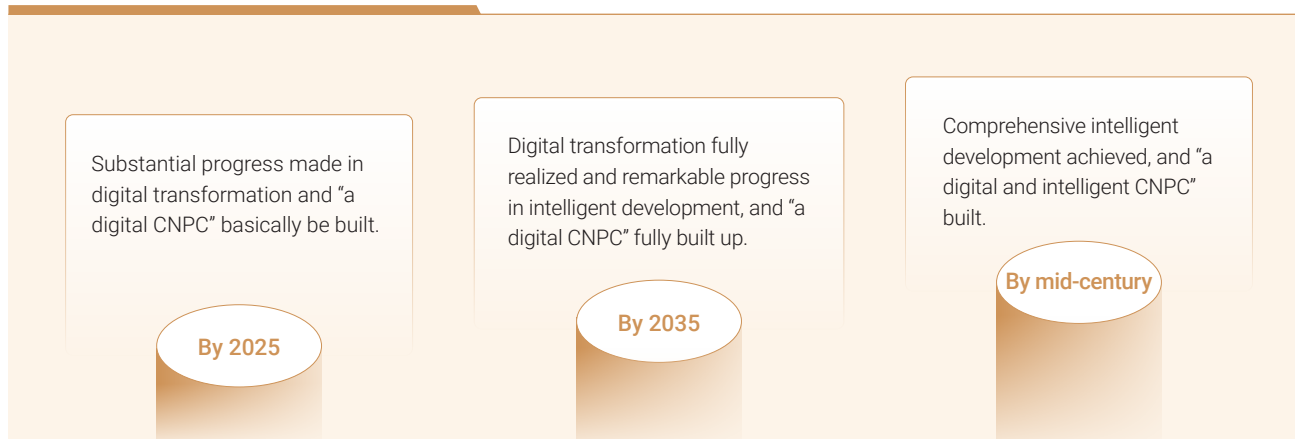
- 1 Breakthroughs in high clay-content shale oil enrichment theory and key technologies supported the construction of Gulong Shale Oil Demonstration Area
- 2 Innovation in deep coal rock gas enrichment theory and key development technologies promoted industrial development
- 3 Deep reactivation technology for amine solution supported efficient production of sour natural gas
- 4 Development and application of package technology of solution-based high-performance ethylene-octene polyolefin elastomer (POE)
- 5 Development and application of China's first package technology of PETG co-polyester
- 6 Development and application of high-performance solution-styrene butadiene rubber (a key material for tires) technology
- 7 Intelligent seismic operation system contributed to quality and efficiency improvement of seismic acquisition
- 8 Localization of fast imaging through-drilling-tool logging system and processing software for horizontal wells achieved
- 9 Major breakthroughs made in passive magnetic guidance drilling technology
- 10 Over 1,000-cubic-meter, wide-load and low-energy-consumption alkaline water electrolysis hydrogen production technology and equipment put into operation for the first time

Information Technology

Guided by the "value-oriented, strategy-led, innovation-driven and platform-supported" principle, we center on the three main lines of "business development, management reform and technology empowerment", endeavored to maximize the overall benefits of the industrial chain, promote the development of digital transformation and intelligence, and accelerate the high-quality development of the oil and gas business powered the new generation information technology, striving to create an open and shared smart industrial ecosystem of energy and chemicals.

In 2023, we advanced the construction of "a digital CNPC" steadily. We unveiled the CNPC (Beijing) Digital Intelligence Research Institute, implemented IT enhancement projects, and accelerated large-scale ERP construction. We saw remarkable results in optimized oil and gas value chain, released a guide to digital transformation, and made breakthroughs in the construction of national key projects. We further enhanced our cybersecurity and new infrastructure capabilities, basically built a global shared service system and achieved notable results in fully utilizing digital technology to continuously promote reform in corporate management and enhance the effectiveness of corporate governance, and accelerated digital and IT construction, providing new engines for us to become a world-class integrated international energy company built to last.

