

Our Quality Energy for Your Blue Sea and Sky



# 2019 SUSTAINABILITY REPORT CHINA NATIONAL OFFSHORE OIL CORP.



## CNOOC

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中国企业社会责任报告  
评级专家委员会  
Chinese Expert Committee on CSR Report Rating

## Report Introduction

Following its launch in 2005, this is the 15th consecutive issue of annual sustainability report of China National Offshore Oil Corporation. It is an accurate reflection of our fulfillment of economic, environmental and social responsibilities undertaken in 2019. Some pertinent information about the report is as follows:

**Reporting Entity:** China National Offshore Oil Corporation

**Alternative Reference:** China National Offshore Oil Corporation is herein also referred to as “CNOOC”, “the Company”, “we”, “our” or “us”.

**Reporting Period:** January 1 to December 31, 2019. In order to ensure the continuity and comparability of the information disclosed, the applicable period for certain information may be extended forward or backward accordingly.

**Reporting Cycle:** The timescale of this report is a calendar year.

**Reporting Principles:** To meet the needs of the stakeholders and general public by disclosing key information of the Company in a true, objective, timely and comprehensive manner.

**Data:** All 2019 data disclosed herein is annual statistics. In case of discrepancies with the data in the annual report, the latter shall prevail. Unless otherwise specified, all amounts are expressed in Renminbi (RMB).

**Reporting Scope:** Unless otherwise specified, all information disclosed in the report is from official documents, statistical reports and reports of fulfillment of responsibilities by CNOOC and our subsidiaries. The information has been reviewed by our management, supervision department and various subsidiaries.

Moreover, information about CNOOC's management framework, management process for sustainable development and our subsidiaries, please refer to the sustainability and annual reports over the years.

**Improvements:** In order to reflect the fulfillment of CNOOC's responsibilities in a more objective, comprehensive and intensive manner, the compilation of this report is based on site investigation on the responsibility fulfillment of CNOOC's affiliates and the selection of real cases. Opinions and suggestions from the stakeholders are also incorporated to give an active response to their concerns. The report is presented with the themes of “Our Quality Energy for Your Blue Sea and Sky” and three issues of “Promoting Economic Growth, Enhancing Environmental Protection, and Driving Social Progress” to demonstrate CNOOC's sustainable development. In addition to the independent release of “CSR Report Overseas”, eight special issues about social responsibility are highlighted in the report: “CNOOC and SDGs”, “Discovery of 100-billion-m<sup>3</sup>-scale Gasfield in the Bohai Sea”, “Speeding up Deep-water Exploration and Development in the South China Sea”, “Persevering in Serving Our Country with Energy to Celebrate the PRC's 70th Anniversary”, “Green Action Practicing the Concept of Ecological Civilization”, “Poverty Alleviation through Education Watering the Flower of Hope”, “CNOOC Brand Lighting up the Belt and Road” and “Green Production in Longlake Oilfield”.

**References:** This report is prepared on the basis of the SDGs and *Ten Principles* of the United Nations *Global Compact*, the *Guidelines to the Central Government-owned Enterprises on Fulfillment of*

*Corporate Social Responsibilities* and the *Guidelines to the State-owned Enterprises on Better Fulfillment of Corporate Social Responsibilities* issued by State-owned Assets Supervision and Administration Commission of the State Council of People's Republic of China with reference to the *Sustainability Reporting Guidelines* of the Global Reporting Initiative (GRI), the *Sustainability Reporting Guidelines of Oil and Natural Gas Industry (2nd Edition, 2015)* jointly issued by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the American Petroleum Institute (API), the *Guidelines on China's Corporate Social Responsibility Reporting (CASS-CSR 4.0)* by the Corporate Social Responsibility Research Center of the Economics Department of Chinese Academy of Sciences and the *ISO 26000 Social Responsibility Guide (2010)* by the International Standards Organization.

**Language:** This report is published in both Chinese and English. In case of discrepancies, the Chinese version shall prevail.

**Accessibility:** This report is available in print and digital formats. To obtain one copy of the report, please e-mail to report@cnooc.com.cn or login to www.cnooc.com.cn to download. See also CNOOC WeChat Public Account for the H5 version of this report.



WeChat Account of CNOOC

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### THE LOGO OF CNOOC

The corporate logo of China National Offshore Oil Corporation (CNOOC) encompasses the basic design elements comprising the letters that make up the Company's initials CNOOC, enclosed by the blue curves and ripples that represent China's seawaters. The design in red, formed by the capital letters CNOOC, depicts an offshore drilling rig silhouetted against the rising sun, symbolizing prosperity in the offshore oil industry of China.



### ABOUT THE COVER

The drilling and completion project manager of CNOOC Zhanjiang Branch “Lingshui 17-2” gas field development project at the production site



## Chairman's Letter



Dear all,

The year 2019 was the 70th anniversary of the founding of the People's Republic of China, and it was also an extremely extraordinary year in the reform and development of CNOOC. In this year, we remained true to our original aspiration and had our mission always in mind. We actively fulfilled our corporate responsibilities, pursued the harmony of economic growth, environmental protection and social progress, assumed a new mission and demonstrated a new role in implementing the major decisions and arrangements of the party and the state, striving to be the main force for increasing reserves and production, and a responsible corporate citizen.

### Innovation-driven, serving the country with energy

Being committed to serve the country with energy, we earnestly implemented the new energy security strategy, intensified efforts in the exploration and development of oil and gas, accelerated the construction of system for natural gas production, supply, reserve

and sales, and promoted the coordinated development of industrial chains of upstream, midstream and downstream. Over the last year, the reserve substitution rate reached 140%, the total oil and gas output was 107 million tons of oil equivalent, the trading volume of oil products was 109 million tons, the processed crude oil was 37.56 million tons, the imported LNG was 27.69 million tons, the natural gas-fired power output was 22.6 billion kWh, and RMB 128.9 billion were paid for profits and taxes. In 2019, CNOOC jumped to 63rd in the Fortune Global 500 ranking, and was ranked 31st of the world's largest oil companies. Adhering to the drive by scientific and technological innovation, we deeply implemented the innovation-driven strategy, and improved the transformation mechanism of scientific research results, actively promoted digital transformation. We strengthened fundamental forward-looking research, and strived to break through key technical problems in various fields of the industrial chain. The project of "Theoretical Technology and Major Discoveries for Deep

Large-Scale Packaged Condensate Gas Field Exploration in Bohai Bay Basin" won the first prize of the 2019 National Science and Technology Progress Award. With the principle of safety operation as support, we continuously strengthened the advancement of safety management gateway and the management and control of safe production process, and implemented safety inspection and supervision, in order to constantly improve the level of safety management. The production safety situation was generally stable throughout the year, no major production safety accidents occurred. On the basis of quality management, we practiced the national development strategy of "building a powerful country by high-quality development", cultivated the quality culture, enforced brand management, and carried out the quality improvement actions, so as to continuously meet the growing demand for high-quality energy. Our brands like CNOOC, COSL, COOEC, CNOOC enertech, "CNOOC 36-1" are renowned at home and abroad. CNOOC ranks 17th in the global oil and gas brand value list and

8th in the brand value appreciation list.

### Green low-carbon, maintaining ecological harmony

Adhering to the green and low-carbon strategy, CNOOC strives to be a responsible supplier of clean energy and a promoter of green development, and is always committed to becoming an international first-class energy company that satisfies the public, makes employees proud and is respected by peers. In 2019, CNOOC was awarded the "2019 Best Practices for Enterprises Achieving Sustainable Development Goals" by China network of the UN Global Compact. Upholding the concept of "Lucid Waters and Lush Mountains are Invaluable Assets", we strengthened the integrated management of green supply chains, and extended the concept of green environmental protection throughout the entire life cycle of oil fields and refinery production. For achieving "protection in development, development in protection", we issued a "Green Development Action Plan", and actively implemented the "Three-Year Action Plan for Environmental Protection Upgrading in Bohai Oilfield". 4 subsidiaries were awarded national green factories this year. We attached great importance to biodiversity conservation, resource restoration and environmental improvement around the operating areas, producing energy in a more green and low-carbon way, and adapting to the trend of low-carbon development with cleaner energy, in order to fulfill our solemn commitment of "making the sea and the sky bluer". Adhering to green and low-carbon development, we optimized the global layout of natural gas industry, supplied a total of 54.5 billion m<sup>3</sup> of natural gas to Chinese market throughout the year and steadily developed new energy businesses such as offshore wind power, to build a low-carbon energy supply system. We reinforced research on hydrogen energy, geothermal energy, and natural gas hydrate, and strived to create green and low-carbon competitiveness, so as to contribute new green momentum to building a beautiful China and achieving global sustainable development.

### Rejuvenating enterprise by talents, devoting to social harmony

With a commitment to the philosophy of "people-oriented, caring for employees", CNOOC actively promoted the development strategy of "rejuvenating enterprise by talents" and created an institutional mechanism with equal opportunities and fair rules, through building a dense atmosphere of respecting and attaching greater importance to talents, and developed a positive and diligent environment for talent development, so as to contribute to the stable development of enterprise and the stable employment of society. We paid attention to our employees' physical and mental health, helped those in difficulty, and strived to ensure that "no employee lives below the poverty line, no employee cannot afford medical treatment, and no employee cannot afford their children's education", in order to improve employees' sense of gain, happiness and security. In 2019, the ratio of physical examination for occupational health reached 99.87%. The "Haixue" platform has achieved full coverage of staff, with an average offline training of 94.86 hours per capita.

Proactively committed to serving the society, creating harmony and benefiting the people, we guided employees to carry out voluntary services, and constantly advanced community "Warm Hearts" projects, to actively fulfill social responsibilities. With the platform of CNOOC Public Welfare Foundation, we have invested more than RMB 90 million in targeted poverty alleviation, marine protection, public welfare cooperation and other projects. The targeted poverty alleviation has achieved remarkable results. Four of the six poverty-stricken counties and cities have withdrawn from the poverty-stricken list, and the other two counties and cities are under evaluation for acceptance stage, making positive contributions to win the war of poverty alleviation.

### Extending international cooperation, joint development for bright future

We adhered to the internationalization

strategy and bravely assumed the overseas responsibilities. CNOOC has carried out energy cooperation in 45 countries and regions on 6 continents, established overseas oil and gas production bases, and constantly improved the supply capacity of oil and gas resources. In 2019, 36.14 million tons of crude oil and 10.6 billion m<sup>3</sup> of natural gas were produced overseas. As a participant of the UN Global Compact, CNOOC strictly abided by the laws and regulations of the UN and the host countries where its business is located. We strengthened safe and compliant operations, created socio-economic value, protected the balance of ecosystem, optimized the overseas employment system, promoted the common development with the local, and made practical actions to advance the global sustainable development and the construction of a community of shared future for all humankind.

The year 2020 is a year full of great challenges. Facing the impact of COVID-19 on production and operation, we will resolutely implement the decisions and plans, be committed to epidemic prevention and control, production and operation. We will shoulder our responsibility, actively perform our duties, and make all efforts to accomplish annual production and operation objectives. We will give full play to the central enterprises' role of "stabilizer" and "ballast stone" in stabilizing economic growth, and contribute our strength to building a moderately prosperous society in all respects!

Chairman Wang Dongjin  
March 18, 2020



## About Us

### Company Overview

China National Offshore Oil Corporation, the largest offshore oil and gas producer in China, is a state-owned mega company operating under the control of the State-owned Assets Supervision and Administration Commission of the State Council of the People's Republic of China (SASAC). On February 15, 1982, the Company was established with the approval of the State Council, and it changed its Chinese registration name on November 1, 2017, while transforming from an enterprise owned by the whole people into Company Limited (wholly state-owned). The Company's registered capital is RMB 113.8 billion, with 6 domestic and overseas listed companies. The main business covers oil & gas exploration and development, professional technical services, refining product sales and fertilizers, natural gas production and power generation, and financial services. The Company was ranked 63rd in 2019 Fortune Global 500 and 31st in Petroleum Intelligence Weekly (PIW)'s World's Top 50 Oil Companies. The main business performance remains at the forefront of Central Enterprises, and was rated as A-level by the SASAC for 15 consecutive years. At the end of 2019, Moody's and Standard & Poor's rated the Company with credit ratings of A1 and A+, and the outlook is stable.

**63<sup>rd</sup>**  
Fortune Global 500

**31<sup>st</sup>**  
PIW's World's Top 50 Oil Companies

### Strategy of Sustainable Development

As one of the specific implementers of the national energy strategy and marine strategy, CNOOC shoulders the crucial mission of national energy security, developing marine resources and protecting marine ecology. The Company regards economy, environment and society as the most significant cornerstone for energy development and value contribution. CNOOC adheres to its corporate vision "Energy for All", upholding the philosophy of "People-oriented, Responsibilities, Win-win Benefits, Credibility and Innovation" and the ethos of "Safe and Efficient Operations, Green and Low-carbon Growth, People-oriented, Courage to Innovate, Charitable Giving, Openness and Transparency". The Company has systematically built a CSR model on the lines of "Economic Growth, Environmental Protection and Social Progress" and applied the concept of sustainable development to daily operation in dimensions of organization, institution and management process, with the support of the three level CSR management structure including the leading group, departments and subordinates. Moreover, the Company promptly evaluates, adjusts and improves the effectiveness and results of its sustainability strategy through benchmarking and making comparisons with global business leaders and historical data.

As a participant of the United Nations Global Compact, CNOOC has always been adhering to the Ten Principles. By focusing on safer, more environmental-friendly and more efficient operation and management, CNOOC always strives for a balance among economic growth, environmental protection and social progress, and devotes to "Our Quality Energy for Your Blue Sea and Sky".



## Corporate Governance and Operation

### Compliance Operation

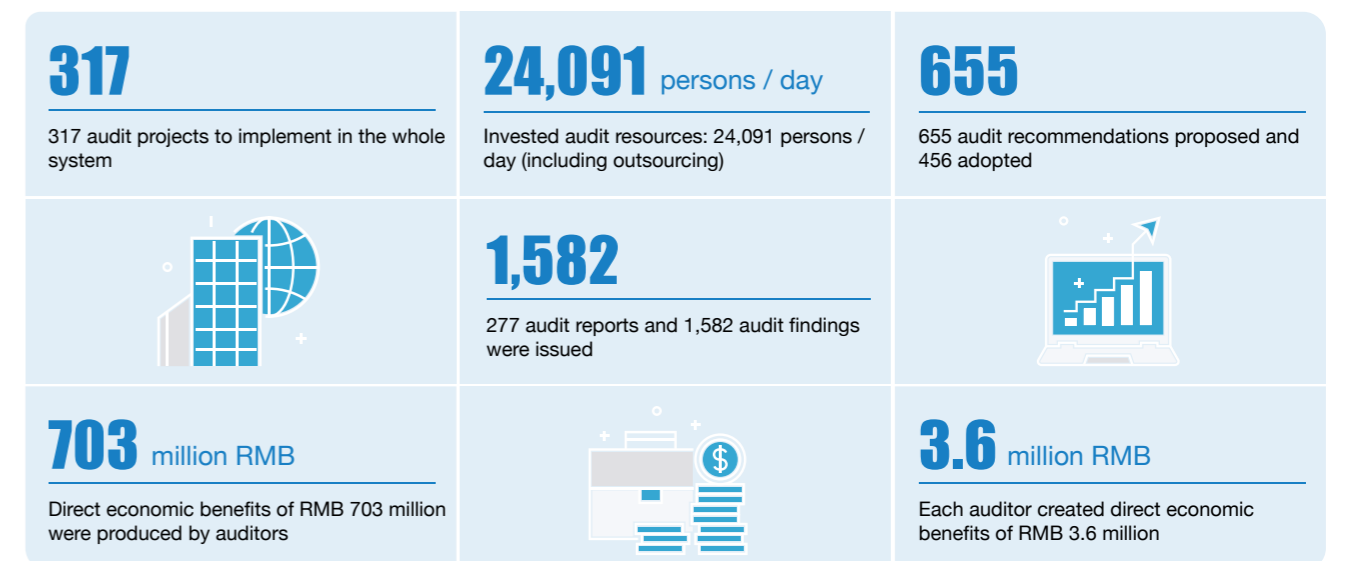
In 2019, CNOOC resolutely implemented the state's deployment to prevent and resolve major risks, strengthened compliance management in accordance with the goals of "enhancing internal control, prevention risks and promoting compliance", and continuously improved corporate governance capabilities, so as to promote the high-quality development of the Company. By engaging various risk prevention measures, the Company solidly promoted the construction of risk prevention and control system and improved the accountability mechanism for operational investment. The Company strengthened supervision on key areas, important links and major projects, centrally organized investigation on major risks to reveal hidden risks, strengthened the rectification of problems found in various inspections, and promoted the "Three Links" of risk, internal control and audit. CNOOC Petrochemical Import & Export Co., Ltd. was awarded the "Leading enterprise of informationization in Risk Management of the Year". CNOOC Finance Co., Ltd. continued to maintain a zero record of non-performing assets and non-performing loans, and its international credit rating maintained the highest level of domestic commercial financial institutions.

### Anti-corruption

Adhering to the general tone of stability and progress, CNOOC continuously advanced anti-corruption construction. The Company made every effort to advance central inspection and rectification and the application of inspection results, to promote reform and development. The Company kept tough stance on corruption, maintained high-pressure situation of punishing corruption and resolutely corrected all kinds of violations of laws and the Company's regulations with an iron hand. The Company attached importance to minor cases and promptly reminded employees of the tendency problems, besides enhancing anti-corruption awareness on a daily basis and carrying out training for preventing crises before they emerge. Focusing on key areas and key works, CNOOC conducted special projects and built corporate constitutions to make continuous efforts to address both symptoms and the root cause. The Company gave full play to patrol inspection and accredited agencies, thereby building a full coverage supervision network to ensure that power is effectively supervised and restricted.

### Internal Audit

CNOOC implemented fully the national major guidelines and policies, effectively strengthened the nation's leadership over internal audit work. Adhering to the principle of "checking problems, controlling risks, improving efficiency and promoting development", the Company strengthened the internal risk prevention and control, vigorously promoted the reform and construction of audit system, kept enforcing audit work with science and technology, accelerated informationization progress, enhanced the effectiveness of internal audit supervision, and devoted attention to build a "centralized and unified, comprehensively covered, authoritative and efficient" audit supervision system, in order to contribute value to building an international first-class energy company with Chinese characteristics.





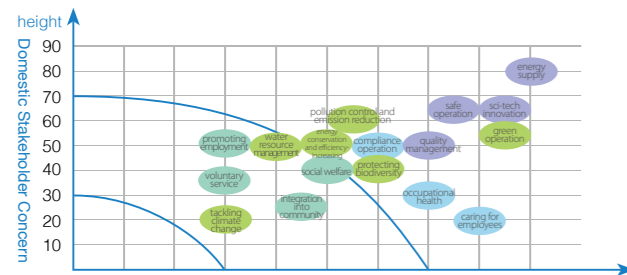
## Stakeholders

Fully communicating with stakeholders and understanding their expectations and requirements are the basis for CNOOC to fulfill its social responsibility and achieve sustainable development.

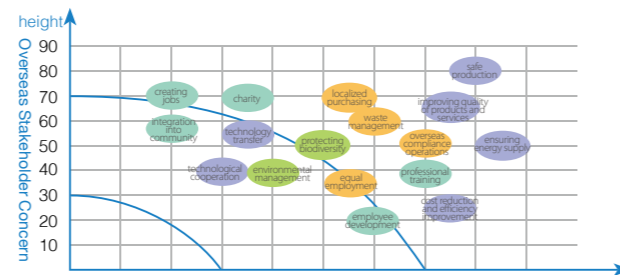
CNOOC has built a service and communication system for stakeholders, including governments, employees, shareholders, customers, industry partners, suppliers and contractors, financial institutions, media, communities and non-governmental organizations, etc. We pay close attention to their concerns in the formulation and implementation of our strategies, policies and plans. We also take various measures of information disclosure to echo their concerns. A series of key performance indicators are used to ensure our actions and communication with stakeholders effective.

### Topic identification

#### Issue identification process



▲ CNOOC Social Responsibility Topic Selection Model



▲ CNOOC Social Responsibility Topic Selection Model

### Information Disclosure Manner



Paper Media



Microblog



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## Communication with Stakeholders

In 2019, CNOOC kept on the theme of “Our Quality Energy for Your Blue Sea and Sky” and undertook sustainable development through three dimensions of “Promoting Economic Growth, Enhancing Environmental Protection and Driving Social Progress”. The Company organized various forms of exchange activities for stakeholders, widely collected opinions and suggestions of stakeholders and responded to their concerns through various channels. Some concerns were presented as main topics in this report.



### Stakeholders' Voice

On December 23, 2019, Nima County in Tibet, one of CNOOC's counterparts, withdrew successfully from the list of poverty-stricken counties. CNOOC has totally invested more than RMB 370 million in the past 18 years, standing together with Nima people and witnessing the construction of Nima County's infrastructure from scratch, and the enormous changes in urban and rural areas.

—Fu Xiaoyu, Deputy Magistrate of Nima, Tibet Autonomous Region

As a small enterprise, loans are our biggest worry. Unexpectedly, within 48 hours after the submission of application materials, we received the operation loan from Zhonghai Trust Co., Ltd. Thanks for your support, my career has more opportunities.

—Li Jinman, General Manager of Guangzhou Zhihong Electronics Co., Ltd.

CNOOC Uganda is one of the oil companies that I am responsible for environmental protection supervision. They have done their best in environmental protection and gained good reputation among the public and the Ugandan government.

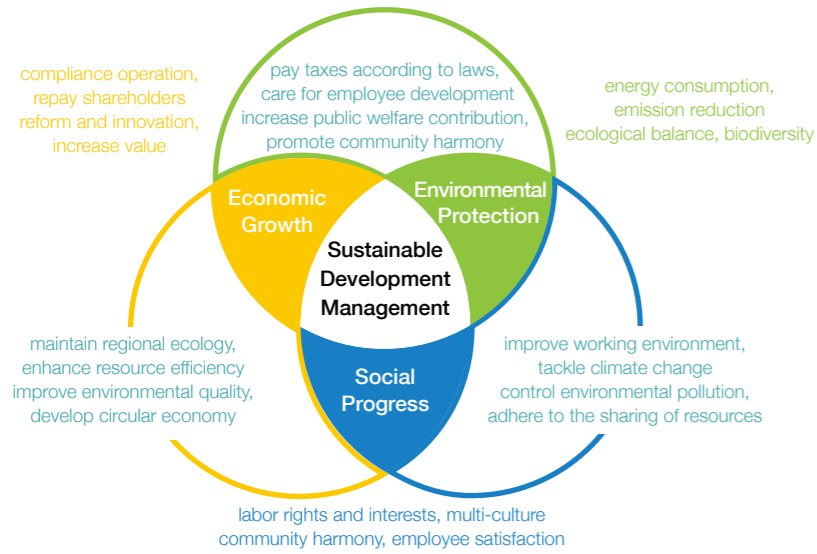
—Isaac Ntuju, chief environmental inspector from Uganda National Environmental Protection Agency

## CNOOC and SDGs

As a participant of the UN Global Compact, CNOOC adheres to the “Ten Principles” in human rights, labor standards, environment and anti-corruption and takes effective measures referring to the 17 sustainable development goals (SDGs) in Transforming Our World: The 2030 Agenda for Sustainable Development, proposed by the UN. In 2018, CNOOC made every effort to fulfil social responsibilities according to the characteristics of its business in order to achieve the 2030 SDGs.



