Our Quality Energy for Your Blue Sea and Sky



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2017

## SUSTAINABILITY REPORT CHINA NATIONAL OFFSHORE OIL CORP.

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CNOOC Limited 中国海洋石油有限公司



## **REPORT INTRODUCTION**

Following its launch in 2005, this is the thirteenth consecutive issue of annual sustainability report of China National Offshore Oil Corporation. It is an accurate reflection of our fulfilment of economic. environmental and social responsibilities undertaken in 2017. 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, 2017. In order to ensure the continuity and comparability of the information disclosed, the applicable period for certain information may be extended forward or

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 2017 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 fulfilment of responsibilities by CNOOC and our subsidiaries. The information has been reviewed by our management, supervision department and various subsidiaries. Moreover,

framework, management process for on Better Fulfillment of Corporate Social sustainable development and our subsidiaries Responsibilities issued by State-owned is available on the Company's website at Assets Supervision and Administration www.cnooc.com.cn as sustainability and Commission of the State Council of People's 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 with the themes of "Our Quality Energy for Your Blue Sea and Sky" and three issues of "Promoting Economic Growth, Enhancing Social Progress" to demonstrate CNOOC's sustainable development. In addition to Language: This report is published in both the independent release of "CSR Report Chinese and English. In case of discrepancies, in Iraq", seven special issues about social responsibility are highlighted in the report: "CNOOC and SDGs", "LNG: Technological Innovation Leading Development", "Internet +: New Experiences of Fast Service", "Green Refinery: A Beautiful Life Made by Intelligent CNOOC", "CNOOC Welfare Foundation: Complete Devotion to Moving Ahead with Warmth", "Caring for Children: CNOOC's Benevolence Lightening the Future" and "The Belt and Road: CNOOC's Heart with the Energy 'Silk Road' "

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 Governmentowned Enterprises on Fulfillment of Corporate Social Responsibilities and the Guidelines to the State-owned Enterprises



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 3.0) by the Corporate

Accessibility: This report is available in print

and electronic formats. The digital version

can be downloaded from the Company's

website at www.cnooc.com.cn. To obtain

a print version of the report, please email

report@cnooc.com.cn. See also CNOOC

WeChat Public Account for the H5 version of

International Standards Organization.

the Chinese version shall prevail.

CNOOC WeChat Public Account

### **Promoting Economic Growth**



Ensuring Energy Supply Emphasizing Sci-Tech Innovation Intensifying Safe Operation Improving Quality Management

### **Enhancing Environmental Protection** [P35-46]



Green Operation Tackling Climate Change Energy Conservation and Emission Reduction Water Resource Management **Biodiversity Conservation** 

### **Driving Social Progress**

Caring for Employees and Stimulating V Devoting to Public Interests and Remain True to the Original Aspiration

Providing Voluntary Services and Strengthening Blue Force

Integrating into the Community and Creating a Better Life

#### **CSR Report Overseas**



Overseas CSR Strategy Creating Socioeconomic Value Strengthening Safety and Compliance Management

Protecting a Balanced Ecosystem

Building Platform for Employee Development Promoting Enterprise-Community Common Development



### 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 platform chief manager of "Kenli 10-1" in Bohai Oilfield is commanding operation at the production site.

## [P11-34]

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## CHAIRMAN'S LETTER



#### Dear all,

Conforming to the trend of the world energy development, CNOOC has been devoted to the new era since 2017, has undertaken new missions and got new achievements. As a member of the United Nations Global Compact, CNOOC adheres to the "Ten Principles" in human rights, labor, environment and anti-corruption, actively takes measures with regard to the 17 sustainable development goals in 2030 Agenda for Sustainable Development United Nations and strives to get a balance between economic growth, environmental protection and social progress.

### Persevering in Innovation, Providing Quality Energy

CNOOC always makes it a point to contribute high quality energy to the society and has decided to stabilize oil production, increase yield of natural gas and vigorously develop clean energies. We aim at promoting the reserves and output of oil and gas, in particular increasing the supply of LNG (liquefied natural gas), coordinating the industrial upstream and downstream business so as to constantly meet the growing social demand for high quality energy.

We take the innovation-driven strategy to lead the energy industry. We have

achieved a series of breakthroughs of key technologies in the entire industry chain. For example, we officially released the first international standard *Standards* for Modular Offshore Drilling Rigs on Fixed Platforms, constantly improved the management system, such as promoting innovation to enhance lean management and innovating business model to create a new industrial formation. We also effectively expanded our service network which helped us implement the market leading strategy focused on "Market Leading, Customer First, Service Foremost and Value Creation".

We regard safe operation and quality management as the lifeblood for corporate sustainable development. We adhere to the core values of "Safety First, Environment Foremost, People-oriented and Equipment Intact" and strive to raise the corporate safety culture and cultivate the "Spirit of Craftsmanship", which helps us constantly provide the society with comprehensive and high quality energy products and services. As a consequence, CNOOC was awarded the honorary title of Best Organization Unit of National "Safe Production Month" campaign and "Safe Production Wanlixing" campaign respectively for three consecutive years.

#### Advocating Green and Low-carbon Life Style for Clear Water and Blue Sky

As a main promoter and practitioner of the energy revolution, CNOOC adheres to the concept of "Innovation, Harmony, Greenness, Openness and Sharing". We adapt ourselves to the low-carbon trend of the world energy development, actively implement the green and lowcarbon development strategy and strive to build world-class green and lowcarbon operational capability, so as to create a better ecological environment. We adhere to the concept of "Lucid Waters and Lush Mountains are Invaluable Assets". Therefore, we actively respond to the *Paris Agreement* and participate in global environmental governance to tackle climate change. Meanwhile, we adapt ourselves to the new requirements of building a "Beautiful China" and strive to fulfil the promise of emission reduction. As a result, *CNOOC Sustainability Report 2016* won the "2017 Golden Bees Excellent CSR Report – Environmental Responsibility Information Disclosure Award".

We always take energy conservation, emission reduction and environmental protection as important ways to transform development pattern and enhance social responsibility. We manage to build a clean, low-carbon, safe and efficient energy system and implement ecological protection by lifecycle project management and green supply chain building. We effectively improve the recycling of water resources and enhance the efficiency of the use of water resources. We also attach great importance to protecting the biodiversity in the vicinity of the operation area and strive to achieve harmony between operation and nature.

#### Implementing Humanistic Management to Gather Blue Force

CNOOC adheres to the talent strategy, regarding the talent as the most valuable asset of the Company. We are committed to sharing our development outcomes with employees and society, pursuing common development with all stakeholders. For example, we work hard to enhance employees' sense of happiness and acquisition through establishing a fair and equal recruitment mechanism, building career ladders for employee development, maintaining an environment of respecting talents, protecting their legal rights and interests and caring for their physical and mental health.

We actively fulfil social responsibility by repaying communities with our development outcomes. We effectively improve the living quality of local residents by carrying out heartwarming projects. We are committed to promoting rescue capacity, such as construction of a state-level Subsea Pipeline Rescue Base and an Oil Spill Emergency Base, meanwhile we actively participate in foreign assistance and marine emergency rescue.

We are enthusiastic about public welfare. On the platform of CNOOC Marine Environmental and Ecological Protection Public Welfare Foundation (hereinafter referred to as CNOOC Welfare Foundation), CNOOC provided RMB 93.04 million for targeted poverty alleviation, marine protection and social cooperation for public interests. We make efforts in building Blue Force a famous brand of our voluntary service, implementing the marine environmental protection and promoting the popularization of the marine knowledge, assisting students in difficulty and supporting education. Dedication of love is now a common practice in CNOOC.

## Extending International Cooperation, Joint Development for Bright Future

CNOOC adheres to the internationalization strategy. Guided by the Spirit of the Silk Road, "Peaceful Cooperation, Openness and Tolerance, Mutual Learning and Mutual Benefit", we have actively extended international cooperation and worked together with partners to pave a new Energy "Silk Road" in order to interlink the whole world for better resource utilization on the basis of mutual benefit. That is our response to building a community of shared future. We put the safety and compliance as a foothold for overseas business. We always abide by laws and regulations of the host country, deeply integrate into the globalization and manage to maximize the value for our stakeholders. We strive to promote local economic development and provide better products and services for overseas customers.

We attach great importance to a balanced ecosystem in our operation area and strengthen energy conservation, emission reduction and carbon reduction management. We have taken various means to protect and restore the ecological environment, so as to achieve coordination among all parts of the ecosystem.

We strive to optimize overseas recruitment system, actively promote localization of overseas employees, build career ladders and help local employees develop together with the Company. We work together with the communities to create sustainable development.

In 2018, been placed in a new historical starting point, CNOOC remains true to our original aspiration, keeps the mission firmly in mind, forges ahead, overcomes difficulties, launches a new journey of energy revolution, composes a new epic of social responsibility, strides forward the strategic goal of building an allaround world-class energy company with Chinese characteristics, makes contribution to achieve the national "Two Centenary Goals" and to realize the Chinese Dream of the great rejuvenation of the Chinese nation!

Chairman Yang Hua March 16, 2018

## PRESIDENT'S LETTER



#### Dear all,

In 2017, with the faith of the new concept of development, CNOOC endeavoured to fulfil corporate responsibilities of economic growth, environmental protection and social progress, in order to achieve the wonderful vision of "Our Quality Energy for Your Blue Sea and Sky".

#### Ensuring Energy Supply and Fulfilling Economic Responsibility

Delivering high quality products and services is the unremitting pursuit of CNOOC. Faced with difficulties and challenges, we carried out reform and innovation for corporate transformation and industrial upgrading. We improved quality and enhanced efficiency for safe operation, and improved services by promoting new types of business, so that we achieved high business performance in 2017. For example, the annual output of crude oil and natural gas reached 75.51 million tons and 25.9 billion m<sup>3</sup> respectively. Imported LNG reached 20.46 million tons. Natural gasfired power output was 21.3 billion kWh. 35.92 million tons of crude oil was processed and trading volume of oil products amounted to 92.5 million tons.

We continue to improve the system of scientific and technological innovation. In 2017, we increased investment in R & D to strengthen research on key issues and accelerate commercialization of sci-tech achievements. The Research on and Industrial Application of Key Drilling and Completion Technologies for HTHP Wells in the South China Sea won the first prize of the State Scientific and Technological Progress Awards. More than 20 key research projects such as the "Study on Fracture System and reservoir-forming in the West of Bohai Sea" and the "Rules of Gas Accumulation and Key E & P Technologies for HTHP Gas Fields in Yingqiong Basin" achieved breakthroughs, the independently developed LNG tank technologies were successfully applied, the production of 6-inch bottom hose achieved localization and the solid fluidization method was proved effective to extract offshore natural gas hydrate. There were 840 patents granted for the entire year, of which 508 were patents for invention.

We take safe production and compliance operation as the precondition for business. In practice, we tamp the foundation of safety and environmental protection, strengthen the safety culture building, implement the safety production responsibility system at all levels, carry out safety capability assessment and strengthen the contractor qualification management and the process management for engineering projects.

We carried on the activity "Quality and Benefit Year" for four consecutive years and effectively increased the products quality and the efficiency of projects by realizing quality control in the whole process of production and management, so as to improve professional technical service as well as brand image.

#### Persevering in Green Development and Fulfilling Environmental Responsibility

CNOOC implements green and low-carbon strategy through green procurement, green production, and green supply chain. In 2017, the Company was awarded the 4th term of "Excellent Energy Conservation and Emission Reduction Enterprise" issued by the State-owned Assets Supervision and Administration Commission (SASAC) of the State Council and was designated by the Ministry of Industry and Information Technology the unit for formulating industrial standards in the *Green Factory Execution Guide*.

We take an active part in the formulation of low-carbon industrial standards; and actively build a carbon asset management system and a carbon asset management information platform to strengthen the management of carbon trading. The Energy Conservation and Emission Reduction Monitoring Center of CNOOC was successfully became the "National Industrial Energy Saving and Green Development Evaluation Center" in 2017 and led the formulation of standards in the Guidelines for Assessment of Green Factory in the Synthetic Ammonia Industry.

The Company saved 2.221 million tons of water in 2017. CNOOC also takes an active part in environmental protection initiatives, focusing on study and protection of biodiversity. The Company has promoted resource restoration and environmental improvement in its operation areas and strived to create better ecological conditions for building a "Beautiful China".

## Sharing Development Outcomes and Fulfilling Social Responsibility

CNOOC adheres to the "People-oriented" philosophy and earnestly undertakes responsibility for the employees, such as protecting human rights, pursuing equality, creating a fair and open environment for the employees, making professional development pathways clear and unblocked, establishing a "Four in One" talent cultivation system involving selection, training, assessment, promotion and certification. The Company attaches importance to the assistance to employees in difficulty and implements targeted poverty alleviation on the side of everyone.

CNOOC Welfare Foundation is regarded as the unified management platform for public welfare projects. Highlighting its particular positioning and expanding the scope of assistance, the Foundation insists on targeted poverty alleviation, marine protection, and other special public welfare charity. Consequently, the Foundation has won various honors like "China Women and Children Charity Award", "Guangming Medal Award", "Award for Organization and Group with Most Caring", etc.

We actively advocate and organize "Blue Force" voluntary services. The Company sends support to the vulnerable groups in the society through voluntary charitable donations, popularization of the marine knowledge and other caring services. We establish regular communication mechanism with communities. The Company requires that all of its new projects are evaluated on the environmental and social impact. CNOOC Sustainability Report 2016 was awared again the five-star (highest) rating.

#### Enhancing International Cooperation and Fulfilling Overseas Responsibility

CNOOC emphasizes overseas business development with prudent operation and keeps on improving international management capabilities. The Company actively implements the Belt and Road Initiative; meanwhile, it promotes local economic and social development overseas. In 2017, CNOOC's overseas output of crude oil and natural gas reached up to 32.73 million tons and 11.6 billion m<sup>3</sup> respectively.

CNOOC upholds international conventions and business ethics, as well as strictly abiding by local laws and regulations. The Company has strengthened compliance management and improved the internal audit system. The localization rate of overseas employees kept increasing in 2017, with 9 percentage rate higher than 2016. The Company also makes efforts to build career ladders for overseas employees and continuously provides local employees training courses in terms of safety, technology, management and so on.

We have set up good communication and cooperation mechanisms with the local government and people. We jointly create opportunities for sustainable development through a set of efforts including job offers and skill training in local communities, donation to local schools, and assistance to the local people in difficulty. All these activities were proved helpful to promote local economic development.

Dear friends, we thank you for your support and trust all the time. In 2018, with your support and our joint efforts, we have the courage to face new challenges and fulfil our responsibilities. Let's contribute our value to create a better life!

President Liu Jian March 16, 2018

## **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).

Headquartered in Beijing, CNOOC was founded in 1982. After more than 30 years of reform and development, it became an international energy company with prominent core business, a complete industrial chain and business spreading across 30 countries and regions. The five main business segments of the Company are oil & gas exploration and development, professional technical services, refining sales and fertilizers, natural gas and power generation and financial services. In 2017, it was ranked the 115th in Fortune Global 500 and the 31st in Petroleum Intelligence Weekly (PIW)'s World's Top 50 Oil Companies. At the end of 2017, Moody's and Standard & Poor's rated the Company with credit ratings of A1 and A+. Both outlooks are stable.

### Strategy of Sustainable Development

As one of the specific implementers of the national energy strategy and marine strategy, CNOOC shoulders the crucial mission of ensuring national energy security, developing marine resources and protecting marine ecology. The Company regards economy, environment and society as the most solid cornerstone for energy development and value contribution.

CNOOC adheres to its corporate vision "Energy for All", upholding the philosophy of "People-oriented, Responsibilities, Winand 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.

win Benefits, Credibility and Innovation"

As a participant of the United Nations Global Compact, CNOOC has always been adhering to the "Ten Principles". By focusing on safer, more environmentalfriendly and more efficient operation and management, CNOOC always strives for a balance among economic growth, environmental protection and social progress.

### **Compliance Operation**

In 2017, the Company strengthened the risk investigation and established the initial major risk tracking and reporting mechanism. CNOOC continued the rolling update of the internal control system by combining full update with partial (focal) amendment for dynamic adaptability. Meanwhile, the Company optimized the investment decisionmaking system and the working procedure of the Investment Committee. Moreover, online and offline training were both launched to help business

personnel better apprehend the internal control system and constantly improve the executive power. CNOOC highlighted comprehensive risk management, strengthened interaction among risk management, internal control and audit, made overall audit plan with risk and problem orientated, and enhanced informationization, standardization and normalization for internal audit.