Development roadmap for "a digital CNPC"



Achievements in digital transformation and intelligent development

Task	Goal	Achievement
Business development	Coordinated and optimized oil and gas businesses. To achieve overall benefits and maximum value for shareholders, we made synergized efforts in resources allocation optimization, business performance coordination, and emergency response.	► We vigorously promoted the construction of production and operation platforms, accelerated the implementation of digital transformation of production sites, continued to promote production and operation "visible, controllable, and manageable", and gradually realized the real-time perception, dynamic analysis, intelligent regulation and adaptive optimization of all elements of production in the whole process. ► The optimization of the oil and gas value chain has achieved obvious results, effectively supporting the pre-calculation of production and operation and the integration and optimization of the industrial chain, realizing the overall management of market prediction, plan optimization, benefit calculation, and comprehensive analysis, promoting the deep integration of production and operation and finance, and supporting the production and operation and decision-making of the Company.
	Transformation and upgrading of main businesses. Industrial transformation and upgrading was driven by integrating Internet of Things, big data, AI etc. into the Company's businesses.	► The <i>Digital Transformation Construction Guide (1.0)</i> was released, covering six construction standards: business scenario design, data, cloud computing resource requirements, production private networks, network security, and the Internet of Things, and clearly proposing the path and construction sequence of digital transformation. ► Oil and gas & new energies: To build a model of "intelligent oil and gas field", we established a unified mode for digital transformation focusing on exploration, development, and engineering among other 8 business areas. Tarim Oilfield completed the pilot construction and achieved lean production, multi-party operation control, integrated and sharing of research. Southwest Oil and Gas Field built three integrated working environment, and formed new business management models for drilling engineering, gas production etc. ► Refining and chemicals & new materials: to build a model of "intelligent refiners", we formulated the <i>Technical Guidelines for the Digital Transformation and Intelligent Development of Refining and Chemical Business</i>, where intelligent refining and chemicals requires for controllable safety risks, lean operation and management, optimized process dynamics. A 3D integrated plant was built in the Yulin ethane to ethylene project comprising digital design, handover, digital twin. Dushanzi Petrochemical and Guangdong Petrochemical were awarded "2023 Intelligent Manufacturing Demonstration Factory" by the Ministry of Industry and Information Technology. ► Marketing business: to build a model of "smart marketing", we completed the construction of all-scenario for marketing, continued to optimize the intelligent scheduling, membership services, intelligent marketing, and cross-business collaboration within a province or region. ► Natural gas sales: to build a model of "smart natural gas sales", we enhanced our capabilities in sales forecast, household safety inspections, and station control.
Management reform	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.	► We pushed forward the construction of a unified office platform, and upgraded the general office platform in line with the principle of "platform+application+service", to build up six functions of multi-terminal service integration, visual application, systematic service management, intelligent data utilization, ecological collaborative sharing, integrated operation and maintenance/operation, hence realizing one-click login and unified to-do for all the 14 office management systems. ► The global sharing service system including finance and human resources was established. Financial sharing incorporated 3 types of business of domestic enterprises in accounting, statement preparation, capital settlement; Human resource sharing has completed full coverage of 6 businesses in 3 categories, promoted and implemented report customization, and regularly analyzed 2 data services; Social security services cover all corporate headquarters. We have integrated and optimized 455 robots, handling more than two-thirds of the business volume, continuously improving the level of automation, and expanding intelligent applications. ► We launched large-scale ERP projects. By optimizing resource planning, integrating business and finance, coordinating operation and production, we accelerated the synergy between materials, fund, information and value, so as to standardize business performance, efficient resource coordination, and value creation ability.
Technology empowerment	To build first-class industrial Internet system of energy and chemicals, and empower digital transformation technologies.	► Based on CNPC's four big data centers, we accelerated the application of cloud platforms, and continued to enhance abilities in cloud computing and storage. ► We conducted special activities for data governance. We put life-cycle data management into place for joint construction and management, and shared benefits. We dived deep for data value, and promoted data governance and data lake construction.