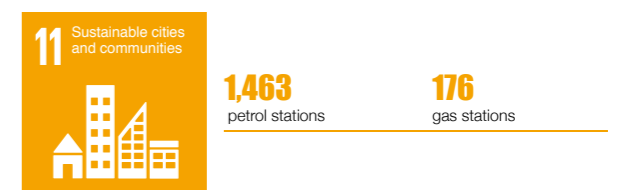
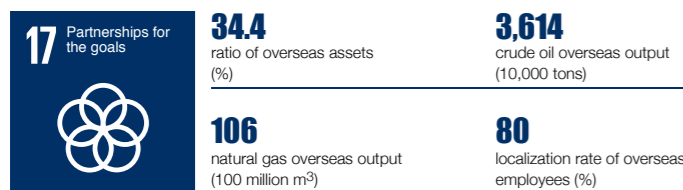
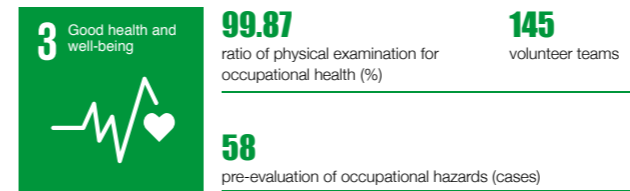
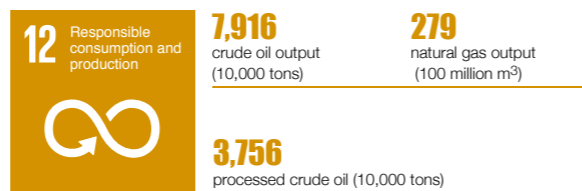
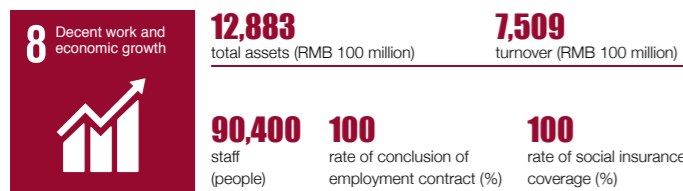
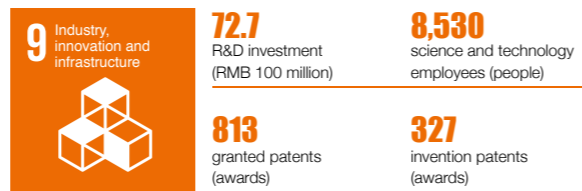
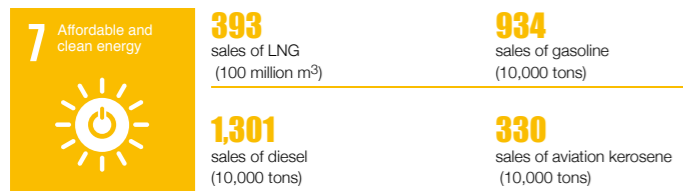
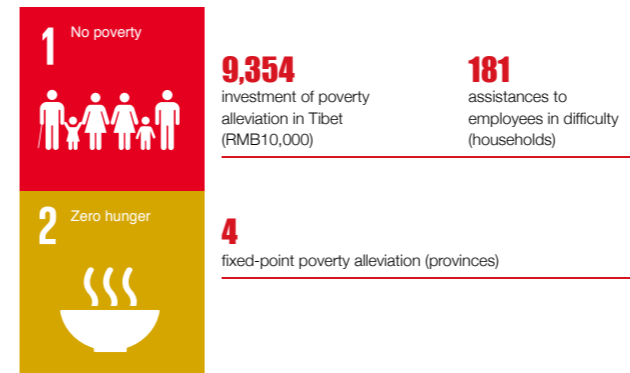
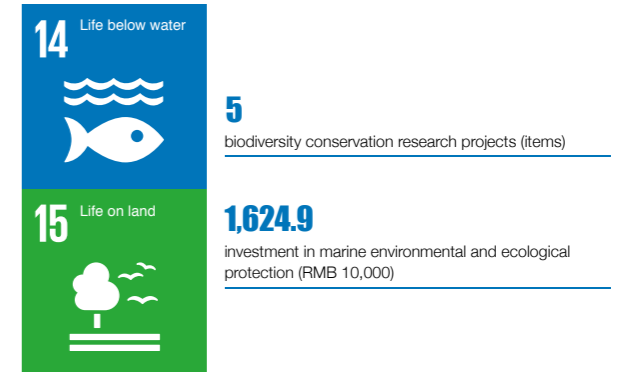
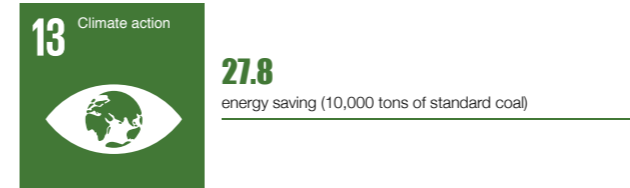
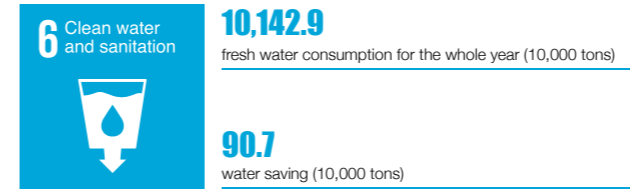
Four domains of the UN Global Compact



CNOOC Sustainable Development Model



CNOOC was awarded the “2019 Best Practices for Enterprises Achieving Sustainable Development Goals (Sustainable Production and Consumption)” by China network of the UN Global Compact.





## Key Performance Indicators

	Item	2017	2018	2019	2019 National Data	Source of National Data
Economic Growth	Crude Oil Output / Domestic Output (10,000 tons)	7,551/4,278	7,406/4,201	7,916/4,301	19,101	NBS
	Natural Gas Output / Domestic Output (100 million m <sup>3</sup> )	259/143	277/160	279/173	1,736	NBS
	LNG Imports (10,000 tons)	2,046	2,642	2,769		
	Processed Crude Oil (10,000 tons)	3,592	4,132	3,756		
	Crude Oil Trading Volume (10,000 tons)	9,250	10,323	10,929		
	Fuel Oil Output (10,000 tons)	372	460	392		
	Ethylene Output (10,000 tons)	108	158	209	2,052	NBS
	Methanol Output (10,000 tons)	153	152	156		
	Fertilizer Output (10,000 tons)	384	402	413		
	Natural Gas-Fired Power Output (100 million kWh)	213	216	226		
	Direct Contractor Casualties (people)	5	3	0		
	Employee Casualties (people)	0	1	2		
	Recordable Injury Events (cases)	47	56	91		
	R&D Investments (RMB 100 million)	57.6	58.4	72.7		
	Science and Technology Employees (people)	8,529	8,337	8,530		
	Granted Patents (awards)	840	779	813		
	Environmental Protection	Energy Conservation and Emission Reduction Investments (RMB 100 million)	3.5	3.7	3.8	
Comprehensive Energy Consumption per RMB 10,000 Turnover (tons of standard coal equivalent)		0.3805	0.3548	0.3471		
Energy Savings (10,000 tons of standard coal equivalent)		33.5	25.3	27.8		
Sulfur Dioxide Gas Emission (tons)		4,710	4,174	2,645		
Chemical Oxygen Demand (tons)		10,268	9,117	8,809		
Nitrogen Oxides Emission (tons)		1,074	919	911		
Ammonia Nitrogen Emission (tons)		66	61	30		
Social Progress	Headcount (10,000 people) <sup>1</sup>	9.8	9.4	9.04		
	Rate of Conclusion of Employment Contracts	100%	100%	100%		
	Rate of Social Insurance Coverage	100%	100%	100%		
	Percentage of Employees Joined the Labor Union	100%	100%	100%		
	Percentage of Female Employees	20	19	19		
	Degree of Employee Satisfaction (10-point system)	8.15	8.72	8.93		
	Incidence of Occupational Disease (cases)	4	3	9		
	Rate of Physical Examination for Occupational Health	99.7%	99.5%	99.87%		
	Average Training Duration per Employee (hours)	74.0	74.34	94.86		
	Employee Turnover Rate	2%	2%	1.5%		
	Charitable Donation (RMB 10,000)	9,304	10,983	14,562		
	Tax and Fees (RMB 100 million)	991 <sup>2</sup>	1,147	1,289		
	Number of Foreign Employees	4,767	4,671	4,771		
Localization Rate of Overseas Employees	80%	79%	80%			

Note: <sup>1</sup> Headcount includes the number of foreign employees.

<sup>2</sup> Profits and taxes paid in 2017 will be adjusted according to the number of financial statements.

## Promoting Economic Growth

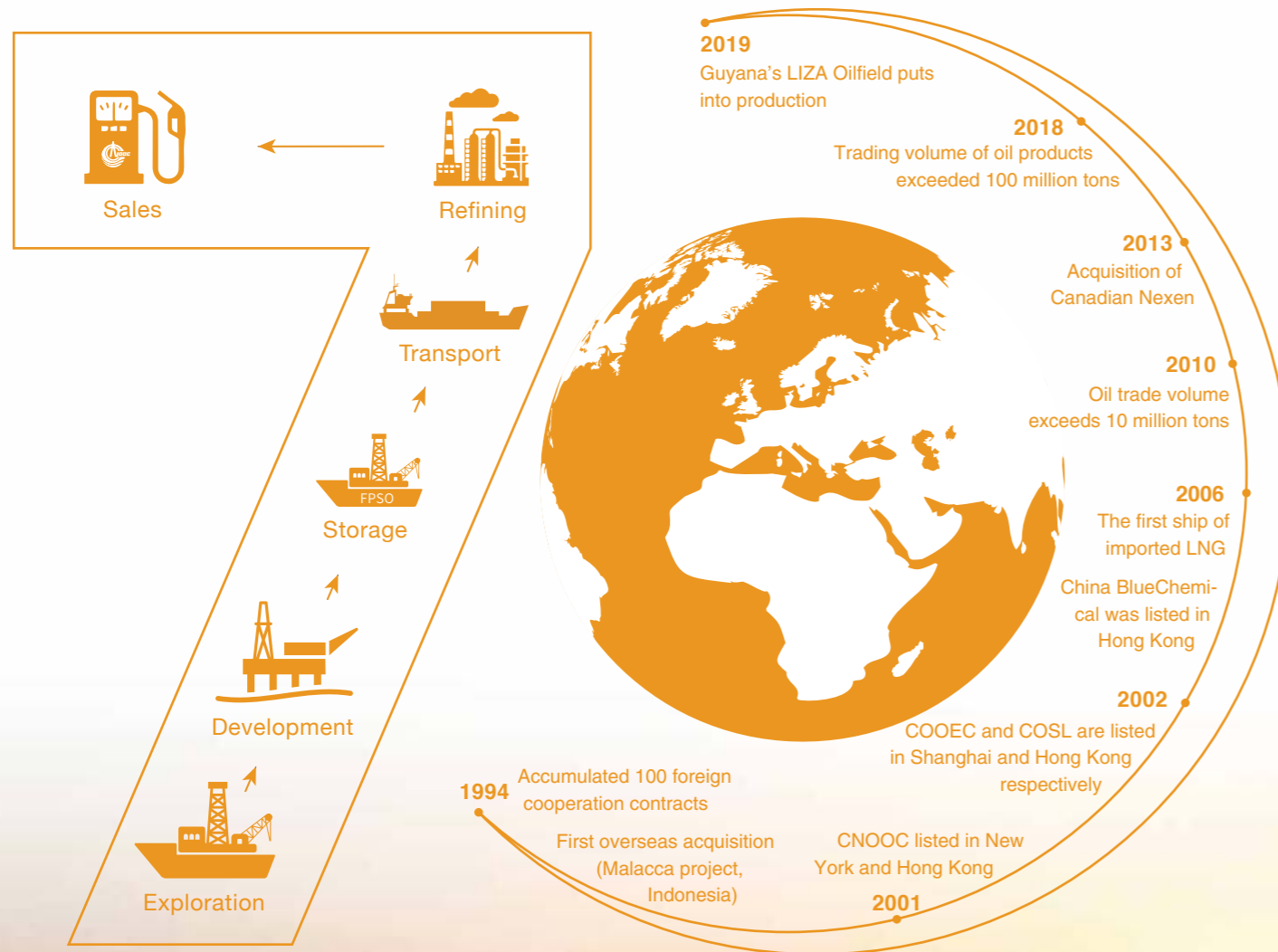




# Persevering in Serving Our Country with Energy to Celebrate the PRC's 70th Anniversary

## CNOOC employees warmly celebrated the PRC's 70th anniversary

President Xi Jinping's speech at the 70th Anniversary Conference of the founding of the People's Republic of China was exciting and inspiring. From the Bohai Sea to the South China Sea, from scientific researchers to the front line at sea, CNOOC employees deeply learned and comprehended the spirit of important speeches, and expressed that they would always be together with the motherland, serve the country with energy, and strive to make new and greater contributions to the country's prosperity, and work with tireless dedication to achieve the two centenary goals and realize the Chinese Dream of national rejuvenation.



Recalling my personal growth, I sincerely thank our great motherland. When I started working, the door of China's opening to the outside world was opened, giving me the opportunity to work and study on foreign platforms. Then I went back to the self-operating platform, back to land and engaged in many different positions. I led people to work independently and obtained some achievements, which were recognized by the motherland. When people work together with one heart, there is nothing they cannot achieve. For a better future of China, we need continue to work hard, do our job well, and enrich ourselves every day with efforts.



**Hao Zhenshan, "The most beautiful struggler", National Model Labor**



The individual and the motherland are like water droplets and the ocean. I took part in the work in 1994 when CNOOC made every effort to increase its reserves and production. There was a broad development space for our newly graduated students. My colleagues and I overcame one technical problem after another and brought back a "Golden Doll" from the South China Sea. As one employee of CNOOC, I am proud to contribute to the economic construction of our country.

**Li Zhong, winner of National Labor Medal, leader of the "10,000 People Program" of science and technology innovation**

As a young scientific and technological researcher, I am fortunate to join the upsurge of China's marine energy development in the new century. I will continue to work with my research team to fulfill responsibilities, to contribute my light and heat in the basic and core technology research of deep-water energy development, to develop more programs to the development of marine energy, and strive for the realization of the Chinese dream for life.



**Li Qingping, National Red Flag Women Bearer and 2017 Marine Figure**





## Ensuring Energy Supply

With a commitment to the general principle of “planning leading, value exploration and focus exploration”, and focusing on large and medium-sized oil & gas field exploration, CNOOC strengthened the concept of value exploration and maintained scientific and reasonable exploration investment portfolio, to ensure energy supply and sustainable development. In 2019, CNOOC produced 79.16 million tons of crude oil and 27.9 billion m<sup>3</sup> of natural gas, imported 27.69 million tons of LNG and generated 22.6 billion kWh of natural gas-fired power.



## Oil and Gas Exploration

CNOOC confronted challenges head-on, aimed at key basins, key areas and zones, and increased exploration efforts in new areas and new fields. In 2019, new domestic exploration discoveries remained at high level. 17 commercial discoveries and 21 potential commercial discoveries were obtained, 28 oil & gas fields were successfully evaluated. 6 commercial discoveries and 1 potential commercial discovery overseas were obtained and 2 oil-gas bearing structures were successfully evaluated.



### “Kenli 6-1” set up model of cluster exploration

In 2019, after the discovery of “Kenli 6-1” in preliminary exploration, Bohai Oilfield organized prompt cluster evaluation and completed 15 exploration wells with proven reserves exceeding 50 million m<sup>3</sup>. As the first large and medium-scale oil & gas field in the laibei low uplift area of the Bohai Sea, it became a model of successful evaluation during the pre-exploring year.

### In field exploration, the well “YL8-3-1” obtained a high-quality natural gas flow of 1 million m<sup>3</sup> per day

In 2019, the well “YL8-3-1”, located in deep-water eastern area of Qiongdongnan Basin, was successfully tested with a daily high-quality natural gas flow of 1 million m<sup>3</sup>, setting a new record of natural gas testing capacity for buried hills in Chinese waters.

The exploratory well is located southeast of Hainan Island. The drilling depth is over 3,000 meters, and the water depth of operating area is 1,831 meters, which marks a major breakthrough in the deep-water exploration field.

## Oil and Gas Production

CNOOC adheres to the innovation-driven strategy, implements safe and efficient lean management, and optimizes technical solutions and contract models. In order to ensure national energy security, the Company takes effective measures to increase production according to local conditions and maintain high production time efficiency and high utilization efficiency of oil wells.

In 2019, by enforcing technological innovation and management innovation, 710 offshore drillings were completed efficiently, reaching a record high of drillings number. The speed and efficiency raising made great achievements in increasing storage and production, with best key technical indicators and lowest drilling costs in the last five years.

In 2019, the domestic output of crude oil and natural gas was 43.01 million tons and 17.3 billion m<sup>3</sup> respectively.

### Bohai Oilfield explored potential in the “Year of Advancing Water Injection”

The year 2019 was regarded as the “Year of Advancing Water Injection” in Bohai Oilfield. Through a series of measures in nearly 1,400 well controls, such as acidification for deblocking, profile control and waterflooding, and layered deployment, the comprehensive decline rate of main oilfield was controlled within 10%.

Increasing frequency and expanding nozzle through “one-well, one-policy” investigation, 92.5% of production wells were proven effective with an increase of nearly 9.5% in daily oil yield, which ensures Bohai Oilfield’s stable production of over 30 million m<sup>3</sup> for 10 consecutive years.

**43.01 million tons**  
Domestic crude oil output

**17.3 billion m<sup>3</sup>**  
Domestic natural gas output

### “Weizhou 12-1” Oilfield became the production “hub” of the largest oilfield group in the South China Sea

The equipment scale of “Weizhou 12-1” Oilfield is ranked first among all offshore oilfields in Beibu Gulf, with many typical processing technologies in the field of offshore oil & gas production. A number of crude oil production technology level is at the forefront of China. For Weizhou Oilfield Group, the largest oilfield group in the South China Sea, it has already become the oil & gas gathering and transportation center, the birthplace of

natural gas comprehensive utilization project, the network communication center and the intelligent grid dispatching center.

In the past 20 years, by injecting more than 515 million m<sup>3</sup> of natural gas into the formation, the “Weizhou 12-1” Oilfield has increased oil production of 1.918 million m<sup>3</sup>, and the first self-flowing gas injection pilot experiment well of CNOOC was completed and maintained high yield.

### Trial production of China’s first integrated offshore HTHP gas field succeeded

On May 10, 2019, the “Dongfang 13-2” gasfield, located in Yinggehai Basin in the western South China Sea, was successfully trial-produced. It is the largest offshore HTHP gas field in China. After centralized processing by central platform, natural gas will be supplied to Hong Kong, Hainan and other provinces through pipeline network, with an annual peak capacity of 3.5 billion m<sup>3</sup>.





## Refining and Chemical Production

CNOOC adheres to the development path of “Low Cost, Differentiation, Science and Technology Leading” and is committed to build an oil refining industry with international leading level. After one decade’s development, the refining and chemical industry of CNOOC, distributed in the “two continents and one bay” region, has begun to take shape. At present, two integrated industrial bases for refining and chemical have formed in Huizhou and Ningbo Daxie, and the special oil product processing base characterized by asphalt and lubricants has been built in Bohai rim.

In 2019, CNOOC processed 37.56 million tons of crude oil, produced 12.76 million tons of refined oil products, 6.83 million tons of bitumen, 1.96 million tons of lubricants, 2.09 million tons of ethylene and 2.75 million tons of sodium carbonate.

**37.56 million tons**

Processed crude oil

**6.83 million tons**

Production of bitumen

**2.09 million tons**

Production of ethylene

### Transformation of styrene plant to promote production increase in Daxie Petrochemical

On November 11, 2019, the first industrial application of new rectification polymerization inhibitor, independently developed by Tianjing Chemical Research and Design Institute of CNOOC, was realized in Daxie Petrochemical on the styrene plant with annual output of 280,000 tons, all performance indicators and stability meet production requirements, about RMB 1.2 million will be saved in the cost of additives every year.

It has remarkable effect on reducing polymer generation, tar emission and mitigating styrene polymerization, and will bring better economic benefits.

After transformation and optimization to the styrene plant system in 2019, the work load was increased from 103% to 113%, with a daily output exceeding 900 tons, which reached record high since the operation of the plant, and the output of styrene increased by 29,200 tons in the whole year.

### CNOOC Oil & Petrochemicals Co., Ltd. was awarded the “the best supplier of China-made asphalt”

On March 4, 2019, CNOOC Oil & Petrochemicals Co., Ltd. was awarded “the best supplier of China made asphalt in 2018”, with the excellent performance of “CNOOC 36-1” in Taihang Mountain Expressway, a key project of “Beijing-Tianjin-Hebei integration”, and in 4 countries along the Belt and Road.

the transportation planning of “five verticals and two horizontals”.

The “CNOOC 36-1” asphalt was also applied into the widening projects of Beijing-Taibei Expressway and Beijing-Kaifeng Expressway, as well as the supporting project of transportation during the 70th National Day Parade, achieving seamless connection with the key projects in Beijing.

In 2019, “CNOOC 36-1” was applied in the construction of Beijing-Daxing Airport Expressway and became an important part of

### Catalytic oil slurry processing for delayed coking unit was put into operation in Huizhou Petrochemicals

At 11 am on October 22, 2019, heating furnace F-103 of delayed coking unit in Huizhou Petrochemicals was put into operation successfully, which marked the successful commencement of catalytic oil slurry processing project of delayed coking unit.

furnace Individual Heating and Post-Furnace Mixed Refining of Oil Slurry”. Ever year after the project is put into production, it will be able to fully process the 260,000 tons of catalytic slurry produced in the phase I and phase II of Huizhou Petrochemical. It is expected to increase an economic benefit of RMB 50 million per year.

The catalytic slurry heating furnace project developed initially the technology of “Pre-

## Service Network

CNOOC always takes customer satisfaction as an important indicator to measure service quality. The Company actively innovates its business model and expands service network. CNOOC attaches great importance to customer information protection and continuously enhances service capabilities for better customer satisfaction. CNOOC strives for 100% resolution rate of customer complaints and common development with customers on the basis of mutual benefit.

In order to provide more convenient services, CNOOC continues to strengthen the construction of petrol stations, gas stations, oil depots, LNG receiving terminals and natural gas pipeline networks. By the end of 2019, the Company has actually controlled 1,463 petrol stations, 176 gas stations and 10 LNG receiving stations.

### Petroleum Products Supply

In 2019, CNOOC continued to develop the marketing network for petroleum products and optimize the network structure through the transformation from “having” to “having better”, from “increasing quantity and scale” to “improving development quality, investment efficiency and overall profitability”. Totally, 25.66 million tons of refined oil products were sold over the year.

#### Pilot launch of “CNOOC Mall”

On June 25, 2019, the pilot e-commerce platform “CNOOC Mall” (www.cnocmall.com) was launched, the services of e-commerce, logistics and call center were put into use in order to improve the marketing configuration, delivery capacity and precise service capacity. By the end of 2019, 22 stores of CNOOC Oil & Petrochemicals and 13 stores of CNOOC Gas & Power Group had been launched on-line.

#### CNOOC promotes oil product upgrading

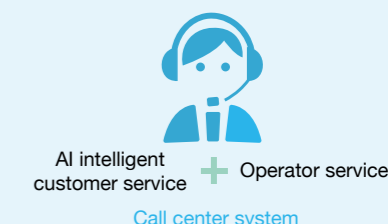
Since January 1, 2019, CNOOC oil depots and petrol stations have comprehensively supplied national VI automotive diesel oil half a year ahead of schedule. On January 9, the first 1,100 tons of 98# National VI ethanol gasoline from Zhongjie Petrochemical was officially put on sales and won the favor of customers.

#### First ethanol gasoline distribution center in oil depot got approved

On January 30, 2019, the ethanol and gasoline distribution center in Yingkou oil depot was officially approved by Liaoning Development and Reform Commission. It is one of the first new ethanol gasoline distribution centers in Liaoning Province, and is also the first self-owned oil depot in CNOOC that is well equipped by online blending facilities.

### CNOOC Gas & Power Group Promotes Digital Marketing

CNOOC Gas & Power Group cooperates with Shanghai Petroleum and Natural Gas Trading Center, and actively explores the innovation of trading and business mode with the help of mature e-commerce platforms. The company creates a “Skynet” for natural gas sales and opens up the online direct sales channels, in order to continuously accumulate practical experience for establishing the most influential and authoritative digital marketing brand of CNOOC in China.



#### Achieving comprehensive “cloud sales”

CNOOC Gas & Power Group has fully launched online trading for LNG liquid or pipeline gas, and will greet a splendid new era of “cloud sales”.

#### Innovating marketing model

In conjunction with Shanghai Petroleum and Natural Gas Exchange, CNOOC Gas & Power Group promoted innovation and launched various trading modes, so as to realize the significant transformation of customer development from going-out to inviting-in.

#### Develop own digital platform

13 natural gas online stores were opened on e-commerce platforms with sales areas covering the whole country, which improved customer consumption experience and helped the digital transformation of downstream sales.





### Natural Gas Supply

CNOOC always adheres to the green and low-carbon strategy, continues to actively supply more green, low-carbon, diversified, and environmentally-friendly high-quality energy sources, increases the supply of natural gas in offshore gas fields, promotes the development of unconventional natural gas, expands the scale of LNG supply, and continuously improves the ability of natural gas supply. The Company makes every effort to mobilize the resources of the entire group, does everything possible to stabilize the supply, expands the scope of natural gas supply with practical actions, and increases the natural gas supply capacity in various regions, in order to contribute green power to building a beautiful China.

#### Two gas wells were put into production in “Jinzhou 25-1 South” Oilfield

On April 25, 2019, two new natural gas wells drilled by WHPE platform in “Jinzhou 25-1 South” Oilfield started production successfully, increasing daily supply of natural gas by 400,000 m<sup>3</sup>, and guaranteed the stable operation of Liaodong natural gas pipeline network.

#### Shenmu area began to consume self-producing gas

On September 29, 2019, the Shenfu gasfield, developed and constructed by CUCBM, began to supply gas to the urban area, the supply could meet the daily gas demand of 50,000 households. It is the first time that this national top 100 County, which is thriving due to coal, has used the natural gas produced in its own territory. In 2020, with the promotion of production capacity and surface engineering construction, the gas supply capacity will be further improved to meet the basic demand in Shenmu area, such as people’s livelihood and “coal to gas” demand, which will promote the improvement of gasification rate, improve the atmospheric environment, and benefit the local.

Increase reserves and production  
Stabilize gas supply

#### Clean energy for Shanxi

The pressure boosting station of Panhe Gas Production Plant of CUCBM Jinnan Branch is an important part of the national coalbed methane development demonstration project. More than 2.2 billion m<sup>3</sup> of natural gas has been delivered to the south of Shanxi Province, the green energy was continuously injected to promote the construction of clean and low-carbon energy consumption mode in Shanxi Province.

#### More than 30 billion m<sup>3</sup> of gas went on shore in the eastern South China Sea

By April 15, 2019, the cumulative export of natural gas in the eastern South China Sea had exceeded 30 billion m<sup>3</sup>. These natural gas was transported to gas power plants, urban gas companies and large industrial users in the Great Bay Area of Guangdong, Hong Kong and Macau, contributing to the local economic development and the Blue Sky Protection Campaign.

