

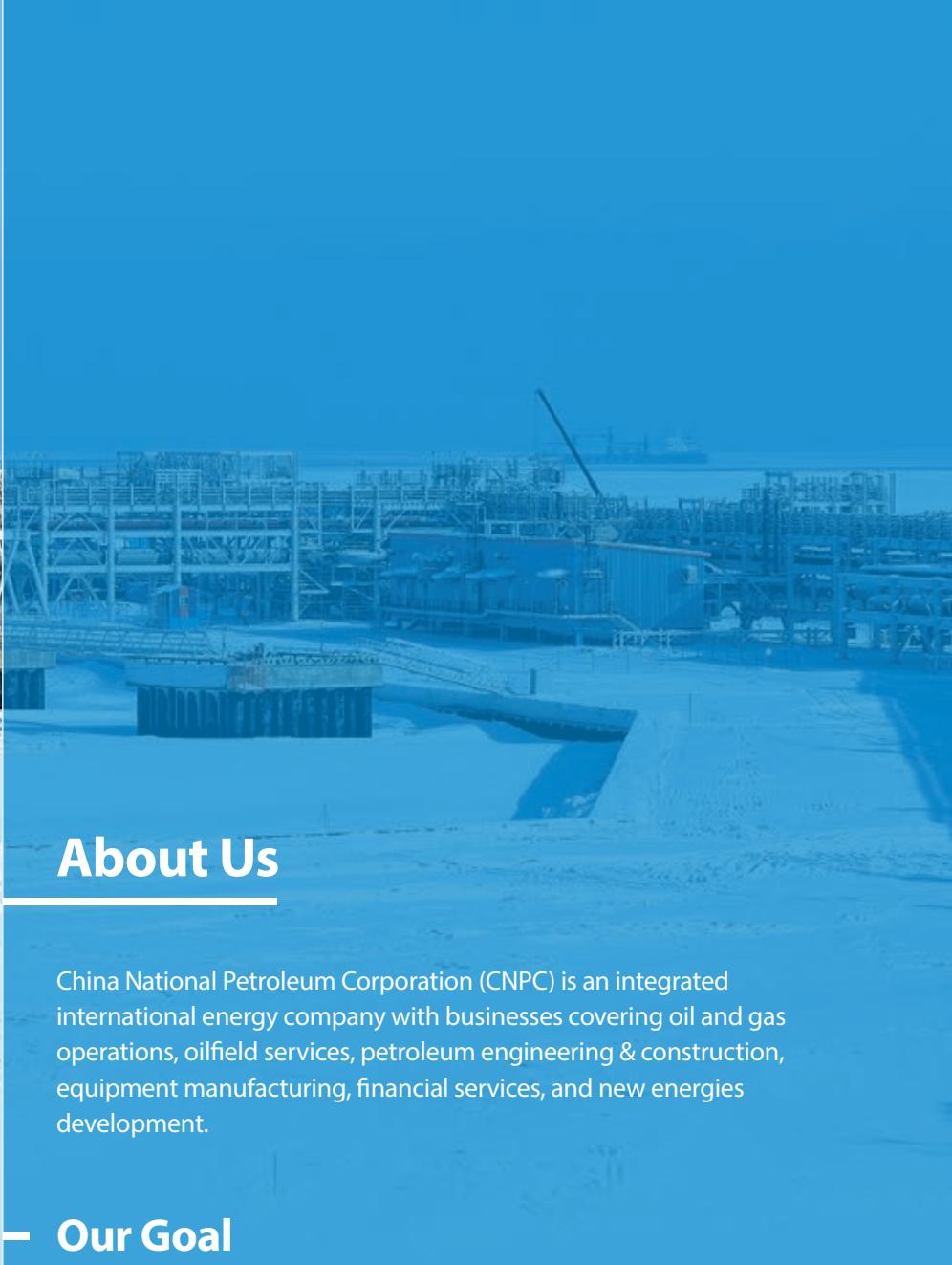


# 2020 Overview



## Contents

About Us	01
Top Management	02
Financial Highlights	03
Environment and Society	04
Technology and Innovation	06
Annual Business Review	08
■ Domestic Oil and Gas Operations	08
■ Overseas Oil and Gas Operations	10
■ Supporting Business	12



## About Us

China National Petroleum Corporation (CNPC) is an integrated international energy company with businesses covering oil and gas operations, oilfield services, petroleum engineering & construction, equipment manufacturing, financial services, and new energies development.