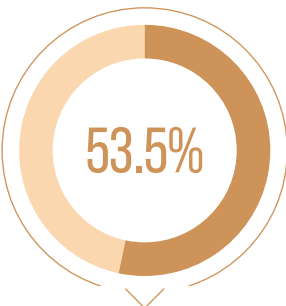
Clean Energy

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.

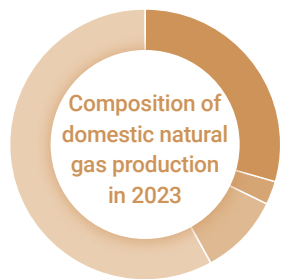
Natural Gas

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.

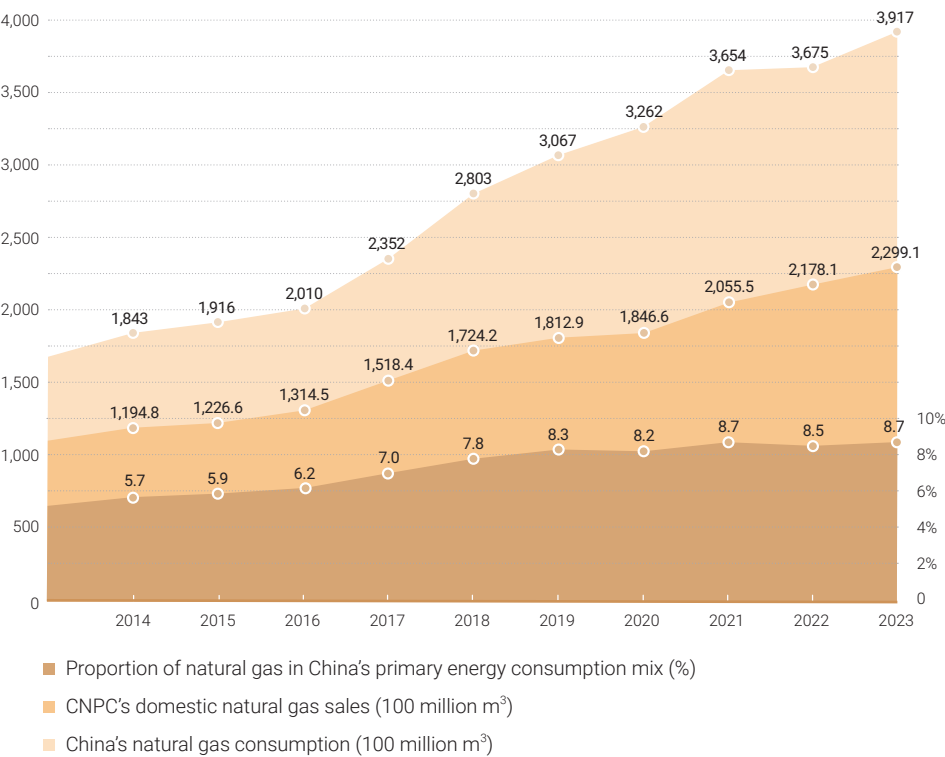
Green Power Optimized Energy Structure



Share of natural gas in domestic oil and gas production



■ Tight gas	29.5%
■ Coalbed methane	2.8%
■ Shale gas	9.7%
■ Conventional natural gas	58%



Source: CNPC Economics & Technology Research Institute

In 2023, CNPC's natural gas production increased 5.1% from last year to 184.6 billion cubic meters (152.9 billion cubic meters domestically), 66.6% of the national total. Meanwhile, the Company strengthened efforts in enhancing natural gas supply capabilities by ramping up domestic production and increasing pipeline gas imports, and provided a total of 229.91 billion cubic meters to the country, an increase of 5.6% year-on-year.