#### Green the Yangtze River Economic Belt

On October 14, 2019, the foundation project of 1,440 pile for four storage tanks of the Jiangsu Binhai LNG Receiving Terminals Project were all completed. On January 4, 2020, concrete casting has totally been completed in the 20 areas of the four storage tank caps. After the project is completed, the supply scope of CNOOC’s LNG resource will expand from Jiangsu to Anhui and Henan, boosting strong green force driving the development of the Yangtze River Economic Belt.

#### LNG industry stepped into southwest China

On January 9, 2019, Guangxi LNG, the 10th LNG Receiving Terminals of CNOOC, started trial production and provided clean energy for Southwest China. The project takes seven years to complete, composed of two 30,000 m<sup>3</sup> tanks, a 50,000 tons liquid chemical terminal and supporting facilities, and the annual LNG turnover reaches 600,000 tons. It will play an important role in promoting the optimization of local energy structure and green development of surrounding areas like Yunnan and Guizhou Province.

#### Tianjin’s total LNG export volume exceeded 10 million tons

In 2019, Tianjin LNG orderly promoted the construction of phase II project, building six Tianjin LNG storage tanks of 220,000 m<sup>3</sup> on the basis of existing facilities, which are planned to be put into use in 2023. After completion, the single-day gasification and external transportation capacity can reach 70 million m<sup>3</sup>, which will secure the sufficient supply of clean energy in North China region and the whole Northern China, and play a more active role in accelerating the industry development of China’s clean energy.

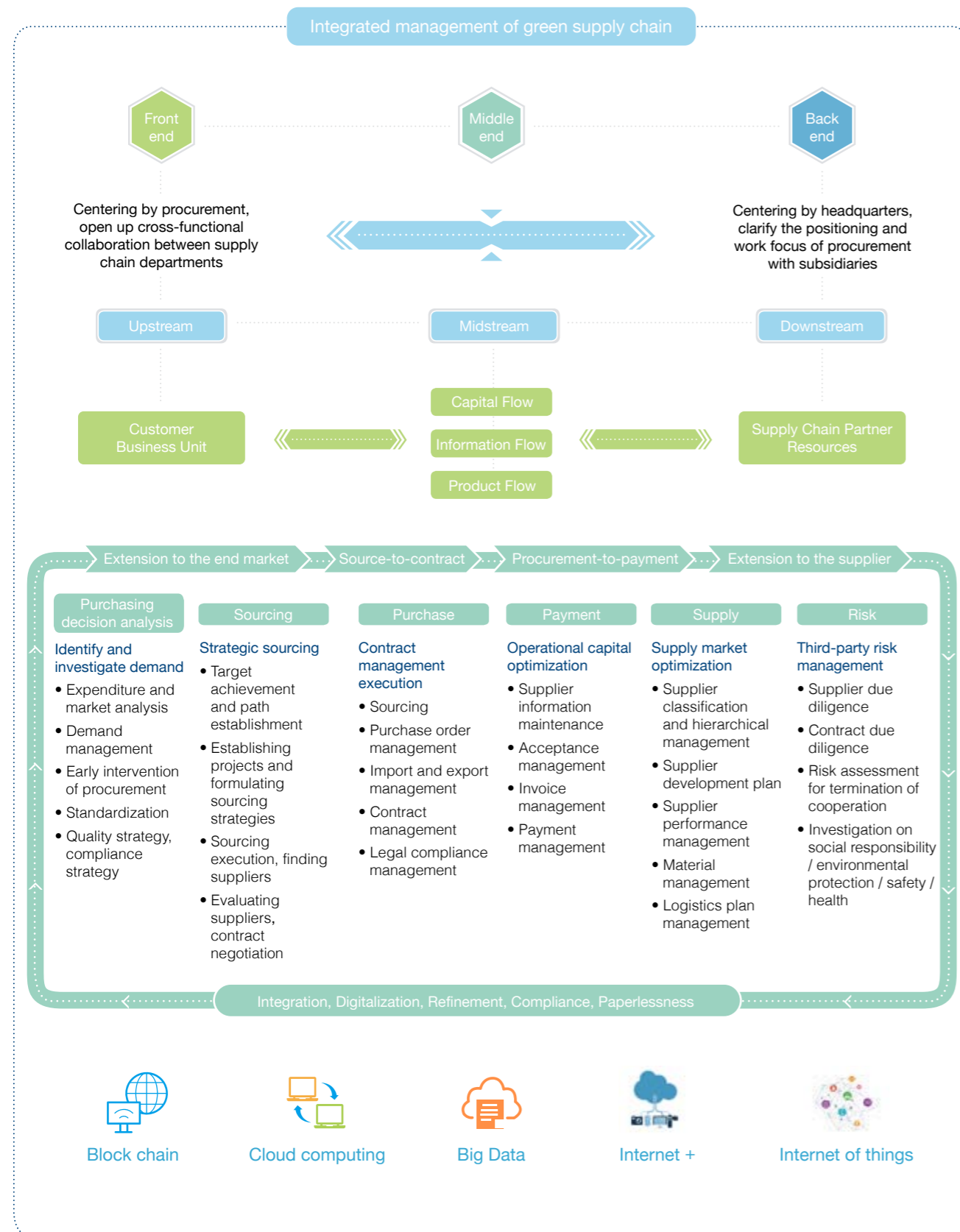


### Supply Chain Management

In order to establish an integrated supply chain ecosystem, CNOOC enforces the construction of modern supply chain, with procurement business as the core, deploys the transformation strategy of integrated supply chain management, and opens up capital flow, information flow and products flow from client to supply side.

CNOOC enforces green supply chain management and adopts prudent principles and strict standards to select suppliers and contractors in the supply chain. The Company values not only their product quality, service ability and corporate reputation, but also their concept and implementation of fulfilling social responsibilities such as implementing QHSE standards and labor standards. Adhering to the concept of “win-win cooperation and common development”, the Company comprehensively implements centralized, unified, classified and hierarchical supplier management, shares supplier information resources, strengthens training and supervision, optimizes performance evaluation, and realizes dynamic management of supply chain during the entire process from access to exit, so as to ensure the normal performance of economic contracts.

In order to make the supply chain business faster and more efficient, promote the coordination and interaction between supply and demand, and provide more detailed, high-quality and timely logistics and business flow services, the Company will start comprehensive digital transformation of supply chain to realize the visibility between all links in the supply chain, and focus on creating an operating mode with e-commerce attributes, to cultivate new growth points and form new driving forces in the supply chain field.



### Reconstruction of supplier management system

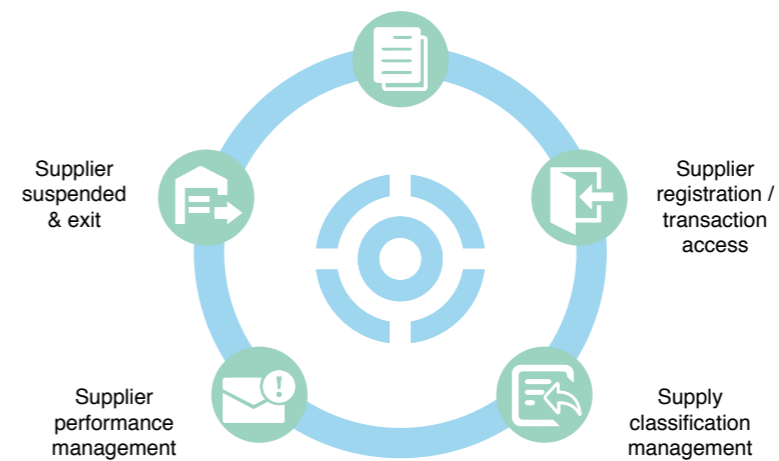
In 2019, CNOOC restructured its supplier management system, revised the “Supplier Management Measures”, and formulated the “Procurement Contract Implementation Management Measures”. Through panoramic management of suppliers, comprehensive evaluation and management on suppliers’ registration, procurement activities, contract performance, after-sales service, and maintenance of file information, etc., and prompt elimination of unqualified suppliers, high-quality supplier resources were kept for the business development of the Company.

The Company implemented the supplier registration management, removed the barriers of the first level and the second level to fully share suppliers’ resources. After registration, suppliers can immediately participate in bidding or procurement projects.

The Company established the supplier risk prevention and control system, strengthened the management of penalties for suppliers’ violations of laws and regulations, and the risk-alert management of suppliers’ credit risks, to avoid the loss and risk brought by unqualified suppliers.

The Company established the closed-loop management process from signing of procurement contract to contract closing and post-evaluation, standardized management rules and requirements for the implementation of procurement contract, and ensured the integrity of purchase contract execution information. We strengthened the management of procurement and delivery quality, progress control and contract change, unblocked the information communication channels of contract parties, and reduced the execution risk of procurement contract.

### Supplier resource development



282

Non-compliant suppliers handled

100%

Contract performance rate

### Supplier risk management

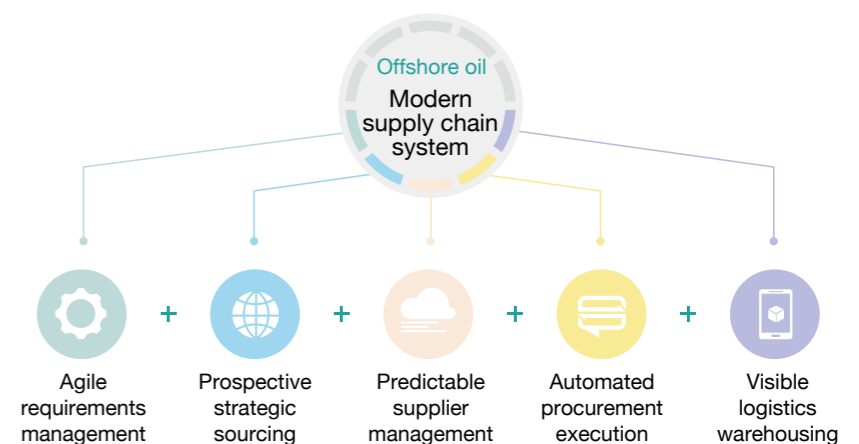
- Supplier due diligence
- Contract due diligence
- Risk assessment for termination of cooperation
- Investigation on social responsibility / environmental protection / safety / health

### Modern supply chain system

CNOOC has improved its inventory management system, and the overall effect of supply chain has appeared. The reduction goal of no dynamic inventory has been successfully achieved, and inventory quality has improved significantly. The no dynamic inventory of CNOOC for more than three years has been reduced to RMB 1.19 billion from RMB 1.648 billion at the beginning of the year, achieving the goal of 28% reduction. The inventory structure has been improved, laying a good foundation for high-quality material management.

CNOOC is building a modern supply chain for the offshore oil industry, initiating reforms of the procurement management system, accelerating the innovation and application

of supply chain, exploring the introduction of new digital means to improve management, and promoting innovation in industrial organization and business models.





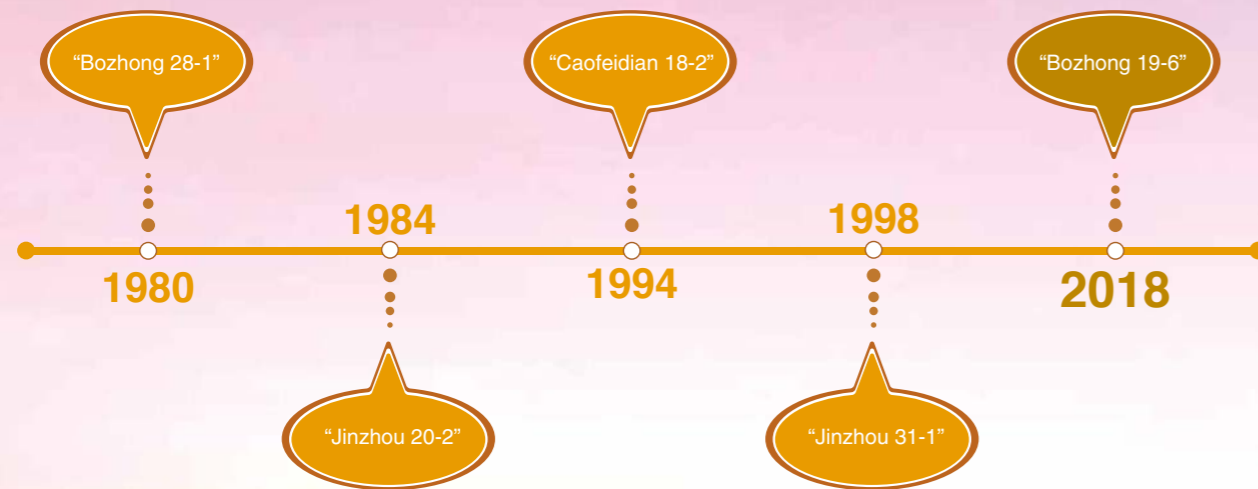
## Discovery of 100-billion-m<sup>3</sup>-scale Gasfield in the Bohai Sea

After years of arduous exploration and through collaborative cooperation from production, learning, research and application, CNOOC has tackled five world-class problems, including how to generate large-scale gas in oil-based basins and whether there are large-scale high-quality reservoirs in deep metamorphic buried hills, and formed the theoretical technology for deep large-scale packaged condensate gasfield exploration in Bohai Bay Basin.

Under the guidance and support of this technical achievement, "Bozhong 19-6", a large gas field with "double 100-million" scale, was successfully drilled. Focusing on the discovery and exploration evaluation of "Bozhong 19-6" gasfield, CNOOC has achieved a series of major breakthroughs in theoretical understanding and key technologies, opening up a new prospect for natural gas exploration in oil-type basins. At the National Science and Technology Progress Award Conference in 2019, the technological achievements won the first prize of National Science and Technology Progress Award.



Won the first prize of National Science and Technology Progress Award 2019





## Emphasizing Sci-Tech Innovation

Sci-tech innovation is a core driving force for enterprise's sustainable development. Majoring in oil and gas business, CNOOC actively implements the innovation-driven strategy, deepens the reform of sci-tech institutions and mechanisms constantly, and improves the sci-tech innovation system. To meet the major and important demand of the state and the company, researchers focus on a series of core technologies such as deep-water oil & gas fields, offshore heavy oil, HTHP, oil & gas fields with low permeability, and constantly explore technological research on offshore wind power, natural gas hydrate, hydrogen energy, geothermal energy and marine energy, to provide clean energies for economic, social and environmental sustainable development.

### Technical Innovation



#### China's first international standard in the field of coatings was led and drafted by Changzhou Institute

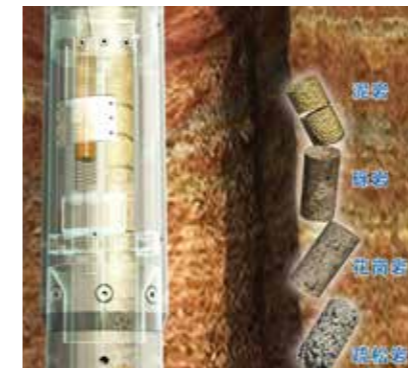
On April 11, 2019, the international standard ISO 23168: 2019 "Paints and Varnishes - Determination of Water Content - Gas Chromatographic Method" led and drafted by CNOOC Changzhou Coating Chemical Research Institute was officially released, which is the first international standard that

China has led and drafted in the field of coatings and will effectively improve the international influence of China's coating industry and analytical and testing techniques, marking a historic step for Chinese coatings industry into the international standardization field.



#### Industrialization of large-diameter coring equipment has achieved remarkable results

Due to remarkable characteristics of strong formation adaptability and high operating efficiency, the large-diameter coring equipment, independently developed by COSL, can fully adapt to the challenges of different formation lithology. This technology has surpassed international competitors and become the main force of marine operations, with many records such as maximum operating well depth of 4,758 meters, maximum well deviation of 42°, and maximum temperature of 170°C. In 2019, 35 wells were operated with an estimated revenue of RMB 49 million.



#### Transformation of achievements to increase reserves and production in Panyu Oilfield

In 2019, two technological innovation achievements of CNOOC Shenzhen Branch have been successfully applied in tackling key problems of dual directional imaging technology in Panyu dual ultra-high oilfield, pushing forward new potential reserves of 7.65 million m<sup>3</sup> and 7 new potential wells in "Panyu 4-2" oil field. The research results make further suggestions of 5 adjustment well positions, expected to increase oil production by up to 505,000 m<sup>3</sup>.

#### Achievements of major science and technology programs for sustainable and stable production of 30 million tons in Bohai Oilfield

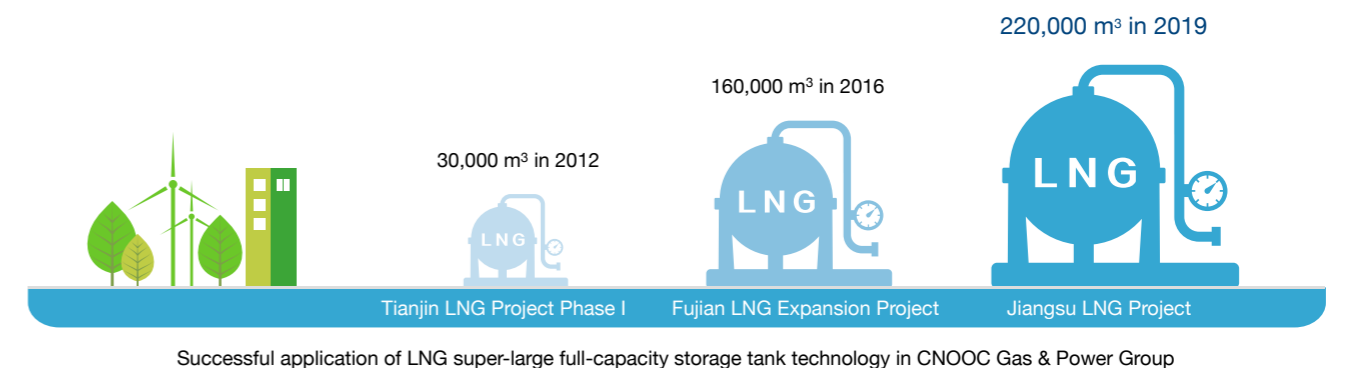
CNOOC Tianjin Branch has steadily advanced the implementation of "Key Technology Research on Sustainable and Stable Production of 30 Million Tons in Bohai Oilfield". This major project, consist of 7 major topics, 14 key technologies and 30 sub-topics, has been fully launched and got several achievements. The key technology for tapping the potential of

Bohai "double high" oilfield has been tested in 474 wells of 3 target oilfields, with an annual net increase of 708,000 tons and a reduction of 1.9% to the decline rate of typical double-high oilfield. The elaborate reservoir description technology has successfully guided the rolling expansion of nine oilfields, increasing proved reserves of 37.57 million tons.

#### Underwater emergency sealing device was independently developed

China's first underwater emergency well sealing device, independently developed by CNOOC, integrates machinery manufacturing, hydraulic control, data monitoring, information transmission, and ROV intervention and has multiple functions such as shut-in, diversion, well killing, dispersant injection and trap

gas release. This device overcomes design challenges of high erosion resistance and HTHP resistance, and the relevant parameters from shallow water tests reach the level of the most advanced products in the world, which fills domestic gaps. Over 90% components are made in China.





## Speeding up Deep-water Exploration and Development in the South China Sea

“Lingshui 17-2” gasfield is located in the southeast of Hainan Island, about 150 km away from Sanya City, Hainan Province, with a water depth of 1,220-1,560 meters. It is the first large self-operated deep-water gas field in China, with over 100 billion m<sup>3</sup> proved geological reserves of natural gas, and 6.8 million tons geological reserves of condensate oil. The project creates the first development mode of deep water semi-submersible 10,000 tons class storage platform in the world.

“Lingshui 17-2” is expected to be put into production in 2021, with a stable output of 10 years, and every year after completion, it will stably supply 3.3 billion m<sup>3</sup> of natural gas to Hong Kong, Guangdong, Hainan and other regions.

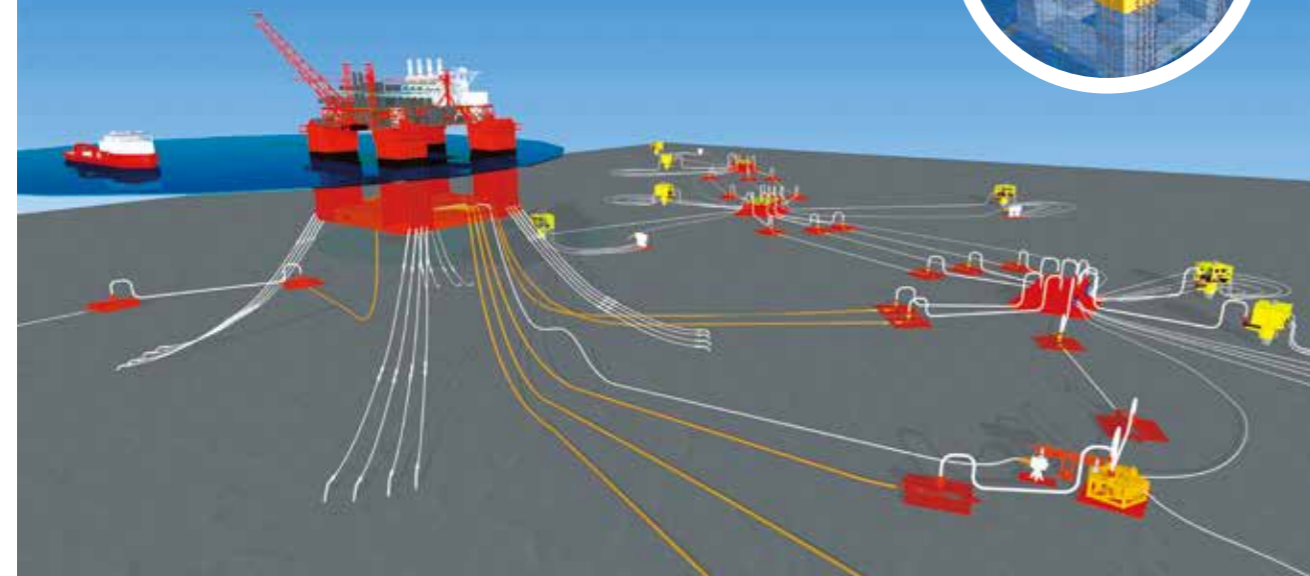
**1,500** meters

Design of China's first floating platform with water depth of 1,500 meters

**3.3** billion m<sup>3</sup> per year

Every year after completion, it will stably supply 3.3 billion m<sup>3</sup> of natural gas to Hong Kong, Guangdong, Hainan and other regions

- Design of the world's first semi-submersible platform for condensate storage
- Design of China's first floating platform with water depth of 1,500 meters
- First use of polyester cable mooring system in China
- First application of steel catenary riser in China
- First self-developed underwater production system design integrating underground & underwater production systems and deep-water risers in China



## Pioneering Innovation

In order to improve the clean energy supply capacity, CNOOC organizes research on the development path of new energy and digital transformation technology, initiates research on the strategic direction of new energy technology development, and organizes research on technical and development paths of natural gas hydrate, hydrogen energy, marine energy, offshore wind power and geothermal energy.

In 2019, the Company compiled a technology development roadmap for the hydrogen energy industry. The first hydrogen refueling station project, is expected to be completed and put into operation in 2020. In view of the problems of “complex distribution, difficult development and low utilization efficiency”, CNOOC has formed a scalable industrial model of efficient development and utilization of geothermal resources.

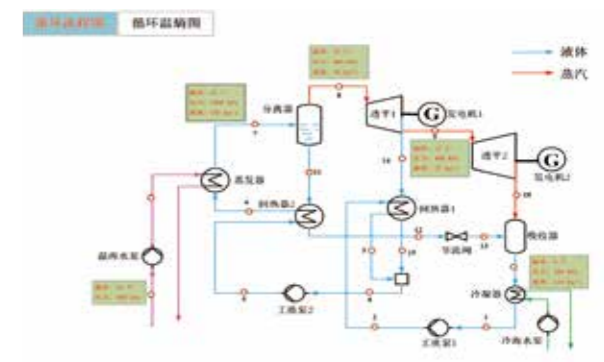
### Detection equipment and technology for natural gas hydrate won the highest award of International Invention Exhibition

At the 47th Geneva International Invention Exhibition in 2019, CNOOC General Research Institute's “Onboard Online Detection Equipment and Technology for Natural Gas Hydrates Pressure Maintaining Core” won the highest award of the exhibition—the jury's gold award of special recognition (the jury's special award only accounts for 1% of all exhibition projects). This achievement has been successfully applied in the sampling project of southeast Hainan.



### Successful development of Simulation Platform of Ocean Thermal Energy Conversion System Test

By the advantages of University-Enterprise Alliance in production, learning and research, CNOOC carries out research with universities on key technologies of ocean thermoelectric power generation. After one year's technical research, the first domestic Simulation Platform of Ocean Thermal Energy Conversion (OTEC) System Test, which integrates thermal calculation, simulation and equipment selection, has been successfully developed.



Rongfeng Company builds a comprehensive marine energy system

CNOOC Rongfeng Energy Co., Ltd. is committed to building an integrated energy system for offshore oil and gas, offshore wind power, hydrogen production and photovoltaic, to achieve integrated development and supply of overall energy. The company will center on offshore wind power, focus on new marine energy businesses, and give attention to promoting and investing in fixed-based offshore wind power, floating-based offshore wind power, decentralized wind power, hydrogen production by water electrolysis, and marine pasture development, so as to form a complete industrial chain with the characteristics of CNOOC.

