



Environment and Society

The company is committed to the principle of "people-oriented, quality utmost, safety first, environment prioritized" to achieve "zero defect, zero injury and zero pollution". We pay attention to people's livelihood and social progress, and strive for harmonious relationship between energy and the environment, as well as enterprise and the community.

At CNPC, we put the environmental protection, energy conservation and emission reduction, provision of clean and efficient energy, as well as joint development with the community as an important basis for our sustainability strategy. The company continues to promote safe, green and thrifty operations, press ahead with the construction of ecological civilization and develop a resource-saving and environmentally-friendly enterprise. As a good corporate citizen, we actively support community development where we operate in order to promote local economic and social development.

Safe Operation

We actively promote the building of a long-acting safety system and comprehensively enhance our work safety management. In 2020, the company maintained a safe momentum in production.

Management System and Performance Assessment

In 2020, we issued a range of rules and regulations, including the *Measures for Organization-wide Work Safety Scoring Management* and the *Measures for Work Safety Responsibility Sites*, to ensure work safety accountability, facilitate work safety briefing and performance review, strengthen safety performance assessment at all levels and create an organization-wide safety management system with clear tiers and graded responsibility.

Safety Risk Management

The company implemented a dual-prevention mechanism covering risk prevention and control as well as hazard identification and treatment for production safety, and improved the risk prevention and control classification system, so as to eliminate safety risks and potential hazards. In 2020, we continued to implement a hierarchical risk control system in our subsidiaries, take targeted measures and go through change-related safety risks identified in the oil and gas pipeline reform and the split-up of "utilities, heating and property management" services. A safety risk management program for reserves and capacity expansions was developed. In particular, a risk control plan for high-sulfur gas fields in Sichuan and Chongqing was formulated and a special inspection was conducted.

Hazard Control

We attach equal importance to both prevention and control of hazards, build a long-acting mechanism for hazard control, so as to ensure all hazards are timely and effectively treated. In 2020, we launched a 3-year action plan for production safety, setting forth safety restrictions for key areas and processes, well control inspections and hazard control measures for pipelines and gas storages to ensure a fundamental improvement in production safety.

Supply Chain Safety

We include suppliers and contractors into our safety management, and have an all-process management from access, selection, training, use, to evaluation, so as to prevent and reduce accidents caused by suppliers and contractors. In 2020, we examined carefully our strategic contractors, implemented a "zero tolerance" policy against incompetent contractors and provided training for key positions to reduce safety risks in connection with contractor operations on an ongoing basis.

Overseas Security Management

We constantly reinforce the operation of social security management system, strengthen social security risk prevention and control, and enhance emergency response capabilities. In 2020, in response to the COVID-19 pandemic, we introduced a four-tier overseas joint prevention and control mechanism, set up regional coordinating groups covering 78 countries/regions around the world, recording zero COVID-19 deaths and zero social security-related deaths throughout the year.

Environmental Protection

We make great efforts to reduce adverse effects on environment and climate. By improving resource utilization efficiency, fighting the battle against pollution, and promoting energy conservation and emission reduction, we strive to achieve environmentally-friendly and resource-saving operations and vigorously advocate the construction of ecological civilization, in order to achieve harmony between energy and the environment.

Environmental Risk Prevention and Control

We carry out environmental risk identification and assessment, and implement a risk prevention and control management model focusing on forecasting, pre-warning and monitoring. We have established a sound risk management mechanism featuring "tiered management and hierarchic prevention and control", in order to ensure overall control over environmental risks. In 2020, we formulated a set of work plans for upgrading pollution control and environmental protection in the Yellow River regions, identified and treated eco-hazards, strengthened the management for environment incidents and environmental violations, and implemented escalated investigation and treatment for environmental incidents. In 2020, no major environmental incidents were reported.