Case Ensuring gas supply for residential heating in winter

1. We deployed in advance domestic key production capacities and the construction of gas storage and peak-shaving capacities during the heating season. By tapping our production potential of domestic gas, imported gas and gas storage, we saw a year-on-year increase of more than 4.5% in the total gas supply in the 2023-2024 heating season.
2. We fully completed the signing of gas supply contracts, and confirmed 34% of contract signed for winter domestic gas in the Company's market area, ensuring full coverage of gas demand for residential use.
3. We held a group-wide mobilization and deployment meeting before winter to ensure gas supply. We prepared in advance a plan to cut down gas supply among interruptible gas users and carried out practical drills to ensure gas supply for residential heating and improve our coordination and emergency response capabilities.
4. At the end of October, we completed injection in gas storage and collecting resources for more than 80% of the tanks in our own LNG terminals.
5. In response to wide fluctuations of temperature since the beginning of winter, we strengthened industry-wide coordination, and effectively safeguarded our gas supply during the ultra-low-temperature cold wave across the country. Sales reached a peak of 932 million cubic meters on December 21, 2023, an increase of 91 million cubic meters, or 10.8%, from the historical peak of the heating season.

Unconventional natural gas

 Shale gas	 Coalbed methane	 Tight gas
► Five shale gas fields built: Changning, Weiyuan, Luzhou, West Chongqing, and Zhaotong; ► Total output: 14.81 billion cubic meters (+890 million cubic meters from 2022)	► Two CBM industrial bases built: Qinnan and Edong ► Total output: 4.31 billion cubic meters (+1.29 billion cubic meters)	► Gas fields built: the Sulige Gas Field (Changqing Oilfield Company), and Edong Gas Field (PetroChina Coalbed Methane Company) ► Total output: 45.1 billion cubic meters (+3.97 billion cubic meters)

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 2023, the total domestic terminal sales of natural gas increased by 9.3% year-on-year.

In 2023, we launched 13 natural gas terminal programs in Shandong, Jiangsu, Henan, Liaoning, Tianjin, Xinjiang, Inner Mongolia and Gansu etc.

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 full-industry-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 2023, we built a number of projects such as a million-kilowatt PV power plant in Kashgar, Xinjiang, the medium and deep-level geothermal heating project in Beijing, and the water electrolysis hydrogen production project in Yumen, and completed the equity acquisition of Potevio New Energy Co., Ltd., with a new energy development and utilization capacity amounting to 11.5 million tons of standard coal per year.



- Yumen Oilfield's 300,000 kW PV power project connected to the grid



Progress in new energies and new businesses in 2023



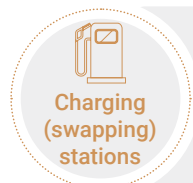
- Newly added geothermal heating area of 10.45 million square meters, amounting to more than 35 million square meters in total
- Newly added 11 geothermal projects, all of which were listed for winter gas supply, spreading over 10 provinces, autonomous regions and municipalities such as Beijing, Hebei, Henan, Shandong, and Shaanxi
- The first medium and deep-level geothermal heating project in Beijing put into operation
- Expanded the geothermal heating market in Beijing-Tianjin-Hebei and central regions, with a contracted area of more than 40 million square meters



- The aggregate installed capacity of more than 5 million kW
- Completed a 1.1 million kW photovoltaic power generation project in Kashgar, Xinjiang; the 300,000 kW photovoltaic power generation project in Yumen Oilfield connected to the grid for power generation
- Qinghai Oilfield restarted the Golmud gas-fired power station and commenced construction of supporting new energy projects



- Our total production capacity of high-purity hydrogen reached 6,600 tons/year, an increase of 120% over the previous year.
- The hydrogen purification project of CNPC Sichuan Petrochemical put into production and provided clean hydrogen energy to the Chengdu Universiade.
- Our first large-scale water electrolysis hydrogen production demonstration project, the Yumen Oilfield Water Electrolysis Hydrogen Production Demonstration Project, was completed.
- Our first "oil, gas, hydrogen, electricity, solar and non-fossil fuel" integrated energy station, the Suzhou Huaqiao Station of CNPC Jiangsu Marketing Company, was put into operation.