#### Internal Audit

CNOOC enhanced the universal coverage of auditing supervision on key domains, factors and projects, which provided a solid guarantee for improving the perception and preventing major risks, the loss of state-owned assets, as well as improving risk management, efficiency, compliance operation and sustainable development. In 2017, the Company completed 525 internal projects, 1,955 audit findings and 1,004 audit advices, created a total of RMB 787 million of direct economic benefit.

#### Anti-corruption

CNOOC kept tough stance on corruption and dealt with cases violating laws and the Company's regulation with an iron hand, besides enhancing anticorruption awareness on a daily basis and carrying out training for preventing crises before they emerge. The Company conducted internal patrol inspection in headquarters and subsidiaries for checking problems and acting as a deterrent, thereby urging them to deepen rectification, reinforce reform and promote development. CNOOC continued to improve the institutional system, focusing on the supervision and inspection of the implementation, comprehensively strengthen the internal control and corporate governance, and resolutely correct all kinds of violations of disciplines and regulations.

## **KEY PERFORMANCE INDICATORS**

	Item	2015	2016	2017	2017 National Data	Source of National Data
	Crude Oil Output (10,000 tons)	7,970/4,773	7,697/4,555	7,551/4,278	19,151	NBS
	Natural Gas Output (hundred million m <sup>3</sup> )	251	245	259	1,474	NBS
	LNG Imports (10,000 tons)	1,316	1,652	2,046		
	Crude Oil Refining Capacity (10,000 tons)	3,262	3,229	3,592		
	Crude Oil Trading Volume (10,000 tons)	5,616	7,941	8,637		
	Fuel Oil Output (10,000 tons)	576	435	372		
	Ethylene Output (10,000 tons)	90	107	108	1,822	NBS
	Methanol Output (10,000 tons)	156	151	153		
Economic Growth	Fertilizer Output (10,000 tons)	418	370	384	6,065	NBS
Glowin	Natural Gas-Fired Power Output (100 million kWh)	223	215	213		
	Direct Contractor Casualties	2	2	5		
	Employee Casualties	0	5	0		
	Recordable Injury Events (case)	72	65	47		
	R&D Investments (RMB100 million)	31	21	27		
	Science and Technology Employees (people)	8,975	9,097	8,529		
	Granted Patents (awards)	999	834	840		
	Energy Conservation and Emission Reduction Investments (RMB100 million)	2.9	4.1	3.5		
	Comprehensive Energy Consumption per RMB10,000 Turnover (tons of standard coal equivalent) <sup>1</sup>	0.2731	0.3519	0.3805		
Environmental Protection	Energy Savings (10,000 tons of standard coal equivalent)	30.8	23.0	33.5		
	Sulfur Dioxide Gas Emission (tons)	8,844	5,796	4,710		
	Chemical Oxygen Demand (tons)	1,723	1,075	1,074		
	Nitrogen Oxides Emission (tons)	15,187	10,654	10,268		
	Ammonia Nitrogen Emission (tons)	149	109	66		
	Headcount (10,000 people) <sup>2</sup>	11.8	10.6	9.8		
	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%		
	Employee Satisfaction Index (10 point system)	7.74	7.62	8.15		
	Percentage of Female Employees	24%	21%	20%		
Social Progress	Incidence of Occupational Disease (cases)	4	3	4		
	Rate of Physical Examination for Occupational Health	99.6%	99.9%	99.7%		
	Average Training Duration per Employee (hours)	81.3	86.0	74.0		
	Employee Turnover Rate	7.4%	2.6%	2.0%		
	Charitable Donation (RMB10,000)	16,822	13,608	9,304		
	Profit and Tax (RMB100 million)	821	741	957		
	Number of Foreign Employees	7,664	4,864	4,767		
	Localization Rate of Overseas Employees	85%	71%	80%		

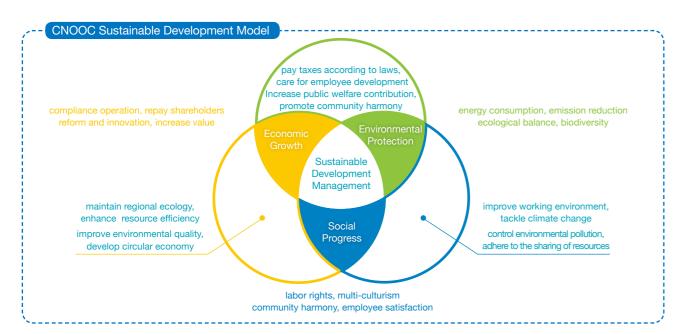
Note: 1 The data of comprehensive energy consumption of production value per 10,000 RMB of 2016 and 2017 is calculated by taking the data of 2015 in comparable price as the base; the data of 2015 is calculated by taking the data of 2010 in comparable price as the base. <sup>2</sup> The staff size includes foreign employees.

## **CNOOC and SDGs**

As a member of the UN Global Compact, CNOOC adheres to the "Ten Principles" in human rights, labour 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. CNOOC makes every effort to fulfil social responsibilities according to the characteristics of its business in order to achieve the 2030 SDGs.

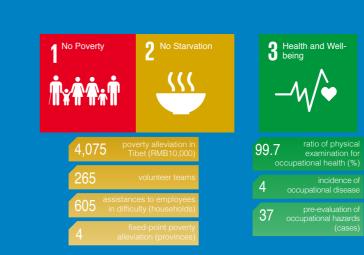


Four Areas of Global Compact



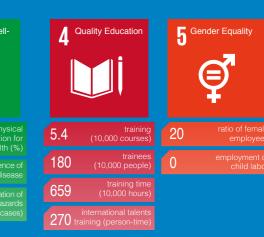
Decent Work and Economic Growth 7 Affordal Energy total assets (RMB100 million) 27 7,551 turnove 5,505 8,529 259 840 3,592 9.8 100 ratio or concrete employment contracts(%) 0.3805 508 100 ratio of social insurance Partnership to Promote Goal Achievement 36.8 eace. Justice 100 system certification rate of supplie and Powerfu 3,273 output (10.000 tor  $\mathfrak{B}$ 116 80







#### 09 / SUSTAINABILITY MANAGEMENT







## **STAKEHOLDERS**

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. We believe that trust and support of stakeholders are impetus for our further development. In 2017, CNOOC kept on the theme of "Our Quality Energy for Your Blue Sea and Sky" and undertook sustainable development through three dimentions of "Promoting Economic Growth, Enhancing Environmental Protection and Driving Social Progress", in order to better meet the needs and respond to the concerns of stakeholders.

### Information Disclosure



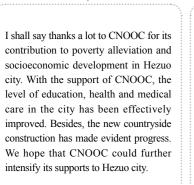






Website: www.cnooc.com.cn

## Stakeholders' Voice



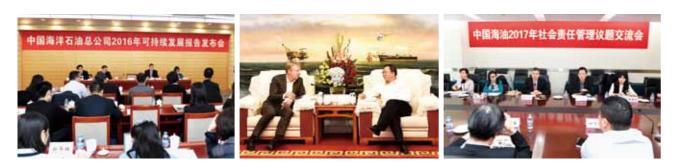
Zhou Mei, Deputy Secretary and Mayor of Hezuo City, Gansu Province Thanks for the event "CNOOC Open Day". It is the first time that diplomatic envoys has made a study on the state-owned central enterprises after the 19th CPC National Congress. The event was well organized and the wonderful presentation let me know the history of CNOOC, developing from a domestic upstream company to an international integrated company, with operation from shallow water to deep water. The event was extraordinary significant to me as I have a deeper understanding on the confidence in our path, theory, system and culture. I hope to strengthen exchange and cooperation with CNOOC and want to provide as much support as possible for the Company to "Going Out".

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Song Aiguo, China's Ambassador in Egypt CNOOC Welfare Foundation provides a lot of support to legal aid cause and makes great efforts to comprehensively promote the law-based governance so that more people in difficulty and vulnerable groups feel the warmth, care from all sectors of the society. Thanks CNOOC for making justice deeply and firmly rooted in the people's mind.

**China Legal Aid Foundation** 

### **Communication with Stakeholders**





**C N** 

## PROMOTING ECONOMIC GROWTH

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## ENSURING ENERGY SUPPLY

CNOOC continues to provide more diversified, greener and more environmental-friendly quality energy, strengthen the conventional oil and gas exploration and development, promote

### **Oil and Gas Exploration**

Being led by regional development planning and guided by exploration for medium and large-scale oil and gas fields, CNOOC has optimized its exploration investment portfolio and achieved breakthroughs in multiple regions.

the development of unconventional gas, increase the supply of LNG and make a great contribution to ensuring energy supply and control of air pollution.

In 2017, CNOOC produced 75.51 million tons of crude oil and 25.9 billion m3 of natural gas, imported 20.46 million tons of LNG and generated 21.3 billion kWh of natural gas-fired power.

In 2017, CNOOC continued to keep the domestic self-financed exploration and newly discovered reserve at a high level, with 25 commercial discoveries and 8 potential commercial discoveries, successful evaluation of 19 oil and gas bearing structures such as "Bozhong

19-6" and "Kenli 6-4/6-5", of which "Bozhong 36-1", "Ledong 10-1" and some others were expected to be large and medium-scale oil and gas fields. The Company also achieved 2 overseas commercial discoveries and successfully evaluated 4 oil and gas bearing structures.

"Bozhong 3-1" was approved a 100 million m3 level oilfield by national authorities on August 28, 2017.

Thereby, the history of no 100 million m<sup>3</sup> level oilfield discovered in the south of Bohai Sea was ended. CNOOC has now four 100

million m3 level oilfields in the east, west, south and north of Bohai Sea respectively and has created a new prospect for development.



"HAI YANG SHI YOU 981" departing from port for propeller test and FMEA

"Ledong 10-1-3", a natural gas exploration well in Western South China Sea Oilfield in Yingqiong basin, achieved ignition on October 9, 2017. The well is a typical super HTHP well at 4,079 meters depth and nearly 200°C at the bottom where the pressure coefficient is 2.3. This achievement signifies a breakthrough of Chinese natural gas

exploration in deep water and CNOOC has a full set of technologies and management abilities for geological study, drilling and logging under the condition of super HTHP.

### **Oil and Gas Production**

In order to ensure national energy security, CNOOC actively responds to the severe challenges in the low oil price environment. Adhering to the innovation-driven strategy, the Company implements safe and efficient lean management, optimizes technical plans and contract modes, takes effective measures to increase production according to local conditions and maintains high production time efficiency and high utilization efficiency of oil wells.

In 2017, the domestic output of crude oil was 42.78 million tons, and natural gas was 14.3 billion m<sup>3</sup> (of which the output of coalbed methane was 1.15 billion m<sup>3</sup>).

In 2017, faced with multiple difficulties such as increasingly complex external environment and difficult control over declining rate of the old oilfields, Bohai Oilfield promoted comprehensive innovation of both management and technology. A list of responsibilities involving 14 work units and 4,348 key points in the working process was put forward. The detailed responsibilities were assigned to the work units in departments. Besides intensive cultivation in old oilfields,

By the end of 2017, the cumulative production of oil and gas in the eastern South China Sea had exceeded 309 million m<sup>3</sup>.

CNOOC adheres to the strategy of promoting self-financed and cooperative operations simultaneously and parallelling oil and

In 2017, Western South China Sea Oilfield overcame the problems such as long periode of development, fast decline in output and difficulty in production growth, in addition to negative factors like typhoons, overhaul, etc., and made efforts to achieve 100.2% of the annual production target through



The maiden voyage of China's first mobile offshore production test platform

Bohai Oilfield reinforced lean management in the less productive, less efficient and longterm closed wells, established a database for three types of wells, cooperated with various sectors such as reservoir, operation and production, thus achieved stable output over 30 million m3 for 8 years consecutively, which hit the historical record. Bohai Oilfield backs the development of Chinese economy as its cumulative production of oil reached 350 million tons in the past 50 years.

gas explorations, besides advancing E&P activities from shallow water to deep water, from simple to composite oil and gas reservoirs. CNOOC has successfully developed 32 oilfields and 7 gasfields, which effectively ensure the national energy supply.

technological innovation and management optimization.

Western South China Sea Oilfield achieved stable production over 10 million m<sup>3</sup> for 10 years consecutively, since its first membership in the "10 Million m3 Level Oilfields" in 2008.

### **Refining and Chemical Production**

CNOOC makes full use of the advantages of production and marketing integration, focusing on upgrading the quality of oil products, advances major projects according to plans, strengthens policy study on the industry, optimizes process engineering and intensifies production plan management, in order to ensure the stable and efficient operation of equipment and achieve the overall value maximization of refining and chemical production.

In 2017, CNOOC processed 35.92 million

tons of crude oil, produced 8.78 million tons of refined oil products, 6.94 million tons of bitumen, 1.08 million tons of lubricants, 1.08 million tons of ethylene, 2.72 million tons of sodium carbonate and 3.84 million tons of chemical fertilizer.

capacity of more than 20 million tons, helps

CNOOC further optimize its industrial

structure, improve the coordinated

development of industrial integration and

promote Chinese petrochemical industry to

be high-end and intensive, in order to meet

the fast increasing demand for high-end

petrochemical products in the South China

and even all over the country.

#### E I he oil-retinery engineering of Phase II Project of Huizhou Retinery was successfully started up in one g

The oil-refinery engineering of Phase II Project of Huizhou Refinery of CNOOC with annual capacity of 10 million tons was put into operation in one go on September 30, 2017. Thus, Huizhou Petrochemical's processing capacity of crude oil reached up to 22 million tons per year, ranking in the top 3 of Chinese refineries.

In 2017, Huizhou Petrochemical processed

14.18 million tons of crude oil. It accumulatively processed 100 million tons of crude oil and paid more than RMB 100 billion as taxes since it had started operating 8 years ago. It becomes the Chinese refinery which processed 100 million tons of crude oil within the shortest period.

The overall completion of Huizhou Petrochemical, a refinery with the processing

## Daxie Petrochemical processed annually over 8 million tons of crude oil for the first time

In 2017, Daxie Petrochemical processed over 8 million tons of crude oil for the first time, with a year-on-year growth of 23.8%, and reached a record high.

Daxie Petrochemical intensified and optimized both operation and management. It made efforts to tap the potential and vigorously explored and applied clean technologies and techniques in production. Targeting at key points in company-wide working processes, the managers strived for "Three Optimizations" in terms of raw oil resources, production management and product structure. As results, the company greatly improved key economic and technical performance indicators including yield of light oil, comprehensive mercantile rate and the loss rate of processing was reduced evidently. Breakthroughs were made in product quality, energy saving and environmental protection, resource utilization and other domains so as to contribute actively clean energies to the East China.



Night scene of the project site of Huizhou Refinery Phase II

#### awarded the "National Prize for High Quality Engineering in the Chemical Industry"

A series of refinery devices of the integration project of Taizhou Petrochemical, such as the continuous catalytic reforming unit with annual processing capacity of 1 million tons, the aromatics extraction unit with annual processing capacity of 400,000 tons, the fuel oil hydrotreating unit with annual processing capacity of 1.7 million tons, the hydrogen unit with annual processing capacity of 50,000 Nm<sup>3</sup>/h and the paraffin wax-based lubricating oil hydrocracking unit with annual processing capacity of 400,000 tons, were awarded National Prize for High Quality Engineering of Chinese Chemical Industry on September 13, 2017.

Taizhou Petrochemical's integration project uses naphthenic oil and paraffin waxbased oil resources with foreign patented technologies to produce high quality naphthenic, paraffinic wax-based lube base oil and many other petrochemical products. The project helps the company achieve a comprehensive utilization of resources and an excellent engineering quality.