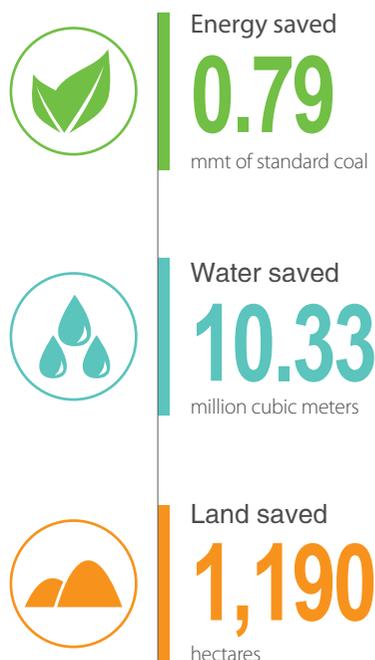
Sustainable Use of Resources

We attach great importance to the protection and rational utilization of energy and natural resources and strive for conservation of natural resources. Focusing on enhancing water use efficiency for achieving water sustainability, our water conservation activities include planning and management of water use, deployment of water-saving and recycling technologies, integration of water conservation indicators into performance assessment, and minimizing the use of fresh water. Based on the requirements for well-studied site selection, efficient use, sufficient protection and timely remediation, land use efficiency is improved through innovated land-saving practices and management models, optimal and intensive land use in production processes, land reclamation, and restoration of geological environment in mining areas. In 2020, we reduced energy consumption by 0.79 million tons of standard coal, water consumption by 10.33 million cubic meters, and land consumption by 1,190 hectares.

Waste Disposal and Ecological Restoration

Hazardous wastes are strictly monitored and controlled with a lifecycle management system in place to address ecological and environmental risks in key areas. A lifecycle management platform for hazardous wastes is introduced with a three-level management mechanism. Solid wastes such as oily sludge, drill waste and spent catalyst are monitored and controlled in the process of collection, storage, transportation, recycling and disposal. In 2020, we launched an online solid waste management platform to strengthen monitoring of stationary pollution sources and introduced discharge permit management in all our refineries. COD, ammonia nitrogen, sulfur dioxide, and nitrogen oxide emissions were reduced by 4.0%, 4.5%, 7.3%, and 6.4% respectively year-on-year.

In 2020



Conservation of Biodiversity and Natural Habitats

We are committed to minimizing the potential impact of our operations on the ecological environment and biodiversity. A holistic approach to pollution source control and lifecycle management across the value chain is adopted. Pollution and ecological damage issues are investigated and addressed effectively. Noise reduction and emission reduction measures are taken to minimize our footprint in the ecological environment. We

withdraw from environmentally sensitive areas in an orderly manner, do our utmost to minimize the use of arable land, and strive for soil and water conservation, vegetation restoration, ecological remediation and protection of biodiversity. In 2020, we closed 281 oil, gas and water wells in environmentally sensitive areas. Our 20,300 service stations were renovated to ensure leak-proof operation.

Protecting the environment to boost green development

We have been actively promoting environmental protection and following eco-friendly practices in the spirit of "lucid waters and lush mountains are invaluable assets" to progress with "Green Mining" continuously.

Dagang Oilfield is located on the coast of the Bohai Sea, where wetlands, water reservoirs, river courses, tidal flats, farmland and other ecological systems coexist. Every year, hundreds of thousands of birds inhabit and visit the Beidagang Wetland, including endangered species such as the Oriental White Stork.

Our eco-friendly practices:

- Ensuring 100% of waste water and waste gas from stationary pollution sources are up to discharge standards and 100% of solid wastes are properly disposed through cleaner production
- Eliminating "mud pool" to prevent land pollution associated with drill mud and fluids
- Avoiding environmentally sensitive areas in source design by shifting from "one-well-one-site" to "multiple-well-one-site"



Climate Change and Low-Carbon Transition

In response to the *Paris Agreement* adopted at the Paris Climate Conference, the goal to hold global average temperature increase to “well below 2°C above preindustrial levels” and the “carbon peak” and “carbon neutrality” pledges of the Chinese government, we actively take on climate change and push ahead with a green and low-carbon transition, aiming for achieving near zero emissions around 2050.

Green and Low-Carbon Transition

We have integrated “green and low-carbon” into our corporate development strategies and formulated the roadmap in alignment with the “3060” goal. We continue to bolster natural gas supply and promote a “green” growth pattern based on core oil and gas operations and a mix of alternative and renewable energies to create a low-carbon energy ecosystem. In addition, we continue to explore new low-carbon business models, develop new energies and new materials and facilitate emission reduction and de-carbonization in traditional operations. We support the large-scale development of geothermal energy, beef up R&D and application efforts in biomass, make plans for laying out hydrogen business across its value chain and promote the development and use of clean energy according to circumstances.