- Completed the equity acquisition of Potevio New Energy Co., Ltd.
- 923 charging (swapping) stations were completed and put into operation, an increase of 122% over the previous year.

6,600 tons per year
High-purity hydrogen capacity

344 tons
High-purity hydrogen produced

Green Products

We optimized the energy consumption structure by upgrading energy products. In 2023, we further increased our hydrogen production capacity. The hydrogen purification project of PetroChina North China Petrochemical was restarted, the water electrolysis hydrogen production demonstration project of Yumen Oilfield was completed, and the hydrogen purification project of Changqing Petrochemical was put into operation. With high-purity hydrogen generated, Sichuan Petrochemical completed the task of supplying hydrogen to the Chengdu Universiade.

Climate Change

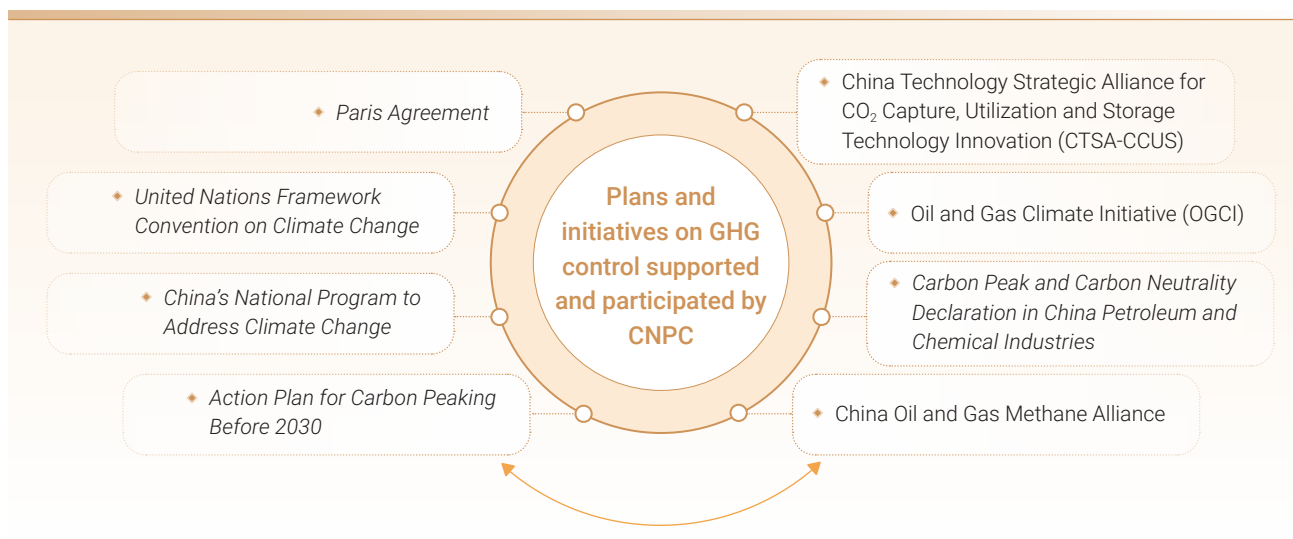
We respond to the *Paris Agreement*, and actively contribute to China's efforts to peak CO₂ emissions. We take the initiative in international climate governance, and actively respond to climate change.