### Service Network

CNOOC always takes customer satisfaction as an important indicator to measure service quality. Fully integrating internal with external resources, the Company actively develops and improves service network. We attach great importance to customer information protection, and continuously improve service 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 allow its customers to enjoy its products and services, CNOOC strives to build a service network centering on "Two Deltas and One Bay" (the Yangtze River Delta, the Pearl River Delta and the Bohai Bay region). The Company

Petroleum Products Supply

In 2017, based on the market-oriented concept, CNOOC strengthened coordination between production and marketing, gave an impetus to the market by enhancing the leading role of the producers, actively built up the marketing system, innovated end-user development mode, made differential supply strategies and optimized resource allocation according to consumption characteristics of local markets, so as

and marketing. CNOOC constantly enriched products, improved product and service quality, extended service network and basically formed a marketing network for oil products, aiming at covering "Two Deltas and One Bay" and extending to the Central region along "One River

#### "CNOOC 36-1" Asphalt Used in Multiple Highways in Snow-covered Plateau and in the Desert

In 2017, "CNOOC 36-1" asphalt was used to build Wuding Highway in Yan'an, National Highway 349 (Zetang to Gongga airport section) on the snow-covered plateau, Jingxin Highway, the road in the desert, the world's longest highway across the desert, the Asian largest single highway construction project, the landmark project of the Belt and Road Initiative.

"CNOOC 36-1" airport asphalt was successfully used to the construction of Middle Runway Maintenance Phase III Project of Beijing Capital International Airport which undertakes more than 40% of flight and landing volume of the airport. The newly developed damped asphalt was successfully put into the market for the production of acoustic insulating material for world famous automobile manufacturers like Mercedes, BMW and GM.



and strengthens the construction of service stations, gas stations, bulk plants, LNG receiving terminals and natural gas pipeline network.

continues to explore new service modes

By the end of 2017, the Company had owned 1,166 service stations, 170 gas stations, 9 LNG receiving terminals, and 4,685 km of onshore natural gas pipelines.

to improve the operational efficiency of integration management of production

#### an'an, on the

and Two Railways" (Yangtze River, Beijing Guangzhou Railway and Beijing Kowloon Railway).

In 2017, CNOOC won recognition and favor of more customers by selling high quality oil products conforming to higher standards and extending service network, with quality, efficient and considerate service. The Company sold 18.84 million tons of refined oil.

#### CNOOC provides Guangzhou Baiyun International Airport with pipeline jet fuel

Lisha pipeline for refined oil is CNOOC's first self-financed onshore pipeline. It starts from Dayawan and terminates at Lisha bulk plant, with a total length of 163 km.

In 2017, CNOOC Dongguan Sales Logistics, subsidiary of CNOOC Oil & Petrochemicals, accumulatively transported 172,000 tons of jet fuel by pipeline to Guangzhou Baiyun International Airport in a way of safe, convenient and zero pollution, so as to meet the increased demand of jet fuel of the airport.

### Natural Gas Supply

Centered on "Two Deltas and One Bay". CNOOC continues to extend natural gas supply network and actively builds LNG receiving terminals, natural gas pipelines and gas stations, striving for building up the coastal natural gas pipeline network and providing sustainable economic development with clean energy so as to build a "Beautiful China".

CNOOC has developed the natural gas business in 18 provinces and 70 prefecture-level cities while its LNG receiving capacity reached up to 33.9 million tons per year.

In 2017, CNOOC Gas & Power Group sold

23.2 billion m<sup>3</sup> of offshore natural gas in

southern China and achieved extraordinary

effects of green and low-carbon development

by replacing 28 million tons of standard coal

and thus reducing 60 million tons of carbon

dioxide (CO<sub>2</sub>) and 500,000 tons of sulfur

The natural gas came from offshore gas fields

such as "Liwan 3-1". "Huizhou 21-1" and etc.

They were transported to downstream power

plants, industrial and urban gas users through

Guangdong pipeline network.

dioxide (SO2).

CNOOC Mengxi Coalbed Methane Pipeline Project was approved by National Development and Reform Commission. The project is a major measure for CNOOC to respond to the national strategy of Coordinated Development of Beijing-Tianjin-Hebei, with supply of clean energies for regional socioeconomic development and Xiongan New Area.

The project starts from Hangjin Qi, Ordos City, Inner Mongolia, via Shanxi, Hebei, Tianjin and ends in Huanghua City of Hebei, with the total length of 1,279 km. The project

is divided into three phases. Once the project finishes, Beijing-Tianjin-Hebei region and Xiongan New Area will be able to receive the coal gas produced in Ordos and Datong as well as the natural gas in Tianjin LNG Receiving Terminal owned by CNOOC Gas & Power Group.

The project will further improve the supply capacity of clean energies by interconnecting with other natural gas pipelines in the region to promote the regional socioeconomic development and air pollution control so as to help build a "Beautiful China".

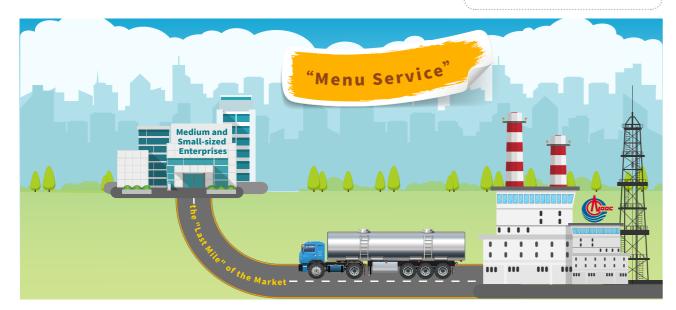
LNG fueling stations of CNOOC Gas & Power Group in eastern China adopted more flexible mode, designed the station for small LNG cylinders groups and a "Menu Service" to help deliver techniques and LNG to customers, filling the delivery gap in the "Last Mile". The first delivery succeded on

#### September 20, 2017.

The service innovation is appreciated as timely assistance by industrial users who used high quality and clean energy from CNOOC to timely alternate coal with no investment on building new stations.

We now use natural gas provided by CNOOC while we don't need to pay even a pence for infrastructural construction any more. The quality gas ensures the quality of our products, and improves the air quality in our plant as well. So we no longer suffer from the pungent smell of coal.

Mr. Du, boss of a mould factory



### **Ensuring Supply of Natural Gas**

#### Global deployment, real-time peak shaving, reserve and supply capacity enhancement

In mid-August 2017, CNOOC forecasted the demand for gas in the forthcoming winter on the basis of scientific analysis. The Company settled arrangements in advance, such as purchasing and stocking millions of tons of LNG, coordinating upstream resource sellers and optimizing shipment date, to ensure the availability of more than 20 billion m<sup>3</sup> of natural gas for winter. In addition, CNOOC leased a FSRU and let it berth at Tianjin LNG Receiving Terminal. The FSRU provided an additional capacity of supplying 14 million m<sup>3</sup> per day to Beijing-Tianjin-Hebei region. Another two LNG carriers were leased and ordered by CNOOC to wait at sea for further instructions, which also enhanced regional reserve and supply capacity for emergency.





#### Pipelines interlink for transporting natural gas from south to north, finding new solutions to ensure natural gas supply for emergency provision

On December 6, 2017, under the coordination and support of the National Development and Reform Commission and the Energy Bureau, Binda Gas Pipeline Project, a joint supply project of CNOOC, CNPC and Tianjin Binda Gas Industry, was put into operation. Hence, Tianjin LNG Receiving Terminal could meet the daily demand over 5 million m<sup>3</sup> of natural gas for nearly a million households in Beijing-Tianjin-Hebei region.

On December 16, 2017, CNOOC transported its natural gas from Guangdong Aotou transmission station to the Second Pipeline of China's West-to-East Gas Transmission Project (reverse to the normal direction), so as to replace a part of natural gas of CNPC with its offshore gas from the South China Sea and the imported LNG for the supply to southern China area. Together with the replacement of natural gas with CNPC and Sinopec in Zhejiang, Fujian and Tianjin, the supply of natural gas to northern China maximally increased 17.5 million m<sup>3</sup> per day by the nationwide joint action.

In the face of up roaring demand for natural gas in the North China, CNOOC carried out a "Transporting Natural Gas from the South to the North" action by organizing about 250 tankers to transport natural gas from Guangdong Zhuhai Golden Bay and Yuedong LNG Terminal to the North China in a reasonable manner of resource allocation.

#### Strengthening self-discipline, price stabilization and co-maintaining the market order

Facing the sharply increased LNG price, CNOOC assumed political and social responsibility and achieved to keep the LNG liquid price within price range at RMB 4,500-5,100 per ton. On December 3, the sales branches of CNOOC Gas & Power Group took a lead in responding to the government's call for joint efforts to stabilize the LNG market price during the winter by issuing a Group's "Reminder Letter on Stabilizing the Market Order of Natural Gas Price" to all their gas users and tanker carriers.

#### 17 / PROMOTING ECONOMIC GROWTH



### **Supply Chain Management**

CNOOC strengthens green supply chain management, maintaining a prudent manner and strict standards with regard to selecting suppliers and contractors, valuing more concepts and actions in fulfilling social responsibilities, including QHSE and labor standards, than product quality, service capacity and corporate reputation. CNOOC upholds the concept of "Cooperation for Win-win Results and Common Development", thus implements centralized, unified

and classified supplyer management, shares supplier information, enhances training and supervision and optimizes performance assessment as well. The Company applies a whole process dynamic management to ensure 100% compliance of economic contracts.

Based on "Open. Fair and Transparent" bidding principles, CNOOC managed to prevent and solve supply chain risks by applying online procurement and strengthening the whole process

In 2017, COSL Drilling Department worked out an outline document of Procurement Management Regulation for global materials outsourcing, started up purchasing and procurement centers in Singapore, the recognized equipment trade center, and Houston, the recognized equipment manufacturing center. The department also built a dynamic global supplier database which allows users to input information of all drilling wells and suppliers into the AMOS system and to build a high quality and efficient global material supply chain by linking the single suppliers in the world, complementing manufacturing and trade,

COOEC's project Green Supply Chain System Construction of Typical Marine Equipment was selected in the national key integrated system projects of green manufacturing in June, 2017.

The project realised green design and manufacturing of typical marine equipment to improve key techniques for production and energy efficiency. The achievement of the project enhances systematic management of the green supply chain of design, procurement, production, transportation and installation. The implementation of the project will set a model of green development for the marine engineering industry.

complementing logistics in the eastern and western hemispheres, to realize the global Internet, 60% of purchasing time of some orders can be saved, greatly shorten the procurement process and increased the purchasing efficiency.

COSL can get fittings stored anywhere in the world ready to delivery within 5 minutes

Mou Jun, Manager of Singapore Purchasing & **Procurement Center** 

In 2017, CNOOC conscientiously implemented the Guideline to Further Promote "Internet+ Governance" put forward by the State Council and "Internet+ Bidding & Purchase" Action Plan (2017-2019) put forward by the National Development and Reform Commission. The Company actively advanced the Electronic Bidding System (EBS) project.

CNOOC's Procurement Business System was issued three star class (highest) certification by Chinese Information Security Certification Center, marking CNOOC's informationization stands at the forefront in central enterprises. Since January 1, 2018, CNOOC has operated paperless office in the whole procurement process.

management in terms of bidding admittance, product and service quality control, performance assessment and elimination of disqualified suppliers and contractors.

In 2017, the Company eliminated 136 first and second-tier suppliers, because of regulation violation, major risks or disgualified performance, so that ensured supplier and contractor quality and QHSE management system certification rate 100%.

Quality of Supplier and Contractor and QHSE Management System Certification Rate

## EMPHASIZING SCI-TECH INNOVATION

#### **Technological Innovation**

Technological innovation is a core driving force for enterprise's sustainable development. Majoring in oil and gas business, CNOOC actively implements the innovation-driven strategy and constantly improves the technological innovation system. Meeting the major and important demand of the state and the Company, CNOOC focuses on research on a series of core technologies such as efficient development of offshore

environment.

The Research on and Industrial Application of Key Drilling and Completion Technologies for HTHP Wells in the South China Sea won the First Prize of the State Scientific and

The "Research on and Industrial Application of Key Drilling and Completion Technologies for HTHP Wells in the South China Sea", led by CNOOC, won the First Prize of the State Scientific and Technological Progress Awards.

This huge scientific research project has solved four world-class problems and achieved the

CNOOC adopts a new idea of exploration that the focus of oil and gas exploration is moved from hydrocarbon-rich depression to marginal depression. A single marginal depression is shallow-buried with small area and the formation conditions are complex, while all the single marginal depressions together cover one third of the Bohai Sea area. CNOOC organized research on key technological problems and broke bottlenecks in oil and gas exploration in the marginal

depression of Bohai Sea and thus increased the value of exploration in the marginal depression. The overall achievements reached the international advanced level and were successfully put into practice to discover one oilfield of 100 million tons level and two oilfields of 50 million tons level, with 284 million m<sup>3</sup> of geological reserves (3P), in which 195 million m<sup>3</sup> is the proven reserve, contributing to stabilized oil production in Bohai Oilfield.

ISCCC 电子招标投标系统认证证书 中国海洋石油总公司采办业务管理与交易系统 ---------ANTE ANTE GATT ANTE ANTE 中国信息安全认证中心

heavy oil, oil and gas E & P in deep waters, the low-permeability tight gas E & P, constantly explores new types of marine energies, in order to provide strong guarantee for sustainable development of economy, society and

Technological Progress Awards. CNOOC Gas & Power Group won the CWC LNG Technological Innovation Award 2017. CNOOC's declaration of building "Natural Gas Hydrate State Key Laboratory" was approved by the Ministry of Science and Technology. CNOOC led the drafting of the ISO 18647 Oil and Gas Industry - Specifications for Offshore Modular Drilling Rigs on Fixed Platforms, which was released as an international standard.

The "Research on and Industrial Application of Key Drilling and Completion Technologies for HTHP Wells in the South

most advanced technology in the world.

The achievement was widely applied not only in China, supporting the discovery of 5 gas fields, but also applied to HTHP oil and gas reserve areas in many countries including the US, the UK, Indonesia and Burma, which produced extremely high economic value.



Demonstration projects such as Liwan Gasfield Cluster and Liuhua Oilfield Cluster have developed Chinese engineering and construction technology systems with independent intellectual property rights for deepwater oil and gas development. The technologies have been fully implemented by CNOOC in the deepwater operation of the South China Sea. The achievements made the country's history, marking that Chinese deepwater oil and gas engineering and construction have the ability of offshore oil and gas development in 1500-meter depth under water. Hence, CNOOC enters the world's advanced ranks for deepwater petroleum engineering and construction.