Natural gas decarbonization & recovery facilities

CNPC roadmap for green and low-carbon development

We attach great importance to the transition to a green and low-carbon development model and formulate the roadmap in alignment with the “3060” goal. We have initially established a three-step strategy, i.e. “clean alternative, strategic replacement and green development”, in a bid to achieve carbon peak by 2025 and “near zero” emissions by 2050 through the following three main measures:

- The advantage of natural gas as a green and low-carbon energy is given full play as we vigorously boost gas output and aim to increase the share of natural gas in the our total production to an industry-leading level of approximately 55% by 2025.
- Highlight the essential role of natural gas in the future energy mix, utilize our mineral rights for abundant resources of wind, solar, and geothermal energy and push ahead with the transition to a leading company in broad energy services, i.e. oil, natural gas, geothermal energy, electricity and hydrogen, with integrated development of wind, PV, natural gas and electricity, industrialized application of hydrogen, and scaled development and utilization of geothermal resources.
- Promote the Green Action Plan and bolster efforts in implementing energy-saving, emission-reduction and clean alternative solutions to reduce carbon emissions; use forestry carbon sink and CCUS techniques to facilitate carbon removal; and provide our society with green and zero-carbon energy products.

We play an active role in global oil and gas industry cooperation on climate change by supporting and participating in a number of greenhouse gas reduction and control plans and initiatives:

- The Paris Agreement
- China's National Climate Change Program
- China's National Plan on Climate Change (2014-2020)
- Carbon Technology Strategic Alliance for Carbon Capture, Utilization and Storage (CTSA-CCUS)
- Oil & Gas Climate Initiative (OGCI)
- China Petroleum and Chemical Industry "Carbon Peak" and "Carbon Neutrality" Pledges

Carbon Emission Management

We strengthened management on carbon emission control and improved the control system through business structure optimization, removal of obsolete capacity, recycling of greenhouse gases, monitoring/reporting/verification (MRV) of greenhouse gas emissions etc. The *Action Plan for Methane Emission Control* was released, setting a target of reducing methane emission intensity by around 50% by 2025 compared with 2019. In 2020, our domestic GHG emissions per unit of oil and gas production decreased by 9.65% compared with 2019, among which the methane emission intensity decreased by 6% from the previous year.

CNPC's Role in OGCI De-carbonization Actions

As the only Chinese member in OGCI, CNPC is deeply involved in international cooperation to address climate change and works with other OGCI members in response to climate change and low-carbon transition of the oil and gas industry. We have prepared a CCUS (Carbon Capture, Utilization, and Storage) Development Plan for the 14th Five-Year Plan period. In 2020, Dai Houliang, chairman of CNPC, signed the Open Letter from the CEOs of OGCI, reiterating continued efforts and pledge to promote carbon emission reduction despite the COVID-19 pandemic and low oil prices. Focusing on sustainable transportation, we hosted a roundtable on reducing transportation emissions and held an online forum on opportunities in sustainable transportation. The research and planning for Xinjiang CCUS Industry Promotion Center was completed and the first-phase plan was reviewed and approved by the expert panel.

Carbon Emission Reduction During Production

We endeavor to optimize the structure of energy consumed by ourselves, reduce carbon emissions and carbon footprint in production processes, minimize the use of fossil fuels, accelerate the shift towards clean alternatives and reduce energy consumption intensity. In Huabei Oilfield, Tarim Oilfield and other areas where conditions are ripe, renewable energies such as geothermal energy and solar energy are used to reduce carbon emissions during production. In 2020, the share of natural gas in our total energy consumption was up 2.14 percentage points from 2015, with the share of raw coal down 2.51 percentage points from 2015.

Market-based Mechanism for Carbon Saving

We actively participate in carbon trading activities to achieve carbon emissions reduction through market-based mechanisms. We are the co-founder of the Tianjin Climate Exchange (TCE), the first comprehensive emissions trading institution in China. The energy saving and emission reduction projects developed by TCE can reduce energy consumption by more than 200,000 tons of standard coal annually, equivalent to over 500,000 tons of carbon dioxide in emission reduction. All CNPC's subsidiary companies engaged in the China's emissions trading system fulfilled their end of bargain in 2020.

Forestry Carbon Sink

We support and partake actively in the construction of carbon sink forest and forestation activities in China. The company established the China Green Carbon Foundation together with the State Forestry Administration for ongoing efforts in that regard. Meanwhile, we set up the Forestation Committee to ensure continuous forestation in our production areas and living quarters. In 2020, we planted 2.811 million trees throughout the year and created the first "carbon neutrality" forest in Maanshan, Daqing oilfield. By the end of the year, our green coverage reached 286.6 million square meters.

Social Responsibility

We maintain a strong commitment to aligning our business growth with local sustainable development by bolstering people's livelihood and social progress, reaching out to community building where we operate in various forms, and sharing development opportunities and resources value with the local communities.