Carbon Emission Management

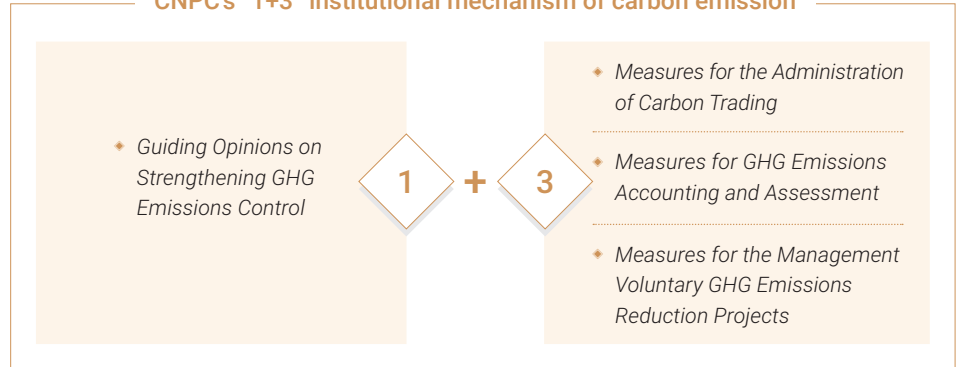
We pay close attention to greenhouse gas (GHG) emissions. We continually improve our carbon emission control system, strengthened methane emission reduction management and control, take an active part in the construction of the carbon market, and deeply participate in cooperation with the global oil and gas industry to cope with climate change. In 2023, the total GHG emissions from our operations were 188 million tons of carbon dioxide equivalent, and the methane emission intensity decreased by more than 10%. In 2023, we were honored with the title of "Carbon Peak Pioneer" and "Low-carbon Model" for 12 years in a row by China Federation of Industrial Economics.

In 2023, CNPC

- ▶ Conducted a study on methane emission control in the oil and gas industry, supporting the country in formulating the *China Methane Emission Control Action Plan*.
- ▶ Promoted pilot monitoring of methane in oil and gas fields, and carried out satellite remote sensing monitoring.
- ▶ Built the "Methane Leakage Detection and Repair Platform" to promote methane leakage detection and repair, and increased methane emission control measures such as exhaust gas recovery, flare extinguishing, and regionalization of stations to continuously reduce methane emissions.
- ▶ Continued to advance energy conservation, efficiency improvement and clean substitution to reduce fuel consumption; and promoted self-generated green power substitution to reduce carbon emissions from the production process.
- ▶ Actively participated in international exchanges on climate change. As the chairman of China Oil and Gas Methane Alliance, CNPC led 10 member companies to keep promoting in-depth technical exchanges, and hosted a side event on methane emission control for China Pavilion at COP28.



CNPC's "1+3" institutional mechanism of carbon emission



In 2023, the Company strengthened carbon emissions assessment and compliance with CEA

- ◆ Continued to strengthen assessment constraints. We decomposed the total amount and intensity targets of carbon emissions to professional companies and subordinate companies to intensify the anti-driving mechanism for carbon control and carbon reduction.
- ◆ Optimized the operation of coal-fired units, reduced the use of coal, increased clean substitution, and continued to promote synergies in energy conservation and carbon reduction. We increased our carbon emissions allowance reserves and compliance management, and our coal-fired captive power plants included in China's national carbon emissions trading market fully completed the clearance of carbon emissions allowance for the second compliance period.
- ◆ Carried out an upgrade of carbon asset control platform and on-site data verification, and strengthened data quality management to continuously promoted lean management of carbon emissions.
- ◆ Tracked the carbon trading market launch policy for China's national carbon market expansion and voluntary emission reduction (CCER) projects, advanced the development of CCER projects, and participated in trading in international carbon markets.

New progress in full-industry-chain CCUS development

- ◆ We took the lead in conducting research on carbon capture, utilization, and storage (CCUS) technology in China
- ◆ We established the "1+8" CCUS full-process technology system. Our State Key Laboratory of Enhanced Oil Recovery was selected as one of China's 20 benchmark state key laboratories.
- ◆ We deployed "Four Engineering Demonstrations" and "Six Pilot Tests" of the entire CCUS industry chain, and laid out CCUS hubs and demonstration projects in Songliao, Junggar, Ordos and other regions.
- ◆ We injected 1.59 million tons of CO₂ annually in 2023.



Carbon neutral ecological park, Daqing Oilfield

Global Climate Governance

As the only member of OGCI in China, CNPC has been deeply involved in international cooperation to address climate change, contributing to the fight against climate change and the realization of green and low-carbon transformation of the oil and gas industry with other member companies. In 2023, we acted as the president of the China Oil and Gas Methane Alliance, and promoted exchanges in methane abatement technologies. We participated in COP28, at which we hosted a side event on methane emissions control at the China Pavilion, showcasing our program and our commitment in this endeavor.