### Our Goal

To be a world-leading integrated international energy company

### Our Strategies

Innovation, Resources, Market, Internationalization, Green & low-carbon

### Strategic Pathway

“A three-step approach in two phases”

Phase I (by 2035): Basically achieving high-quality development by 2025; achieving high-quality development in an all-round way by 2030; building a world-leading company in general terms by 2035.

Phase II (2035 to mid-21st century): Scaling a new height every five years towards a world-leading company built to last.

## Top Management



**Dai Houliang**  
Secretary of the CPC  
Leading Group,  
Chairman



**Li Fanrong**  
Deputy Secretary of the  
CPC Leading Group,  
President



**Duan Liangwei**  
Deputy Secretary of the  
CPC Leading Group



**Liu Yuezhen**  
Member of the CPC  
Leading Group,  
Chief Financial Officer



**Lyu Bo**  
Member of the CPC  
Leading Group,  
Vice President



**Jiao Fangzheng**  
Member of the CPC  
Leading Group,  
Vice President

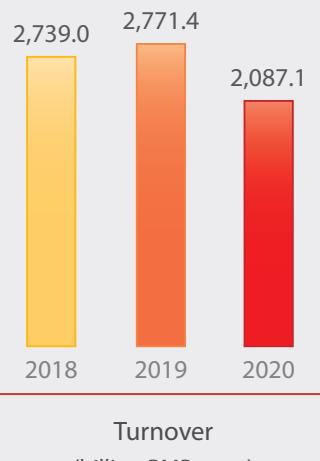


**Xu Jiming**  
Member of the CPC  
Leading Group,  
Chief of Discipline &  
Inspection Group

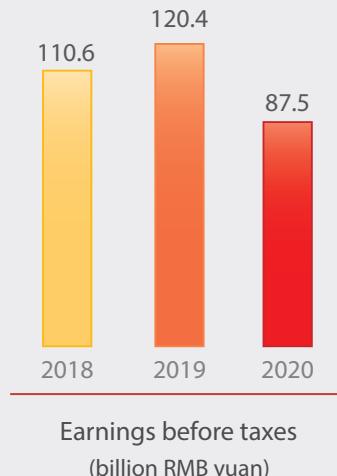


**Huang Yongzhang**  
Member of the CPC  
Leading Group,  
Vice President,  
Chief HSE Supervisor

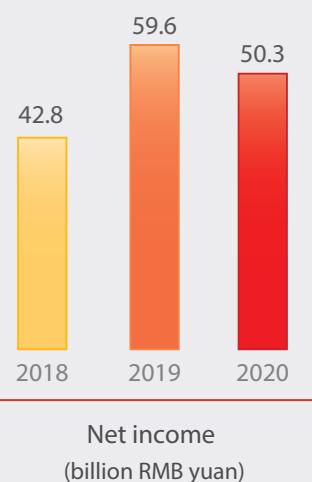
## Financial Highlights



Turnover  
(billion RMB yuan)



Earnings before taxes  
(billion RMB yuan)



Net income  
(billion RMB yuan)



Taxes and fees paid globally  
(billion RMB yuan)



## Environment and Society

The company is committed to the principle of "people-oriented, quality foremost, 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.

### Safe Operation and Environmental Protection

We actively promote the building of a long-acting safety system and comprehensively enhance our work safety management. We make great efforts to reduce footprints 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. In 2020, the company maintained a safe momentum in production and no major environmental incidents were reported.

### Climate Change and Low-Carbon Transition

In response to the *Paris Agreement* adopted at the Paris Climate Conference, we endorse the goal to hold global average temperature increase to "well below 2°C above preindustrial levels" and support the "carbon peak" and "carbon neutrality" pledges of the Chinese government. 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. 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.