Targeted Poverty Alleviation

We respond actively to the initiatives of the United Nation's *2030 Agenda for Sustainable Development* and to the Chinese government's policies on poverty alleviation, with a special focus on people's livelihood, industrial development, intellectual development and medical care. By combining our business strengths with local resources and market advantages in areas receiving assistance, we take targeted measures to help them develop the local economy on their own.

We have been working on our poverty alleviation solutions and playing an active role in winning the battle against poverty. In 2020, we invested RMB 172 million in 84 projects, including infrastructure reconstruction, education and training, healthcare, as well as industrial collaboration, in 13 counties and districts from seven provinces (municipalities and autonomous regions) of China, namely Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou.

Education

We carry out various activities in helping young people access equal opportunities for education. Specifically, we set up scholarships, offer grants and subsidies to students from underprivileged families, improve teaching conditions for impoverished regions, and support scientific and cultural activities as well as relevant events. In 2020, CNPC Scholarships totaled RMB 3.99 million to 635 students. In addition, we explore new models to support education, and call on the public to pay attention and work together to achieve education equality. In partnership with the China Foundation for Poverty Alleviation, Beijing Normal University Education Group and Tencent Charity Foundation, we are actively involved in commonweal projects such as Xuhang Scholarship Program and the Teacher Training Program to increase access to education in poverty-stricken areas.

Promoting Local Development

We adhere to the principle of open-up and cooperation for mutual benefit, and keep expanding our joint-venture cooperation with local capital in the upstream, midstream and downstream sectors. During the process of developing and running our projects, we help to nurture local suppliers and contractors, thereby creating jobs, driving related business growth, and giving back to local people.



Teacher Training Program helped children in poverty-stricken areas receive better education

Contributions to the Development of Overseas Communities

We respect the cultures and conventions of the host countries, and are committed to establishing long-term and stable cooperative relations in an oil and gas community of shared interests. As a good corporate citizen, we incorporate our development into local socio-economic growth and actively create socio-economic value to jointly promote the development and prosperity of local communities.

Enhancing Communication with Local Communities

We set up environmental protection and community relations coordinating bodies in many overseas areas to promote communication with local governments, NGOs and community representatives, with whom we have strengthened communication and coordination by holding conferences, issuing reports and paying visits.

Managing Community Impact

We exert a positive influence in community development through responsible operations, which is not only reflected in job creation, tax contribution, and business opportunities for local suppliers and service providers, but also in reducing the impact from production and operation activities on community environment and social life to protect rights and interests of community residents. Before launching a project, we conduct assessments of its social and economic impact, taking into consideration of local people's needs, their rights and benefits, cultural heritage, and involuntary resettlement, in a bid to protect the legitimate rights and interests of local people.

Women's Health Volunteer Project

In 2020, we launched the Women's Health Volunteer Project in Rumaila, Iraq, aiming to improve health knowledge among local households, promote early detection of health problems and give medical advice through a range of health and hygiene education activities. The project selected and trained 43 female volunteers to prepare them with professional information on hygiene, health, common symptoms and diagnostic methods to assist the local households as much as possible. Volunteers visited nearly 1,000 households every month and the project benefited more than 4,000 residents in the area.



Our Singaporean arm celebrated the Chinese New Year together with the elderlies in local communities

Participating in Community Welfare

We take an active role to help improve the living conditions of local people to achieve harmonious and mutual development through donating in education, healthcare and other public welfare programs. In 2020, we assisted the countries where we operated in fighting the pandemic by donating COVID-19 supplies, providing necessary assistance in pandemic control services and sharing information on pandemic control practices.

Promoting Localization

We strictly comply with laws and regulations in the countries where we operate, and have made remarkable contributions to local economic development. We place priority on purchasing local products and services, and create opportunities for local contractors, suppliers and service providers to participate in our projects. We also support the development of local SMEs and business start-ups in local communities and create job opportunities. Since our presence in Kazakhstan in 1997, we have invested USD 30.1 billion there in oil and gas development over the past two decades, paid more than USD 48 billion of taxes, and donated approximately USD 400 million to support public welfare.

Targeted actions against poverty

Poverty is a common challenge all countries are facing in the process of achieving sustainable development. No Poverty is the Goal 1 in the United Nation's *2030 Agenda for Sustainable Development*. The Chinese government has made it a top priority to end poverty in achieving the goal of building a well-off society in an all-round way. CNPC is deeply committed to poverty alleviation as part of our CSR efforts. We have been seeking the effective way to fight poverty and contribute to global sustainable development.