Clean Substitution

While providing clean oil products to the society, we focus on optimizing our own energy consumption structure. We care about carbon emissions and carbon footprints in our production and operations, and strive to reduce our consumption of fossil fuels and lower energy consumption intensity. We make energy conservation our number one source of energy, improve oil and gas commodity rates and energy efficiency, and accelerate green and clean substitution. In 2023, after a combination of measures such as energy conservation and emissions reduction, clean substitution, and carbon offsetting were implemented, the first station of the West-East Gas Transmission Pipeline in the Tarim Oilfield was certified by a third party as China's first "carbon neutral station".

Participating in Carbon Emission Trading

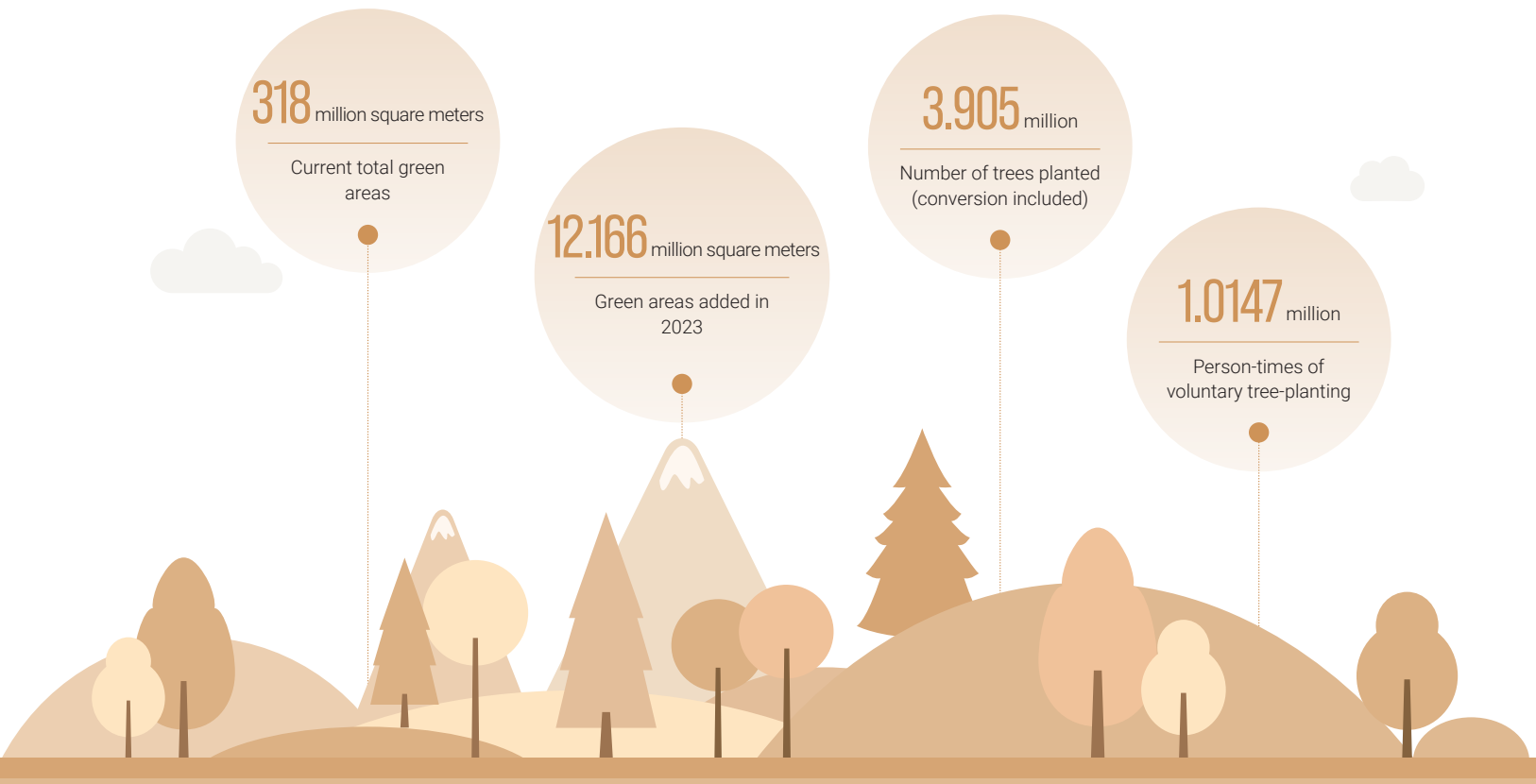
We actively participate in the construction of the national carbon emissions trading market. We increased our carbon assets reserves and enhanced our performance by purchasing carbon emission allowance (CEA) and China Certified Emission Reduction. In 2023, we put the CEA plans in place and improved our performance management, and paid the second performance period of CEA for the self-supply power plants included into the national carbon emissions trading market.