Project	Main Achievement
Marine Natural Gas Hydrate Production Test by Solid Fluidization Technology	Formed an integrated engineering technology system of natural gas hydrate resource investigation, evaluation, sampling drilling and solid fluidization test; successfully implemented the production test
Research and Application of Key Technology for High Precision Imaging Processing of Overseas Offshore Pre-salt Oil and Gas Reservoirs in Deepwater	Successfully applied to the 300 km <sup>2</sup> imaging process in Brazil deepwater Libra block, confirmed the newly discovered barrels of proven oil in place in this block
Study on the Evaluation Method of Marine Source Rocks in the West Africa Passive Continental Margin Basin	Effectively guided the favourable play selection and new venture evaluation in the drift sequence of West Africa passive continental margin basins selected 3 favourable exploration plays and 5 favourable exploration blocks in the Lower Congo basin, Niger delta basin and so on
Study on Fracture System and Reservoir-forming in the West of Bohai Sea	Established hydrocarbon pooling patterns and a technical process suitable for the study on reservoir-forming in active fracture zones in the west of Bohai Sea; guided by the patterns and process, obtained 4 commercial discoveries like "CFD 6-4"
Oil and Gas Geology and Key Exploration Technologies on the Continental Margin of the Pearl River Mouth Basin	Discovered 3 mid-size oilfields like "Lufeng 14-8", with 37.83 million m <sup>3</sup> of new added proven reserve in place; discovered 20.2 million m <sup>3</sup> of 3P reserves and potential resources in "Liuhua 34-6" structure
Study on Accumulation Mechanism of Tight Sandstone Gas in Linxing-Shenfu Block	Newly added 5.6 billion $m^3$ of natural gas geological reserves in E & P integration test area, and the cumulative production reached up to 78 million $m^3$
Online Profile Control & Flooding Technologies for Oilfields with High Water Cut in Bohai Bay	Online profile control & flooding technologies and their supporting system have been estimated and applied in C17 and other wells in "Qinhuangdao 32-6" Oilfield with 12,530 m <sup>3</sup> of total incremental oil
Study on Enhancing Oil Recovery of the Reef Limestone Oilfields in the East of South China Sea	Achieved series of achievements in geophysical characterization for reef limestone reservoirs and high precision logging evaluation in the east of South China Sea; applied the achievements to 2 adjustment wells including C7H3, and accumulatively increased 770,000 m <sup>3</sup> of oil production
Large Diameter MRCT	Developed a large diameter MRCT and applied in 5 wells onshore and offshore, obtained 103 cores; the performance reached the international advanced level
Key Technologies of Short Radius Side Drilling and Completion in "Suizhong 36-1" Oilfield	Formed a short radius side drilling technology system specially for "Suizhong 36-1" Oilfield development and adjustment, successfully applied in 5 wells including "SZ36-1- E19H1", whose project duration was saved by 4.54 days, footage by 1,120 meters and cost by RMB 6.527 million
Development of Large CWHE for LNG	Developed the first set of CWHE for LNG in China with the capacity of 300,000 m <sup>3</sup> per day, intended to use in Xi'an LNG project, which is estimated to save tens of millions of RMB for the project owner
High Temperature Resistant Cementing Slurry Series	Achieved industrialization; developed 3 markets including Shell, Haski and the eastern Tarim Basin of Xinjiang; created over RMB 60 million of output value
New De-mulsification Technology for Oilfields	The products have been applied in 3 oilfields such as "Nanpu 35-2" with more than 1,560 tons of sales and over RMB 24.5 million of output value
Optimal Implementation and Producting Technology of Horizontal Wells in Thick Carbonate Reservoirs	Implemented horizontal well and explored ESP in the Mishrif layer; the productivity of a single horizontal well reached 4,500 barrels per day, which hit historic level
Innovation of Integration Technology System for Tight Gas E & P	Established a tight gas E & P integration test area (LX 8/9 well area), with an annual output of 60 million m <sup>3</sup> and an accumulative production of LNG over 10 million tons
Complete Set Technology of Phosphorusless Water Treatment	Used by Huizhou Petrochemical, CNPC Guangxi Petrochemical, SINOPEC Sabic Tianjin Petrochemical and other enterprises, with an output value over RMB 100 million
High Performance High Build Epoxy Anticorrosive Coating	Broke the monopoly of foreign technologies in the field of marine and heavy duty anticorrosive coatings; successfully applied to ships and offshore oil platforms with an accumulative sales revenue of RMB 36.5 million

On April 24, 2017, CNOOC achieved breakthroughs in the marginal oilfield production equipment development project Design and Application Direction of A new Cylinder-shaped FWPSO won acceptance, indicating that China has the ability of independent development in 500-meter depth under water in marginal oilfields.

The coating technology not only ended the On June 26, 2017, the weather-resistant polyurethane elastomer with high abrasion long-term dependence on foreign protective resistance was successfully applied to coating materials for important parts of high "Fuxing", the new cornerstone of Chinese speed train, but also widened the application high-speed trains. field of the weather-resistant polyurethane elastomer with high abrasion resistance.

COOEC completed the domestic underwater control system integration testing for the first time.

On October 13, 2017, COOEC's "Subsea Control System and Key Equipment Research and Development" project succeeded for

bottom of the sea.

On May 31, 2017, the barge "HAI YANG SHI YOU 228" of COOEC jerked the upper platform of "Wenchang 9-2/9-3", weighed up to 12,800 tons, and firmly embedded it on the jacket which was grounded on the



"Blue Whale" in offshore operation

the first time in the domestic subsea control system integration testing, marking that CNOOC has mastered the complete design capability of subsea control system, as well as integrated construction capability of 500-meter depth control system and the test devices.

The floatover technology used in the operation was independently designed by COOEC. It broke the monopoly of foreign

technologies. The self-developed LMU and DSU were for the first time applied to production, which achieved localization of key equipment of their kinds.

On June 26, 2017, the first middle and short radius horizontal well was drilled in Bohai Oilfield, marking CNOOC has mastered the key well drilling and completion techniques for middle and short radius wells. The

achievement is significant to reduce offshore drilling cost, increase oil recovery and economic return, in addition to break rigid restraints on investment and production in the low oil price period.

### **Pioneering Innovation**

CNOOC carries on promoting research on natural gas hydrate, ocean energy, hydrogen energy, offshore nuclear power

and other new type green and low-carbon energies. Relying upon scientific projects, CNOOC supports the R & D of pioneering energy technologies and has made positive progress and phased achievement in a number of national key projects.

A team at CNOOC Research Institute has undertaken researches on "Marine Natural Gas Hydrate Production Technologies and Techniques", relying on a series of completely independent technologies, techniques and equipment including "HAI YANG SHI YOU 708", a deepwater engineering survey vessle. In 2017, the team achieved the first successful solid fluidization test and ignition of non

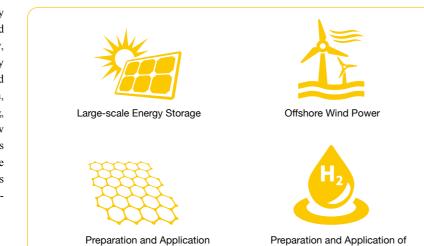
diagenetic hydrate at a depth of 1,310 meters under water with the hydrate orebody buried depth of 117-196 meters.

This indicates that China has achieved a historic breakthrough in the key technology of natural gas hydrate exploration and production with independent intellectual property rights, and advanced to the safe

of Graphene

and efficient development of marine natural gas hydrate. The intensive and sustainable research on this technology is expected to provide strong support for green development of natural gas hydrate, accelerate the green production and consumption oriented policymaking and building a clean, low-carbon, safe and efficient energy system.

The low-carbon and clean energy technologies, such as the preparation and application of graphene, power battery, offshore wind power, large-scale energy storage, preparation of hydrogen and construction of hydrogen refuelling station, etc. have been researched. By the researching, we aim at catching up with the new technological development, find business development opportunities and provide important references for the Company's future industrial layout in the field of lowcarbon and clean energies.



Hydrogen Energy

#### **Tidal Current Energy Demonstration won Awards**

The innovations of CNOOC's "500 kW Ocean Energy Isolated Power System Demonstration Project", on the basis of tidal current energy development technology, have achieved a complementary effect among multiple energies including tidal current, wind and solar energies, and got breakthroughs of key technologies of ocean energy development and utilization, such as low-velocity high-efficiency tidal current turbine blade, multiple energies collection and energy management, tidal current energy generation device support platform, etc. In addition, the project "Research and Demonstration of the Key Technologies of Independent Power System of Ocean Energy for Island Power Supply" was awarded the Second Prize of the 2016 Ocean Engineering Science and Technology.

#### Research on the Application of Offshore Nuclear Energy Technology

The characteristic risk and its assessment method for offshore nuclear energy application in offshore oil fields were initially established through the research, and the target oilfield as well as the access platforms and received electricity price for demonstration pilot project of offshore nuclear power station was clearly defined through prefeasibility study, which laid a solid foundation for the national demonstration pilot project in the future. The professional and technological consulting services provided by the research team for the National Energy & Offshore Nuclear Power Platform Technology R & D Center was highly recognized as well.

#### Taking Firm Steps in Advancing the Research on Ocean Thermal Energy

CNOOC advanced "Pilot Studies on Ocean Thermal Energy Development" on schedule and has achieved a preliminary conceptual scheme for the development in the South China Sea. The Company has also completed the studies on location selection, ocean thermal power generation system and support platform, which helped the Company promote the application of ocean thermal power generation.

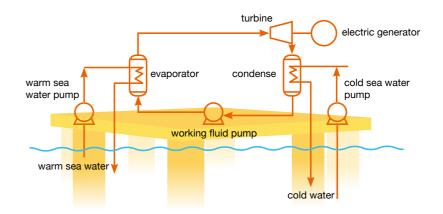


Diagram of the Conceptual Scheme for the Development of Ocean Thermal Energy

#### **Research on Offshore Multi-energy Complement Technology**

On one side, the research aims at supplying sustained energy for use at sea by centering at marine renewable energies with the complementary support of a mix of wind, solar and other energies. On the other side, the research aims at providing a safe, green and efficient energy supply solution for the development of deepwater energies, making efforts to downsize the huge cost of largescale energy storage and reduce power fluctuations (generated by using a mix of renewable energies) through optimization of multi-energy complement technology.

## LNG: Technological Innovation Leading Development

As a kind of clean energy, LNG is believed to be the leading energy in China's energy transition. CNOOC adheres to the vision "Our Quality Energy for Your Blue Sea and Sky", strengthens technological innovation and constantly breaks through the barriers of key technology and equipment manufacturing in the LNG industry. CNOOC Gas & Power Group is the fifth company in the world that possesses the core technology of large-scale natural gas liquefaction and the only company that possesses the core technology of large-scale full containment storage tank manufacturing in China.

### Natural Gas Liquefaction Technology

- large-scale, small-scale and offshore floating liquefied natural gas (FLNG) technology and core technology of
- property rights
- serial liquefaction technology of 3.5 million tons by one train per year and FEED capability for liquefaction plant
- the technical of PDP for the whole large-scale LNG plant



## LNG RECEIVING **TERMINAL**

- S Key Technologies of LNG Receiving Terminal
- full 3D dynamic simulation technology of LNG receiving term
- pipe stress analysis technology for LNG receiving terminal
- offshore floating and fixed receiving terminal technology
- overall process comprehensive simulation and optimization technology of the process of LNG receiving terminal
- DSS for LNG receiving terminal
- cloud computing platform for process and key equipment of LNG receiving terminal

#### Full Containment LNG Storage Tank Technology

- CGTank<sup>®</sup>: Core technology of Large-scale full containment LNG storage tank
- three dimensional full model and multi-point contact finite element calculation technology for containment tank are the first of their kinds in the world
- more than 30 patents and software copyrights, 10 special algorithms and unique engineering technology solutions and 9 domestic pioneering technologies
- of 160,000 m<sup>3</sup>, which are designed and built with self-developed CGTank<sup>®</sup> technology

LNG TANK



- Key Technologies of Natural Gas Pipeline Transportation

- pipeline integrity evaluation technology
- R & D of Pipeline in-line inspection technology

#### Soft Science of the LNG Industry

- investment estimation and budget estimate ability for the whole LNG industry chain, item pricing and cost control ability of EPC project for LNG receiving terminal
- Liquefaction, Receiving, Tanker / Pipeline Transportation and Gas Utilization (Gas Filling Station, Power Plant, etc.)"
- capability of rapid and systematic investigation & analysis, stematic quantitative analysis and theoretical modelling of simulation research for nature gas industrial hot spot



### S LNG Bunkering Technology and Equipment

### • LNG filling for Vehicles

tank container LNG filling device, unpowered LNG filling device, visual system of LNG filling station, new type of LNG dispenser

#### • LNG bunkering

LNG marine transfer hose and LNG marine transfer arms, dual fuel transformation evaluation system for fishing vessel,



### PIPELINE TRANSPORTATION

• 8 international and domestic innovated technologies; 10 granted patents; 7 comprehensive models

• the first domestic application-level dynamic peak-shaving model of natural gas pipe network in the coastal southeast of China and multi-sources gas transportation and heat value adjustment technology

#### • pipeline semi-quantitative risk analysis and assessment technology

• engineering capability of upstream surface engineering, upstream gas gathering and transportation pipe network, midstream gas transportation trunklines, and downstream city gas transmission network / satellite station

• capability of economic evaluation and post project evaluation and evaluation of pricing for the whole process of engineering project

• the economic evaluation model and its capability for the whole LNG industry chain, including "Upstream E & P, Pipeline Transportation,

## INTENSIFYING SAFE OPERATION

CNOOC regards safe operation as the lifeblood for corporate sustainable development. Adhering to the core values of "Safety First, Environment Foremost, People-oriented and Equipment Intact", the Company persistently improves its security system to reinforce management of the personnel, production process and emergency response and strives to build

a substantial safe entity. In 2017, the Company continued to firmly hold the sense of safety and kept the employees away from "Red Lines" and "Bottom Lines", meaning no violation of laws and regulations is permitted. The building of CNOOC-specific safety culture and the emergency response management system was accelerated and the inspection on safe production was further strengthened. Thanks for these efforts, CNOOC maintained production safety throughout the whole year and was awarded the honorary title of "Best Organisation Unit" of National "Safe Production Month" and "Safe Production Wanlixing" for three consecutive years, while Bohai Petroleum Administration and CNOOC Gas & Power Group were both named "Advanced Unit".

### Safety Culture

CNOOC always advocates "Safety Standard Behaviors" and on-site operation behaviour guidance of "Five Do's and Five No-nos". The Company carried out a variety of publicity and educational activities to continuously build the CNOOC-specific safety culture conforming to the core concept of "People-oriented, Execution and Intervention".

In 2017, CNOOC focused on leadership in safety construction. Chairman Yang Hua wrote a letter to all staff, "Your Safe, I Ease", which was later published by China Offshore Oil Press and got positive feedback. All group-level managers endorsed safety and participated in video recording Leaders' Comments on Safety. On June 12, Chairman Yang Hua gave the first lesson "Safety, Our Responsibility and Our Mission" to the headquarters managers. Other grouplevel managers gave 9 lessons of safety on

occasions of investigation and Party Group Member's Reception Day. All subsidiaries positively responded to the lessons and 1,178 senior managers at all levels throughout the Company gave 2,065 lessons in the year.



Large offshore LNG transportation operation



Well Control Week

Safety Day

> Week activities from October 30 to November 5, 2017, taking "Enhancing Risk Awareness of Blowout, Building a Strong Safety Defense in Well Control" as the theme. The Company focused on special rectification, emergency exercise and technical seminar to further improve the safety management capability of well control.

Safe roductic Month

Oi

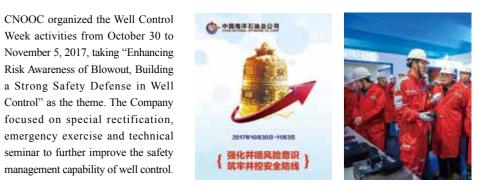
Oil

- · soliciting essays
- Press;

- than 5,700 participants.
- than 139.000 votes.

#### 27 / PROMOTING ECONOMIC GROWTH

The first "Safety Day" activities were organized by CNOOC Gas & Power Group on June 15, 2017.



"Be Safe in the Last One CM", Theme of the Safe Production Month in 2017

the organizor received 1,422 essays and selected the best 60 essays to publish in *China Offshore Oil* 

the WeChat Public Account of the Company released nearly 200 messages on production safety;

the Company's Microblog account released 253 messages and won over 100,000 clicks in total.

• the microvideo competition with the theme of security warning received 140 microvideos.

• the Team Safety and Environmental Protection Knowledge and Skills Competition was held with more

• the "Best Slogan for Team Security" was voted on the Company's Microblog, with a total of more



### **Production Safety**

CNOOC continuously strengthens QHSE management system, focusing on prevention from problems and strengthening control over key fields. The Company strives to provide a safer working environment for all contractors and develops the first-class management capability of production safety.

In 2017, CNOOC continued to improve the safety supervision system, implement effective safety supervision measure and maintained a stable situation of safety production. The Company carried out comprehensive remediation activities to ensure the safety management of dangerous chemicals, identified and

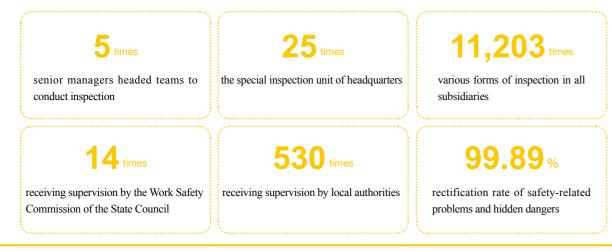
assigned duties to each main body, made it clear for safety risks and major hazards, and reinforced the foundation of safely producing dangerous chemicals. CNOOC also conscientiously carried out the comprehensive electrical fire troubleshooting programs on the basis of comprehensive investigation on the quality of electrical appliances in use, hidden dangers and weaknesses of electrical risk prevention in electrical design and construction for building projects and buildings in use. In addition, the Company carried out special safety hazards investigation and troubleshooting activities for platform

drilling and workover machines, emphasizing safety hazards rectification for drilling and workover machines, and organized special investigation to comprehensively enhance the platform drilling and workover machines safety management. The Company actively strengthened maritime management and put the CNOOC Maritime Safety Management Methods into practice, which helped improve the maritime regulation system. "HAI YANG SHI YOU 225" and "HAI YANG SHI YOU 226" both won the honorary title of "Safety and Reliable Ships" which is the "Oscar" in the safety management.