We have been combining poverty alleviation with cooperation among all sides, livelihood improvement with sustainable development, and economic progress with education access. We have launched a number of poverty alleviation projects, lifted several impoverished groups out of poverty, set up an experienced poverty alleviation team and developed a multi-faceted poverty alleviation model. In line with the local poverty alleviation plans, we bring financial support, capacity building and resources integration together and leverage the advantages of professional institutions, enterprises, and the public to create a poverty alleviation ecosystem. A targeted approach to poverty alleviation has been adopted to ensure the much-needed resources are provided to the right people, the projects are carefully planned and implemented, the funds are properly used, the measures are developed for individual households, the work teams are sent to the participating villages and the desired results are achieved. Since 1988, we have spent approx. RMB 7 billion in poverty alleviation to benefit close to 10 million people from 476 counties/cities in 28 provinces, municipalities and autonomous regions across the country.

1988-2020 in China:

- Approx. RMB **7 billion** of assistance funds
- Poverty alleviation projects covering **476** counties/cities in 28 provinces, municipalities and autonomous regions
- More than **10,000** poverty alleviation team members working with local communities
- Benefiting a population of approx. **10 million**

Four Areas of Poverty Alleviation

- **Livelihood:** With a focus on addressing livelihood issues such as low living standard weaknesses in public services and low income, we have implemented herder housing, municipal utilities, infrastructure, drinking water and irrigation projects, aiming to bolster public services and promote the harmony of social and economic progress in the local communities.
- **Industry:** We endeavor to support local industries and create jobs by identifying resource endowments, exploring market potential, seeking value generation opportunities, and pooling and providing resources based on in-depth research. All this helps facilitate endogenous development in local communities, increases income for the poor and enables sustained poverty alleviation.
- **Education:** We continue to reduce poverty through education, i.e. promoting equality in education, narrowing education gap, training teachers, building educational infrastructure and providing student grants. Educational support for young people in poverty-stricken areas covers all stages from kindergarten to university. In rural areas, a wide range of well-designed training programs are made available to young and middle-aged people in order to improve cultural and professional competences among the underprivileged people.
- **Healthcare:** We stress the importance of healthcare progress in poor parts of the country and strive for access to high-quality health services to reduce poverty in relation to or caused by poor health. We help the local communities address the shortage of healthcare facilities and healthcare workers to improve health.

Poverty Alleviation Practices

Water-efficient irrigation projects in poverty-stricken areas

Qinghe County, where several ethnic groups live, is located in the border area of Xinjiang. Due to the harsh natural environment and a weak industrial base, Qinghe has been one of the key counties under the national poverty alleviation program. Given the extended drought and low crop yields in the area, we have invested more than RMB 10 million in water-saving irrigation projects since 2016 to improve the irrigation conditions of more than 8,000 *mu* of arable land and increase income for the local farmers and herdsmen.

Eco-friendly forestland in Xinjiang

From 2018 to 2020, we have donated RMB 22 million to support the afforestation project in Qapqal County, Xinjiang as part of our poverty alleviation efforts. An integrated “Ecology + Industry + Poverty alleviation” model is adopted for the afforestation project. The project recruits low-incomers as forest rangers to participate in the process of afforestation and forest management and increases income for poor families. The 10,000-*mu* afforestation project will be open to tourists, aiming to build an eco-sustainable and livable Qapqal and encourage the local poor to participate in the “under-forest economy” to share development dividend of eco-industry. As of 2020, the project has completed afforestation of 10,000 *mu*, creating jobs for 220 poor households.

E-commerce programs in poor parts of Guizhou

Xishui County in Guizhou Province has been economically underdeveloped due to lack of talents and poor transportation. In recent years, in addition to selling local agricultural products and industrial products through our network of service stations, we have been working with the China Foundation for Poverty Alleviation in offering e-commerce training courses in Xishui County. We also help the local community develop their e-commerce development plan, introduce Alibaba’s Rural Taobao initiative, set up Rural Taobao service stations, and establish an e-commerce platform to put the local industries on the fast track of Internet economy.

Tongzhou Health Project for children healthcare

In order to promote well-being of left-behind children from poor families in rural areas, we join efforts with the China Foundation for Poverty Alleviation and Ai You Foundation in launching the Tongzhou Health Project. The project assists poor families in early detection and treatment of childhood diseases and provides relief funds for eligible applicants to reduce financial burdens for these families. Depending on the nature and seriousness of disease, the families will be granted a reduction from their medical expenses of up to RMB 50,000 after review. The project also organizes free clinics for children aged 0-14 from time to time and provides medical assistance to answer questions for parents of young patients, promote prevention and control of diseases and build health awareness.