■ In 2020:

Energy saved	Water saved	Land saved
<b>0.79</b> mmt of standard coal	<b>10.33</b> million cubic meters	<b>1,190</b> hectares
COD emission reduced (YoY)	Ammonia nitrogen emission reduced (YoY)	Sulfur dioxide emission reduced (YoY)
<b>4.0%</b>	<b>4.5%</b>	<b>7.3%</b>
		Nitrogen oxide emission reduced (YoY)
		<b>6.4%</b>

## Social Responsibility

We maintain a strong commitment to aligning our business growth with local sustainable development by bolstering people's livelihood and social progress, and sharing development opportunities and resources value with the local communities.

### In China

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.



### Overseas

We respect the cultures and customs 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.





## Technology and Innovation

In light of its business development program, the company has deepened R&D reforms and stepped up talent development in a bid to foster innovation on all fronts and create a new engine for growth.

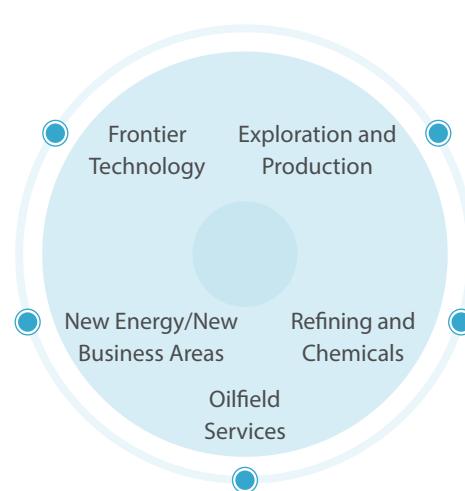
### Construction of Technological Innovation System

In 2020, in line with the principle of "Support current business and lead future development", we continued to unleash the power of innovation. We kept pushing ahead with the construction of our technological innovation system featuring multi-tier and multi-direction, to support the growth of our business units. With on-going investment, improved management and stronger team building, our technological supporting system became fledged gradually.

### Major R&D Achievements in 2020

R&D efforts were focused on exploration, cost-efficient development, clean fuels production and high-end equipment manufacturing. Significant progress was made in applied fundamental research, generic/core technologies and advanced technology reserve study.

R&D plans were made to promote new energies/new business areas such as geothermal, hydrogen energy, biomass energy, underground coal gasification; R&D efforts in CO<sub>2</sub> flooding, carbon capture and storage were beefed up; significant progress was achieved in related industrial tests to facilitate green development.



Our service capabilities were bolstered with new breakthroughs in high-end equipment, tools, software and materials, including the GeoEast system, 3D induction logging tool, 7000HP electric fracturing skid and high-performance dissolvable bridge plug etc.

R&D efforts were focused on enhancing efficiency and profitability. New understandings were obtained on shale oil reservoir forming theories and ultra-deep oil and gas reservoir forming theories. New advances were made in developing EOR techniques for ultra-low permeability reservoirs, new polymers and numerical simulation software etc.

The transformation and upgrading in refining and chemicals sector picked up pace; R&D efforts for value-added products were beefed up; Big Refining/Big Ethylene technologies were developed and applied; refineries saw a shift in production from fuels to chemicals; raw materials were becoming low-cost and diversified while refined products were more targeted to high-end and specialized applications.

As of the end of 2020, we had:

Research institutes	Key laboratories and testing centers	National R&D platforms	Scientists and researchers
84	54	21	30,013

## Digital Transformation and Intelligent Operation

The company has been actively promoting digital transformation and intelligent operation and used digital technologies such as cloud computing, Internet of Things, 5G, big data and artificial intelligence to facilitate business restructuring, management mode reform and business model innovation, improve core competences, promote business transition and create value.

In 2020:

Kunlun Digital Technology Company was set up to create an open, knowledge sharing and innovation ecosystem supporting digital-intelligence transformation, and bolster our services capabilities in the process of digital industrialization and industrial digitalization.

“Dream Cloud” has been upgraded and deployed to enable important changes in upstream decision-making, productivity improvement and cost reduction, reserves and production growth, efficiency enhancement and shift on production organization model.