#### **Continuous Enhancement of Safety Inspection**

CNOOC put forward the yearly target "Resolutely Prevent the Occurance of Major Accidents, Prevent Large Accidents in an All-round Way and Reduce Ordinary Accidents". A leading group of production safety inspection was set up to coordinate the deployment of inspection through video conference.



#### 3 Million Working Hours with No Injury Accident, New Safe Record of LNG Transport Ship Construction

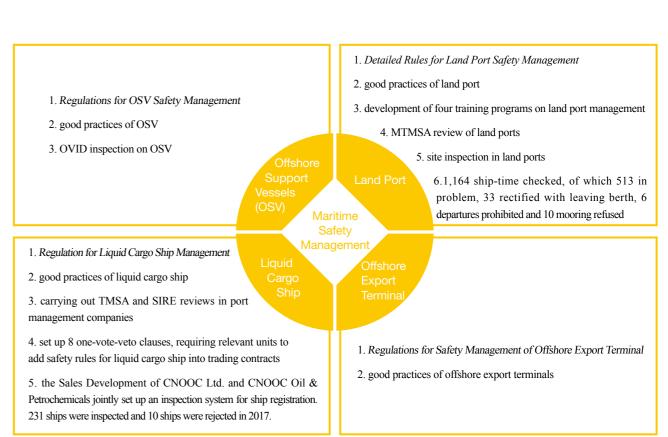
On May 24, 2017, CNOOC's Curtis LNG Transport Ship Construction Project achieved 5 million working hours with no injury accident and created a new record for LNG transport ship construction in China. LNG transport ship is well recognized as a special ship is very difficult to construct. The project team carried out measures such as "Everyone is a Security Guard", surprise inspections, strict implementation of safety system, resistance to discount of safety and created a WeChat group for the project in order to supervise the rectification of safety risks. All staff were required to eliminate any fluke and paralytic attitude and oversight activities to ensure safety "In the Last One CM". The achievement lays a good foundation for large international construction projects.

#### CNOOC Gas & Power Group Taking Various Measures to Ensure Transport Safety



On March 14, 2017, CNOOC Fujian New Energy, subsidiary of CNOOC Gas & Power Group, won the honorary title of "Outstanding Road Transport Enterprise in the Road Transport Safety Year", jointly issued by the Ministry of Transport, the Ministry of Public Security and the State Administration of Work Safety.

CNOOC Fujian New Energy adheres to the business philosophy of "Safety, Efficiency, Harmony and Development", makes efforts to improve detailed safety





management through activities like road emergency drills, selection of civilized vehicles and optimization of safety inspection, dispatching and scheduling. The company achieved a double harvest of safety and economic benefits with accumulative safe transport of 111,800 trips and a total transport mileage of 23.516 million kilometers during the past ten years, equivalent to running 588 laps around the Earth's equator.

#### **Emergency Management**

Based on hazard identification and risk analysis, CNOOC continuously improved the emergency management mechanism, gradually advanced the

major accident scenarios construction, integrated the ICS system into the existing emergency plans, carried out anti-terrorism investigation on risk and

hidden dangers in the whole group and put into practice the Rules for Terrorism Prevention in Offshore Oil and Gas Production Facilities.

CNOOC China Ltd. Tianjin took a FPSO drift caused by ship collision and a single point fracture accident as clues for scenario construction to make analysis on the gap of capability in terms of resource allocation, personnel and disposal measures by focusing on 6 key factors as well as 8 key tasks,

so as to enhance emergency management capability.

China BlueChemical took a cabin explosion accident in a ship with full load of naphtha anchoring in a Dangerous Chemical Wharf of a certain port as main line for scenario

construction, organized site staff from all sides to deeply participate in the comprehensive drill, coordinated in-depth discussions among experts in multiple domains, and worked out a case of major accident scenario which had a guiding significance for emergency.

On October 26, 2017, the kick-off meeting of the state key research project "Offshore Oil and Gas Exploitation Accident Prevention and Control Technology Research and Industrial Demonstration" was held in Beijing, marking that CNOOC officially launched the research and construction of risk prevention and emergency rescue system for deepwater and

#### high-seas operation.

The project focused on key problems in prevention and control of marine (deepwater) major accidents of oil and gas exploitation, such as those induced by natural disasters like typhoon and industrial accidents like blowout and explosion. The project achieved a safety management techniques system for

oil and gas exploration in the depth of 3,000 meters under water, through theoretical analysis, numerical simulation, laboratory test and demonstration of technique integration application at sea. The achievement played a typical and exemplary role in constructing national public security prevention and control system in deepwater and high-seas.

On November 21, 2017, CNOOC Environmental Services (Tianjin) as the first Chinese company won certification of International Maritime Organization (IMO) Training Qualification level 2 from Nautica Institute. The certification helps CNOOC

make inroads into international oil spill emergency training market.

CNOOC emergency management system effectively prevented the invasion of "Columba", the strongest typhoon of the year.

When the typhoon landed in Zhuhai city of Guangdong at 12:50, August 23, 2017, western South China Sea Oilfield had completed the withdrawal from platforms, with evacuation of 2,711 people by 142 helicopter sorties and 2 ship-time. Zhuhai

LNG Receiving Terminal made the emergency start of high pressure transmission line and supplied 16.12 million m<sup>3</sup> of natural gas for residents in Zhuhai, Zhongshan, Jiangmen and other areas. CNOOC Zhuhai Natural Gas Power Generation kept power supply of 3.657 million kWh in the very day until receiving the blackout instruction from Guangdong Electric Power Dispatching

Center at 11 am. In addition, Guangdong Pipelines, Zhuhai Natural Gas, Zhuhai New Energy, "Liwan 3-1" Oilfield Gaolan Terminal, Yacheng Gasfield Hongkong Terminal and other units successfully completed emergency rescue and disaster relief that ensured the safety of personnel and production facilities and provided full support to the affected areas.

#### Emergency Drill for Export Transportation Protection

On September 19, 2017, Bohai Oilfield "Suizhong 36-1" crude oil terminal held a joint emergency drill with crews on oil tankers. The terminal is currently CNOOC's largest one in China that integrates land storage with external transport. The terminal contributes a lot to the stable external transport of crude oil through

#### August 1, 2017

since its operation.

Location: COOEC Port, Tianjin Name: Ship shore joint emergency exercise Units: COOEC Installation Company, Nanjiang Maritime Bureau Participants and equipment: 8 vessels, 2 fire engines, 1 ambulance, 5 sprinklers, 1 recovery device, 300-meter oil boom and more than 120 people Subjects: Occurrence of accident, alarm processing, emergency decision, communication and command, trouble removal, etc.

## August 9, 2017

Location: Bohai Oilfield Name: Comprehensive emergency exercise Units: Bohai Petroleum Administration. Environmental Protection Division and Beihai Branch of State Oceanic Administration

Participants and equipment: 3 vessels and more than 150 people Subjects: Maritime collision avoidance, oil spill disposal and communication for collaborative emergency, etc.



#### June 6, 2017

Location: Huizhou

Location: The coastal waters of Liuheng, Putuo District of Zhoushan City

Name: Defense against typhoon joint practice exercise Units: CNOOC Donghai Petroleum Administration. Zhoushan Zhongyuan Shipping Engineering Co., Ltd., Sinopec, CITIC Amanoatae, Maritime Bureau, etc.

Participants and equipment: Relevant personnel of the Emergency Office of CNOOC Donghai Petroleum Administration, 1 Jaguar helicopter and 2 vessels Subjects: Big horsepower ship rescuing cable-broken ship and dragging anchor ship, Jaguar helicopter rescuing crews on dragging anchor ship, etc.



multiple risk control measures and maintains a record of 6,000 days zero accident of transport

The marine loading arm fault of a 30,000ton port, which could not be repaired in a short time, was set as background for

the emergency drill. Site staff responded quickly and cooperated closely, kept close communication with the upstream platform, achieved in maintaining control on working process and orderly connecting emergency transportation hoses, so that the transport was timely resumed.

#### June 15, 2017

Location: MacunPort, Hainan

Name: Large dangerous chemicals ship shore joint emergency exercise

Units: HainanPort Company, Haikou Maritime Bureau, Traffic and Transportation Bureau of Chengmai County

Participants and equipment: NAN HAI 210 (tug)

Subjects: Pump-stop and valve-closure reporting, fire extinguishing, orderly evacuation, casualty treatment and transfer, marine oil spill recovery, etc.



Name: Comprehensive emergency exercise 2017

Units: CNOOC EnerTech (Huizhou) Logistics Base, Huizhou Frontier Inspection Station Participants and equipment: 2 fire tugs, 2 antifouling ships, 1 fire engine, more than 100 people Subjects: Anti-terrorism, fire control, oil spill, etc.



## Internet +: New Experiences of Fast Service

Focusing on customer demand, CNOOC aims at efficiently providing service to customers, by taking customer satisfaction as standard of evaluation, quality of products as a fundamental, "Internet+" as means. The Company is positively commits itself to social responsibility, actively broadens the scope and channels of service to expand the service network to village corners.



TETETETE MERINA STATETE



#### "Internet + Service Station"

CNOOC formally launched cooperation with third party online retailers and payment services providers, in business-online related fields such as sales of oil products and non-oil products, loyalty maintenance and system optimization, in order to build a new business mode called "Internet + Service Station".

The Company promotes a model transition of refined oil products sales from traditional marketing to internet marketing, so as to improve the service quality and customer experience.

Business SAAS (software as a service) system + intelligent explosion-proof small-ticket machine + intelligent invoicing machine; APP location payment with no code scanning, WeChat public account payment and the popular WeChat code scanning payment, the serial payment of service station can be transformed to the parallel payment.



## **IMPROVING QUALITY MANAGEMENT**

CNOOC considers "Pursuing Excellent Performance, Leading Position and Customer Satisfaction" as its quality objective and always adheres to the policy of "People-oriented, Safety First, Integrity and Law-abiding Operations, Reinforcing Foundation, Being Innovation-driven and Winning with Quality". As a response to the national strategy of "Build the Country on the Basis of Quality", the Company carries on activities to continuously improve quality of products, projects and services, striving to identify quality risks in an all-around way, enhance the quality management system and cultivate the culture emphasizing quality. In 2017, CNOOC's Eagle Eye team on the "Qinhuangdao 32-6CEPI" platform was awarded "National Trustworthy Group for Quality", marking a historic breakthrough. Zhuhai LNG Terminal of CNOOC Gas & Power Group was awarded "National Advanced Enterprise of Implementing Excellent Performance Model" for three consecutive years and thus won the "Special Prize for National Advanced Enterprise of Implementing Excellent Performance Model".

On January 4, 2017, Changzhou Institute of CNOOC EnerTech was selected in the national standards research and development contribution index units, as the first and only unit of the coating industry. The Changzhou Institute operated National Coating Engineering Technology Research

Center undertakes all-level coating research and development and gets a number of independent patents every year. Up to now, the center has participated in the formulation of 471 international, national and industrial standards, of which 10 international standards were under its direction.

In September 2017, China Offshore Bitumen, subsidiary of CNOOC Oil & Petrochemicals, successfully put 0<sup>#</sup> diesel on the market in line with the CN-VI standard. In order to meet the requirements of the CN-VI standard, China Offshore Bitumen studied and optimized production process, raw material proportioning, hydrogenation process parameters and diesel blending scheme, so that the indicators of new diesel were better

upgrade quality of oil products.

than those of CN-VI standard, thus helped



On June 5, 2017, CNOOC Quality Management Information System was put into test application. The system includes 6 functional modules, such as information bulletin, system management, quality control, quality activity, new product and technology promotion and quality management tools. The quality control module is composed of

3 platforms including oil product quality control, internal inspection and examination quality management and explosion-proof electrical management. The oil product quality control is the key part for standardized management of service station, which has been tried in the Hunan Branch of CNOOC Oil & Petrochemicals.



In 2017, the Company carried out quality audit in CNOOC BlueChemical Hainan Base, with 37 problems found and rectified, and strengthened quality supervision of key vehicle products of Guangxi Energy Company and Hebei Marketing Company, investigating 25 service stations, 1 depot and 1 transport fleet, with 91 problems found and rectified.



About 52,500 employees of subordinate units participated in the activity and there were totally 2,246 departments involved in the launching ceremony. In the very month, 1,830 special inspections were carried out, 4,375 hidden quality problems were found and processed and 3,173 quality problems were solved.



The total number of QC teams registered by subsidiaries has reached 1,800, an increase of 39% over last year. In 2017, they obtained 369 outstanding QC achievements of the industry and 7 of them were awarded National Outstanding QC Teams.







## **GREEN OPERATION**

As a member of Global Compact and a main driver of "Energy Revolution", CNOOC adheres to the principle of "Innovation, Coordination, Greenness, Openness and Sharing" and have faith in

CNOOC upholds the concept of green development and pursues implements green operations and green recycling in the overall business.

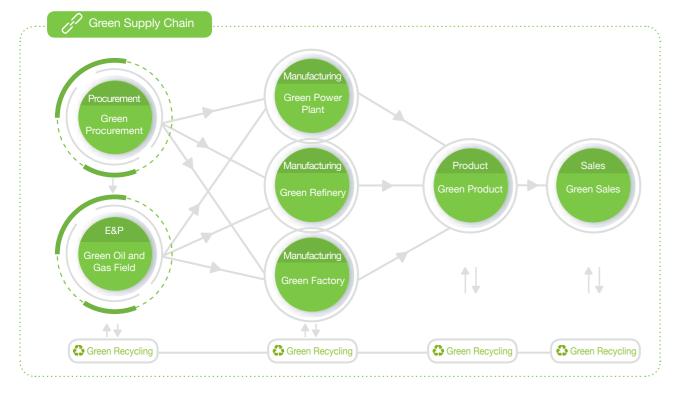
In 2017, CNOOC was awarded honorary title of the 4th term of "Excellent Energy Conservation and Emission Reduction Enterprise", issued by the SASAC and was designated by the Ministry of Industry

"Lucid Waters and Lush Mountains are Invaluable Assets". The Company makes efforts in integrating environmental protection into the overall business to reduce the negative effect of operations

and Information Technology as a drafting unit of industrial standards in the Synthetic Ammonia Green Factory Assessment Guide. CNOOC was also invited to give a speech at the international conference of "Green Manufacturing" as a typical representative unit. CNOOC BlueChemical was awarded the first batch of "National Green Factories".

on environment, so as to supply more quality energy products to meet people's ever-increasing needs of a beautiful and ecological environment with harmonious coexistence between human and nature.

Both CNOOC BlueChemical and CNOOC Kingboard were awarded the honorary title of "Energy Efficiency Leader Benchmarking Enterprise" (ammonia and methanol), issued by National Development and Reform Commission, the Ministry of Industry and Information Technology and China Petroleum and Chemical Industry Association.



## Green Oilfield: Eastern South China Sea Oilfield

Eastern South China Sea Oilfield protects the sea by optimization of process and construction schedule, 24 hours of operation supervision, enhancement and releasing, scientific management of garbage, etc. It has succeeded in reducing emissions and marine pollution far below the standard required by the State Oceanic Administration.

#### Green Factory: China BlueChemica

CNOOC BlueChemical establishes an energy and environment management system, so as to ensure a leading position in China in terms of corporate energy efficiency and fresh water efficiency. Its subordinate units won the title of "Energy Efficiency Leader Benchmarking Enterprise" (ammonia and methanol) for 6 consecutive years.

#### Green Products and Sales: **CNOOC Oil & Petrochemicals**

CNOOC Oil & Petrochemicals meticulously makes green products and puts on the market a series of green bitumen products. It implements all-around green sales, in particular returns volatilized high quality gasoline to oil tank in order to reduce the effect of oil volatilization on environment.

## Green Refinery: A Beautiful Life Made by Intelligent CNOOC

the South China Sea, Huizhou City, Guangdong Province.

