



Environment and Society

At CNPC, we have been committed to the principles of “people-oriented, quality-utmost, safety-first, and environment-prioritized” to achieve the goal of “zero accident, zero injury, zero pollution and zero defect”. We pay close attention to people’s livelihood and social progress and strive for harmonious relationship between energy industry and the environment, as well as between enterprise and the community.

Safe Operation

In line with the Company's overall reform and development plan, the 2023 Major Hazard Screening Program, Year of Safety Management Enhancement Program and the Special Campaign on Hazardous Chemicals were implemented to address tough issues in relation to well control, gas storage and key construction projects. Throughout the year, CNPC maintained a sound profile regarding safe production.

Management system

Measures for Production Safety Accident Management; Management Measures for the Withdrawal and Use of Safe Production Fund; Measures for HSE Hazard Identification, Treatment and Monitoring; and Measures for Contractor Safety Monitoring and Management were introduced to further improve the production safety management system.

Risk management

The Company strengthened risk assessment, issued timely warnings and risk reminders on typical accidents, seasonal weather changes, holidays and other special time periods, and oversaw the implementation of preventive measures. In 2023, the Company continued to conduct safety audits

on key enterprises in key areas, and all problems identified in this process were rectified.

Emergency response capabilities

Benchmarking of in-house fire brigade was conducted in accordance with the national guidance to bolster emergency response capabilities. A number of emergency response drills were conducted and our ability to respond to emergencies continued to improve.

Supply chain safety management

The selection of strategic contractors was strengthened. Training courses for key employees from contractors were provided and the "zero tolerance" policy against incompetent contractors was implemented.

Environmental Protection

At CNPC, we make great efforts to reduce adverse impact on the environment and climate. We continued to improve resource utilization, promote green development, pollution control, energy conservation and emission reduction, so as to achieve the goals in the battle against pollution, and protect our blue skies, clear waters, and clean lands.

Environmental protection conference

The Company held a corporate-level environmental protection conference to review the achievements in green and low-carbon development and environmental protection since the 18th CPC National Congress, analyzed the current situation and existing problems, and identified the key tasks ahead.

Environmental protection management

The Management Measures for Online Pollution Source Monitoring System and the 2023 Environmental Protection Technology Catalogue were issued to ensure environmental compliance.

Environmental hazard management and risk control

Ecological and environmental hazards were identified and addressed on an ongoing basis. A hierarchical and categorized system to address environmental risks was implemented and our ability to prevent and control such risks further improved. In 2023, no major environmental incidents were reported.

Pollutant discharge standards

We strengthened the system of automated monitoring, early warning and forecasting, and made sure all wastewater and waste gas met the standards on major pollutants before discharged. In 2023, a network of 860 online pollution source monitoring systems was put in place, enabling full coverage of key pollution sources nationwide.

Soil pollution prevention and control

The Company identified key subsidiaries for soil pollution supervision and management, and launched major campaigns to minimize soil pollution from the

source. Pilot projects were implemented to prevent and control soil pollution in the production process.

Environment protection in key river basins

Ecological and environmental hazards in key river basins were identified and addressed. The plans for protecting the ecological environment in the Yellow River Basin and the Yangtze River Economic Belt were improved. 111 pollution control projects were completed in the Yellow River Basin and the Yangtze River Economic Belt.

Management of key pollutants

Chemical oxygen demand, ammonia nitrogen, nitrogen oxides, and volatile organic compounds from refining and petrochemical operations released into the air were reduced by 0.33%, 9.16%, 2.93% and 6.25% respectively year-on-year.

Sustainable use of resources

Great importance was attached to the protection and rational utilization of resources to minimize resource consumption. We reduced energy consumption by 0.86 million tons of coal equivalent, water consumption by 8.54 million cubic meters throughout the year.

Conservation of biodiversity

The Company actively engages in biodiversity conservation and fully integrated such an endeavor into its business operations. *The CNPC Guidance on OECMs for Biodiversity Conservation* was issued, setting out the conditions, application procedures and supporting measures for building other effective area-based conservation measures (OECMs). The first three OECMs were launched at Daqing Oilfield and Huabei Oilfield.