Information technology has been further integrated into business operation to build smart oil/gas fields, intelligent refineries, smart marketing and intelligent engineering.

## S&T Awards and Intellectual Property Rights

In 2020:

- We received one first prize and two second prizes of the State Science and Technology Progress Award, as well as one second prize of the State Technological Invention Award
- We led the formulation of one international standard and participated in the revision of six international standards
- We were granted the organizer prize of the China Standard Innovation Contribution Award and four project prizes
- We applied for **6,814** patents and were granted **5,290** patents



Routing inspection by drones at Changqing



## Annual Business Review

Focusing on market orientation and economic returns, the company continues to optimize production organization and resource allocation, promote integrated and coordinated operation on oil and gas production, refining, marketing and trade activities, improve international operation performance and bolster market competitiveness in supporting business.

### Domestic Oil and Gas Operations



### Exploration and Production

In 2020, we achieved five key strategic breakthroughs and 15 major discoveries, including eighteen 100-million-ton or 100-bcm proved plays, registering a record high growth in oil and gas reserves. Our domestic oil and gas equivalent production of 2020 recorded 200 million tons for the first time in history. Gas output exceeded 100 million tons of oil equivalent and outran oil for the first time. Our oil and gas production mix was further optimized and we have made remarkable progress on green and low carbon development. In 2020, we kept pushing ahead with our new energy development plans. New energy operations such as hydrogen energy, geothermal energy, solar energy, biofuels, and charging (battery swap) stations picked up pace and major progress was made in green and low carbon development.

Newly proven oil in place

**872.53**  
mmt

Newly proven gas in place

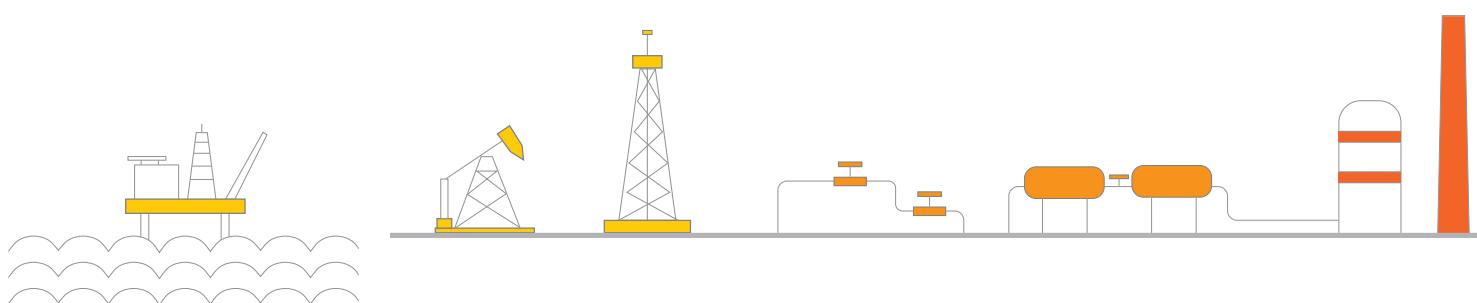
**648.3**  
bcm

Crude production

**102.25**  
mmt

Natural gas production

**130.6**  
bcm





## Refining and Chemicals

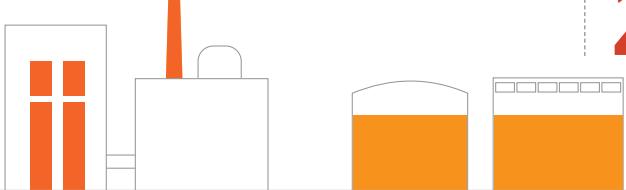
Focusing on reducing crude runs, increasing output of chemicals and optimizing product portfolio, we made every effort to facilitate high-quality development of the refining and chemicals sector. The transformation and upgrading of the refining and chemicals business was further accelerated. Positive progress was made in the construction of the all-plant digitalization project at Guangdong Petrochemical and the ethane-to-ethylene projects at Changqing and Tarim. As of the end of 2020, the company has seven large integrated refining-petrochemical complexes and six 10Mt/a fuel refineries in China.