CNOOC Huizhou Petrochemical pursues the initial set of objectives "Green Production, Operational Excellence and Sustainable competitiveness by green smart factory building, and to set a green refinery example with "World-class Safety and Environmental





Annual processing capacity: 22 million tons Pollutant discharge standard rate: 100% Qualified Product rate: 100% Investment in energy saving and environmental protection: RMB8 Efficiency improvement of resource utilization over 15% Operating costs reduced by 20%

CNOOC Huizhou Petrochemical is located in Dayawan Petrochemical Economic and Technological Zone on the beautiful coast of

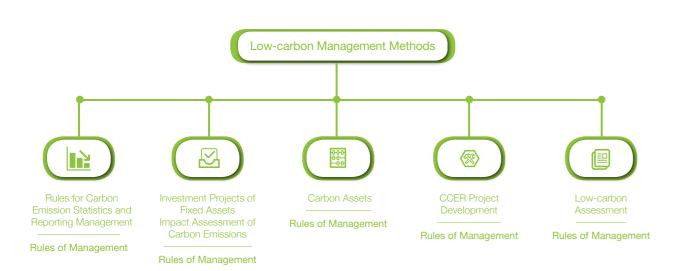


## TACKLING CLIMATE CHANGE

As a responsible energy corporation, CNOOC actively responds to the Paris Agreement and climate change. The Company focuses on building a clean and low-carbon, safe and efficient energy system, continues to build an all-around low-carbon management system, and strives for "Our Quality Energy for Your Blue Sea and Sky".

In 2017, CNOOC clarified its duties of low-carbon management, set up lowcarbon promotion leading groups and low-carbon promotion offices in the second level subordinates and other key controlled discharging subsidiaries, actively participated in the construction of carbon market in China, participated in the drafting of low-carbon standards of the industry, built up the low-carbon

management system, formulated lowcarbon management regulations and rules, completed the construction of low-carbon management information platform and carried out a number of research projects like "The Carbon Emissions Effects Analysis of Newly Developed Domestic Offshore Oil and Gas Fields" in the 13th Five-Year Plan period.





### Carbon Emissions Assessment for Achieved Initial Success

In 2017, CNOOC carried out carbon emissions effects assessment of oil and gas fields with comprehensive energy consumption of more than 20,000 tons of standard coal, or CO2 direct emissions of more than 10,000 tons, and downstream investment projects with comprehensive energy consumption of more than 50,000 tons of standard coal, whose results assisted the Company's investment decision-making. 9 comprehensive adjustment projects were implemented, including Shanxi Datong SNG and "Wenchang 13-2" Oilfields.

CNOOC elaborated the scope, review process and depth of report content of carbon emissions effects assessment for investment and construction projects of fixed assets. A competent professional technical team was set up and a technical, assessment and management system of carbon emission was formed.

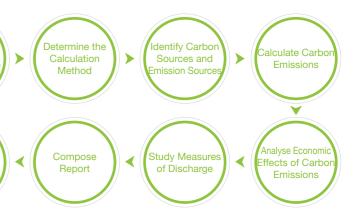
## Carbon Inventory in 35 Key

In 2017, CNOOC organized carbon inventory in 35 key controlled discharging subsidiaries and made it clear the Company's carbon assets, carbon quota in need and the basis for participation in the formulation of national industry standards as well as making lowcarbon development strategy, through figuring out the accurate amount intensity data and the reduction potential of carbon emissions. More than 1,000 person-time were trained of lowcarbon management and the training time was in total 300 class hours.



#### 39 / ENHANCING ENVIRONMENTAL PROTECTION





#### Marine carbon sinks monitoring station completed construction and put

In 2017, two CNOOC-participated time series monitoring stations of marine carbon sinks in Bohai Sea and western South China Sea were officially put into use. Marine carbon sinks monitoring station can provide high-density time series observation results, correctly

evaluate the offshore emission reduction, making great significance on exploring the mechanism and law of marine carbon sinks and helping build big information database.



## **ENERGY CONSERVATION AND EMISSION REDUCTION**

As an advocator and practitioner of low-carbon economy, CNOOC always adheres to green, low-carbon and recycling development philosophy and takes energy conservation and emission reduction as important approaches to transform the development pattern and enhance core competitiveness, actively takes part in the environmental governance and implements commitment on emission reduction. In 2017, CNOOC invested RMB 350 million in energy conservation and emission reduction, implemented 158 projects and reduced energy consumption per RMB 10,000 turnover to 0.3805 tons of standard coal. Working with the State Oceanic Administration on the regulation of marine pollution discharge permission, the Company carried out related research with a special report as outcome. The Company also led the formulation of industrial standards in the *Synthetic Ammonia Green Factory Assessment Guide*. Both CNOOC BlueChemical and CNOOC & Shell Petrochemicals were named the national "Green Factory Demonstration Unit", while COOEC's project "Green Supply Chain System Construction of Typical Marine Equipment" was selected in the yearly state key projects of green manufacturing system integration. petrochemical units. Meanwhile, the Company put forward *Rules for VOCs Management* and supporting operation instructions in 2017 to guide the standardization of the comprehensive VOCs management requirements, implementation of LDAR, VOCs detection and total amount accounting, etc.

In 2017, CNOOC organized training of

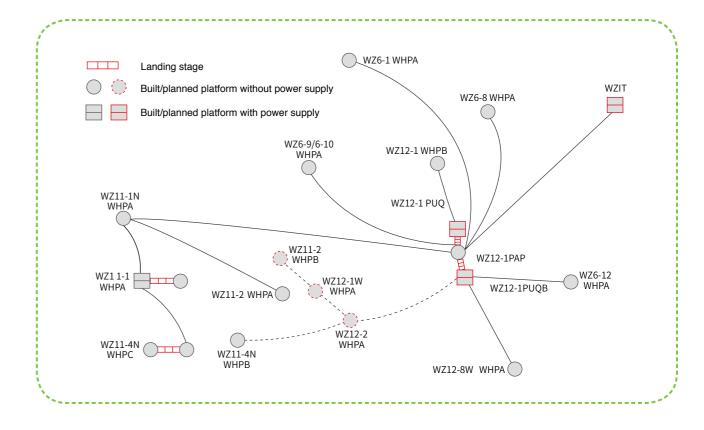
VOCs accounting information system platform in Tanggu and Shanghai respectively. As a consequence, communication on VOCs management among subordinates was effectively strengthened and the staff reinforced their understanding of the promotion of VOCs control and management in the whole country.

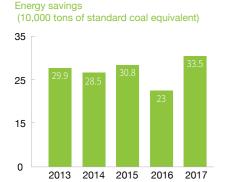
#### Power Grid Interlink Saving Natural Gas

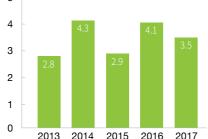
CNOOC has four oil and gas production bases, which are located in Bohai, the east of South China Sea, the west of South China Sea and East China Sea respectively.

In the past, the power supply of offshore oilfields usually used the "Isolated Island" mode, i.e. a power station formed an independent power supply system. To make more efficient use of energy, CNOOC put forward the idea of "Integrating Regional Development with Energy Conservation and Emission Reduction for Planning and Implementation", based on the promotion of research and experiment of offshore oilfield power grid interlink technology.

Weixinan Oilfield achieved the power grid





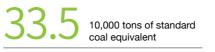


### Whole Process Environmental Protection Management

CNOOC centers on strengthening the environmental impact assessment management. Taking CNOOC environmental management information system as a platform, the Company promotes the whole process environmental protection management by focusing on the strict EIA management, pollutant emission standards and total quantity control management as well as the overall emission reduction management. In 2017, the Company's  $SO_2$  emission was 4,709.8 tons; the NOx emission was 10,267.9 tons; and ammonia nitrogen emission was 66.2 tons, decreased by 21%, 4% and 39% over the same period last year, respectively. The COD was 1,073.9 tons.

### **Special Treatment of VOCs**

On the basis of the pilot work of VOCs (Volatile Organic Compounds) control in the last two years, CNOOC continued to promote the oil and gas recovery management and equipment leakage detection and repair (LDAR) work in



Energy Savings

Energy conservation and emission reduction

5

investment (RMB 100 million)

### Hazardous Waste Management

CNOOC sends hazardous wastes to qualified units for recovery processing to ensure that hazardous wastes will not cause pollution to the environment.

interlink for Weizhou Terminal, "Weizhou 12-1" Oilfield, "Weizhou 11-1" Oilfield, "Weizhou 11-1N" Oilfield, "Weizhou 12-8" Oilfield, "Weizhou 6-9/10" Oilfield and "Weizhou 11-2" Oilfield. The work can save natural gas of 40 million m<sup>3</sup> and be of important demonstration and guiding significance to regional development of Chinese offshore oil and gas fields.

### Uvent Gas Recovery and Utilization

According to the characteristics and the actual demand of offshore production, CNOOC advances research on offshore associated gas recovery technology, for example, making centralized recovery of the gas and using it for offshore turbine generator and boiler as fuel, or delivering it to land as fuel for power generation, chemical production and civilian use.

"Weizhou 11-1" Oilfield, "Weizhou 12-1"

Oilfield, Weizhou Terminal, Dongfang Gas Field Terminal, Tianwaitian wellhead platform and PingBei & HuangYan Oil and Gas Field Phase I Development Project and "Jinzhou 25-1 South" Oil and Gas Field Phase II Development Project were successfully applied.

Weixinan Oilfield Cluster low pressure natural gas recovery project annually saves 22.32 million m<sup>3</sup> natural gas.

#### E Reconstruction of the Joint Gas Pipelines in the Southwest of Bohai Sea

Relying on the existing production facilities and the joint gas pipelines in the southwest of Bohai Sea, CNOOC China Ltd. Tianjin added compressors for pressure boost to recover associated gas from "Bozhong 28/34"

Oilfield Cluster and transported it to the joint gas pipelines. This method can recover 60 million m<sup>3</sup> of natural gas and reduce emission by 140,000 tons of CO2 equivalent per year.

### B Recovery of Light Hydrocarbon from Oil and Gas Terminals Creating Values

In 2017, Weizhou Terminal of CNOOC China Ltd. Zhanjiang installed the selfmade U-shape liquid seal in the outlet of the propane condenser and effectively lowered the temperature in downstream tanks and

largely improved the cooling effect of propane refrigeration systems. The amount of recovered light hydrocarbon created a new record, with an annual increase of 1,800 m3.

#### Fully-enclosed Transport Reducing Leakage Risk

Offshore crude oil processing and transportation adopt fully-closed process. The separator and other processing facilities are equipped with liquid level, temperature and pressure automatic monitoring alarm and shutdown system, thereby ensures operation safety. Platform is provided with the closed drainage system composed of

discharge pipe remittance and closed drain tank, which is used to recover oil and gas from maintenance of process equipment with pressure and emergency venting, and pump back into the closed drainage system by the closed drain pump. These measures have effectively avoided the leakage of oil and gas and eliminated respiratory loss.

#### Evergy-saving Renovation of Lighting in Office Buildings

In 2017, CNOOC completed energy-saving renovation of lighting in office buildings. The overall power saving rate was 40%-45%. It is expected to save 11.98 million kWh and reduce 11,944 tons of CO2 per year.

#### Innocuous-rization of Slurry Treatment in Oilfields

CNOOC requires all kinds of solid waste and refractory pollutants generated in offshore oil and gas production and life waste at sea should be transported and disposed on land. Bihai Environmental Protection, subordinate of CNOOC Safety Technology & Service Company is responsible for the processing

### [] Transformation of Coal Furnace Achieving Zero Emission

China Offshore Bitumen successfully completed the transformation of asphalt heating equipment from the coal stove to the electric heating furnace in the shipping field with zero pollution and zero emission. The transformation adjusts most of the delivery time to the power trough period, so that it not only realizes the environmental protection

#### 🗐 Combustion System Upgrading and Transformation in Zhongshan Jiaming Power Plant Contributing to Emission Reduction

Zhongshan Jiaming Power Plant completed DLN 2.6+ transformation of the combustion system for units 3 and 4.

The world advanced low nitrogen combustion technology was applied to transforming units to not only meet the requirements under the





New Technologies for Flue Gas

Huizhou Petrochemical applied proven and

advanced methods of using additive and EDV

wet cleaning technology to heavy oil FCC

flue gas denitration and dust desulfurization

treatment with the capacity of 1.2 million

tons per year, reduced 469 tons of SO2

emission, 117 tons of nitrogen oxide (NOx)

emissions and 117 tons of soot emissions. The

measure effectively reduced the occurrence

of acid rain in the region and achieved ideal

environmental and social benefits.

of industrial solid waste, sewage and sea oil drilling cuttings, slurry, waste packaging

Bihai Environmental Protection possesses core technologies in the fields like oily waste incineration, innocuous-rization treatment

of water-based drilling fluid and drilling cuttings, oily sludge reduction, oily and highsalt sewage treatment. It uses high cost and high standard non-toxic or low toxic slurry system to recycle all oil-based slurry and wall up pollution to sea.

barrels, etc.

goal, but also optimizes the load of power supply, and achieves cost reduction and efficiency improvement.

workload of as low as 35%, but also avoid nitro-fume with a reduction of 1,500 tons of NOx emission in 2017.

## WATER RESOURCE MANAGEMENT

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

resources management.

The Company consumed 96.391 million tons of freshwater and saved 2.212 million tons of water resources throughout the year of 2017.

#### Freshwater Replacement Setting up the New Method of Saving Wate

Pengbo Oilfield used for the first time the filtered seawater to replace freshwater for the tracer operation with 249 m<sup>3</sup> of freshwater saving of a single well, equivalent to a month's living water consumption on platform. The use of new method for water saving also reduced the cost of freshwater transportation.

## Seawater-desalination Serving the Production Line

Weizhou Terminal of western South China Sea Oilfield speeded up the construction of membrane filtration desalination device. The device can produce 160,000 m<sup>3</sup> of freshwater per year, which will not only effectively alleviate the dependence of offshore installations on freshwater supply, but also enhance watersaving and production efficiency on offshore platforms.

## Reusing Reclaimed Water in Refining and Chemical Process

CNOOC's refinery and chemical subordinates reuse reclaimed water for effective conservation of water resources. For example, CNOOC BlueChemical uses reclaimed water recycling device to circulate water for water replenishing after sewage drainage, which can save 350,000 tons of water per year.

#### Deptimization of Water Clarifier Improving Water Quality

"Suizhong 36-1" CEPK Platform optimized the selection of water clarifier. The amount of water clarifier was reduced by 50% year on year. The use of ships, hoisting work and operation person-hours were largely reduced, while the effect of energy saving and emission reduction was also remarkable.

### E/ Residual Heat of Jacket Water Used for Seawater-desalination

"Qinhuangdao 32-6" FPSO main engine jacket water heating and seawater desalination project adopted distillation method for seawater desalination. Seawater was firstly desalinated by single stage vacuum plate distilling apparatus, then clarified to be qualified freshwater by freshwater

mineralizing equipment and disinfection equipment, and was finally injected into freshwater tank. The circular use of residual heat of jacket water achieved constant desalination and was estimated to produce 7,300 m<sup>3</sup> of freshwater per year.



#### Sewage Treatment Results of CNOOC Tianjin Chemical Research and Design Institute



Application site on "EP18-1" Platform











#### Technology / Equipment

Electrochemical Water Quality Stabilization Demonstration Device	Online contr removal, ste
EDR Desalination Device	Operating u
Functional Membrane Degreasing Technology, High Efficiency Biochemical Technology and Deep Treatment Technology of Ozone Catalytic Oxidation	High oil and
CWPO Microwave Wet Catalytic Oxidation Technology	High degrad and low inve concentration
Electro-catalytic Oxidation Equipment for Living Sewage Treatment on Offshore Platform	Bearing imp

#### 45 / ENHANCING ENVIRONMENTAL PROTECTION



Field operation of electrochemical water quality stabilization demonstration device

Application site on "EP18-1" Platform



 CWPO microwave wet catalytic oxidation technology

#### **Advantages and Achievements**

ntrol of water quality stabilization including scale inhibition and terilization and algae killing in the circulating-water system

under over-saturated conditions of insoluble salts

nd degradation-resistant wastewater treatment

dation efficiency, mild reaction conditions, high safety performance vestment and operation cost, suitable for the treatment of high tion, high salinity, degradation-resistant organic wastewater

npact load, compact layout and high degree of automation

## **BIODIVERSITY CONSERVATION**

As a proactive advocate and practitioner for marine ecological environment protection, CNOOC always attaches great importance to the protection of biodiversity in the area surrounding the operation zone.