Climate Change

Actions were taken in line with the *Paris Agreement* and the Chinese government's goals on carbon peaking and carbon neutrality. We doubled down on efforts to fulfill the Green Business Leader Initiative, and continued to improve the standard system of green business to enhance the management of carbon emissions and promote green and low-carbon transition.



In 2023, the Company was awarded Low-carbon Model by China News Weekly for the 12th consecutive year. It also received the title of “Top Runner of the Year for Industrial Carbon Peaking” from China Federation of Industrial Economics.

Carbon Emission Management

At CNPC, we continue to strengthen the management system for carbon emissions control, implement measures for carbon intensity-based emission reduction, participate in the National Carbon Trading Market actively and deepen cooperation on climate change in the global oil and gas industry to promote green and low-carbon transition. In 2023, the Company's domestic and overseas GHG emissions totaled 188 million tons, and methane emission intensity decreased by more than 10% year-on-year.



In 2023, the Company

- Participated in the formulation of *China's Methane Emissions Reduction Action Plan*.
- Implemented methane monitoring pilot projects, using satellite-based remote sensors to identify methane emissions of oil & gas fields.
- Built a data platform for methane leakage monitoring, promoted methane leakage detection and repair, and implemented methane emission reduction measures such as vent gas collection, flaring reduction and site retrofitting etc. to reduce methane emissions.
- Continued to improve energy efficiency, shift towards cleaner alternatives and minimize fuel consumption; promoted green technologies; reduced carbon emissions in production.



The Company supported and engaged in a number of programs and initiatives for GHG emissions reduction.

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| <ul style="list-style-type: none"> The <i>Paris Agreement</i> <i>United Nations Framework Convention on Climate Change</i> <i>China's National Climate Change Program</i> <i>Action Plan for Carbon Dioxide Peaking Before 2030</i> Carbon Technology Strategic Alliance for Carbon Capture, Utilization and Storage (CTSA-CCUS) | <ul style="list-style-type: none"> Oil & Gas Climate Initiative (OGCI) China Oil and Gas Methane Alliance <i>China Petroleum and Chemical Industry Carbon Peak and Carbon Neutrality Pledge</i> <i>Aiming for Zero Methane Emissions Initiative</i> |
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Cooperation on Climate Response

As the only Chinese member of OGCI, CNPC is actively involved in international cooperation to address climate change. The Company serves as the Secretariat of China Oil and Gas Methane Alliance, to promote technical exchanges on methane emission control. The Company participated in COP28 UAE and hosted a side event on methane emissions at the China pavilion to present CNPC's action plan for reducing methane emissions as a responsible central SOE.

Accelerated clean substitution

At CNPC, we endeavor to minimize the use of fossil fuels, reduce energy intensity, optimize the energy structure and accelerate the substitution with cleaner alternatives.



Jilin Oilfield produced China's first net-zero oil

In 2023, China's first net-zero barrel of crude oil was produced by Jilin Oilfield. Net-Zero means it was produced with zero carbon emission by using clean energy technologies such as wind and solar power generation, in-wellbore heat extraction, solar thermal system and CCUS-EOR etc. instead of fossil fuels.

Since the launch of the net-zero demonstration project, Jilin Oilfield has tackled production-related carbon footprint challenges one by one. For power supply, wind

farms, photovoltaic power plants and energy storage systems were built to replace grid power with clean electricity. For gas heating, geothermal, solar thermal and aerothermal energies were used in place of hot water blending in annular and trunk pipelines to reduce gas consumption. CCUS measures were taken to enable oil displacement and carbon sequestration at the same time. As a result, these measures came together to produce crude oil with zero carbon emission.



Jilin Oilfield CCUS Project

Participation in the National Carbon Emissions Trading Market

At CNPC, we actively participate in carbon trading activities through the National Carbon Emissions Trading Market and enhanced the management of carbon allowance and carbon compliance. The Company engaged in the research on carbon market expansion and the reopening of the CCER trading market to promote the development of CCER projects.