Crude runs

**160.02** mmt

Refined products output

**107.23** mmt



## Marketing and Sales

In 2020, based on a market-oriented approach, we improved linkage between production and distribution and built up marketing capabilities to maintain market share. We introduced a number of measures such as integrating, sharing and cross-industry partnership to create a multi-purpose service platform with “refined products, gas, hydrogen, electricity and non-fuel products”, and provide our customers with one-stop services covering “people + vehicle + lifestyle”.

Refined products sales

**106.51** mmt

Service stations

**22,612**

Sales revenue from non-fuel products

**24.5** billion RMB yuan



## Natural Gas Sales

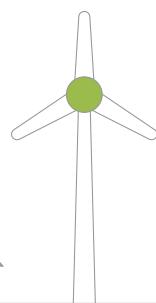
Based on a market-oriented approach, we coordinated the production, storage and distribution processes, boosted domestic reserve increment and production ramp-up, diversified overseas imports, expanded the end-user markets and improved customer services. We actively promoted the “gasification” and “replacing coal with natural gas” campaigns in the Beijing-Tianjin-Hebei region, Fen-Wei Plain, Yangtze River Delta and Pearl River Delta and took necessary measures to meet the need for winter heating. As of the end of 2020, our natural gas marketing network covers 31 provinces, municipalities and autonomous regions and Hong Kong SAR.