The Company adheres to the principle of ecological protection in all phases of a project life cycle, carries out environmental risk pre-assessment in advance to identify sensitive targets in the vicinity, and mitigates environmental risks as early as possible, so as to achieve the harmonious balance between economic projects and ecological environment.

Taking CNOOC Welfare Foundation as a platform, CNOOC actively participates

The LNG receiving terminal located in

Shenzhen Dapeng Bay is now "Home of

E Home of Egret

Egret".

in environmental initiatives, research and conservation projects dedicated to ecological diversity, resource restoration and environmental improvement. Featured projects such as spotted seal protection, enhancement and releasing, etc. have been launched to improve ecological conditions for building a "Beautiful China".

### E Seagulls "Escort"

"Bohai 9" towed a platform to Bozhong Oilfield, when hundreds of seagulls were hovering over the platform, like escorts.



## Escorting the National Protected Animal "Home"

The crew of West River Platform found an Owl in the machine room. It was finally sent back to the land safely by helicopter and adopted by rescue center.





The crews on platform carried out timely emergency rescue of marine animals, carefully cut off the nest and helped them return to the sea.



### Dolphin Accompaniment

Dolphin accompaniment has become a microcosm of harmony between CNOOC's oil and gas E&P activities and the oceanic ecology.



### Building Nests for Seabirds

CNOOC Foundation carried out "Beautiful Weizhou Island" Ecovillage Construction Project and organized staff and the Weizhou Island middle school students to design and build bird's nest for their breeding.





spotted seal protection research project

 study on ecological environment and resource conservation and restoration technology of typical coastal zone in Shandong



Research and Conservation Financed by CNOOC Welfare Foundation

 study on the amount, migration distribution and protection of finless porpoise groups in the Huanghai Sea and the Bohai Sea

 "Beautiful Weizhou Island" Ecovillage construction project

marine breeding and releasing project





## DRIVING SOCIAL PROGRESS

## CARING FOR EMPLOYEES AND STIMULATING VITALITY

CNOOC adheres to the principle of "People-oriented and Care for Employees", seriously fulfils its responsibility to the employees, respects their rights and interests, expands space for their career development, concerns their physical and mental health and happiness and continuously improves work environment to achieve the common development of the Company and the employees.

## Protection of Rights and Interests

CNOOC strictly abides by laws and regulations of 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.

#### Salary and Welfare

CNOOC fully ensures employees' legitimate rights and interests and strives for providing employees with good salary and welfare. The Company makes efforts in improving the normal wage growth mechanism to share its development achievements with the employees by gradually conforming the material incentive and welfare of employees to the market mechanisms and the growth of the Company's performance.

The Company establishes a comprehensively effective employee welfare system, beside basic social insurances (endowment insurance, medical insurance, employment injury insurance, unemployment insurance and maternity insurance), we supplemented personal accident insurance, commercial supplementary medical insurance, juvenile children supplementary medical insurance, occupational pension and housing allowance, etc.

The Company improves the labour protection mechanism through a series of measures such as strictly implementing employees' periodic health examination and special health examination, distributing the labour protection appliances and heatstroke prevention subsidies in time, encouraging employees to take vacation for wellness and issuing one-off resettlement subsidy and comprehensive subsidies to the inter-regional employees.

#### **Employment Policies**

CNOOC protects employees' human rights and respects value, individuality and privacy of employees with different cultural backgrounds. Centred on contract management, based on post management, standardizing marketing mangement, the Company adheres to the principle of "Gender Equality and Equal Pay for Equal Work", standardizes labour management, strongly opposes any kind of inhumane treatment or forced labour, strictly conforms to local employment rules and treats the employees equally without discrimination in terms of recruitment, training, promotion and salary, regardless of race, nationality, faith, gender, age, marital status and special legal protection.



In 2017, the total number of Company's employees was 97,986, in which female employees accounted for 20%, middleand higher-level female managers accounted for 0.4%, minority employees accounted for 3%. The localization rate of overseas employees reached 80%. There were 417 fresh graduates recruited in the whole year. The rate of Conclusion of Employment Contracts remained 100% with the rate of social insurances coverage was 100%. The employee turnover rate was 2%. The Company neither found any violations, such as child labor and forced labor, nor received any complaint of violation of

human rights in any regions throughout

#### Democratic Management

the year.

CNOOC constantly improves the employee democratic management system and makes full use of employees' roles in the democratic decisionmaking, 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. Since 2008, the Company has carried out the investigation of employees' satisfaction according to the principle of "Full Participation and Scientific Sampling". The employees' satisfaction in 2017 scored 8.15 out of 10, with an increase of 0.53 over last year.

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 joined the labor union 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-level Managers" in order to help employees fully express their opinions and participate in democratic decisionmaking, administration and supervision.

### **Career Development**

In pursuit of its people-oriented philosophy, CNOOC provides employees with equal and open environment and clear access for career development. According to the characteristics of different professions, we have designed three career development accesses: management, technology and operation personnel, besides establishing a "Four in One" training system involving selection, training, assessment and promotion and certification, so as to improve personal professional ability and work performance step by step in a planned manner.

#### **Career Access**

CNOOC constantly improves the three accesses for management, technology and working personnel with emphasis on mechanism building. The Company always focuses on building talent pools and constantly implements programs of the selection and training of excellent young talents, enhances systematic management of professional qualification, promotes innovation of the selection of technical experts in subordinates. The Company put forward the Deepening the Reform of the Professional Title Management System (Provisional) to improve system building, which does not highlight one's academic background, record of service or published papers, but moral character, ability and performance and allow more excellent young talents to have opportunities to stand out.

In 2017, 107 personnel were selected Technical Experts of the Company or its subordinate units, 2 personnel were selected Skilled Experts of the Company, 88 personnel won senior technician qualification and 357 personnel won technician qualification.

### **Employee Training**

CNOOC constantly improves the talent training system with multiple levels and stages, which makes a platform for employees' ability training and potential development.

In 2017, the Company actively carried out 54,000 training sessions, with 1.8 million person-time (including 1 million person-time of online learning) and 6.59 million hours (i.e. 74 hours per capita) of training, in which the international talents training was carried out for 270 persontime. The Company strengthened construction of the coach team by cultivating 35 qualified talent appraisers (the first batch), 30 case developers and 30 internal coaches, which further strengthened the talent development. The second competition of "Good Course, Good Coach" was held with receiving a total of 389 courses, of which 40 works of face-to-face courses and 60 high-guality micro-class works entered the final



### (CNOOC E-learning Net", Approachable Teacher for the Employees to Learn

"CNOOC E-learning Net", the Company's online learning platform, was officially launched on July 3, 2017, which allows employees to learn on computer or mobile phone with internet access. 504 courses and 301 knowledge units including 3 major categories of technology, skills and synthesis, and 30 minor specialities were uploaded on

the platform. Employees can use courses, knowledge units, activities, tests and research modules to participate in autonomous, fragmented and mobile online learning and related assessment activities. The platform makes knowledge sharing and accumulation a habit. Therefore, the learning organization has a better "ecological" environment.

#### Brand Building of Innovative Studios

CNOOC helps high skilled talents play the leading and exemplary role and makes efforts in brand building for innovative studios. 11 subordinate units of CNOOC have created 66 innovative studios, guided employees to establish and actively practice the concept of innovation-driven development, and formed an innovative atmosphere. The Shi Shikai Innovation Studio of CNOOC BlueChemical won the title of "National Exemplary Model Worker and Craftsman-type Talent Innovation Studio".

In 2017, the Company held high-skilled personnel exchanges for thirteenth consecutive years. More than 40 representatives from frontline units, such as skilled experts, leaders of technician innovation studio and outstanding young technicians, took study tours in China BAOWU Steel and COMAC, making benchmarking with the National Skill Master Studios and exchanging experiences of studio building with masters.

#### Public Exposure in the National Skill Contest

In the final of the second session of Petroleum and Petrochemical Industry Welders Contest, CNOOC won the third of individual and of group respectively. Chen Kun, an employee of COOEC, won the title of National Technical Experts issued by the Ministry of Human Resources and Social Security.

Petroleum and Chemical Industry Instrument Maintenance Workers Contest, 2 teams won the second prize of group, 1 team won the third prize of group, 1 person won the title of "National Petroleum and Chemical Industry Technical Experts" and 8 people won the title of "National Petroleum and Chemical Industry Excellent Talents".

In the final of the 9th session of the National



#### Professional Skills Competition Carrying Forward the "Spirit of the Craftsmanship"

From August to October 2017, CNOOC held the seventh session of the Professional Skills Competition. The competition was closely related to the practice of offshore oil production and was classified into 9 occupations. The competitions were held in 6 divisions in China. The top 3 of each occupation were named "Technical Experts of the Central Enterprises". The Contest helped improve work environment for stronger respect to skilled personnel, training more skilled talents and developing skilled experts, and make "excelsior", the core of CNOOC's "Spirit of Craftsmanship", rooted in the mind of the employees.

### Career Health

With the "People-oriented" philosophy. CNOOC constantly improves functions and informatization of the career health management system, fully implements occupational disease hazard control by priority classification, so as to implement effective control over key workplaces,

In 2017, CNOOC carried out 37 preevaluation projects of occupational disease hazards, completed 36 evaluation projects of occupational disease prevention facilities construction, achieved a full coverage of regular

#### CNOOC Petrochemicals Import and Export Organizing a Lecture on Psychological Counselling

Targeted at knotty problems and psychological pressure in the work and the life of the employees, CNOOC Petrochemicals Import and Export held a lecture on psychological counselling to help the staff correctly understand their psychological status quo, effectively alleviate their psychological pressure for better work and life so as to improve their sense of happiness.

employee health promotion, implemented health management for focus groups, popularized the "1+N" mode of exercise and "Star Exercise" software, established 24-hour psychological hotline, carried out quietly pervasive health education and construction of health corner of grassroots team. As a consequence, the overall health situation of







key posts and focus groups.

surveillance of workplace occupation hazards and the rate of occupational health examination for employees exposing occupational disease hazards reached 99.7%, so as to prevent and control occupational disease hazards from the source.

### Caring for Employees

Employees are the essential source for sustainable development of the Company. CNOOC highly emphasizes on assisting employees in need and timely helps their families in difficulty by settling the troubles of their everyday lives. The Company 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

CNOOC strives for harmonious labor relations and effectively implements activities to help employees in difficulty in order to share reform and development outcomes with all the staff. The Company strictly abides by CNOOC Employee Poverty Alleviation Management Methods and builds up the all-around poverty alleviation system.

CNOOC gradually improves the filing of the employees in difficulty, set up a pilot information system for poverty alleviation and effectively guide the distribution of resources to the targeted employees in difficulty. For the whole year, the Company invested RMB 20 million to help employees in difficulty and provided employees in difficulty with direct assistance of more than 3,000 persontime. The Company carried out for the first time medical assistance for major diseases for all staff to ensure that they would not fall into poverty by diseases.

CNOOC carried out for the third consecutive year the "Warm Support to

the Families of Employees in Difficulty" activity with RMB 3.667 million and aided 605 families in total.

CNOOC advocates the model of "Changing Thoughts and Behaviors with Determination and Diligence for Poverty Alleviation", and actively makes efforts to help the employees in difficulty be employed or self-employed with emphasis on the choice of business, start-up and market development.

#### Balancing Work and Life

CNOOC advocates the philosophy of "Happy Work and Happy Life" and cares for the employees' life in an 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.



#### "Offshore Workers' Wives Club" for Cozy and Mutual Assistance



#### Today is my Off-hitch day, so I Call the Shots

In 2017, Bohai South Region Operation Company formulated annual off-hitch plan through extensive collection of opinions, to ensure special activities for each traditional festival and thematic major events for each quarter in order to provide off-hitch employees with more care and support. Drawing upon practices in traditional festivals like the Spring Festival and the Lantern Festival, and experiences of Dongying International Marathon, academic forums, etc., the company carried out a series of off-hitch activities including public welfare, parentchild, training and competition, which won the praise of participants.



#### Various Cultural and Sports Activities



#### 53 / DRIVING SOCIAL PROGRESS

CNOOC EnerTech Tianjin Branch set up the "Offshore Workers' Wives Club" to provide cozy and mutual assistance to the families who have members undertaking long-term offshore work, long-term business travel and work abroad in its subordinate units or social enterprises outside CNOOC in Tianjin. The club regularly gave lectures, held salons, organized leisure activities, etc., so that offshore workers' wives enjoyed the happy reunion, and lived everyday with healthy and positive attitude.



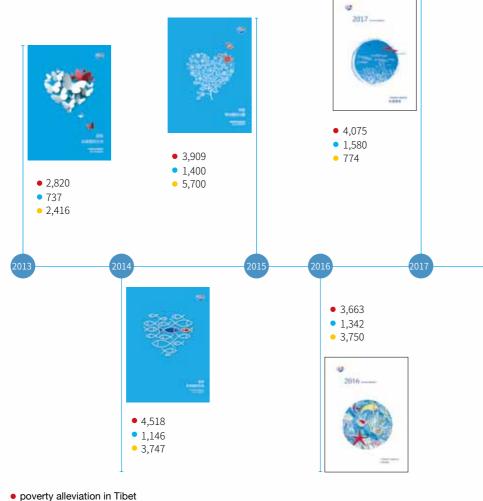


## **CNOOC Welfare Foundation: Complete Devotion to Moving Ahead with Warmth**

CNOOC Welfare Foundation is a non-public Foundation launched by CNOOC and approved by the Ministry of Civil Affairs on July 9, 2012.

CNOOC Welfare Foundation aims at marine environmental and ecological conservation, promoting scientific research and technological development projects on marine ecology and supporting international exchanges and cooperation activities as well as other public welfare charities in the marine field.

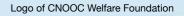
Since 2013, CNOOC Welfare Foundation has highlighted its featuring positioning, improved the management system, expanded the scope of assistance, strengthened project supervision and invested accumulatively RMB 416 million in three categories of projects including poverty alleviation in Tibet, marine environmental protection and public cooperation. In 2017, in the evaluation of social organizations organized by the Ministry of Civil Affairs, CNOOC Welfare Foundation was rated a 4A level foundation. We remain true to our original aspiration and keep in mind the social responsibility as our fundamental mission. On the road of providing public welfare services, we keep moving ahead with warmth.



 marine environmental protection public welfare cooperation

CNOOC invested RMB 416 million Unit: RMB 10,000 Yuan

光明切励奖 突出贡献奖 5013第二前中国注义社会自住风雪和州家 社会責任优秀案例实 妇女儿童慈善奖 环保2013中央企业扶贫开发工作先进单位。 正序架 100万 公劫 8888 1788 は安く 32月4日 2014年国北重監督学 実出情報学 2013年1月14日第15日第二、2014光明贡献学 2014 -12 Rev. 21.0 公益でき 2015社会扶留先进集体 から自然水デー 老城夜行業 1,4000 21.1K FT# \*\*\*4 获得最初 化0.2 环保 2016光明点教授 1010年長中国公司正型 2016民心奖 16.62 = D T 10月年2月1日日10日 2018 2018世安社院代表来例天 慈善 orrange activities 2017光明功勋奖 結約第 大4850 (大16,50 从开究 1011日第二十二十四日第三 2017中国妇女儿童慈善奖 突出贡献癸 7014光明貢献奖 THER BRANE SAME 2013中央企业状势开发工作先进单位 2013中国儿童慈善笑 扶贫 52247 2011年後前來基準書, 2013第三篇中国企业社会责任优惠集织奖 用体突 包心笑 12810 基核奖 2014中国儿童慈善奖——突出贡献奖 1.000 MAAN NOFFRAIDERACHINER 2014中国妇女慈善党 环保 Innutes 2018年夏中国辺最全世 2018年に日本市内市市を大学 10.0488 科技研究室 2015年3月1日2日 2016年3月1日2日在全主 2015光明功勋奖 2016年3月1日2日在全主 2015光明功勋奖 2016年3月1日2日在全主 2015光明功勋奖 中国海洋石油集团有限公司 团体契 11.18 2017堂县景台或相当田区市 1007年至445年至8年2 款姓 三新加州女 2010民心翼 2010光明贡献奖 2018年度中国公益企业 2016企业扶贫优秀案例英 2017最具爱心机构与团体奖 THREE HEREY TO SERVICE STREET, SALES





## Caring for Children: CNOOC's Benevolence Lightening the Future

Children are our hope. Children are our future. CNOOC has always attached importance to children, the special stakeholder group, and strived to create a healthy and harmonious environment for their growth.