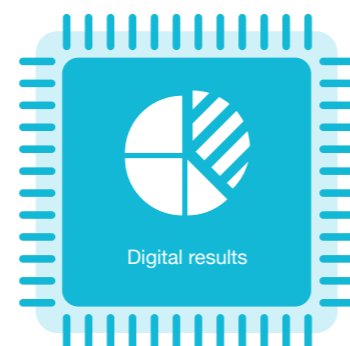


Pilot project of satellite communication earth station completed acceptance

In order to effectively enhance the informationization management level of offshore production and solve the difficulty of ship communication, CNOOC aims at creating an "Internet +" ship communication plan with high cost performance ratio by using big data, new Internet concepts and new technologies. VSAT (very small aperture terminal) equipment can fully meet the communication needs of internal and external information management of ships, maritime satellite communication, satellite link and front-line staff at sea.

The world's first LNG 4D evolution analysis technology

LNG four-dimensional evolution analysis technology, proposed by CNOOC Gas & Power Group, is an intelligent and systematic solution for the entire life cycle of LNG low temperature plant. With the technology, all is visible in the plant for the dynamic process, mechanics and control parameters of all low-temperature equipment and facilities throughout the life cycle, and the optimization is realized in design, construction and operation. The technology has been applied to projects like Zhejiang LNG Phase II and Zhuhai LNG Terminal.

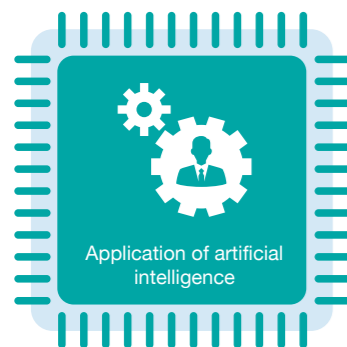


CNOOC financial process robot launched online

CNOOC's "RPA (Robotic Process Automation) financial robot project" has been put into use. The first RPA is mainly used for data verification on the IAI platform. It only takes 45 minutes to complete 3 persons' daily workload with high accuracy. It will provide more practical experience for the Company in large-scale exploration and application of process robot technology, and will strongly promote the Company's digital development.

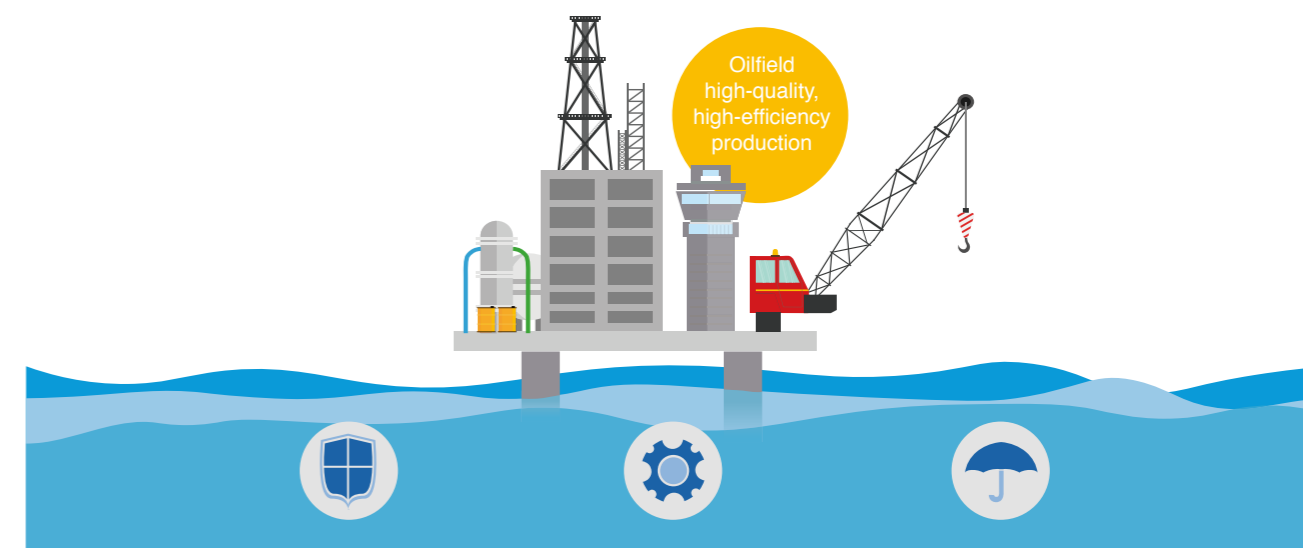
First AI app served in exploration and development

On January 4, 2019, CNOOC EnerTech successfully developed the first artificial intelligence application in the field of exploration and development. The software can build a full space model, execute automatically deep learning from test productivity values, and then predict the 3D spatial productivity index. The AI algorithm has effectively supported the efficient development of Linxing gasfield.



## Intensifying Safe Operation

In 2019, centering on the work of increasing oil and gas exploration and development, CNOOC clarified the annual work focus of "improving the system, consolidating the foundation and deepening the safety production responsibility system for all staff", established the annual management goal of "resolutely preventing major accidents and comprehensively preventing all accidents, and always pursuing 'zero death'". Focusing on preventing and resolving the safety risks of increasing storage and production, the Company continuously deepened the safety production responsibility system for all staff, strengthened the safety management gateway, the management and control of safety production process, and implemented the safety inspection and supervision, to promote the improvement of the safety management level.



### Safety Culture

Safe production is the foundation and development guarantee of the Company. Actively using the safety culture to play a leading role, CNOOC is committed to creating a safety culture construction pattern of "Group company promoting, subsidiaries being responsible, grass-roots team implementing, and all employees participating", and promoting the formation of a long-term mechanism for self-discipline and continuous improvement of safety culture construction.

June 2019 is the 18th "Safe Production Month" in China. CNOOC focused on "consolidating the foundation, improving the system, and deepening the safety production responsibility of all staff", through activities such as safety preaching, selection of advanced figures for safe production, and promotion of the construction of quality safety engineering projects, and further enhanced the awareness of safe production and safety skills among all employees, in order to promote strict safety management

at the grassroots level, implement the safety production responsibility, and improve the level of safe production. The Company promoted the safety culture construction of "people-oriented, implementation and intervention", and created a good safety production atmosphere for increasing reserves and production. Employees were encouraged to participate in various safety activities, to contribute their safety wisdom and work with tireless dedication for the safe development of CNOOC.

The second "Advanced Individuals in Safe Production" selection and commendation



In 2019, the Company organized the second "Advanced Individuals in Safe Production" selection and commendation activities. 88 advanced and 10 outstanding individuals in production safety were selected. They are dedicated to their duties, work diligently, and faithfully practice CNOOC's QHSE core value of "Safety First, Environment Foremost, People-oriented and Equipment Intact". They always remember their original intention and mission, and practice the CNOOC safety culture of "people-oriented, implementation and intervention". They are truly "safety guards" of CNOOC.



CNOOC EnerTech carried out health and safety weekend activities

CNOOC EnerTech always pays attention to employees' health and safety outside working hours. By carrying out weekend activities of health and safety, employees and their families can truly enjoy the "safety caring" from the company. To popularize safety emergency skills and improve safety and health awareness, the activities are designed for different ages

and genders, including fire emergency, high altitude descent, rope skills, first-aid bandaging, cardiopulmonary resuscitation, smoke experience in fire field, vehicle escape, food health and safety, etc. More than 200 families from Bohai and Zhanjiang have participated in the activities.



700

"Safety Class" lectured by leaders

36,000

Attendances

706

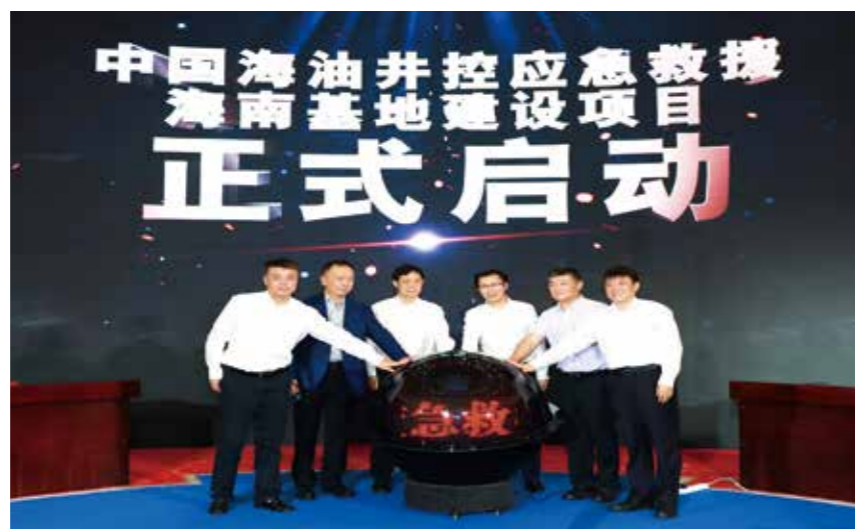
Articles from grassroots units

327

Micro-video submissions in contest

CNOOC Well Control Week activities held in Hainan Province

From November 25 to December 1, 2019, activities of the 6th CNOOC Well Control Week were carried out in Haikou with the theme of "strengthening the concept of safe development and ensuring the development of deep sea energy". Experts from Ministry of National Emergency Management, major domestic oil enterprises, well-known emergency organizations at home and abroad, were invited to attend the activities, including exchange of well control technology, display of well control equipment, promotion of well control culture, emergency drills, as well as the opening of Bohai base for National Offshore Oil and Gas Emergency Rescue and the inauguration ceremony of Nanhai base.



Safe Production

In 2019, in face of the complex situation like the significant increasement of workload and risks pressure while increasing production and storage, CNOOC aimed at resolutely eliminating major accidents, comprehensively preventing all accidents, and always pursuing "zero death", adhered to improving the QHSE management system, strived to make safety and environmental protection take the lead in building a world first-class company, reinforced basic safety management and promoted characteristic safety culture, implemented a green and low-carbon development strategy, and successfully completed various missions of energy conservation and emission reduction. The year-round production safety situation remained generally stable without major production safety accident.

In 2019, relevant control and management measures were formulated and taken for key engineering projects, underground operation safety, high-risk well control, production facilities and typhoon prevention safety. Special deployment for safety of storage and capacity expansion was conducted. 11 key monthly inspection items such as operating permit, hot work, isolation and locking were determined. Special joint inspections were formulated and implemented to key engineering projects, third-party certification and inspection agency, underground operation safety, high-risk well control, production facility anti-typhoon, as well as 13 land terminals and 2 unconventional booster stations, and the ignition facilities of 845 boiler heaters were specially

investigated. CNOOC carried out safety risk mapping for 1,287 storage tanks under the jurisdiction of the company, and implemented hierarchical management and control. Special access audits were conducted for 8 diving contractors. We improved the maritime safety management system, by taking the support ship information system as standard, checked 12 support ships, and carried out 1,552 inspections on liquid cargo access. 14 group-level security inspections were organized, and typical security problems were timely notified to promote the rectification of hidden dangers.

In 2019, CNOOC conducted technical audits (North) and management audits (South) for all the helicopters in use, while focusing on the maintenance management and possible impact of China's navigation reform. In November, a helicopter safety management seminar was organized in Tianjin to discuss the application of AW139, the transit to new airports, and the rescue with helicopter.

In 2019, CNOOC organized superior safety audits on 8 subsidiaries and urged 445 issues to be rectified. The Company strengthened comprehensive management of hazardous chemicals, identified 60 major risks, and formulated 210 risk classification management and control maps. The Company strengthened the management of high-impact zones of long-distance pipelines, established "one area, one file" files, and re-identified dangerous sources, and implemented management control by levels, to comprehensively prevent and mitigate the safety risks of increasing reserves and production.

10 times

Evacuation of platform

301 times

Use of helicopters

72 times

Use of ships

10,634 people

Evacuation of people

Guangdong Pipeline Company was awarded for research achievement of mini fire station construction

According to the characteristics of long-distance natural gas pipeline substation, such as the wide range of stations, the relatively small staffing and the relatively weak force of firefighting, Guangdong Pipeline Company

conducted the construction of mini fire stations in natural gas stations, of which the research achievement "Exploration on Construction of Mini Fire Stations in Long Distance Natural Gas Pipeline Substation" won the second

prize of the China Petroleum and Chemical Fire Technology Innovation and Development Forum. It was the only project shortlisted and awarded from CNOOC.



**Deep maintenance in “LvDa 10-1” Oilfield**

Construction personnel of “LvDa 10-1” Oilfield inspected internal conditions of the motor stator and carried out deep maintenance on the water injection pump motor, which consisted of core pulling inspection of motor rotor, winding inspection of stator coil, etc., in order to ensure that the water injection pump was at its best and could inject enough water for the oilfield.



**“Bozhong 34-2/4” Oilfield continued overhaul in the snow**

Considering the characteristics of winter production, and through measures such as combing the agentia inventory in advance, adding new platform agentia in a timely manner, and rationally adjusting the agentia concentration, “Bozhong 34-2/4” Oilfield ensured “non-stop agentia” in the production process. Production personnel overhauled the pneumatic diaphragm pump in the snow to ensure the stable operation of chemical agent process.



**COSL ships and captains won the honor of China Maritime Safety and Integrity**

On the lists of “Safe and Integrity Ship” and “Safe and Integrity Captain” published by China Maritime Safety Administration in 2019, 12 ships including COSL’s HYSY685 and 16 captains including Fan Canke won the honor. The ships and captains who have been awarded the titles of “Safety and Integrity Ship” and “Safety and Integrity Captain” will be issued certificates of “Safety and Trustworthy Ship” and “Safe and Trustworthy Captain” with a valid period of 24 months by China Maritime Safety Administration. The “Safe and Integrity Ship” can be exempted from ship safety inspection (including pre-departure inspection) for 24 months, or even 36 months if the ship is continuously served by the “Safety and Integrity Captain”, and granted the priority for inbound and outbound procedures. Therefore, this honorary certificate is also well known as the “free pass” for domestic ports.



**COSL’s offshore platform staff keeps in mind the concept of “Safety First”**



By fully establishing the concepts of “if everyone is a safety officer, there will be zero accident every day” and “once effective measures are taken, all accidents can be prevented”, COSL offshore platform defined the comprehensive management system as the code, to strictly implement the safety management regulations and standards. They developed a detailed training plan, and verified the results through “system knowledge contest”, “knowledge assessment for key positions system”, “one-to-one assistance”, so as to improve employees’ awareness of system and safety. They carried out the activity of reciting “Safety Operation Procedures” and all pass for everyone, and strictly complied with the standards, to prevent habitual violations of rules and create a good safety culture.

To ensure normal production operations on site, COSL’s offshore platform attached great importance to equipment safety management. To improve the equipment management level and ensure the intrinsic safety of equipment, platform equipment maintenance personnel adhered to the precise and standardized management of equipment and improving the equipment integrity, so as to ensure “zero accident” in safe production.



1,000 days  
Mexico time August 21, 2019  
COSL 7



3,000 days  
Beijing time August 8, 2019  
HYSY 923



4,000 days  
Beijing time March 25, 2019  
Bohai 5

They standardize the filling of stop card, strictly abide by the 12 safety rules, implement the JSA and safety permit system, realize the normalization of risk analysis on wrong positioning and not working. Bilingual broadcasts with Chinese and Spanish are adopted to prompt large-scale and key operations, conduct red zone management, study accident warnings, and improve awareness of safety.



In the living area of the platform, a safety culture gallery is arranged. They carry out signing and flop events for safe days, the signing occurs in the smoking room, and the flop outside the living area. They strictly implement the regulations, such as “safety management tools”, “12 safety rules” and “red zone management”, to strengthen employees’ safety awareness and skills.



They fully implement safety management requirements without missing, strengthen the training on three management tools such as work permit, operation risk analysis, and STOP card, and equip safety tools such as push-pull rods and high-altitude fall prevention, to ensure the continuous increase of the number of the days without loss of working hours.





## Emergency Management

CNOOC continues to do a good job in responding to natural disasters and strengthening emergency preparedness, and by improving emergency capacity building and carrying out emergency duty and response in a timely and efficient manner, actively promotes the compliance of public security and terrorism prevention. In 2019, the “Crisis Management Plan” was revised and issued twice in accordance with changes of regulations and personnel, and the “Emergency Management Measures” was revised.

In 2019, the national wide grading of key anti-terrorism targets for petroleum and petrochemical companies was carried out. 82 onshore operation sites of CNOOC were rated as key targets 1 to 3, and work is carried out in accordance with the plan. In 2019, all subsidiaries of CNOOC carried out more than 300 special anti-terrorism inspections daily or before key events, and 116 various anti-terrorism emergency drills.

**16**

Primary anti-terrorism key target company

**25**

Secondary anti-terrorism key target company

**41**

Third-level anti-terrorism key target company

### CNOOC took multiple measures to improve prevention level for major activities

Before the start of major national events in 2019, CNOOC actively urged the territorial units to carry out anti-terrorism prevention work and inspected the anti-terrorism prevention work of subsidiaries in Hainan, Guangxi, Tianjin and Shanghai. By improving regulations, organizing drills, intensifying inspections, strengthening emergency duty, and leading teams to supervise, the Company

makes contributions to the smooth development of various domestic diplomatic activities. By the 70th National Day, on behalf of the National Anti-terrorism Leading Group, CNOOC supervised the anti-terrorism work in Qinghai and Ningxia, and urged the implementation of deployment requirements for the National Day security and anti-terrorism work.

### CNOOC applied new technologies to prevent new threats

In 2019, CNOOC launched anti-UAV defense system construction, conducted system pilots, and formulated acquisition strategies for anti-UAV defense system. The system has been deployed in Tianjin LNG, Weizhou terminal, Ningbo terminal and Guangxi LNG.



### CNOOC Gas & Power Group guaranteed natural gas supply in flood season

In case of continuous heavy rainfall and flood disasters in many places in south China, Guangdong Pipeline Company of CNOOC Gas & Power Group organized patrol inspectors to conduct encrypted inspections to natural gas pipelines of 350 km in Zhuhai, Zhongshan, and

Guangzhou. They attached great importance to mountains, rivers and complex geological areas where pipeline passed, dredged flood drainage channels, and clear silt and debris, in order to protect the natural gas “aorta” of the Great Bay area.



### CNOOC set benchmark for public security and anti-terrorism

In September 2019, Tianjin LNG, as a benchmarking enterprise for Tianjin’s “Requirements for Public Security and Anti-Terrorism Prevention of Petroleum and Petrochemical System”, introduced its experience to Tianjin Public Security System and petroleum and petrochemical enterprises, and was highly recognized by the supervision teams of National Anti-Terrorism Office and SASAC on the eve of the 70th National Day, which reflected the responsibility of CNOOC

to implement public security and anti-terrorism work at all levels.



**13,104**

Emergency drills

**260,076**

Participants in drills

### CNOOC promoted the application of CIMS

The ICS (Incident command system) emergency command system is an international standard for emergency command. According to practice, CNOOC summarized the principle, framework and method of emergency management that are in line with CNOOC’s characteristics and put forward the CIMS, which effectively improved the existing

emergency management mechanism.

In 2019, the Company organized CIMS training for midstream and downstream units. More than 40 representatives from CNOOC Oil & Petrochemicals, CNOOC Gas & Power Group, China BlueChemical and CNOOC EnerTech participated in the training.

### CNOOC Zhanjiang Branch carried out 2019 joint emergency response exercise

On June 28, 2019, CNOOC Zhanjiang Branch carried out the 2019 emergency response exercise at Dongfang Terminal. More than 70 persons from various departments, Dongfang terminal and China BlueChemical attended the exercise.

As the “fire point” was close to major hazard sources such as condensate storage tanks in the plant area, the risk situation was probably further expanding. Dongfang Terminal reported immediately the situation to Zhanjiang emergency duty room, and requested emergency support from nearby unit, the full-time fire brigade of China BlueChemical.

In the exercise scenario, it was simulated that there was a condensate leakage risk in condensate loading area and caused a fire.



### CNOOC’s assistance in marine rescue

In 2019, all relevant units of CNOOC fulfilled external rescue responsibilities and humanitarian obligations, and provided strong support for emergency actions of government agencies. During the year, the Company participated in 47 maritime search, rescue and assistance work, rescued 829 people in 19 ships, dispatched 56 ships and 7 helicopters, and received 5 external praises, including 2 government commendations and 3 letters of commendation.

## Improving Quality Management

CNOOC adheres to the directives of “People-Oriented, Safety First, Honest and Law-Abiding, Reinforcing Foundation, Innovation-Driven and Winning with Quality”, implements the national strategy of “Building a Powerful Country by High Quality Development”, carries out the quality improvement actions in an all-round way, identifies quality risks comprehensively, improves the quality management system, cultivates the quality culture and continuously improves product, engineering and service quality.

On September 1, 2019, CNOOC launched the “Quality Month” activity with the theme of “carrying out quality improvement actions to improve the quality of product, engineering and service”, and focused on five topics: conduct quality publicity activities to improve the quality awareness of all staff, carry out special quality inspections to eliminate hidden quality hazards, implement spot checks on product quality to improve product supply quality, strengthen laboratory management to enhance inspection and testing capabilities, and carry out mass quality activities to enhance the quality awareness of employees.

### Quality Improvement Action

**5,548**



5,548 quality hazards discovered and handled

**2,448**



2,448 departments participating in the launching ceremony

**2,483**



A total of 2,483 special inspections were carried out

**77,734**



77,734 participants in CNOOC's Quality Month in 2019

**40,567**



40,567 people participated in the Total Quality Management Knowledge Competition of Central Enterprises held by SASAC and achieved excellent results

**1,647**



The total number of QC teams registered by each unit reached 1,647

**458**



Won 458 outstanding QC achievements of the industry

**2**



Obtained 2 National Excellent QC Teams

**7**



In the 4th National Quality Innovation Competition of China Quality Association, 7 innovation projects were awarded

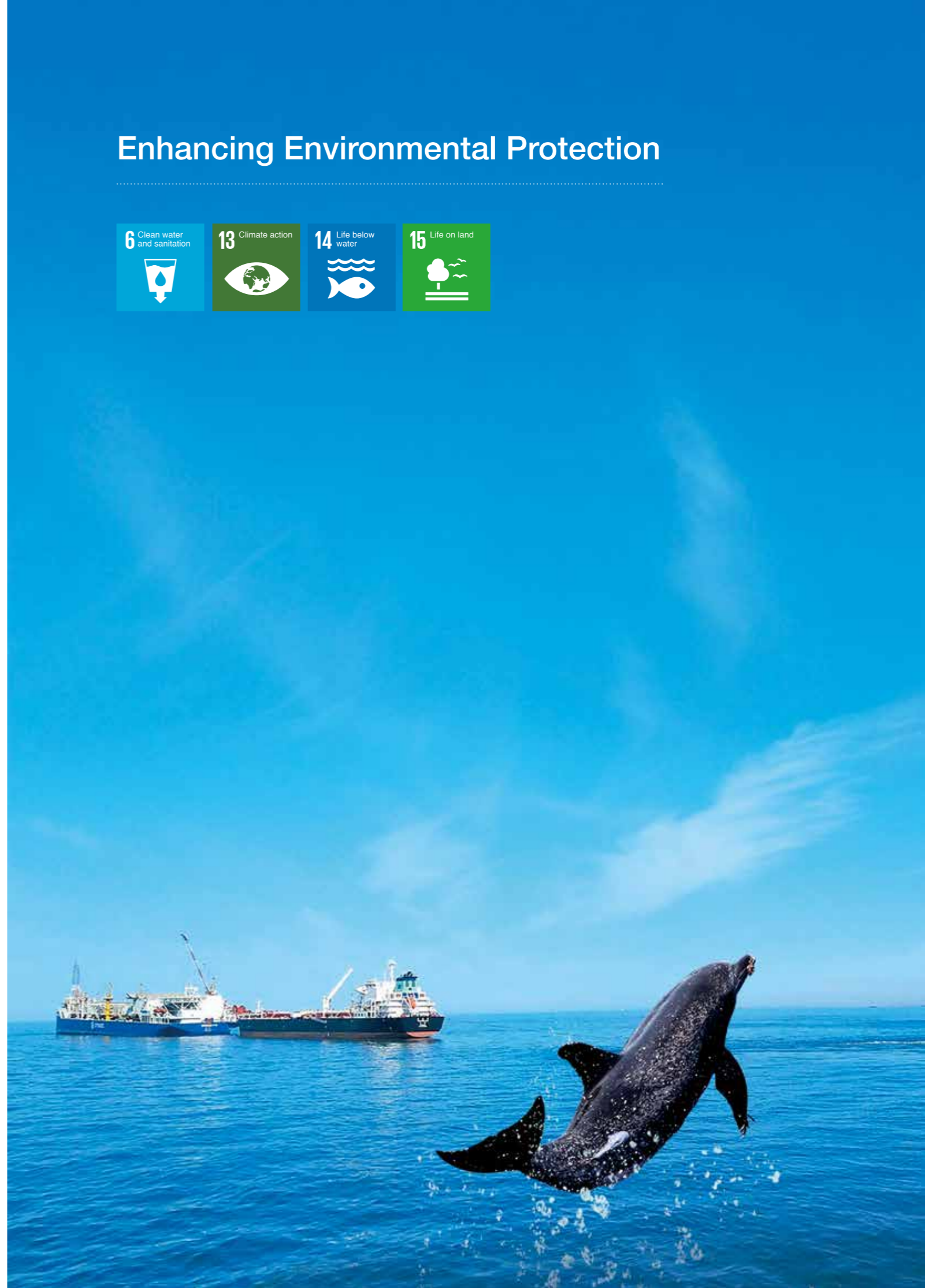


CNOOC and COOEC were awarded the “Outstanding Promoting Unit for the 40th Anniversary of Quality Management Promotion”

COSL was awarded the “Excellent Corporate Governance Enterprise” and “Excellent Enterprise of Sustainable Development of the Year” of 2019 Sina Gold Kirin Forum

COSL's “Quality Improvement and Efficiency Enhancement of Dynamic Triaxial Liquefaction Test” won the highest award “QIC-V Technical Achievement” of the 4th National Quality Innovation Competition

## Enhancing Environmental Protection





## Green Action Practicing the Concept of Ecological Civilization

The construction of ecological civilization is the fundamental for the sustainable development of human beings. Green development is an inevitable requirement for building a high-quality modern economic system and a fundamental strategy for solving environmental problems.