Developing Forest Carbon Sequestration

We actively rolled out the construction of carbon sinks and carbon neutral forests, and promoted the realization of carbon neutrality through carbon offsetting. In 2023, CNPC's first carbon neutral forest in Ma'anshan (Daqing Oilfield Company) was built into an eco-park covering an area of 10,000 mu; the second carbon neutral forest was also unveiled in Junggar of Xinjiang Oilfield Company.

In 2023, CNPC

- Completed its second carbon-neutral forest in Xinjiang Oilfield (Xinjiang Oilfield Junggar Carbon Neutral Forest), making a total of 17,900 mu of carbon sequestration forests and carbon neutral forests in Daqing Oilfield, Changqing Oilfield and Xinjiang Oilfield.
- Launched the "Afforestation Action in 10,000 Well Sites" in response to the country's initiative, with a total of 901,000 trees planted in 2,026 well sites and stations.
- Continued to carry out the public welfare activity of "Planting a Tree for Carbon Neutrality", with a total of 1.096 million person-times participating in donations of more than RMB 33.63 million, and 3,550 mu of four forests including the Daqing Battle Forest were built.
- Launched "Planting a Tree for Carbon Neutrality - Red Nanliang Forest Theme Activity" in partnership with the Office of the National Greening Committee, the National Forestry and Grassland Administration and the China Green Foundation, advocating the participation of the whole society in afforestation, and was awarded the honorary title of "Outstanding Contributor to Land Greening" by the China Green Foundation.



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 2023, the Company registered overseas operating production of oil and gas 181.954 million tons of oil equivalent, with equity production of 103.82 million tons, up 1.5% year-on-year, making due contributions to energy supply for host countries and supporting local economic development.

CNPC key international energy cooperation projects in 2023



In September 2023

The Halfaya Gas Processing Plant in Iraq, invested and constructed by CNPC, was basically completed. The completion of the project will considerably boost Iraq's economic & social development, people's livelihood, and ecological & environmental protection.

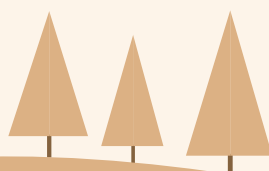
In October 2023

CNPC signed cooperation agreements with the Ministry of Energy of Kazakhstan and KazMunayGas, agreeing to deepen oil and gas cooperation with Kazakhstan. This injected new momentum into China-Kazakhstan energy cooperation and high-quality BRI construction, promoting industrial prosperity and the sharing of development results.



In June 2023

CNPC and QatarEnergy signed a cooperation document on the North Field LNG expansion project. According to the agreement, QatarEnergy will continuously supply 4 million tons of LNG per year to CNPC over the next 27 years.



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 12.69 million tons in 2023.

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 2023, the total global oil and gas trade volume reached 500 million tons, with the revenue of USD 278.8 billion.

- ✓ The Yamal LNG Project is the first mega energy cooperation project in Russia under the "Belt and Road" Initiative.