Natural gas sales

**184.7** bcm

Total LNG gasification and loading volume

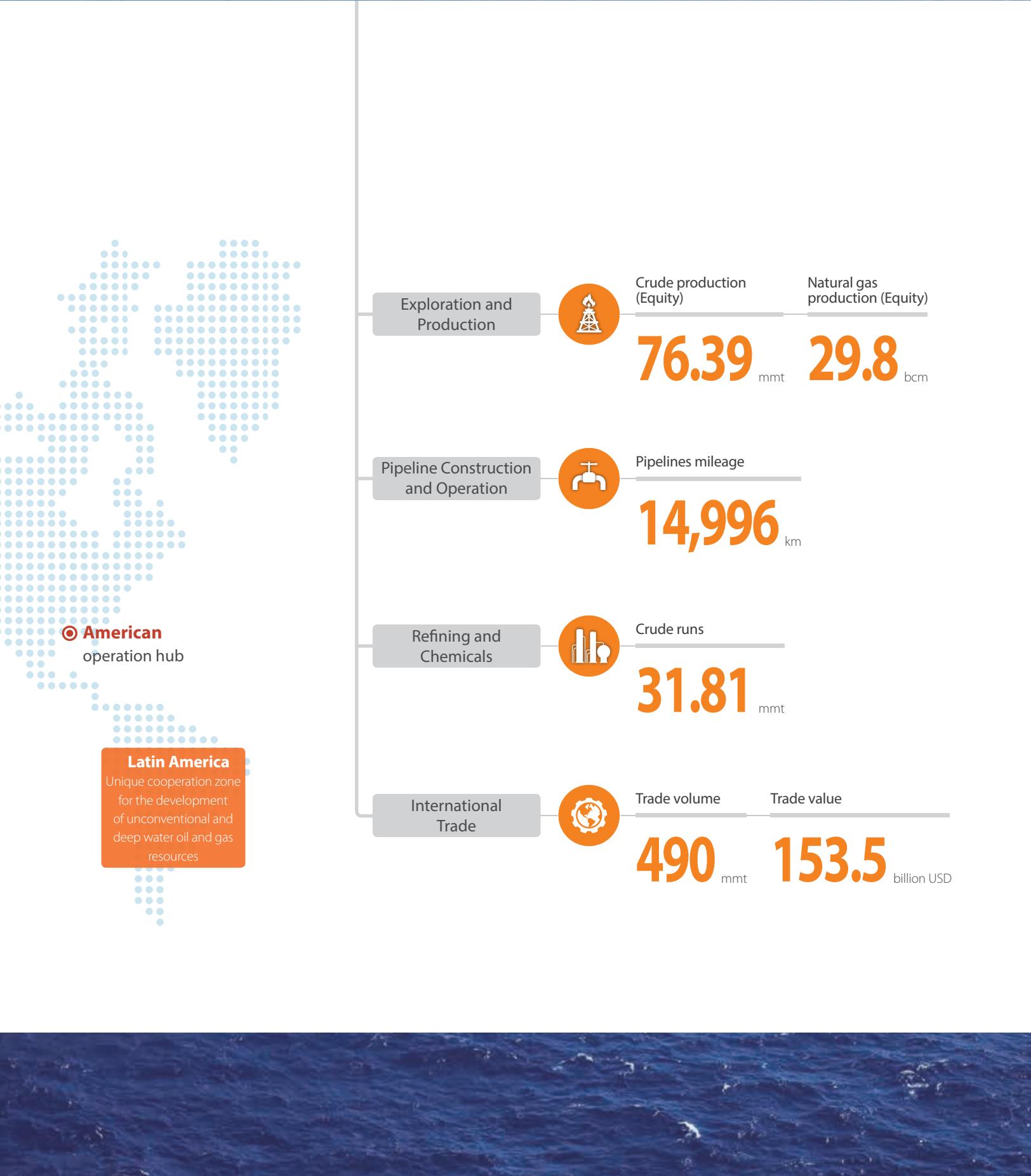
**17.76** bcm



## Overseas Oil and Gas Operations

In 2020, we continued to promote international cooperation particularly along the Belt and Road route based on the optimized investment structure and regional footprint in Central Asia-Russia, Middle East, Africa, Latin America, and Asia-Pacific. Our investment in oil and gas business reached 35 countries and regions around the world. Our global oil and gas trading network continued to grow, covering more than 80 countries and regions around the world. Our three international operation hubs in Asia, Europe and the Americas continued to bolster operation management.





## Supporting Business

Leveraging the company's integrated operation capabilities and expertise, our service business continued to optimize market layout, deepen collaboration with oil and gas operations, and strengthen technological innovation and lean management. In 2020, our service quality and market competitiveness in oilfield services, engineering and construction, equipment manufacturing and financial services continued to improve, providing a strong support to the company's operational efficiency across the industrial value chain.



### Oilfield Services

In line with the "Innovation+ Year" initiative, our oilfield services arm launched demonstration drilling projects and deployed key actions for enhancing fracturing speed/efficiency to promote a wider adoption of new techniques. As a result, the service quality, efficiency and economic benefits were enhanced, greatly facilitating ramp-ups in oil and gas reserves and outputs. As of the end of 2020, CNPC offered geophysical prospecting, drilling, well logging, mud logging, downhole operation and offshore engineering services in **49** countries.



### Engineering and Construction

We saw continuous improvement in project management and construction capabilities with a focus on strengthening project lifecycle management. As of the end of 2020, we performed **75** major projects in oil and gas field surface engineering, refining and petrochemicals and storage and transportation at home and abroad.



### Petroleum Equipment Manufacturing

We continued to promote lean management and service-oriented manufacturing to accelerate the transformation and upgrading of equipment manufacturing business. As of the end of 2020, we sold petroleum equipment to more than **80** countries and regions around the world.



### Financial Services

Focusing on industrial finance, we continued to support the core oil and gas operations as efforts were pressed ahead with financial-industrial combination, synergy-achieving among various financial operations and risk management to improve the efficiency of capital operation. CNPC provided a wide range of financial services, including in-house banking, banking, financial leasing, trust, insurance, insurance brokerage, and securities, etc.

## About This Overview

In this overview, the expressions "CNPC", "the company" and "we" are used for convenience where references are made to China National Petroleum Corporation. This overview is presented in Chinese, English, Russian, Spanish and French. In case of any divergence of interpretation, the Chinese text shall prevail.

Recycled/recyclable paper is used for this overview.

It is recommended that you visit [www.cnpc.com.cn](http://www.cnpc.com.cn) or scan the QR code to browse or download the PDF version of 2020 Annual Report and 2020 Overview for more information about us.



2020 Annual Report



2020 Overview



**Planning:** CNPC International Department  
**Editing:** CNPC Economics & Technology Research Institute  
Corporate Presentation Department  
**Designing:** Beijing FineDesign Co., Ltd.

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