As the largest offshore oil and gas production operator in China, CNOOC actively practices the green and low-carbon development strategy, promotes the transformation of the Company's development mode, strives to be a responsible supplier of clean energy and a promoter of green development, and is always committed to becoming an international first-class energy company that satisfies the public, makes employees proud and is respected by peers.

CNOOC formulates and implements the "Green Development Action Plan" as the Company's guideline for green and low-carbon development in the new era.



### Overall Objective

By 2020, CNOOC's main indicators of green and low-carbon development would have reached the domestic leading level and completed the pilot construction of green manufacturing, laying a solid foundation for building an international first-class clean energy production and supply company with Chinese characteristics.

By 2035, CNOOC's overall indicators of green and low-carbon development would have reached the internationally advanced level and basically completed the green manufacturing system. CNOOC initially turns itself to be an international first-class clean energy production and supply company with Chinese characteristics.

By 2050, CNOOC's overall indicators of green and low-carbon development would have reached the internationally advanced level and completed the green manufacturing system. CNOOC builds itself into an international first-class clean energy production and supply company with Chinese characteristics in all respects.

### Specific Targets



- By 2020, the main indicators of environmental friendliness would have reached the domestic leading level;
- By 2035, the overall indicators of environmental friendliness would have reached the international advanced level;
- By 2050, the overall indicators of environmental friendliness would have reached the internationally leading level.



- By 2020, CNOOC would have built itself into a leading manufacturer and supplier of clean energy in China;
- By 2035, CNOOC would have built itself into an internationally advanced clean energy production and supply company;
- By 2050, CNOOC would have built itself into an internationally leading clean energy production and supply company.



- By 2020, CNOOC would have realized carbon emission reduction (CERs) of 3.2 million tons compared to 2015, the main indicators of green and low-carbon development would have reached the domestic leading level, and the pilot construction of green manufacturing system would have been completed;
- By 2035, the overall indicators of green and low-carbon development would have reached the internationally advanced level, and the green manufacturing system would have been basically completed;
- By 2050, the overall indicators of green and low-carbon development would have reached the internationally leading level, and the green manufacturing system would have been completed in all respects.



## Green Operation

CNOOC earnestly implements the new energy security strategy, and actively promotes the construction of ecological civilization. Guided by the green and low-carbon strategy, and by issuing "Green Development Action Plan", creating green factories, launching energy-saving projects, and implementing contract energy management, strengthening energy efficiency control and low-carbon informationization construction, the Company conducts the integration of green operation and production control system, and strives to promote the deepening of energy conservation and ecological environmental protection, to contribute green power to the construction of beautiful China.

### Green operation management system



#### Strategy

#### Implementing green and low-carbon strategy

CNOOC strives to enforce low-carbon management capacity and low-carbon competitiveness, vigorously develops natural gas and LNG business, steadily develops new energy business, and intensifies the efforts to build low-carbon energy supply system. CNOOC strengthens the awareness of social responsibility, enhances the image of green development, and endeavors to build a world-class clean energy production and service enterprise.

#### System

#### Improving an ecological environmental protection system

CNOOC resolutely implements the principle of "protection in development, development in protection", conducts whole life-cycle environmental protection management, and strengthens environmental protection management in various stages of project, such as feasibility study, design, construction, trial production, and production. At present, a relatively complete system of environmental protection has been formed. In 2019, the Company organized the formulation of "Detailed Rules for Enterprise Environmental Risk Management" and "Detailed Rules for Solid Waste Management" to strengthen the treatment of environmental risks and hidden dangers, as well as the implementation of classified solid waste classification management, source reduction and full-process control.

#### Action

#### Release of "Green Development Action Plan"

On June 10, 2019, CNOOC issued the "Green Development Action Plan" and the "Implementation Plan for Green Development Action Plan" to comply with the global energy transformation and development trend and the requirements of national ecological civilization, and defined the green development goals of CNOOC in the three stages such as 2020-short term, 2035-medium term and 2050-long term, and formed the overall framework and development ideas, to promote the high-quality development of China's offshore oil industry.

#### Performance

#### Awards for green management

In 2019, companies of CNOOC were selected into the 4th National Green Manufacturing list, including CNOOC Deepwater Development Limited, Dongfang Operation Company of CNOOC China Limited, Hainan Branch, CNOOC Refinery Co., Ltd., Huizhou Refinery Branch, COOEC-Fluor Heavy Industries Co., Ltd.



## Energy Conservation and Efficiency-Increasing

CNOOC actively follows the trend of low-carbon transformation of global energy industry, effectively implements the policy of energy conservation priority, continuously promotes the lean management of energy conservation, and enforces energy conservation throughout the entire process and all fields of production and operation, to drive the company's high-quality development with minimum energy consumption.

In 2019, CNOOC achieved energy conservation of 278,000 tons of standard coal, with an integrated energy consumption of 0.3471 tons of standard coal per RMB 10,000 turnover.

### The "Research of Low-pressure Natural Gas Retrieval by Jet Flow Technique in Bohai Oilfield and Its Application" has achieved initial success

In March 2019, achievements of "Research of Low-pressure Natural Gas Retrieval by Jet Flow Technique in Bohai Oilfield and Its Application", carried out by oil production service company of CNOOC EnerTech, were put into use on "BZ34-2/4" CEPA central platform.

The platform recovers natural gas of 10,000 m<sup>3</sup> per day, reducing carbon dioxide emissions of 7,884 tons per year. 30% energy of the returned high-pressure gas produced by the export compressor is recovered on the platform, equivalent to saving electricity of 219,000 kWh.

### Energy saving transformation of circulating water system in Fudao Company

In July 2019, the overall optimization and energy-saving transformation project for four circulating water devices of Fudao Company was completed, achieving annual electricity saving of 35.45 million kWh, equivalent to 10,635 tons of standard coal and CO<sub>2</sub> emission reduction of 18,682 tons, and the power saving rate was 30.8%.

The "Overall Optimization Technology of Vane Pump Based on 3D CAD-CFD" was adopted to design and process the high-performance impellers of recycling water pump, and greatly improved the pump efficiency. The project is replacing original fan motor by a gearless water turbine with the use of system's residual pressure. Excess energy of the circulating water return flow was recovered, and the overall energy efficiency of the circulating water system was greatly improved. Advanced on-line monitoring system was used to optimize the flow of circulating water system to keep the operation staying best.

### Waste heat recovery project was successfully put into use in Daxie Petrochemical

In September 2019, "Waste Heat Recovery System of Process Hot Water in Ethylbenzene Plant", major energy-saving project in Daxie Petrochemical, was successfully put into operation at first trial, and expected to create benefits of RMB 15 million per year.

This energy-saving technology is mainly composed of absorption heat pump units, flash tanks, water pumps, heat exchangers and other auxiliary equipment, can effectively reduce the overall energy consumption of ethylbenzene-styrene plant, will realize reasonable energy utilization in the plant and effectively promote cost reduction and efficiency increase of enterprises.

### Transformation of electric heat tracing system on "Bozhong 26-2" platform

Transformation of skin effect electric heat tracing system was implemented on "Bozhong 26-2" platform, including replacing the direct start-stop power frequency cabinets with automatic controlled thyristor cabinets, to realize soft start & stop, and adjusting the real-time power by the control system according to the sea pipe outlet temperature, to achieve energy conservation and emission reduction. Under the condition that the new system is annually used for 200 days, the project will save electricity of 626,000 kWh, and greatly improve the energy efficiency.

### Zhuhai LNG built intelligent management system

In 2019, intelligent operation and maintenance management system was put into use in Zhuhai LNG, and has reduced electricity consumption by about 5 million kWh, with a direct cost reduction of about RMB 4.9 million.

The company takes multiple measures to save energy and increase efficiency. For key equipment in the plant, information technology is applied to monitor the energy consumption and operating conditions in real time, and based on these conditions further creates energy consumption optimization model to scientifically guide the decisions on optimal production mode. Through performance management methods like energy consumption assessment and cost accounting, the company improves operation teams' awareness of energy saving.





Transformation of permanent magnet motor in CUCBM to promote energy saving



In September 2019, 201 high-energy-consumption excitation motors, under the jurisdiction of 22 valve groups in Shizhuang South Block, were transformed by CUCBM into high-efficiency energy-saving permanent magnet motors. After transformation, the average power saving rate of all valve groups is 78.68%, and the annual energy saving is 1,250 tons of standard coal.

Permanent magnet motors are characterized by high efficiency, high power factor, small current, no slippage during operation, stable

speed, and low temperature rise. Through the transformation project, CUCBM reduced the motor loss and improved the overall efficiency of the motor. It broke through and solved the problems of existing traditional control mode, such as increasing the torque low-speed excitation, high heat, and high energy consumption, and achieved low-impact times stable operation of oil pumpers by 0.5 time per minute. The transformation saves production costs, improves the on-site production runtime rate, and improves the level of enterprise production management.

Energy saving and efficiency improvement

**278,000** tons of standard coal

Energy saving



**0.3471** tons of standard coal

Integrated energy consumption per RMB 10,000 turnover

Energy saving and efficiency improvement in natural gas power plant of CNOOC Gas & Power Group

Zhongshan Jiaming BC Link Construction Project was put into operation smoothly and realized efficient operation. High-efficiency units of Phase III replaced low-efficiency units of phase II for power generation. As of December 31, 2019, the alternative surfer electricity quantity was 1.178 billion kWh, saving natural gas of 8.959 million m<sup>3</sup>. The cost reduction was about RMB 22.1285 million with the natural gas price of RMB 2.48 per m<sup>3</sup> (including tax).

In Zhuhai Electric Power, the condensate pump frequency conversion was optimized, from the single pressure control of condensate main pipe to a dual control mode, which integrated the frequency adjustment of low-pressure drum water level by condensate pump with the pressure control of condensate main pipe. The optimization effectively reduced the operating current of condensate pump and greatly saved the power consumption of power plant. The frequency of the condensate pump inverter is reduced by 3 Hz, the actual operating current is reduced by 8 amps, and each unit can save the cost of RMB 189,000 per year.



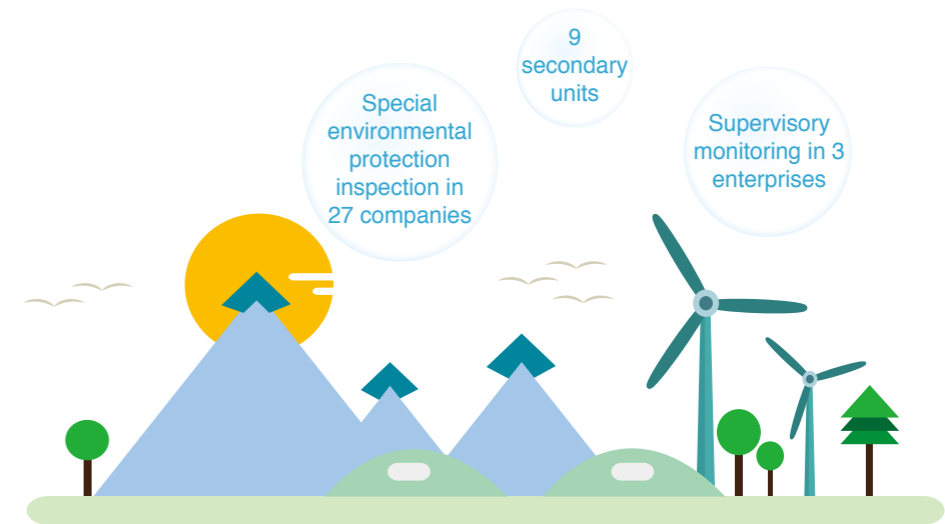
Through the DLN1.0+ upgrading of unit 6 and unit 8 to improve the thermal efficiency, Shenzhen Electric Power increased benefits of RMB 1.65 million. After inspection and maintenance, weld treatment was carried out on the condenser throat of unit 7 to improve the vacuum and unit efficiency. RMB 3.5 million in energy saving and efficiency improvement was realized throughout the year.

Putian Power Plant starts and stops 500 to 600 times per year on average.

By implementing the optimization scheme of shortening start-stop interval time of units, the shutdown time is shortened by about 4 minutes, and 786 tons of standard coal can be saved every year.

## Environmental Governance

CNOOC continued to strengthen environmental governance and took various measures to fight against pollution. Subsidiary enterprises in key areas such as the Beijing-Tianjin-Hebei region, the Yangtze River Economic Belt, the Pearl River Delta, and the Hainan Free Trade Zone (ports) strictly implemented the requirements for pollutant emission limits, and actively carried out the upgrading of environmental protection facilities. In 2019, about 56 transformation projects for standard raising were constantly carried out in subsidiary enterprises, with an environmental protection investment of about RMB 230 million. In addition, CNOOC further implemented the national special environmental protection requirements for blue sky, clear water and clean land by continuously strengthening the special supervisions on environmental protection, launching soil pollution investigations, conducting solid waste management and control investigations, and promoting the completion of anti-seepage transformation of underground oil tanks in gas stations.



### Environmental Inspection and Monitoring

In 2019, CNOOC continued to implement environmental pollution risk investigation and treatment of potential environmental hazards, deployed special environmental protection supervision and supervisory environmental monitoring work for the whole company, including the application and implementation of emission permits, pollution prevention and control of air, water and solid waste, as well as environmental risk management and control, environmental monitoring and other environmental protection business. Special environmental supervision was carried out in a total of 27 enterprises subordinated to 9 secondary units and supervisory monitoring in 3 enterprises. Meanwhile, in order to make full preparations for the Central Environmental Protection Inspector to enter central enterprises, CNOOC sorted out the existing environmental protection management contents, and organized the establishment of environmental protection management account at all levels.

### Investigation of Soil Pollution

According to the requirements of "Soil Pollution Control Law" and other national policies for soil pollution prevention and control, CNOOC launched a full investigation on soil pollution to key subsidiaries. By the end of 2019, 40 enterprises subordinated to five secondary units had taken the lead in completing the preliminary investigation of soil pollution. In addition, CNOOC compiled the "Compilation of Soil Environmental Management Requirements" and "Guidelines for Investigation of Potential Soil and Groundwater Pollution Hazards in Industrial Enterprises" to provide a basis for subsequent work of soil pollution risk control and remediation.

### Solid Waste Management

In 2019, the Company formulated the "Regulations on Solid Waste Management", and implemented source reduction, solid waste classification management and full-process control. At the same time, the review of 8 hazardous waste outsourcing units from 4 branches were carried out during the year. The management status and compliance with the whole process were understood. The subordinate units were urged to carry out extended management of their outsourced processing units. The main responsibility was implemented, and the standardized management of hazardous waste was effectively strengthened. The Company continued to increase efficient treatment of hazardous wastes from offshore drilling and completion. Through technical measures such as source reduction, process reduction and end disposal, a total of 117,000 tons of hazardous waste were processed throughout the year, with a reduction of 27,000 tons at sea and zero land inventory.

### Anti-seepage Transformation of Underground Oil Tanks in Gas Stations

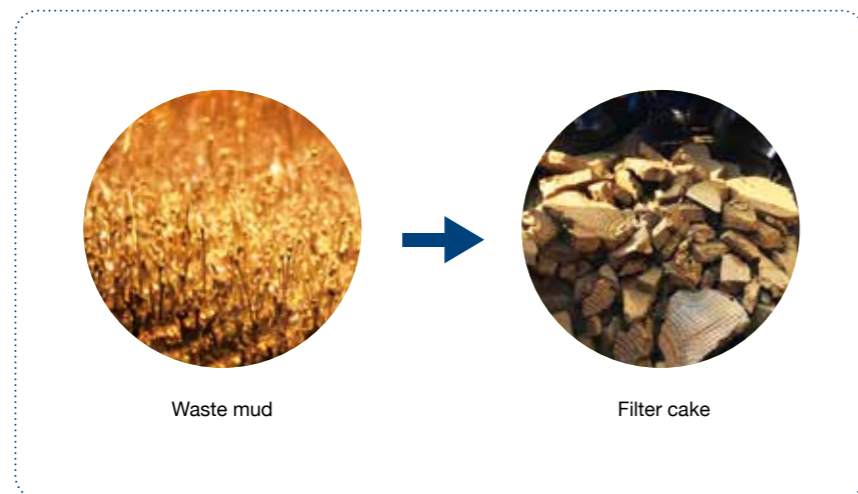
Based on the anti-seepage transformation work of underground oil tanks in subsidiary gas stations in 2018, CNOOC continued to promote the comprehensive completion of anti-seepage transformation of underground oil tanks in gas stations through monthly follow-up of the progress and on-site inspection. By the end of 2019, all subsidiary operating gas stations had completed the transformations, with a completion rate of 100%.

#### Huahe Company uses ash to treat geological disasters

Huahe Company takes the initiative to participate in the treatment of geological disasters around Hegang City, and carries out ash and slag backfilling treatments for many abandoned sand pits in Xing'an District of Hegang. During the backfilling process, ash and slag are compacted in layers and green vegetation is planted. In addition to economic and ecological benefits, it provides a practical solution for the comprehensive utilization of general solid waste.

#### Multi-dimensional pollution control and emission reduction in Bohai Oilfield

Bohai Oilfield controls the production and discharge of various pollutants from three aspects: space, time and total volume. In terms of space, for the operations of exploratory well in marine ecological sensitive area, CNOOC invested in drilling platform transformation. All the drilling cuttings and mud from the reservoir section were recovered, stored and transported back to the land for disposal by qualified units, so as to realize "zero discharge" of drilling cuttings and mud from the reservoir section in the operation area. In terms of time, according to the spawning cycle of major economic fishes in the sea area, environmental protection measures for avoiding fishing season were implemented to reduce the impact of drilling operations on the marine ecological environment. In terms of total volume, according to the EIA report, it was strictly controlled within the range of discharge standards for production water and domestic sewage.



### Water Resource Management

With emphasis on utilization efficiency of water resources, CNOOC implements water-saving activities and promotes the recycling of water resources in order to enhance water resources protection. The Company continues to intensify technological innovation, strengthen water use process management, take comprehensive measures to reuse wastewater and reclaimed water, desalinate seawater and protect water ecosystem, and comprehensively strengthen water resources management, to realize the sustainable utilization of water resources.

In 2019, the Company's annual fresh water consumption was 101.429 million tons, saving 907,000 tons of water resources.

#### "Weizhou 12-8W/6-12" Oilfield strengthened water-saving culture construction

In rainy days, "Weizhou 12-8W/6-12" Oilfield makes full use of rainwater in maintaining 6S responsible area to strengthen the water-saving awareness. By establishing recovery tanks for air conditioning condensate and rainwater, the oilfield company collected water for deck cleaning and toilet flushing. The consumption of fresh water by tugboats was effectively reduced. The oilfield company also organized on-site personnel to carry out fine maintenance on water-saving equipment, such as seawater

desalination device and domestic sewage treatment device. Through a series of measures, such as regular cleaning of the membrane group of domestic sewage treatment device and equipping ultraviolet sterilization device on the seawater desalination device, the utilization efficiency and equipment life were greatly improved, and the replenishment frequency of fresh water by tugboat was reduced.

#### Desalination technology of flash evaporation was applied in CNOOC EnerTech

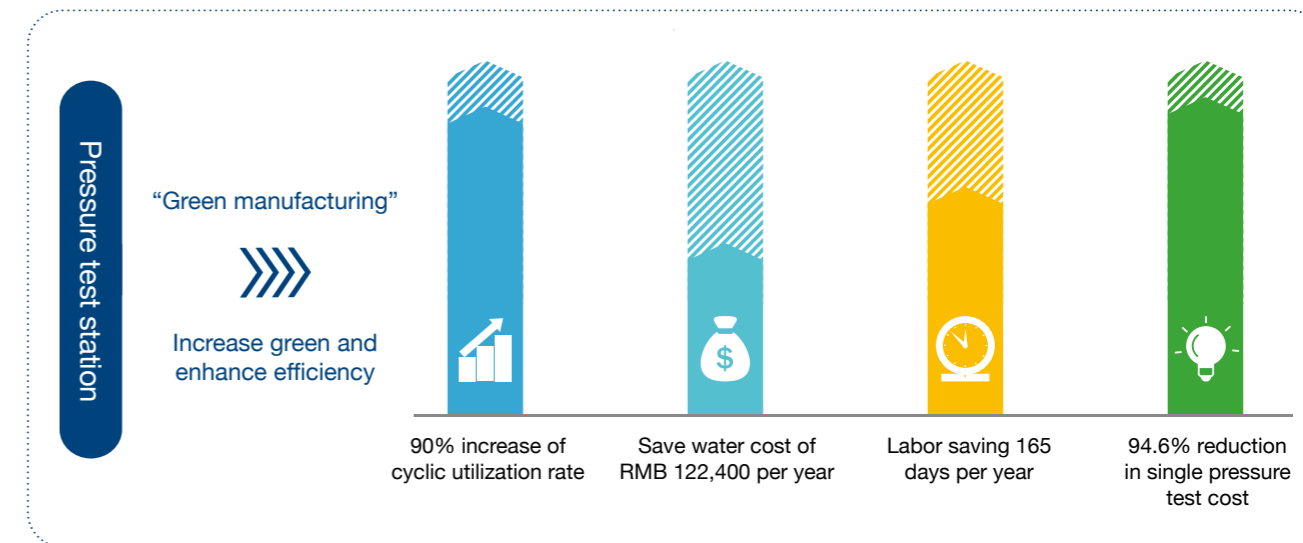
In 2019, achievements of the research on flash evaporation desalination technology contracted by CNOOC EnerTech were applied in 4 offshore oil production platforms including "Bozhong 34-1" platform and FPSO (Floating Production Storage and Offloading).

Desalinated seawater can be used as platform fresh water for personnel drinking, bathing and deck washing, and greatly reduces the supply cost of platform's onshore fresh water with about RMB 250,000 per year.

#### Establishment of pressure test workstation in COOEC

Special Equipment Branch of COOEC established a pressure test workstation to solve the pressure test process problems and won more sufficient construction time. Especially after the pressure test station upgrade and the installation of electric heaters and

intelligent water injection modules, the water-saving effect has reached a new level. As of December 2019, compared with that before the construction, the company has accumulatively saved 82,000 tons of water by recycling the pressure test water.





Innovative water-saving technology took root

The FPSO (Floating Production Storage and Offloading) of “Penglai 19-3” Oilfield recovered the waste heat from boiler flue gas. Boiler flue gas is imported into hot water heat exchanger, to generate hot water for the desalination machine, where seawater is finally desalinated. With the average daily production of 100 m<sup>3</sup> of freshwater, self-sufficiency of freshwater was achieved for production and living in FPSO facilities, which reduced the use of ships for fetching water, and effectively saved production costs.

The boiler waste heat seawater desalination project on the FPSO HYSY117 (Floating Production Storage and Offloading), which was recently put into operation in July 2019, has achieved to produce 1,500 m<sup>3</sup> of fresh water in half a month.



Huahe Company was selected as Industrial Water Saving Benchmarking Enterprise of Heilongjiang Province in 2019

On August 30, 2019, 10 units of the power generation project by circulating water return residual pressure of Huahe Company were completed and put into operation, with a power generation capacity of more than 1,400 kW. This project creatively uses hydro turbine power generation technology, and breaks the traditional Inertial thinking of recovering surplus energy by using turbines to drive fans. It introduces bulb-type cross-flow turbines from hydropower industry into the chemical industry, innovates and optimizes the turbine selection and structure, to improve the technology applicability. It is the first industrial application in the industry, and of extensive significance in chemical, refining, power generation and other fields. It can save electricity of 11.5 million kWh each year, create economic benefits of more than RMB 6 million. Huahe Company was selected into the list of “Industrial Water Saving Benchmarking Enterprise of Heilongjiang Province in 2019”, jointly issued by Department of Industry and Information Technology and Department of Water Resources of Heilongjiang Province.



## Tackling Climate Change

As a responsible energy company, CNOOC responds to the *Paris Agreement* and actively tackling climate change, focusing on building a clean, low-carbon, safe and efficient energy system, continuously building a comprehensive low-carbon management system, and striving to achieve “Our Quality Energy for Your Blue Sea and Sky”.

In 2019, CNOOC issued “Green Development Action Plan” to practice the idea of ecological civilization. The action plan is required to implement “Green Oilfield” in the future in order to minimize carbon emission during the exploration and development of offshore oil and gas. CNOOC formulated the carbon emission index system and implemented emission reduction measures by making comparisons with global business leaders in terms of total greenhouse gas emissions, greenhouse gas emissions per unit product, control of torch release air and methane emission.