Forestry Carbon Sink

At CNPC, we actively engage in building forestry carbon sinks and NbS (Nature-based Solutions) forests to promote carbon neutrality through carbon compensation. In 2023, the Company's participation in voluntary tree planting reached 1,014,700 person-times, planting 3,905,000 trees, with the existing green space amounting to 318 million square meters. In 2023, the Junggar NbS Forest of Xinjiang Oilfield was officially unveiled. At the end of 2023, the newly planted forestry carbon sinks and NbS forests reached 17,900 *mu*. In response to the national initiative, the Company launched the Afforestation Campaign for 10,000 Well Sites, planting 901,000 trees at 2,026 well sites and stations. CNPC continued to carry out the "Plant a Tree for Carbon Neutrality" program, which raised RMB 33.63 million from 1.096 million people. Four afforestation projects were completed, including Daqing Forest, with a total area of 3,550 *mu*.

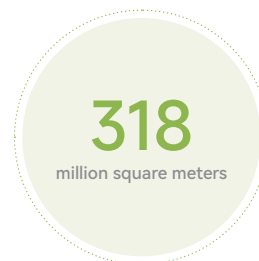


Junggar NbS Forest was unveiled

On April 21, 2023, the Junggar NbS Forest, Xinjiang Oilfield's first NbS forest, was officially unveiled in its afforestation and emission reduction zone. This is the second NbS forest of CNPC, following the first one named Ma'anshan at Daqing Oilfield. The Company received the Carbon Neutrality Certification from Tianjin Climate Exchange to recognize a total of 118,000 trees planted in the Junggar NbS Forest, which expanded its carbon sink assets.



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Social Responsibility

At CNPC, we maintain a strong commitment to aligning our business growth with the sustainable development of the localities where we operate, with a focus on bolstering people's livelihood and social progress, supporting community agenda in various forms, and promoting harmonious socio-economic development of local communities.



Demonstration Projects for Rural Revitalization through Tourism

Wutongshan, CNPC's rural tourism project in Xishui, Guizhou, is a sustainability demonstration project seeking to reduce poverty with tourism. It upholds the overall rural revitalization strategy of "thriving businesses, pleasant living environments, social etiquette and civility, effective governance, and prosperity". In 2017, CNPC joined hands with China Foundation for Poverty Alleviation and Xishui County Party Committee and County Government to launch the project. Leveraging the beautiful landscape

resources in Tianba Village, Xishui County, the high-end homestay accommodation brand Wutongshan was created to offer a rural tourism experience combining home stay, countryside lifestyle and nature-inspired art education. After its launch, the project delivered handsome dividends to more than 600 villagers in Tianba Village, created jobs for more than 30 households, increased the sales of agricultural products and improved the income of the local farmers.

Rural Revitalization

At CNPC, in response to the United Nations' 2030 Agenda for Sustainable Development and the Chinese government's guidance on promoting rural revitalization, we leverage our resources and cater to local needs and conditions in the assisted areas to facilitate the endogenous development of the local economy, and support the development in formerly impoverished areas and the comprehensive revitalization of rural areas. In 2023, the Company earmarked RMB 659 million for rural revitalization and public welfare and implemented 1,310 assistance projects.



- The Company provided RMB **200** million for **95** paired assistance projects.
- Sales of local products purchased and sold under the assistance programs amounted to RMB **1.76** billion.
- A total of RMB **35** million was provided to improve the living environment in Jimunai, Nilek, Balikun and Qinghe counties in Xinjiang, as well as Xishui County in Guizhou.
- 34 training sessions were carried out offline, covering **128,000** person-times.

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Education

At CNPC, we continue to support education through various student aid programs, including scholarships and grants. We explore new ways to raise awareness on education equality and help students from poverty-stricken areas get access to education and realize their dreams and values. The Company earmarked RMB 65.31 million to support education in 2023.

In 2023

- CNPC Scholarships provided RMB **4.47** million to **685** outstanding students.
- The Xuhang Scholarship Program provided RMB **11** million to **3,313** students from 24 high schools in 8 provinces.