CNOOC has integrated the idea of greenhouse gas emission reduction into the entire life cycle of new projects. Starting from the source, the Company carries out strict control over process selection and equipment selection during the project design stage, in order to ensure the maximum of energy utilization efficiency, the optimization of greenhouse gas emission reduction measures. Upon the completion, a strict post-evaluation will be conducted to meet low carbon requirements for new projects.

“Internet celebrity” in new energy field

In July 2019, CNOOC established CNOOC Rongfeng Energy Co., Ltd. Based on the development of offshore wind energy, the company continued to expand new energy forms of and new formats of energy supply, to explore new force driving sustainable development. The first offshore wind power project jointly developed by Rongfeng has smoothly started. Jiangsu offshore wind power project is under intense construction, and other offshore wind power projects are also under implementation.

In order to give full play to the advantages of the company’s industrial chain and realize integrated development, CNOOC is studying a power supply project scheme for oil & gas fields by offshore decentralized wind power. After the implementation, the project will effectively reduce the development cost of

offshore oil and gas fields, and nitrogen oxide emissions. Meanwhile, as the pioneer of offshore decentralized wind power development, it will also help improve the related procedures and standards for China’s offshore decentralized wind power.



CNOOC continues conducting carbon emissions impact assessment

CNOOC Research Institute has established a carbon quota price prediction model and summarized a set of adaptable and effective work ideas and methods for carbon assessment, forming a complete carbon emission assessment technology system. The first “Guideline for Carbon Emission Impact Assessment Report of Investment Project” of CNOOC will be released in the near future, which will lay a solid foundation.

CUCBM laid the foundation for CBM to enter the carbon emission market

In 2019, with no applicable standard, CUCBM led the completion of the “Research on Greenhouse Gas Emission Accounting and Detection Methods for Coalbed Methane Enterprises”, identified the key elements of greenhouse gas emissions from coalbed methane extraction enterprises, and demonstrated the emission levels of key emission sources (fugitive emissions). The company compiled the detection scheme of emission factors of coal-bed methane mining enterprises, and completed the “Guide to the

Calculation of Greenhouse Gas Emissions for Coal-bed Methane Enterprises”, laying a solid foundation for coalbed methane to enter the carbon emission market.





## Biodiversity Conservation

The ocean is our blue homeland, a treasure trove of abundant resources, and the base for high-quality development of CNOOC. While pursuing the sustainable development of offshore oil industry, it is the unwavering promise of CNOOC to fulfill its responsibility for environmental protection. For many years, CNOOC has been a participant in and sponsor of enhancement and releasing activities. The Company actively fulfills the social responsibility of state-owned enterprises and strives to protect the marine environment and biodiversity.

### Case

#### “Cute Assistant” in oilfield

On June 12, 2019, the employees working on the WHPF platform of Caofeidian Oilfield in the Bohai Sea were surprised to encounter a “cute assistant”. A cute spotted seal jumping out of the sea, lying on the jacket and twisting the body with an eager look, as if to join the operation team immediately. Spotted seal is a national second-class protected animal, and has high requirements for marine water quality and environmental sound. Its constant appearance around Bohai Oilfield facilities, shows a perfect picture of harmonious coexistence between human and the nature.



#### “Eye for the Mystery” infrared camera investigation project



Since 2019, CNOOC Public Welfare Foundation has been funding the Forest Ecological Environment and Protection Research Institute of China Academy of Forestry Sciences to carry out the “Eye for the Mystery” infrared camera investigation project. 800 infrared cameras are sponsored to conduct special investigation of wildlife in 8 nature reserves across the country. The project is committed to enhancing the protection and management of biodiversity, assisting the scientific research of wildlife protection, which makes the public have better understand and pay more attention to the natural reserves and biological diversity, and enjoy the benefits of natural protection.

#### Seagulls fly

In March, 2019, there was a spectacular scene at the estuary of Haihe River. Thousands of seagulls were perching and foraging. CNOOC continues to contribute new momentum to building a beautiful China. The Company is not only a developer of blue territory and builder of marine economy, but also a protector of the marine ecosystem. In recent years, through actively participating in environmental protection actions such as comprehensive marine management, CNOOC has achieved remarkable results in building blue land and green oil fields.



#### Enhancement and releasing to protect marine ecology

On May 16, 2019, the public welfare creature releasing activity of CNOOC was launched. 1 million crab seedlings and 11 million Penaeus chinensis seedlings were released to the Liaohu River and the Bohai Sea. As one of the sponsors, CNOOC has invested more than RMB 10 million in the restoration of fishery resources in the Bohai Sea, which is the largest investment over the past years.



#### Frequent appearance of finless porpoise in the waters around “Nanbao 35-2” Oilfield

“Nanbao 35-2” Oilfield not only has zero discharge of production water and purification of domestic sewage, but also collects rainwater falling on the platform to avoid entering the sea. Once the passing ship is oil spilled, the oilfield will conduct emergency treatment at the first time and try every means to retain the blue sea and blue sky.



## Driving Social Progress





## Caring for Employees

CNOOC always regards talents as the most valuable wealth of the company, actively promotes the development strategy of “rejuvenating enterprise by talents” and creates an institutional mechanism with equal opportunities and fair rules. Through building a dense atmosphere of respecting and attaching greater importance to talents, developing a positive and diligent environment for talent development and creating a positive, initiative, healthy and inclusive enterprise culture. CNOOC improves employees’ sense of gain, happiness and security.

### Protection of Rights and Interests

CNOOC strictly abides by laws and regulations of the UN and the host countries where its business is located. We faithfully respect human rights, pursue equality and proactively advocate our partners, suppliers and contractors to make common efforts to comply with relevant regulations. We strictly carry out various employment policies without any discriminatory provisions or behaviors to establish harmonious and stable labor relations and maintain employees’ legitimate rights and interests.

### Compensation and Welfare

CNOOC continues to improve the comprehensive salary management

system, optimize the salary mechanism in accordance with relevant national policies, focus on the main business development of oil and gas, ensure national energy security, and serve the overall situation of increasing storage and production. CNOOC improves its comprehensive remuneration management, strengthens the linkage between “bonus pool” and performance appraisal, and forms a clear, sensitive and effective mechanism of incentives, gradually establishes a salary growth and distribution mechanism that matches the market. In order to encourage the creation of better benefits, by comparing internal and external salaries, CNOOC focuses on two-level technical experts and skilled personnel for marine work and front-line staff. The Company will increase precise incentives and implement

special instant incentives, to stimulate the entrepreneurial enthusiasm of key talent officers, and promote “employees to empower enterprises”. Through exploring diversified incentive methods, the Company is actively promoting equity and dividend in sci-tech units, and building a mechanism linking employees’ income with the performance of the Company, with personal contribution.

The Company establishes a comprehensively effective security system, which provides employees with five basic social insurances, namely, endowment insurance, medical insurance, employment injury insurance, unemployment insurance and maternity insurance, as well as multi-level supplementary insurance, including personal accident insurance, commercial supplementary medical insurance, critical illness insurance and juvenile children supplementary medical insurance. The participation rate of social insurance reaches 100%. The Company joins hands with insurance companies, actively follows up the implementation of critical illness insurance, actively carries out the publicity work for employee supplementary medical insurance and critical disease insurance, innovates employee health digital services, opens quick small claims services for supplementary medical insurance, and establishes the WeChat public service of “health home for employees of CNOOC”. In addition, the Company has established occupational pension and housing allowance for employees.

In order to help employees better balance their work and life, the Company strictly enforces the relevant regulations on

employees’ holidays and fully guarantees employees’ legal leave rights. On the basis of guaranteeing employees to enjoy national statutory holidays, the Company has made a series of efforts to encourage employees to take vacations and recuperation, and offer paid annual leave and family visit leave. Settlement allowance and comprehensive allowance are provided for migrant workers, and transitional apartments are prepared in particular region for single employees to help them quickly integrate into local life.

### Employment Policy

CNOOC earnestly abides by the international conventions ratified by Chinese Government, such as the *Convention on the Elimination of Discrimination in Employment and Occupation*, and has established a relatively complete management system of employment according to the *Chinese Labor Law* and relevant laws, regulations of local authorities and listing place.

Employees of different nationalities, nations, races, genders, religious beliefs and cultural backgrounds are treated equally, and recruiting or use of child labor is firmly prohibited. Female has the same rights as male in the Company. The Company has been focusing on promoting the employment of local residents, women and ethnic minorities, increasing employment opportunities in local communities, and improving the coordination mechanism of labor relations, to promote the harmony of labor relations. The Company advocates a kind of respectful, open and tolerant culture, abides by the local laws and regulations, and implements overseas personnel management methods. In addition, in order to attract local talents, the Company has been devoting itself to developing and improving systems of employee recruitment, use as well as incentives, and providing a broad career development platform. No violations such as child labor and forced labor have been found in any operations, in any regions

throughout the year, and no complaints on human rights issues have been received.

### Democratic Management

CNOOC constantly improves the employee democratic management system and makes full use of employees’ roles in the democratic decision-making, administration and supervision. The Company effectively protects employees’ rights to be informed, to oversee, to participate and to be heard, safeguarding employees’ democratic and legitimate rights and interests. In 2019, the employee satisfaction rate scored 8.93 points (out of 10 points). Labor unions at different levels effectively protect employees’ legitimate rights and interests, and supervise the Company’s fulfilment of responsibilities and duties. The percentage of employees’ joining was kept at 100%. The Company improves the enterprise democratic management system and the business affair publicity system with the basic form of workers’ congress, strengthens the function of safeguarding rights of the labor union and enhances democratic management such as enlarging channels of transmitting decisions to lower levels and reporting employees’ opinions to higher-levels so as to help employees fully express their opinions and participate in democratic

decision-making, administration and supervision.

### Career Development

CNOOC will continue to optimize the career promotion channel and smooth the career development of employees. Adhering to the high-end guidance, the Company further increases the selection of two-level technical experts of the Company and subsidiaries, carries out the first selection of senior technical experts of the Company, sets up new post level of chief technician, and gradually opens up the career development channels for technology and skills.

### Career Access

CNOOC takes the opportunity of the reform of scientific, technological system and mechanism, adheres to the orientation of “morality, ability, performance and potential”, fully mobilizes the enthusiasm, initiative, and creativity of scientific and technical personnel, and effectively enables professional and technical personnel with strong ability, good performance and great contribution to obtain better career development opportunities. CNOOC Zhanjiang Branch was selected as the “demonstration enterprise for deepening the reform of talent development system

#### Improve employee experience by digital means

CNOOC takes digitalization as an opportunity and focuses on user experience to explore new models of human resource service. The self-service terminal for employees is introduced to realize “on-demand access” of relevant materials, such as on-the-job certificate and income certificate. Through mobile Apps, efficient services, including information query, salary query, online learning, performance assessment, training registration, vacation application, etc., the system is available 24/7 for employees, particularly offshore and overseas employees. The system functions are so simple and easy to use that everyone “knows how to use at a first glance”. The employee satisfaction is constantly improving.



#### “100 Outstanding Craftsmen” of central enterprises

Liu Hailin and Gao Dongbin, two of CNOOC’s outstanding employees, were selected into the training support program of the first “100 Outstanding Craftsmen” of central enterprises.





and mechanism” by SASAC. Liu Hailin of COOEC and Gao Dongbin of CNOOC Oil & Petrochemicals were selected as “100 Outstanding Craftsmen” of central enterprises.

### Employee Training

In 2019, CNOOC actively carried out staff training and continued to increase training investment, an increase of 52.76% over the previous year. The Company held 57,400 offline training courses, with 990,600 person-times, and 8.07 million training hours (i.e. 94.86 hours per capita), an increase of 27.6% over 2018.

The Company continuously promoted online learning, strengthened the construction and promotion of the content resources of “Haixue” online platform,

deployed Online China-Europe MBA, English College, Accounting College, etc., and established a number of thematic contents, such as petroleum spirit, digital knowledge, health, safety and environmental protection, well control, etc. The platform was used to carry out various training activities such as topical learning, talent selection, and competition events. The number of platform users reached more than 87,500, with a monthly average number of active users of 23,000, and the class hours per capita increased by 238% over the previous year. Continuous investment in training and the online & offline blended learning mode have effectively promoted the construction of learning organization.

**87,500**

Online users

**57,400**

Offline training courses

**990,600**

person-times

Person-times of training

**8.07** million hours

Hours of training

### The craftsmanship of CNOOC shining in the “Weld World Cup”

The “ARC CUP of 2019 Belt & Road and BRICS Skills Development and Technology Innovation Competition” was held on September 9, 2019. The “ARC CUP” is known as the “Welding World Cup”. CNOOC’s delegation competed with more than 300 welding experts from 10 countries and finally won 6 first prizes (including 5 championships), 4 second prizes and 7 third prizes in individual events, as well as a group gold award. It is the best result since CNOOC attends the “ARC CUP”.



### Career Health

Upholding the QHSE core value of “People-oriented” philosophy and closely centering on the implementation of occupational disease prevention law, CNOOC focuses on the source control of occupational disease hazards, and according to the Company’s practices, strengthens supervision and verification of occupational health management in workplace, and attaches great importance to promote standardized management in daily monitoring of occupational hazards and health. The Company develops occupational health network video training courses, continuously deepens the information management of occupational health, and solidly promotes hazard classification management. At the same time, the Company pays attention to the physical and mental health of employees, and continuously carries out health promotion and psychological stress management services for offshore staff.

In 2019, CNOOC carried out 58 pre-evaluation projects of occupational disease hazards and 42 acceptance projects of occupational disease protection facilities. A full coverage of regular surveillance of workplace occupation hazards has been achieved and the rate of occupational health



examination for employees exposing occupational disease hazards reached 99.87%.

### Caring for Employees

Employees are the essential source for sustainable development of the Company. CNOOC earnestly practices the “people-oriented, caring for employees” philosophy, constantly improves employees’ working and living conditions, carries out various caring activities, strives for ensuring that employees balance their work and life, and enhance their sense of happiness.

### Assisting Employees in Need

Adhering to the “Three No” Principle, namely, no employee lives below the poverty line, no employee cannot afford medical treatment, and no employee cannot afford their children’s education, CNOOC’s Leading Group for Poverty Alleviation and Relief Work builds a comprehensive poverty alleviation and relief system to earnestly help employees in need. Special funds of RMB 20 million was allocated for poverty alleviation and relief throughout the year.

According to their monthly income, population and children’s schooling situation, 181 employee families in need got RMB 1.33 million for family assistance and children’s financial aid of education. In accordance with the principle of “reasonable medical treatment, appropriate and precise assistance”, proper medical assistance of RMB 7.156 million was distributed to more than 400 employees with serious illness. 1,330 disabled people in need (including employees and their families) got reliefs of RMB 3.895 million. Over 600 families got relief of RMB 3.5 million during the activity of “Warm Support to the Families of Employees in Difficulty”.







### Balancing Work and Life

CNOOC advocates the philosophy of “happy work, happy life” and cares for employees’ life in all-round way. The Company preserves cozy and leisure space and organizes various recreational sports activities for the employees to balance their work and life.

## Devoting to Public Interests

CNOOC carries out targeted poverty alleviation in the fields of industry, housing, education, medical treatment and infrastructure, which provides sustainable and stable “blood” for local economic development and continuously improves local people’s lives.

In 2019, CNOOC actively promoted poverty alleviation through education, consumption, and tourism in combination with the Company’s professional advantages, and took various measures to explore a new model for industrial poverty alleviation. The Company won the highest rating in the assessment of poverty alleviation work designated by the central unit for two consecutive years. A manager who served temporary positions won the “Innovation Award” of the National Award for poverty alleviation.

By the end of 2019, Xiahe County and Hezuo City in Gansu Province, Baoting County in Hainan Province and Nima County in Tibet had successfully withdrawn from the poverty-stricken list. Zhuozi County in Inner Mongolia and Wuzhishan City in Hainan Province are under evaluation for acceptance.



### Investigation in Baoting County

On November 29, 2019, Wang Dongjin, Chairman of CNOOC, investigated on targeted poverty alleviation work in Baoting Li and Miao Autonomous County. He entered villages and farmers’ home, and made on-site inspection on the Assistance Projects.

When Wang Dongjin visited Gao Jinxiong’s mother in Shiluo village, he crouched down to talk with the elderly about the living conditions and physical condition. Learning details about her livelihood, such as weaving and selling straw mats, from the 80-year-old woman,

he highly praised the elderly for her spirit of consistent efforts and self-improvement, and blessed the elderly to live better.



### Promoting public welfare services with student assistance funds

Since the establishment of “CNOOC University Student Assistance Fund” with the China Soong Ching Ling Foundation in 2003, CNOOC Public Welfare Foundation has donated more than RMB 50 million to help 15,156 college students living in poverty.

In addition to carrying out public welfare activities and helping college students to finish their studies, the student assistance fund project breaks through the simple model of poverty alleviation and aid, encourages the students to pay more attention to the society and people’s livelihood from a deeper perspective, and guides them to participate in public welfare undertakings, to help the students complete the transformation from being helped to helping others, and pass the love on.

### The sea holding hands with the plateau

On December 23, 2019, Nima County, the counterpart support county of CNOOC, withdrew from the list of poverty-stricken counties (districts).

With the assistance of CNOOC, the GDP in Nima County has increased by nearly RMB 800 million compared with that before the counterpart assistance. The infrastructure and industrial structure have been continuously improved. With the appearance of various living facilities like schools, hospitals, shops, cinemas, hotels along the streets, and tap water,

central heating, and cable TV into households, a modern small city has taken shape.





# Poverty Alleviation through Education Watering the Flower of Hope

To help the poverty-stricken people, help them by education first. To alleviate poverty, alleviate ignorance first. In 2019, CNOOC continued to extend its responsibility and passed love on. Combining with its professional advantages, CNOOC actively carried out poverty alleviation training and education in Xiahe County and Hezuo City of Gansu Province, Zhuozi County of Inner Mongolia, Baoting County and Wuzhishan City of Hainan Province, and Nima County of Tibet, so as to enrich local people in pockets and brains.

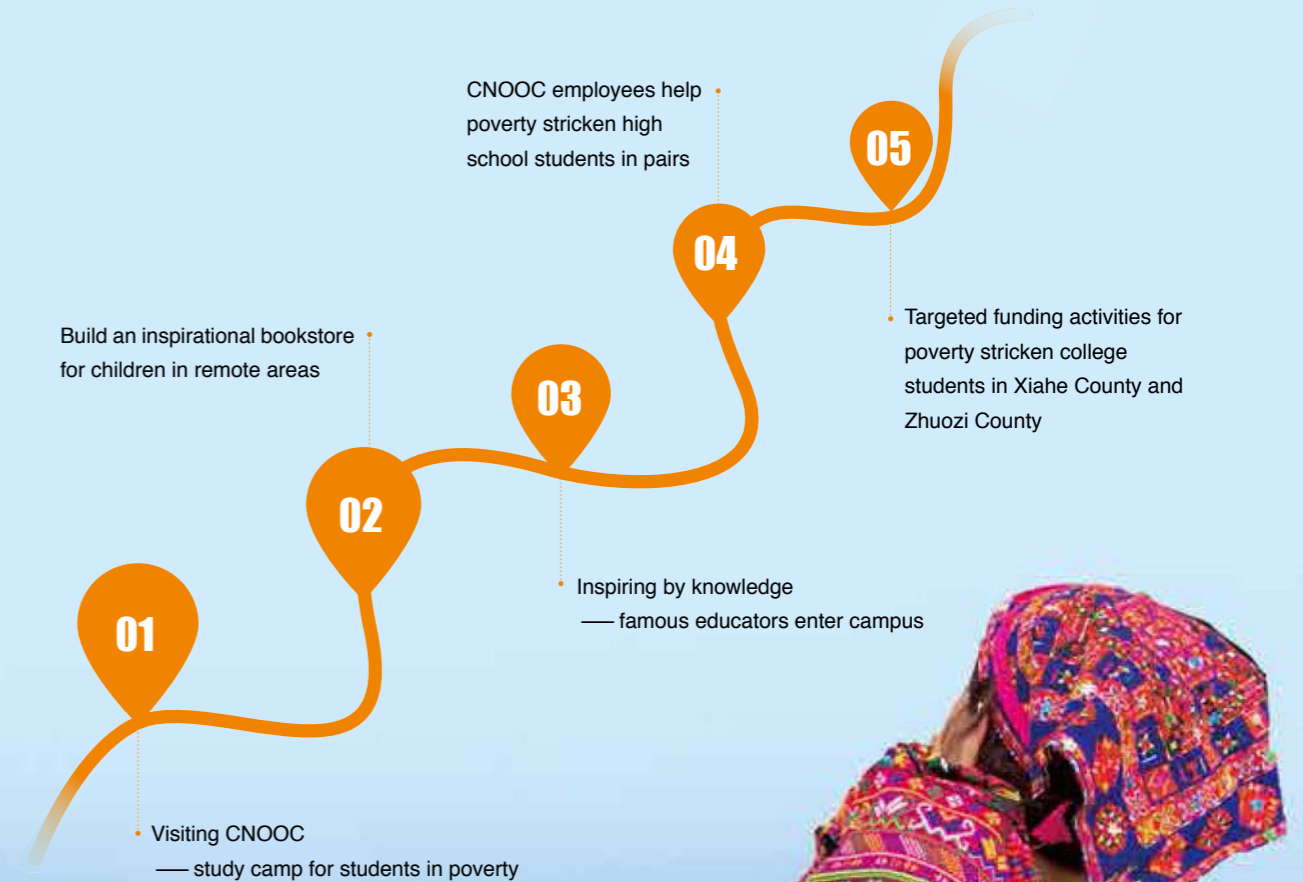


## Poverty Alleviation through Education

It is an important task for poverty alleviation and an important way to block the poverty transmission between generations to help children in poverty stricken areas to receive good education. In 2019, CNOOC launched many education activities of poverty alleviation to sprout the seeds of knowledge.

### Poverty Alleviation Training

In 2019, CNOOC customized trainings for poverty alleviation. 18 poverty alleviation trainings were originally organized to train 1,000 people, but at last 1,754 people actually participated, with a completion rate of 175.4%.





## Providing Voluntary Services

With the goal of building harmonious mining areas, harmonious enterprises, and a harmonious society, CNOOC continues to deepen and vigorously carry out the “Blue Force” youth volunteer activities, continuously promotes the systematization of volunteer service teams, the scientification of project management, the standardization of organizational activities, and the diversification of service fields, and cultivates the sense of responsibility and dedication of young people, to fulfill the corporate social responsibility, and give sincere service back to the society. By the end of 2019, CNOOC had 145 “Blue Force” youth volunteer teams and more than 5,100 volunteers. Over 400 voluntary public welfare activities were carried out throughout the year.

The Company continued to innovate the organization forms of “Blue Force” youth volunteer activities. During important events such as Lei Feng Day, Environment Day and World Ocean Day, “Blue Force” youth volunteer teams from the whole system went to streets and communities, and actively implemented the “blue” commitment to carry out various types of public welfare activities, such as popularization of marine science and environmental protection, educational assistance, community services and social assistance for the elderly, disability and weakness.

In 2019, 15 youth micro-public welfare projects were selected and funded by more than RMB 500,000. Relying on the “Blue Force” youth volunteer teams, many public welfare projects were successfully implemented, such as “Visiting CNOOC”, “Assisting Poverty Alleviation”, “Marine Public Welfare and Environmental Protection”, “Marine Culture Publicity”, “Protecting Arable Land and Renewable Resources”, “Caring for the Empty Nest Elderly”, fully mobilizing young employees’ enthusiasm of serving the enterprise and society, and building a communicative bridge between young employees and enterprises as well as between enterprises and society.



## Integrating into the Community

CNOOC is proactively committed to serving society, creating harmony and bringing benefits to people, establishes the regular communication mechanism with communities and listens to optimization proposals of local governments and residents. The ratio of environmental and social impact assessment for new projects is kept at 100%. The Company makes efforts to share resources with communities, proactively carries out community building in a cooperative way and repays communities with its development outcomes. The Company helps local residents solve difficulties in life, improve local ecological environment, create and maintain communal safety and harmony. CNOOC constantly advances the “Warm Hearts” projects to effectively improve the residents’ living standard, drive the community culture construction and build their beautiful home with cooperative efforts.

### Maritime rescue, create green passage by sea-land-air relay

In 2019, CNOOC fulfilled relevant external rescue responsibilities and humanitarian obligations, and strongly supported various emergency actions of local governments.



### Emergency rescue of injured fishermen on offshore platform

On December 28, 2019, a fisherman operating in East China Sea was cut by fishing gear on the left major artery and needed urgent medical treatment. After receiving the call from Taizhou Maritime Search and Rescue Center, the emergency center on the offshore platform of CNOOC Shanghai Branch immediately launched an emergency plan for personnel rescue, and dispatched helicopter to transport the injured to Putuo People’s Hospital for surgical treatment.



### CUCBM sends sympathy to poverty stricken residents in the community

Langanbao town of Shenmu City is a key operation area for tight gas development of CUCBM.

CUCBM is committed to community residents, and provides assistance to families in poverty. The company fixes contacts with 18 families in the community, frequently visits the elderly, the weak and those with mobility problems, and regularly delivers daily necessities like rice, noodle, oil to their homes.



### Huahe Company of China BlueChemical maintains pairing relationship with corporate community

Since March 2017, Huahe Company has formed a co-construction partnership with the Xingsheng Community of Hedong Road Office, Xing’an District, Hegang City, and signed an “Agreement for Co-residence & Co-construction of Community”, to create a joint voluntary service mechanism for enterprise-community. The company innovated the “make-to-order” voluntary service model. On average, volunteer service was carried out once or twice a month in the community, realizing the standardization, normalization of volunteer service activities and resource sharing between enterprises and community.





Condensation of every little bit keeps life endless

CNOOC EnerTech organizing blood donation



Thirty years of blood donation

Li Gang is an ordinary employee of the strong electricity team of the Engineering Department in Shaoyaoju CNOOC Building Management Branch of CNOOC Enterprises Co., Ltd. During the 11,000 days since he participated in the public welfare, he has donated blood 32 times with a total of 12,800 ml and all for free. If a patient needs 800 ml of blood on average, his donation can save more than 20 people.

Let love not be rare

Lu Yunhui donated 3,200 ml of Rh negative type B blood (also known as panda blood due to rarity) over 10 years, which is close to the total blood volume of an adult.

Love warms elderly

CNOOC inherits the Chinese traditional culture of “respecting the elderly”, earnestly cares for the lives of the elderly, listens to their voices, and helps them solve practical difficulties. The Company organizes young volunteers to enter elderly institutions and elderly families to provide services such as medical care, housekeeping, nursing, counseling, and psychological counseling. The Company also cooperates with community hospitals, elderly canteens and other institutions to carry out a series of activities like “free consultations, dinners, cultural and sports entertainment, and festival warmth”, to ensure the elderly have “medical care, living care and entertainments”.



“The Most Beautiful Physician” in community of CNOOC Enterprises Co., Ltd.



CNOOC EnerTech’s annual event of “Celebrating Double Ninth Festival”



CNOOC Shanghai Branch caring for the elderly by starting from their “heads”

# 2019 CSR REPORT OVERSEAS

Deeply Integrating into Global Economy • Joint Development for Bright Future







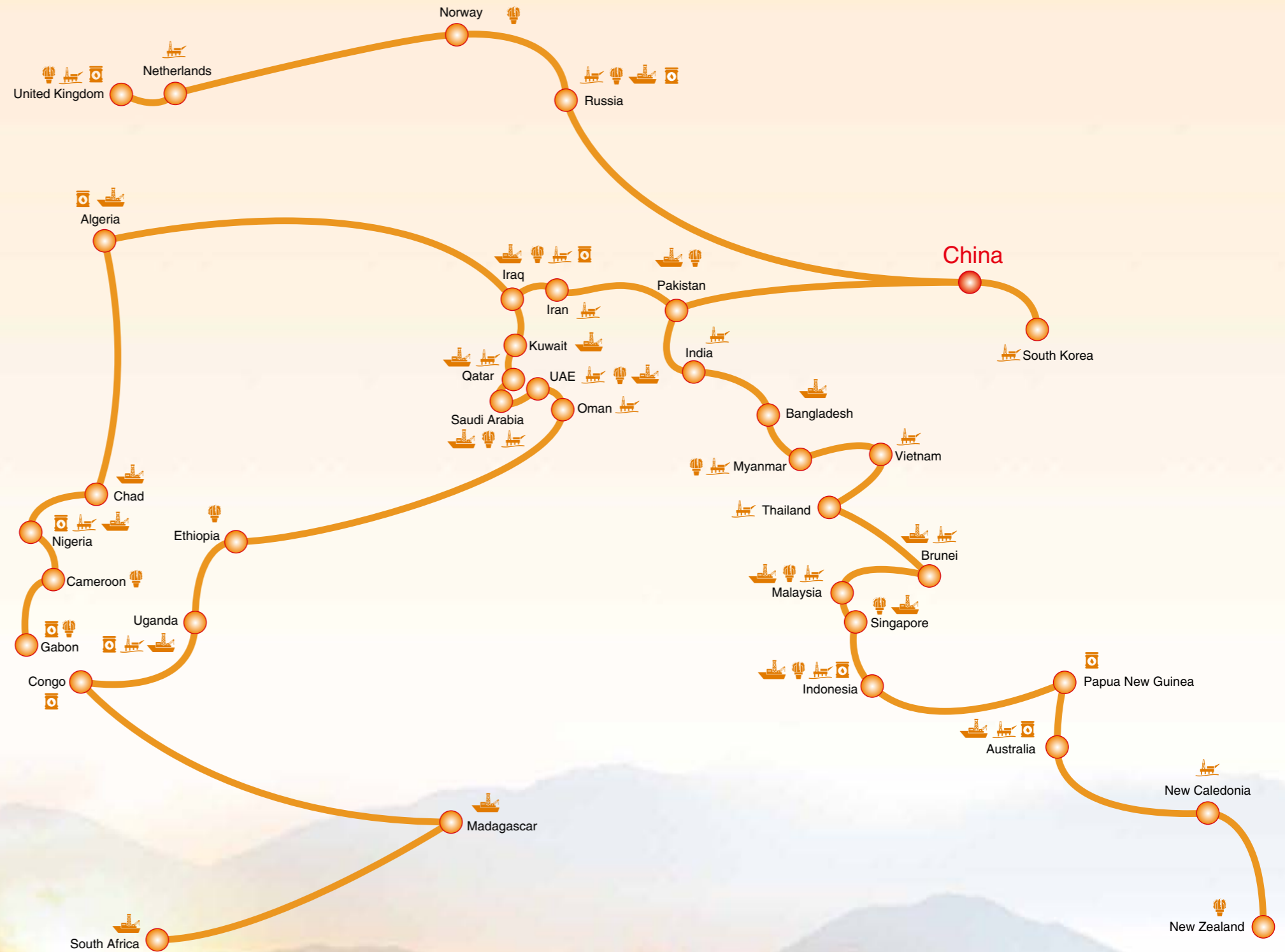


## CNOOC Brand Lighting up the “Belt and Road”

In 2019, focusing on customers, CNOOC attached great importance to the stable operation of overseas brands, kept close to markets and customer demands, and continuously optimized the quality of products and services, to strengthen the CNOOC brand.

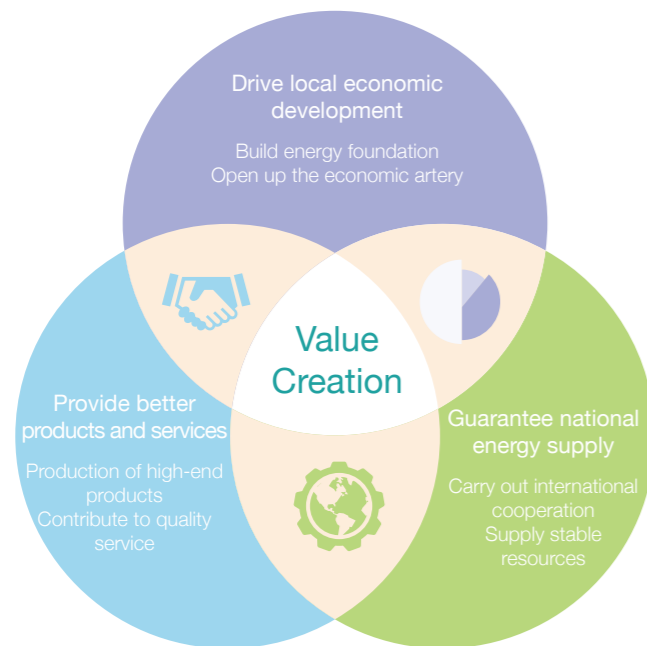
CNOOC maintained great operating performance in the extremely severe market environment and has made new breakthroughs in the markets of many countries and regions. COOEC and other companies have won several awards for overseas project contribution and safety constructions. The CNOOC brand lights up the “Belt and Road” and will boost the global sustainable development.

 CNOOC	 COSL	 COOEC	 CNOOC EnerTech
Oil and gas field exploration	Geophysical prospecting services	Offshore oil and gas production facilities	Energy technology services
Oil and gas field production	Drilling services	Onshore oil and gas production facilities	FPSO production technology service
	Oilfield technical services	Oil sand well site facilities	Energy logistics services
	Shipping services		Safety, environmental protection and energy conservation services



## Creating Socioeconomic Value

In accordance with the spirit of “consultation, co-construction and sharing”, CNOOC adheres to the consistent “win-win” concept, strengthens communication and cooperation with governments, partners, media think tanks and other stakeholders, and implements as always the projects in accordance with the principle of “Safety First, Environment Foremost, People-oriented and Equipment Intact”, in order to bring real value to all stakeholders.



**36.14 million tons**  
Overseas crude oil production

**10.6 billion m<sup>3</sup>**  
Overseas gas production

**34.4 %**  
Proportion of overseas assets

**31<sup>st</sup>**  
PIW's World's Top 50 Oil Companies

**3<sup>rd</sup>**  
Global LNG Importer

### Signing cooperation agreement with ADNOC

On July 22, 2019, CNOOC practiced the “Belt and Road” initiative and officially exchanged strategic framework agreements with Abu Dhabi National Oil Corporation (ADNOC). The two parties will jointly explore cooperation opportunities in the fields of upstream exploration and development, refining and chemical industry, and LNG. The signing of this strategic cooperation agreement is of great significance for CNOOC to promote the development of overseas oil and gas businesses, realize the diversification of resource imports, and optimize the layout of the integrated industrial chains of upstream, midstream and downstream.

### Many achievements obtained in overseas business

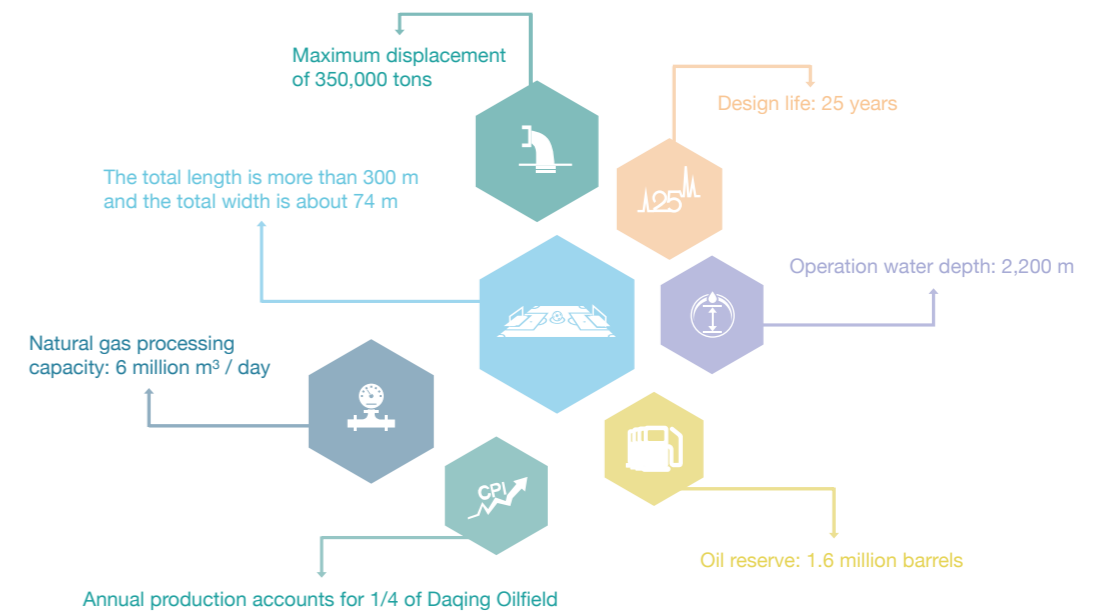
On January 2, 2019, the Egina Oilfield in OML130 block of Nigerian waters, of which CNOOC participated in the construction, was put into operation successfully. The oil field is about 150 km away from the Nigerian Gulf, and is located underwater with the depth of 1,600 meters. It adopts the development mode of FPSO with underwater production system. After being put into operation, the production has been stable and achieved a daily peak production of 200,000 barrels in the year.

On November 6, 2019, CNOOC successfully obtained 5% equity of Buzios Oilfield in Brazil. Buzios Oilfield is the largest single oil and gas discovery of last decade in the world, with huge reserves. It was put into production in 2018 and is a well-known high-quality deepwater subsalt asset. It is another high-quality asset that CNOOC, together with PetroChina and Petrobras, has successfully obtained in Brazil.

On December 21, 2019, Liza Oilfield in Guyana, in which CNOOC participated, was safely put into production ahead of schedule. Liza Oilfield was discovered in May 2015 and became the largest oil and gas discovery of the year. The first-phase development project is located in Stabroek block, about 190 km away from the coast of Guyana, with one FPSO and 17 underwater wellheads. The project is expected to reach a daily peak production of 120,000 barrels in a few months.

### COOEC delivers another world-class “offshore oil and gas processing plant”

On December 4, 2019, FPSO P70, the largest tonnage-level in the world and integrated independently by China, was successfully delivered to the Brazilian owner at the Qingdao site of COOEC. The 18-month construction period has refreshed the international delivery record of super large FPSOs. It is another successful deliver of world-class FPSO by CNOOC after P67 in last year.



### China's first overseas world-class natural gas supporting transport ship project completed successfully

On January 8, 2019, “Pan Africa”, the largest and most advanced LNG carrier, which was independently designed and built in China, was officially delivered. The vaporized LNG capacity of “Pan Africa” reaches 104 million m<sup>3</sup>. If calculated by resident’s standard consumption of 15 m<sup>3</sup> per month, it can meet the use of 600,000 households for one year. After being put into use, it will work with Pan-Asia, Pan-America and Pan-Europe to open up the “Maritime Silk Road” and transport 8.6 million tons of LNG every year.

### CNOOC EnerTech contracted Missan water treatment plant



On August 13, 2019, CNOOC EnerTech officially took over the operation right of Iraq’s Missan water treatment plant (WTP). Its stable operation has a profound impact on the production of the terminal plant and the domestic water in the surrounding living areas.

### COSL successfully completed the first overseas abandon-disposal integration project

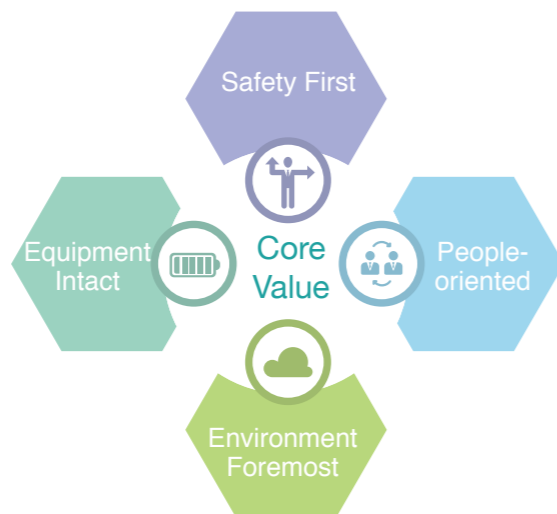
On May 17, 2019, COSL successfully completed the abandoned wellbore disposal integration project of VESTIGO company (a wholly owned subsidiary of Petronas), and was highly recognized by the customer. The project is the first abandoned disposal integration project of Malaysia National Corporation and also the first overseas abandoned wellbore disposal integration project of COSL. The successful completion of the project marks that the abandoned disposal integration level of COSL has reached a new high, and lays a solid foundation for the implementation of subsequent projects in Malaysia.





## Strengthening Safety and Compliance Management

Safety and compliance management is the very resource of CNOOC operating business in the world. The Company always pays close attention to the safety of overseas personnel and operations and has gradually built up a set of safety and compliance management system that not only conforms to local laws and regulations of resource countries, but also conforms to China's relevant regulations, so as to ensure the compliance, safety and stable operation of overseas projects.



### Employees' voice



Anne Macedo

Land Negotiator, Canada Department of North America Company

—I can always feel the Company's "Safety First" operation philosophy. Small tasks or big projects equally are important to us, my team always put safety and environmental protection first. Having such a team to support me makes me feel at ease in my work.

### Multiple measures taken to ensure safety at home and abroad

CNOOC employees at home and abroad earnestly participate in the "Safe Production Month" activities to jointly safeguard production safety. UK Company focuses on promoting "Step Change in Safety" activities, organizes fire drills, and continues to emphasize the importance of "Safety First" for the company. North American Company organizes HSE conferences to disseminate HSE core concepts and discusses how to further improve the HSE performance. Iraq Company takes the theme of "risk prevention, hidden danger elimination and accident suppression" to improve the safety awareness and safety management level of its employees.

### CNOOC UK won "Maritime Safety Award"

At the end of August 2019, CNOOC UK won two honors of "Marine Safety Awards". Among them, the project of hydrocarbon release prevention (HRP) was awarded "Operational Integrity Category Award". The VR simulator technology for hazard warning developed in cooperation with the Norwegian Classification Society was awarded "Safety Innovation Award".

"Marine Safety Awards" is jointly organized by the British Industry and Trade Association, the British Petroleum and Natural Gas Association and the "Step Change in Safety" organization, in recognition of advanced individuals and enterprises committed to the safety of British continental shelf.



HRP project won "Operation Integrity Category Award"



VR simulator technology for hazard warning won "Safety Innovation Award"

### CNOOC Iraq strengthened procurement plan management

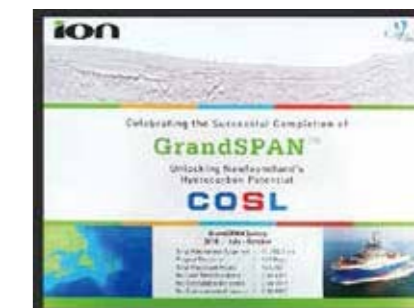
In 2019, Iraqi Company strengthened the management and control of procurement plan, improved the rationality of procurement plan formulation through the review system of procurement management committee, and realized full range control of procurement plan.

- 01 Improve system construction**  
 Revisions of "Supplier Management Procedure", "Supplier Registration Management Procedures" and "Contract Management Procedures" were completed, which made up management loopholes and improved management.
- 02 Improve supplier management**  
 Iraqi Company strictly implemented the principle of "Registration first, then cooperation" to ensure the supplier's qualification is complete and bring competitive suppliers into the company's supplier database. At present, 177 suppliers have been selected into the supplier database.
- 03 Implement long-period project seminars**  
 Two seminars were held in 2019, and 9 key long-period procurement projects were successfully determined.
- 04 Carry out integration of overseas supply chain**  
 Realizing the entire chain real-time online management of "project budget planning-procurement planning-procurement execution-online bidding and evaluation-contract signing-contract management & execution".
- 05 Implement the Rules of Procedure for Procurement Management Committee**  
 In August 2018, the "Rules of Procedure for Procurement Management Committee of Iraqi Company" was issued. 10 procurement management committee meetings were held in 2019.

### HYSY760 received awards for Canadian project

COSL was awarded an honorary medal from Cobra, a North American Company, in recognition of the high-quality seismic acquisition services provided by its HYSY760 fleet in the Canadian 2D seismic acquisition project.

HYSY760 fleet completed the Canadian Grand SPAN 2D seismic acquisition project on November 6, 2018. The operation lasted 122 days and completed data collection of 10,750.3 km, achieving the HSE safety management goal of "zero injury and zero leakage".



### CNOOC Uganda completed "CNOOC Overseas Benchmarking Project"

Aiming to build the "CNOOC Overseas Benchmarking Project", CNOOC Uganda takes "Excellent Project Management (IPMA)" as standard, and set specific quantitative requirements for implementation and measurement, so as to ensure project implementation to meet the requirements of compliance, safety, health and environmental protection.

- Strengthening standardization management**  
 The Company formulated and improved the project management system, comprehensively implemented standardization management, and took the standardization of project management as the core of management. In 2019, 21 engineering regulations were compiled, upgraded and issued.
- Promoting informationization construction**  
 Based on the EDISPIP system, the Company further improved and expanded its functions, established the project management platform portal, improved the standardization of project management process, and improved the efficiency of project management with reduction of the cost of project management.
- Promoting the communication of engineering solutions**  
 In 2019, a number of special meetings were held with government and partners, to conduct extensive and in-depth communication on energy balance research results, localization strategies of key service and equipment suppliers, and project implementation strategies, which were recognized by all parties, creating a foundation for the signing and implementation of subsequent contracts.



## Protecting a Balanced Ecosystem

CNOOC attaches great importance to protecting the balance of ecosystem in overseas areas where it operates, applies all kinds of technological means for biodiversity protection, actively organizes and participates in environmental protection activities, continuously improves the level of environmental protection management, and disseminates the concept of "Lucid Waters and Lush Mountains are Invaluable Assets" to every corner of the world.

### CNOOC UK got the highest score in environmental audit

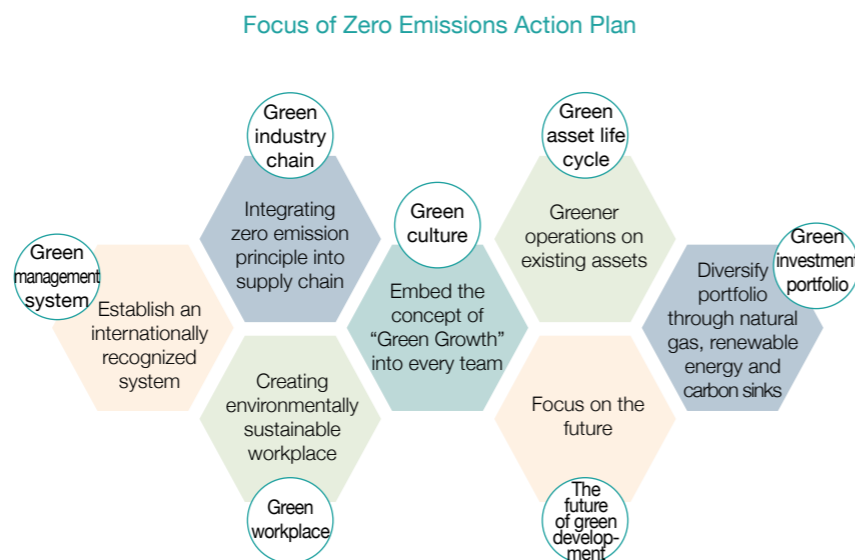
From March 24 to April 30, 2019, CNOOC UK was evaluated and inspected by the British Environmental Management System (EMS) Commissioner. According to the evaluation results, CNOOC UK has no field for improvement and obtained the best results of the audit. EMS system is an environmental management system based on ISO 14001 standard, covering all businesses of British Company, and helps minimize the company's environmental impact. EMS conducts independent verification and review for the units to be accredited every two years, and submits a report to the environmental regulator, the Department for Business, Energy & Industrial Strategy of UK.



### CNOOC implemented "Zero Emission Action Plan"

In June 2019, the UK became the first major economy in the world to pass a law requiring zero greenhouse gas emissions by 2050. In order to coordinate with the actions of British government, CNOOC Europe and Africa business area has formulated a "Zero Emission Action Plan" and played an important role in it to realize green development.

In addition to reducing the impact on the offshore environment, the company also focuses on reducing the impact on the onshore environment the UK business area. Aberdeen and Uxbridge's offices derive most of their energy from solar and wind energy, reducing greenhouse gas emissions.



### CNOOC Uganda protects chimpanzees

During the Environmental and Social Impact Assessment (ESIA) of Kingfisher Oilfield project, CNOOC Uganda specially invited experts in the field of chimpanzee research and protection, to identify and comprehensively analyze the possible impact of oilfield development activities on chimpanzee forest reserve, put forward countermeasures and make overall arrangements for all aspects of the project.

CNOOC Uganda implemented strict management measures, formulated detailed monitoring plans during the project construction and operation period, proposed targeted monitoring indicators, and maintained regular monitoring to ensure that the ecological environment in this area will not be affected by the construction of oilfield project, and that chimpanzees can continue their original life in a more natural state.

### CNOOC Southeast Asia HCML implemented activities in the UN's "World Environment Day"

Since 2017, CNOOC Southeast Asia HCML and local NGO in Samudera jointly held the "World Environment Day" events. Samudera is a mangrove community located in Semare village, Pasuruan district. In order to form a natural sea wind barrier for animal habitats and prevent seawater intrusion and coastal abrasion, in 2019, HCML planted 15,000 mangroves in the village. Besides the

mangroves, HCML also planted local endemic mango trees in the village of Semare.



### The record of zero hydrocarbon emission has been refreshed in CNOOC's Buzzard Oilfield

By the end of 2019, Buzzard Oilfield of CNOOC UK has kept zero hydrocarbon emission in more than 700 days and a safe production record of more than 800 days, creating outstanding performance on health,

safety and environmental protection. With the continuous record of zero hydrocarbon emission, Buzzard Oilfield is growing into a real "green oilfield".

### COSL rescued trapped turtles

On February 26, 2019, HYSY760 fleet rescued two turtles trapped by fishing nets during the seismic acquisition operations in the waters of Gabon, West Africa.

When completing task and going back to mother ship, the disembarkation personnel found some unidentified matters floating on the sea. Immediately after reporting to the bridge, the disembarkation personnel went to verify the situation and found a pile of marine garbage and two trapped turtles. The two turtles were entangled in fishing lines and ropes on the garbage, unable to extricate themselves.





## Green Production in Longlake Oilfield

Longlake Oilsand Project is located 50 km south of McMurray fort, a major oil town in northern Alberta, Canada.

Longlake Oilfield is committed to the green production of oil sands, strengthening carbon emission management and water resources management. With the goal of protecting the biodiversity around the operating area, air monitoring, oil spill impact monitoring, solid and fluid waste management, and wildlife protection measures were adopted, so as to achieve a highly adaptive, coordinated and unified state among all components of the ecosystem.