Promoting Local Development

At CNPC, we adhere to the principle of open-up and cooperation for mutual benefit and keep expanding our joint-venture cooperation with local partners across the upstream, midstream and downstream sectors. During the process of developing and running our projects, we help foster local suppliers and contractors, thereby creating jobs and driving business growth in related sectors to achieve the city-based and industry-driven “city-industry integration”.



The 10th anniversary of the natural gas project in southern Xinjiang

On August 19, 2013, the Happiness Pipeline, a 3,040 km natural gas pipeline surrounding the Tarim Basin, was completed to deliver natural gas to local households. Since then, people of various ethnic groups in 42 counties and 46 regimental farms have experienced a shift from the “sooted pot” way of cooking to an ecological, low-carbon and environmentally friendly lifestyle.

Over the past 10 years, lots of leading companies in southern Xinjiang came onboard this Economy Express of clean energy to promote industry-based revitalization, heading for the future of green and low-carbon development, and contributing to the Chinese path to modernization.

Contributions to the Development of Oversea Communities

At CNPC, we respect local cultures and customs where we operate, and are committed to building long-term and stable cooperative relationships with the host countries. Striving to be a good corporate citizen, we integrate our development into local socioeconomic growth and actively create socioeconomic value to promote local development and prosperity.

Managing Community Impact

At CNPC, we seek to exert a positive influence on community development through responsible operations. This is not only reflected in creating jobs, paying taxes, and providing business opportunities for local suppliers, but also in protecting the environment, safeguarding human rights of local residents and supporting public welfare.

Enhancing Communication with Local Communities

At CNPC, we set up liaison points for environmental protection and community relations in many overseas operations to strengthen communication and coordination with local governments, NGOs and community representatives in a variety of forms.



Open Day to Boost Communication with Local Communities

PetroChina Halfaya FZ-LLC hosts Open Day events from time to time. They invite local government officials, social organizations, media, community members and student groups, providing an opportunity to get to know this large modern oilfield and better understand how it is operated and managed. Visitors attending the Open Day events have expressed their appreciation for the achievements of the oilfield as well as for its contribution to local economic development and livelihood enhancement. As of now, Halfaya Company has become an education base for the local youth from colleges, secondary schools and primary schools to learn about the petroleum industry. Many college students have voiced their wish to work at the oilfield and become part of the big CNPC family.

Participating in Community Welfare Activities

At CNPC, we play an active role in helping local people improve their living conditions by supporting education, healthcare and environmental protection to facilitate sustainable development of the local communities.

In 2023, we carried out a wide range of community outreach activities overseas

Kazakhstan

- A total of 27 donations were carried out in Kyzylorda and Almaty, to support public welfare projects including charity, education, art, and sports, with a total value of USD 970,000.

Iraq

- Three projects were completed and handed over to the local government, including a substation, a lighting system and a power grid upgrade. Three other projects are under construction, including a painted road, two bridges and a road repair. Benefiting about 150,000 people, these public welfare projects had a total expenditure of USD 2.8 million in 2023.

Chad

- A total of 129 water wells were built for the local community to provide reliable access to safe drinking water for 40,000 people from 47 villages (tribes) around the oilfield.
- The Company also donated school supplies and medicine to nearby schools and neighborhoods.

Peru

- The Company engaged in a number of community development projects, including school renovation and book donation, afforestation and land restoration, as well as cultural events such as soccer games and concerts.
- In early 2023, the Company helped El Niño-affected communities restore roads, and provided them with safe drinking water and quarantine equipment.

Myanmar

- A working group on social responsibility was set up to consult all stakeholders for suggestions, determine priorities in community development, and make sound project planning together. We donate funds and medical equipment, support education, repair welfare facilities and build infrastructure etc. By the end of 2023, we have conducted 327 public welfare programs in communities in Rakhine, Magwe, Mandalay and Shan.

Promoting Localization

At CNPC, we embrace the localization strategy, with a preference for local products and services, so as to create opportunities for local contractors, suppliers and service providers to participate in our projects. We also support the development of SMEs and community-based start-ups, creating employment opportunities whenever we can.