### Wildlife protection measures:

- Install fences and flags to prevent entering of ungulates such as deer, bears, foxes, coyotes, etc.
- Place predator model to deter birds and other small wildlife
- Employ wild biologist to observe work sites



Major safety drill



Reindeer protection project



Protecting bird habitat



## Building Platform for Employee Development

Upholding the concept of “respect, mutual trust and win-win”, CNOOC optimizes the overseas employment system, and treats equally the employees, regardless of nationalities, nations, races, genders, religious beliefs and cultural backgrounds. The Company has been focusing on promoting the employment of local residents, women and ethnic minorities, and increasing employment opportunities in local communities. Throughout the year, no violations such as child labor and forced labor have been found in any operations or any regions, and no complaints on human rights issues have been received. The Company currently has 5,988 overseas employees, including 4,771 foreign employees, with a localization rate of 80%.

**4,771**  
Foreign staff

**80%**

Localization rate of overseas employees

### COSL held the first technical training for overseas core employees



On June 21, 2019, COSL held the first centralized training for overseas employees in technology business, in order to improve their technical skills and management capabilities of overseas core employees, and further advance the localization of overseas employment.

Key technicians gave 12 courses in English, including corporate culture, new drilling fluid technology and system introduction, to core employees from Indonesia, Mexico and Myanmar. The training was also an actively respond to the national “Belt and Road” initiative and a brave attempt to implement the company’s internationalization development strategy for COSL.

### CNOOC EnerTech Drilling & Production Testing and Training Center obtained API Q2 certification

On May 31, 2019, CNOOC EnerTech Drilling & Production Testing and Training Center passed the American Petroleum Institute Service Provider’s Quality Management System (API Q2) certification. At present, 139 enterprises in the world have passed API Q2 certification, including 11 enterprises from mainland China.

The certification will help CNOOC EnerTech better explore the international markets, to provide advanced engineering technology services for oil & gas fields, and to enhance core competitiveness.



### CNOOC International UPP project helps internationalization of talents

The UPP (Upward Potential Program) project is a talent plan of CNOOC for the training of “future managers” in overseas business. The core of the project is to provide unique management practice experience opportunities for CNOOC youth. Each trainee of UPP will become the exclusive apprentice of a senior executive of CNOOC International, and will have the opportunity to study abroad for global management practices.

In order to ensure the effective implementation of UPP project, every process from selection, positioning, evaluation to training, and feedback is supervised and tracked by specially assigned persons. All Executives mentors, human resources teams, and UPP students have their clear responsibilities.

At present, the UPP project is continuously promoted to provide a broader growth space for more youths who are committed to international business.



#### Employees’ voice



**Yulia Karnain**  
Department Secretary of CNOOC Southeast Asia

—I have been working in CNOOC Southeast Asia for more than 15 years. CNOOC provided me a very broad growth platform and sufficient training opportunities, so that I can constantly practice and improve myself, enrich myself, and realize the value of life. I really enjoy working in CNOOC. CNOOC, thank you!

#### Employees’ voice



**Haider Fadhil**  
Head of Administration and Human Resources Department of CNOOC Iraq

—Since joining CNOOC Iraq, I have learned a lot, gained knowledge and experience. The company provides me with training courses and best working environment. I am proud to be an employee of CNOOC Iraq. Thank you CNOOC.

#### Employees’ voice



**Carla Pereira**  
Head of Administration and Human Resources Department of CNOOC Brazil

—I am the first local employee of CNOOC Brazil. Here, I have gained knowledge and improved my ability. Since I joined the company, I have obtained three promotion opportunities and the “Outstanding Youth” certificate. I am proud to work in CNOOC Brazil.

### Employee of CNOOC Nigeria won the China-Nigeria friendship “October 1st Prize”

On January 20, 2019, Martin Adebiyi Sonariwo, an employee of CNOOC Nigeria, won the China-Nigeria Friendship “October 1st Prize” as one of 48 award-winning representatives of Nigeria. Martin joined CNOOC Nigeria in 2010 and currently serves as the company’s business manager.

Chinese National Day and Nigeria Independence Day are both on October 1st. the Chinese Embassy in Nigeria has set up the “October 1st Prize” in recognition of Nigerian employees who have made outstanding contributions to Chinese companies in Nigeria.

“ I never expected that my work would be recognized at such high level! I will continue to work hard to make more contributions to the development of CNOOC in Nigeria and the China-Nigeria friendship. — Martin Adeby Sonarivo ”



## Promoting Enterprise-Community Common Development

It is a fine tradition of CNOOC to establish a harmonious relationship with local government and the public. The Company always keeps social responsibility in mind, works closely with local government and supports the government to improve community infrastructures. At the same time, the Company will promote the improvement of public relations, create employment opportunities, drive local economic development, maintain and continuously enhance the Company's image and reputation, in order to form a long-term mechanism for social contribution projects.



### Community Construction

#### COOEC's rescue action in Saudi Arabia



At 12:00 on February 6, 2019, the operation ship "Lanjiang" of COOEC found an accident tugboat in imminent capsizing danger of near the wharf of Dammam, Saudi Arabia. After clarifying the situation, "Lanjiang" immediately formulated a rescue plan. After obtaining local official rescue permission,

"Lanjiang" took the initiative to provide emergency assistance equipment and a large amount of manpower and material resources, helped control the danger in time. The rescue action was sincerely appreciated by the shipyard.

#### CNOOC Southeast Asia assisted in building maritime emergency headquarters

The sea area where the SES project of CNOOC Southeast Asia is located in an accident prone area. In order to fulfill its corporate social responsibility, SES Company signed with local police station a construction assistance agreement with regard to building Maritime Emergency Headquarters on September 5, 2019. The construction commencement ceremony was held on September 18. The main body of the building was completed on November 21 and was expected to be put into use in early 2020. *Titiknol*, a local media in Indonesia, released a report about CNOOC's assistance in building the joint Maritime Emergency Headquarters for the benefits of local people, and highly praised CNOOC's charity.



Commencement ceremony for the main building of Maritime Emergency Headquarters

### Donations to Students and Education

#### CNOOC Congo renovated local primary school

CNOOC Congo cared for local children and actively carries out the renovation of MOKEKO primary school facilities. The school was located in the outskirts of Pointe Noire, Congo, and the condition was woeful. There were no gates, walls or even toilets. The school building was just a few simple brick houses. In order to let the children have classes in the new campus as soon as

possible, CNOOC Congo employees went to the construction site regularly to push forward project and monitor quality. The project was basically completed at the end of November.

Seeing the happy faces of children reading in new classrooms, company employees are deeply proud for their contribution to the community.



#### CNOOC lecturers in Indonesian campus

On November 13, 2019, reservoir experts and human resource managers from HCML went to Airlangga University in Surabaya, East Java of Indonesia, to give lectures for local students.

The lectures is just a part of the regular activities arranged by SKK-Migas, Indonesia's upstream oil and gas regulator. Lectures mainly focused on the history and operation of HCML, the company's footprint in Indonesia, the importance of oil and gas in daily life, and the theory of oil and gas accumulation. Many students said that the lectures deepened their knowledge of oil and gas and benefited them a lot.

#### CNOOC Iraq conducted safety education for students

On March 5, 2019, CNOOC Iraq led the delegation of its demining company into a local school, carried out a unique safety-themed education activities, and distributed football and learning supplies to children.

This event raised the safety awareness of local teachers and students on mine protection, promoted the integration of community, and reflected the good social image of CNOOC Iraq.



### Job Creation

#### CNOOC North America encourages young women's employment rights in STEM

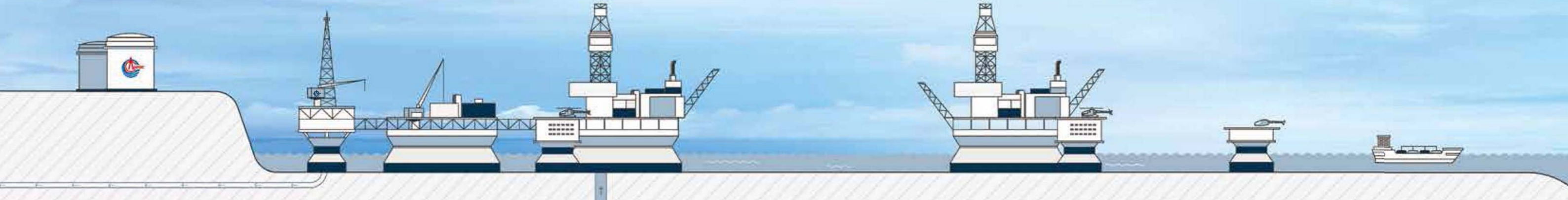
On May 2, 2019, CNOOC North America held the "Minerva One Day Action" event, inviting local female students to learn about employment opportunities in STEM (science, technology, engineering, and mathematics). Students had the opportunities to do hands-on practice, and through various interactions, to learn about different aspects of the company's business.

The event has been held for 20 consecutive years, creates a good learning environment for young women who are interested in STEM-related fields.





## Outlook On 2020



Standing at the new starting point of history, we will continuously uphold the persistent pursuit of “providing oil to China”, work hard with one heart, forge ahead with solid work, actively practice the new concept of development, and write a new chapter of social responsibility.

In the year 2020, we need to work harder. We should continue to encourage the Petroleum Spirit, take it as our duty to serve the country with energy, scientific and technological innovation as the driving force, safety operation as the foundation, quality management as the cornerstone, and promote the strategies with steel-like implementation capacity. We will make efforts to increase the investment intensity on R&D by at least 0.1 percentage points, maintain the reserve substitution rate of more than 130%, and strive to increase domestic oil and gas production capacity of 10 million m<sup>3</sup>, and become the main force in safeguarding national energy security and building a strong maritime country.

In the year 2020, we need to make stable progress with great planning and great determination. We should adhere to green development, practice the concept of ecological civilization, solidly promote the “Green Development Action Plan” and the “Three-Year Action Plan for Environmental Protection Upgrading in Bohai Oilfield”, and extend the concept of green environmental protection throughout the entire life cycle of oil fields and refinery production. We will build a comprehensive low-carbon management system, strengthen water resource management, and attach importance to protecting the ecological diversity around the operating area, doing a good job of fighting pollution, and being the guardian for protecting ecological environment and building a beautiful China.

In the year 2020, we need to remember our initiative responsibilities. We should adhere to the strategy of “rejuvenating enterprise by talents”, focus on implementing the “three major projects” for team constructions of managers and talents, respecting and attaching great importance to professional talents, and effectively improve employees’ sense of gain, happiness and security, to make contributions to social stable employment. We should continue to “serve the society, create harmony and benefit the people”, by using the platform of CNOOC Public Welfare Foundation, we continue to fully perform our duties in targeted poverty alleviation and counterpart support, in order to achieve as scheduled the goal that “all the rural poor people and counties withdraw from poverty stricken list”, strive to promote the implementation of the Rural Revitalization Strategy, and play a good role in winning the battle of targeted poverty alleviation. We will keep our enthusiasm in social public welfare, continuously carry out voluntary services, and make cooperative efforts to improve people’s lives and build beautiful homeland.

In the year 2020, we need to extend cooperation for a bright future. We should continue to uphold the development concepts of innovation, coordination, greenness, openness, and sharing, respond to the national “Belt and Road” Initiative, and actively expand international cooperation with the concept of openness, inclusiveness, mutual benefit, and win-win results; ensure safety and compliance during overseas operations and deeply integrate into the world oil and gas industry; promote local common development, protect biodiversity, and be a practitioner committed to global sustainable development and building a community of shared future for all humankind.

In the new year, we need to forge ahead and overcome difficulties. We shall strengthen the situation research and judgment, actively confront the challenges brought by the COVID-19 epidemic to the Company’s production and operation, properly resolve the various difficulties and problems, and strive to maintain stable production and operation. We will carefully review and investigate major risks and hidden dangers, in order to prevent systematic risks. We will solidly carry out special actions to improve quality and efficiency, strengthen market development, and do all to minimize the impact of epidemic, so as to secure a double victory in preventing and controlling the epidemic and achieving production and operation goals through practical actions.

On the way to promote the high-quality development of CNOOC, we should keep in mind our patriotic feeling and ambitions of serving to the country, be enterprising, work hard, go forward steadily with great strides, and contribute CNOOC’s strength to building a moderately prosperous society in all respects and realizing the Chinese Dream of national rejuvenation.

China National Offshore Oil Corporation  
March 18, 2020



## Third-Party Assessment



### Rating Report of “Sustainability Report 2019 of China National Offshore Oil Corporation”

Upon the request of China National Offshore Oil Corporation, the Chinese Expert Committee on CSR Report Rating invited experts to form a rating team to rate the “Sustainability Report 2019 of China National Offshore Oil Corporation (CNOOC)” (hereinafter referred to as “the Report”).

#### I. Rating Criteria

“Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0)” of the Chinese Academy of Social Sciences and “China Corporate Social Responsibility Report Rating Standards (2020)” of “Corporate Social Responsibility Report Rating Expert Committee of Chinese Enterprises”.

#### II. Rating Process

1. The rating team reviews and confirms the “Process Data Confirmation of Corporate Social Responsibility Report” submitted by the “Report” writing group and relevant supporting materials;
2. The rating team conducts evaluation on the preparation process and the content disclosed by the “Report”, and then drafts the rating report;
3. The Vice Chairman of the Rating Expert Committee, the leader of the rating team, and the experts of the rating team jointly sign the rating report.

#### III. Rating Results

##### Process (★★★★★)

The enterprise management department (policy research office) of the company takes the lead to set up the sustainable development report preparation team, with the chairman as the team leader to control the theme, topic and framework of the report and to be responsible for the final review of the report. The various functional departments and the affiliated units shall be responsible for providing and reviewing the basic materials. The Report is positioned as an important tool to improve the level of social responsibility management, respond to the demands of the stakeholders, and enhance the brand image of the enterprise. The functional value positioning is clear. The substantive issues are identified through the national macro policies, the major issues of the company, industry benchmarking analysis, stakeholder surveys, etc. The subordinate enterprises such as China National Offshore Oil Corporation Limited, China Oilfield Services Limited, and CNOOC Energy Technology & Services Limited are guided to release social responsibility reports and establish a multi-level reporting system. It is planned to publish the reports through the official website and in the forms of PDF, H5, presswork and Chinese and English version, with excellent performance in process.

##### Materiality (★★★★★)

The “Report” systematically discloses the implementation of macroeconomic policies, product and service quality management, sustainable energy supply, occupational health management, safety production management and emergency, science and technology and innovation, development of new energy, energy conservation and emission reduction, measures to respond to climate change, responsibilities of the supply chain, and other key topics for discussion of the oil and gas exploration, mining and processing industries. The description is detailed and sufficient, with excellent performance in materiality.

##### Integrity (★★★★)

The main body of the “Report” discloses 76.5% of the core indicators of the oil and natural gas exploration, mining and processing industries from the perspectives of “accelerating economic growth”, “enhancing environmental protection”, “promoting social progress” and “overseas social responsibility report” etc., with excellent performance in integrity.

##### Balance (★★★★)

The “Report” discloses negative data information such as “number of death of employees”, “number of death of direct contractors”, “number of recordable injury incidents” and “employee turnover rate” etc., with excellent performance in balance.

##### Comparability (★★★★★)

The Report discloses the comparative data on 37 indicators such as “crude oil production”, “natural gas production”, “investment in energy conservation and emission reduction”, “emission of sulfur dioxide”, “employment scale” and “social insurance coverage” for three consecutive years and compares horizontally data such as “ranking 63rd among Fortune Global Top 500 Enterprises”, “ranking 31st among the World’s Largest Oil Companies” and “ranking 17th among the Ranking List of Global Oil and Gas Brand Values”, with excellent performance in comparability.

##### Readability (★★★★★)

The Report continues to adopt the theme of “contributing green energy and building a blue sea and blue sky”, and comprehensively interprets the concept, action and effect in fulfilling social responsibility from three dimensions of economy, environment and society, with a clear framework and prominent topics. The cover design adopts the combination of grass-roots employees and offshore oil scenes to highlight the main business, show the demeanor of the employees, and enhance the appeal and recognition of the Report. The Report sets the “terminology explanation” section to interpret the professional terminologies, which has enhanced the legibility of the Report. The design is bright and clear in style and the combination of images and texts brings out the best in each other and improve the readability of the Report, with outstanding performance in readability.

##### Innovation (★★★★)

The Report actively responds to the current political hot spots such as the 70th Anniversary of the Founding of the People’s Republic of China, poverty alleviation, ecological civilization and “One Belt and One Road”, which highlights the responsibilities of central government-owned enterprises in implementing macro policies and enhances the sense of contemporaneity of the Report. Many third party testimonies are embedded to prove the effectiveness of corporate responsibility performance and strengthen the communication and dissemination value of the Report which facilitates excellent performance in innovation.

##### Overall Rating (★★★★★)

According to the rating team’s assessment, “Sustainable Development Report 2019 of China National Offshore Oil Corporation” is of five-star rating, and it is an excellent corporate social responsibility (CRS) report.

#### IV. Improvement Suggestions

1. Enhance the disclosure of core indicators of the industry and improve the integrity of the Report;
2. Increase the disclosure of the inadequacy of corporate responsibility performance, and further improve the balance of the Report.



China National Offshore Oil Corporation Sustainability Report Won a Five-star Evaluation for the Sixth Consecutive Year

**Huang Qunhui**  
Vice President of Chinese  
Expert Committee on CSR  
Report Rating

**Liu Weihua**  
Leader of the Rating Team

**Zhang En**  
Expert of the Rating Team

任姣姣  
祖志楠

**Ren Jiaojiao**  
**Zu Zhinan**  
Process Assessor



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## Glossary of Terms

### Drilling Platform

Offshore drilling platforms are marine structures used mainly for drilling exploratory wells. Such platforms, generally divided into mobile and fixed platforms, are essential for offshore oil and gas exploration and development operations and house drilling, power, communications, navigation and other equipment, as well as lifesaving and accommodation facilities.

### Heavy Oil

Heavy oil is highly viscous crude oil that contains a relatively high level of asphaltenes and resins. This usually refers to those with ground densities greater than 0.943 and underground viscosities greater than 50 centipoises.

### Oil Reservoir

This is the smallest unit for the storage of oil. Oil reservoir layer or oil layer in short refers to the porous strata for the storage of oil. Not every part of an oil layer will contain oil. Oil reservoir refers to those independent oil-containing areas within an oil layer.

### Adjustment Well

Adjustment wells refer to scattered or clustered wells drilled, in addition to existing well clusters, for improving the development of oil fields.

### Well Logging

Well logging usually refers to geophysical well loggings, in which different forms of well loggers made based on electrical, magnetic, acoustic, thermal, nuclear and other physical principles, enter wells through the use of well logging cables, to allow the ground electrical measuring instruments to record continuously along the well bore the various parameters that change with changes in depth. Underground rock formations, including oil, gas, water, and coal layers and metal deposits, can then be identified through curves representing these parameters.

### Oil Spill Response

Oil spill response is the formulation of plans and adoption of measures to control and prevent oil spills and reduce pollution damage, based on the environment and resources in the potential spill sources and waters within the designated sea areas. This sees common use in offshore oil exploration and development activities.

### LNG

Liquefied natural gas or LNG in short refers to the liquid that forms when natural gas extracted from gasfields cools to a low temperature under high pressure after undergoing the fluid and acid removal, drying and distillation processes. LNG is predominantly methane and is colourless, odourless, non-toxic and non-corrosive.

### Recordable Production Safety Events

According to the OSHA standards of the United States, recordable production safety events include medical treatment, work restrictions, lost time and deaths.

### Occupational Disease

This refers to diseases that develop as a result of exposure to occupational hazards at work.

### QHSE

The abbreviation QHSE stands for Quality, Health, Safety and Environmental. Established on the basis of the principles of compatibility of similarities and complementarity of differences, and on the basis of the ISO 9001 and ISO 14001 standards, GB/T 28000 family of standards and SY/T 6276 Petroleum and Natural Gas Industries-Health, Safety and Environmental Management System, the QHSE management framework usually refers to the framework that directs and controls the quality, health, safety and environmental aspects of an organization.

### COD

Chemical oxygen demand or COD in short refers to the amount of oxidant consumed when treating water samples using a certain amount of strong oxidants under certain conditions. The usual use of COD is to determine the extent of contamination of water bodies by reducing substances.

### CNOOC

The abbreviation CNOOC stands for China National Offshore Oil Corporation.

### Coalbed Methane

Coalbed methane, which is a coal-associated mineral resource and considered an unconventional form of natural gas, refers to a kind of hydrocarbon gas (predominantly methane) found

trapped within coal beds, mainly adsorbed to the surface of coal matrix particles, and partly dispersed in the porosity of coal or dissolved in the coalbed water.

### Natural Gas Hydrate

Natural gas hydrate is an ice like crystalline substance formed by natural gas and water at high pressure and low temperature in permafrost of deep sea sediments or continental permafrost.

### FPSO

FPSO is an acronym for Floating Production Storage and Offloading. FPSO is a floating vessel located near an offshore oil field, where oil is processed and stored until it can be transferred to a tanker for transporting and additional refining. FPSOs can range in structure from a converted former supertanker to a new purpose-built vessel. Such a vessel used for natural gas is known as an FLNG, short for Floating Liquefied Natural Gas.

### Refinery

Petroleum refineries change crude oil into petroleum products for use as fuels for transportation, heating, paving roads, and generating electricity and as feedstocks for making chemicals. All refineries have three basic steps: separation, conversion, treatment.

### Ethylene

A colorless flammable gaseous unsaturated hydrocarbon C<sub>2</sub>H<sub>4</sub> that is found in coal gas, can be produced by pyrolysis of petroleum hydrocarbons, and occurs in plants functioning especially as a natural growth regulator that promotes the ripening of fruit.

### Methanol

Methanol is a liquid chemical. It is colourless, volatile, flammable, and poisonous. Methanol is made from the destructive distillation of wood and is chiefly synthesized from carbon monoxide and hydrogen. Its principal uses are in organic synthesis, as a fuel, solvent, and antifreeze.

### Crude Oil

Crude oil is a naturally occurring, unrefined petroleum product composed of hydrocarbon deposits and other organic materials. A type of fossil fuel, crude oil can be refined to produce usable products such as gasoline, diesel, and various other forms of

petrochemicals. It is a nonrenewable resource, which means that it can't be replaced naturally at the rate we consume it and is, therefore, a limited resource.

### Asphalt

A dark bituminous substance that is found in natural beds and is also obtained as a residue in petroleum refining and that consists chiefly of hydrocarbons.

### Styrene

Styrene is manufactured from petroleum on a commercial scale. It is an organic hydrocarbon used to manufacture rubber and plastic components. Also known as vinyl benzene, styrene is a colourless liquid that quickly evaporates when exposed to the air. Although it is an aromatic monomer with a slightly sweet smell, its odor can be unpleasant in high concentrations or when mixed with other chemicals. If its molecules become linked to form long chains of styrene, it becomes polystyrene, an aromatic polymer with thermoplastic properties.

### Sodium Carbonate

Sodium carbonate is an organic sodium salt and a carbonate salt. Sodium Carbonate is the disodium salt of carbonic acid with alkalinizing property. When dissolved in water, sodium carbonate forms carbonic acid and sodium hydroxide. As a strong base, sodium hydroxide neutralizes gastric acid thereby acting as an antacid.

### Delayed Coking

Delayed coking is one of the chemical engineering unit processes used in many petroleum refineries. The main objective of the delayed coking unit is to convert low value residual products to lighter products of higher value and to produce a coke product.

In brief, the process heats the residual oil from the vacuum distillation unit in a petroleum refinery to its thermal cracking temperature in the heat transfer tubes of a furnace. This partially vaporizes the residual oil and initiates cracking of the long chain hydrocarbon molecules of the residual oil into hydrocarbon gases, coker naphtha, coker gas oil and petroleum coke. The heater effluent discharges into very large vertical vessels (called "coke drums") where the cracking reactions continue to completion, forming solid petroleum coke which deposits out and accumulates in the coke drums from which the product coke is subsequently removed.



## Feedback Form

In order to improve the social responsibility engagement of CNOOC on an on-going basis, we would like to hear your thoughts, which will form an important basis for us to do better. We thank you very much that you could spare some time to give us your valuable feedback on the report and suggestions to the theme and issues of 2020.

### Your Information:

Name: \_\_\_\_\_ Company: \_\_\_\_\_  
Tel: \_\_\_\_\_ E-mail: \_\_\_\_\_

### Your Feedback:

1. What is your overall opinion of the report?

Very good     Quite good     Average     Quite poor     Very poor

2. What do you think of the information disclosed in the report?

Very abundant     Quite abundant     Fair     Quite little     Very little

3. What do you think of the quality of the information disclosed in the report?

Very high     Quite high     Average     Quite low     Very low

4. Which form of design would you like to be used more in the 2020 report?

Expression of management thought     Data graph     Case introduction     Special topic     Picture

5. Which theme would you like to be presented in the 2020 report?

- Our quality energy for your blue sea and sky
- Our clean energy for lucid waters and lush mountains
- Our clean energy for clear water and blue sky
- Our clean energy for a beautiful life

6. Which issue would you like to be added to the 2020 report?

- Economic growth, specifically \_\_\_\_\_
- Environmental protection, specifically \_\_\_\_\_
- Social progress, specifically \_\_\_\_\_
- CSR overseas, specifically \_\_\_\_\_

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