CNOOC actively promotes the "Love Mother's Cabin" Project as care for pregnant and lactating female employees, carries out a wide range of school-enterprise exchanges like popularizing the knowledge of the ocean in campus and opening exhibition hall and the operation area of enterprises to children with experience activities, cares for children in difficulty by providing qualified education and health conditions within its reach, strengthens Blue Force to care for special groups of children such as the autistic children and handicapped children, so that they can as happy as the normal children.

It takes ten years to grow trees, but a hundred years to rear people. We keep on making earnest efforts in child welfare undertakings as always, with our love, to warm up the smiling faces of children and build a better tomorrow for them.

























## DEVOTING TO PUBLIC INTERESTS AND REMAINING TRUE TO THE ORIGINAL ASPIRATION

CNOOC Welfare Foundation is regarded as the unified management platform for public welfare programs. In 2017, CNOOC continued to make targeted

poverty alleviation, caring for students and performing special public welfare charity affairs, won honorary awards like "The Children and Young People's Charity Award", "Guangming Charity Award", "Award for Organization and Group with Most Caring", etc.

#### Deep Friendship with Zhuozi County

On August 3, 2017, Yang Hua, Chairman of CNOOC, along with his delegation came to Zhuozi County, the Inner Mongolia Autonomous Region. He made on-site investigation of CNOOC-aided poverty alleviation projects and donated to the county targeted poverty alleviation fund. Since 2013 when it established a fixed-point assistance relationship with Zhuozi County, CNOOC has effectively applied the poverty alleviation principle of "Relieving Difficulties, Eradicating Poverty, Promoting Bloodmaking Function and Establishing a Longterm Mechanism" to local poverty alleviation planning with the total investment reaching RMB 12 million.

#### Warmth in the "House of Love"

On January 11, 2017, it was so cold in Zhuozi County. However, there was crowded, bustling, outside the "House of Love" of Sandaoying village. The villagers came from all sides and gathered at the entrance, receiving donation from employees of CNOOC Gas & Power Group, who donated within merely one week more than 1,000 pieces of clothes, pairs of sports shoes, electric blankets, etc.



#### UNCOC Assisting the 6th Marine Culture Design Contest among National University & Middle School Students

CNOOC Welfare Foundation assisted the 6th Marine Culture Design Contest among National University & Middle School Students. As one of the series of activities of the World Oceans Day and the National Marine Awareness Day, the contest with the theme of "Intelligent Ocean" attracted participants from 84 middle schools and 550 colleges and universities nationwide and received a total of 30,680 works covering various fields like graphic design, product design, digital media, etc.

Public Welfare and Charitable Donation

## PROVIDING VOLUNTARY SERVICES AND STRENGTHENING BLUE FORCE

CNOOC constantly advocates and promotes voluntary services. In 2017, CNOOC proactively advocated and organized voluntary service activities through the Company's Labor Union, the Youth League Committee and women's organizations to deliver warmth and support to people in difficulty and socially vulnerable groups in various ways, to publicize and popularize marine knowledge and to provide voluntary services. Currently, the Company has



## Breakfast" Project for Children in the Mountain Area

On May 5, 2017, CNOOC's "Donating a Breakfast" Public Welfare Project was inaugurated in CNOOC Chaoyangmen Tower, marking the "Donating a Breakfast" Project was officially settled in CNOOC. The project is a voluntary service project under the rainbow public welfare plan, launched by *China Business News* in 2011. It donates breakfast to Yunnan Hope primary school at RMB 4 per breakfast standard. Up to now, the total amount of fundraising has exceeded RMB 1 million. 265 voluntary service teams and 11,280 young volunteers, and organized nearly 234 voluntary activities of various kinds for the whole year with the participation of 36,179 young employees.

#### "Pearl Students" Picking Shells in CNOOC

Blue Force cooperated with Xinhua Compassion Education Foundation and carried out the "Pearl Students in CNOOC" program for poverty-striken university students in Tianjin, with various experience activities like marine knowledge publicity and occupational skills promotion.

#### Protecting the Sea for Returning Shells Home

On October 15, 2017, the theme activities "Protecting the Sea for Returning Shells Home" kicked off in Qingdao. The activities received positive response from CNOOC's Blue Force with a total of nearly 100 volunteers participating in. Bohai Oilfield signed the Agreement on Cooperative Construction of Marine Science Popularization with the State Oceanic Administration, focusing on developing marine education and increasing young people's awareness of marine power.

#### CNOOC Supporting the "EU-China Blue Year"

2017 was the "EU-China Blue Year", Europe and China continued to promote and deepen cooperation in the areas of marine ecology, marine science and technology and blue economy. On September 16, CNOOC held the "Blue Globe" beach cleaning activity, the key content of "EU-China Blue Year". Representatives of the EU, the State Oceanic Administration and primary and middleschool students in Tianjin were invited to clean up garbage on the beach and voluntarily make oath to protect the ocean from the adverse effects of human activities.

#### Uvolunteer Activities all over the Country in the "World Oceans Day"

June 8, 2017 was the "World Oceans Day". Volunteer teams of CNOOC's "Blue Force" were dedicated to marine cleaning and environmental charity promotion.

Volunteers from all over the country carried out various activities such as lectures on marine knowledge, solicitation of creative ideas of environmental protection, hiking on

beaches with garbage cleaning. Their actions increased the awareness of caring for the ocean and protecting the environment to be deeply rooted in the people's minds.



## INTEGRATING INTO THE COMMUNITY AND CREATING A **BETTER LIFE**

CNOOC proactively commits to serving the community, creating harmony and bringing benefits to the people, establishes the regular communication mechanism with communities and listens to rational proposals of local governments and residents. The ration of environmental and social impact

assessment for new projects is kept at 100%. The Company makes efforts to share our resources with communities, proactively carries out community building in a cooperative way and repay communities with its development outcomes. The Company helps local residents solve difficulties in life, improve

#### CNOOC Petrochemicals Import & Export Carrying out Community Public Welfare Forest Protection Activities

The staff of Xinhai Oil Storage, subordinate to CNOOC Petrochemicals Import & Export, carried out public welfare forest protection activity in cooperation with officers and soldiers of Daxie Frontier Inspection Station, and Rhine Park Community. Volunteers cleaned up the garbage on both sides of the trail on General Hill, in order to protect

the forest environment and reduce hidden dangers. The activity increased awareness of forest protection and environmental protection among officers, soldiers and community residents, so as to deepen their understanding of the importance of low-carbon development and environmental protection to human life.

#### Nurser Rhyme with Theme of CNOOC Selected in Music Textbook for Primary School

A song called "Haiwa Turns to be Youwa" composed by CNOOC was included in the Huacheng edition of music textbook for primary school. The lyrics are simple and lively, with pictures of "HAI YANG SHI YOU 981", tenders and drilling workers. This edition of music textbook has been issued in 14 provinces and municipalities

in the country, in particular used by nearly 70% of the primary schools in Guangdong. The achivement marks that the cooperative community construction and public welfare activities led by CNOOC's subordinate units in Guangdong are greatly welcomed by local people.



local ecological environment, create and maintain communal safety and harmony. The Company 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.

#### Nanhai East Oilfield was awarded "Advanced Collective of Typhoon Resistance"

On September 29, 2017, eastern South China Sea Oilfield received the honorary plaque of "Advanced Collective of Typhoon Resistance", for the recognition of its outstanding performance in typhoon resistance and disaster relief of the year. In 2017, Zhuhai City suffered 3 consecutive typhoons within 11 days. The staff of the company fast reacted to prepare and arrange emergency deployment. In the wake of typhoons, the company actively resumed production and restarted the downstream gas supply within a few hours, which provided strong guarantee for the recovery of the city after the disaster.



Ratio of Environmental and Social Impact Assessment for New Projects



#### A Letter of Thanks from Tianjin Maritime Rescue and Coordinating Center

Tianjin Maritime Rescue and Coordinating Center (MRCC) sent a letter of thanks to CNOOC on July 5, 2017, expressing its gratitude to CNOOC for its often participations in emergency rescue operations at sea and thus positive contribution to the maintenance of traffic order and regional economy in Tianjin.

By the end of 2017, as a main member of MRCC, CNOOC had been involved in 132

search and rescue actions, accounting for 22.3% of all emergency actions. CNOOC also actively participated in the action of rescuing "Yamin 18" and "Naxiang 2" and rescued 7 people in danger.

#### CNOOC rescued lost fishing boat

On July 15, 2017, CNOOC China Ltd. Zhanjiang received the rescue request from Hainan MRCC for "Qiong Dan Yu 13095" fishing boat which had been lost for 2 days. The company sent without hesitate "HAI YANG SHI YOU 685", the guardian ship of KANTAN No.3 drilling unit, to the rescue site. The guardian ship overcame the stormy waves, found the lost fishing boat in a short time and promptly escorted it to return home. The 4 people on the ship were safe and sound.

#### (CNOOC Emergency" Hand in Hand with Tianjin Red Cross

On September 12, 2017, the "Red Cross Emergency Rescue Training Base in Binhai New Area" was officially unveiled at the Offshore Oil Training Center CNOOC. "Blue Rescue Team", which was set up relying on Bohai Oil Fire Brigade, was also presented with the flag by the Red Cross in Binhai New Area and became a "Regular Army" in Tianjin city emergency rescue. Red Cross Society in Tianjin, the government of Binhai New Area and other institutions jointly organized the publicity activities of emergency training and Red Cross life health and safety education for the 2017 "World Emergency Day". Representatives of residents from Bohai Oil mining area, teachers and students from

Bohai Oil second primary school participated in the emergency exercise and the on-site first aid exercise. These activities further enhanced the awareness of disaster prevention and mitigation and helped improve the ability of self-help and mutual aid for local people.



Deeply Integrating into Global Economy • Joint Development for Bright Future

## 2017 CSR REPORT OVERSEAS CHINA NATION OFFSHORE OIL CORP.

## The Belt and Road: CNOOC's Heart v

In the "Silk Road Economic Belt" and the "21st-Century Maritime Silk Road", "CNOOC People" can be found everywhere for business cooperation. They are guided by "Peaceful Cooperation, Openness and Tolerance, Mutual Learning, Mutual Benefit and Common Development", spirit of the Silk Road, striving together to be the constructers of the peaceful world, contributors to the world development and defenders of the world order. They make efforts in building Energy "Silk Road" to achieve the connectivity of all of the global resources as their way to build a community of shared future for mankind.



Jameel Sh. Hussein Deputy General Manager of Missan Oil Company Coordinates: Iraq

Through cooperation, I know that CNOOC is an international energy company with good reputation in technology, capital and management. The people work well and rigorously and respect partners. I hope that CNOOC and Iraq will deepen their cooperation.

I am very proud of being a member of the

outstanding CNOOC team. It is no doubt that

I will learn more professional skills.



Stephane **On-site Electrical Engineer** Coordinates: Russian Arctic region

COOEC Yamal team works 14 hours a day. I shall say they are really an "Iron Amy"! We had a very pleasant cooperation. We have built a deep friendship although the project was successfully completed.



Karl Petter Willumsen Project Supervision Manager of "HAI YANG SHI YOU 982" Coordinates: South China Sea

I have been working as a project manager for COSL over nine years. I led the building of four semi-submersible drilling platforms for CNOOC. The "HAI YANG SHI YOU 982" where I am working on is about to be completed. This makes me very proud.



infrastructure in the countries along these

routes. The Initiative can effectively promote

the development of these countries and is

NUB

really good news for Indonesia

#### Vision

Ranking in PIW Top 50 Oil Companies

Ranking of Global LNG Importers

deeply integrating into global economy joint development for bright future

#### **Strategy Paths**

#### Institution Building

#### Structuring Career Ladders for Employee Development

Management Measures

#### **Risk Prevention**



# S

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## **OVERSEAS CSR STRATEGY**

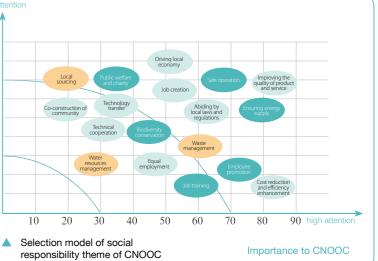
compliance management, value sharing equal Employment, coordinated development co-construction of harmonious communities, beautiful environment

- Regulation of International Staff Planning and Management
- **Overseas Human Resources Management Rules** Regulation of the Basic Salary and Welfare Management for Long-term Expatriate Staff Code of Conduct for Overseas Subsidiaries and Employees

#### Assets Operation System Building

- Overseas Project Reporting and Recording Management Measures (Approval) Rules for Overseas Mineral Right Management, Overseas Subsidiaries Procurement
- Overseas Oil (Gas) Field Prophase Research and Engineering Proposal Management Methods Rules for Overseas Subsidiaries Information Management
- Rules for the Implementation of Overseas Legal Disputes Management Rules for the Implementation of Foreign Assets Audit Rules for the Management of Compound Book Audit

## Identification of Topics







## CREATING SOCIOECONOMIC VALUE

CNOOC is an important force in the implementation of the national "Going Out" strategy and the Belt and Road Initiative. Creating maximum value for stakeholders is a top priority in

developing overseas business, CNOOC actively makes efforts to ensure national energy supply and drive local economic development and provide better products and services for customers.



developing international cooperation to ensure resources supply

CNOOC Gas & Power Group as the First Chinese Company won the "CWC LNG Tech Innovation Award 2017".

#### Prize Citation

In view of the global LNG trade growth and technological progress, CNOOC Gas & Power Group innovated the 4D full life-cycle evolutionary analysis technology for the large LNG receiving terminal, covering design, construction, adjustment commissioning and operation. In particular, the 4D dynamic simulation platform of the receiving terminal is a creation in the world. It solves the technical problems such as the super large-scale 3D multi-phase flow simulation and the multi-point constraint contact simulation of storage tank, and provides a quantitative and safe solution for the construction and operation of the receiving terminal.

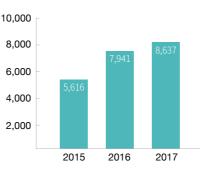


32.73 million tons

#### The Crude Oil Trading Volume Increasing Year by Year

Faced with the challenges of the complex oil market, CNOOC Petrochemicals Import & Export overcame difficulties and developed crude oil trade year by year from 2015 to 2017, with the trading volume of 56.16 million tons, 79.41 million tons and 86.37 million tons respectively.

Crude Oil Trading Volume (10,000 tons)





The FPSO used for BD Gasfield has the largest liquid sulphur treatment capacity in the world

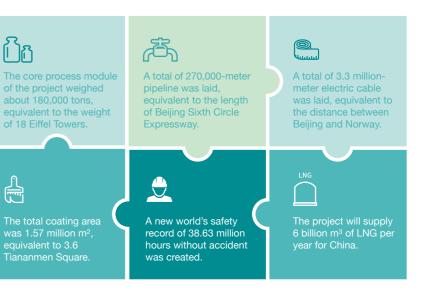
On August 16, 2017, the last module of Yamal project started shipment, marking the first Chinese construction project of LNG core process module was successfully completed.

ក្រឹត

#### CNOOC High-end Manufacturing Shining in Arctic Region

independently designed and constructed by China. COOEC also broke the world's safety record for single site single project construction and provided a reference to the construction of super LNG plant in the Arctic region.

#### This is the first LNG core equipment



#### BD Gasfield, a Rising Star Offshore Indonesia

On July 22, 2017, BD Gasfield of CNOOC SES was formally put into operation. The gasfield is featured by rare "Three-high", i.e. high temperature, high pressure and high hydrogen sulfide content, and has been developed for more than 10 years.

The natural gas produced will be sold to Pasuruan, an Indonesian city, after treatment on FPSO. The gasfield is expected to keep a steady production for another 10 years and provide strong support for the local economic development.

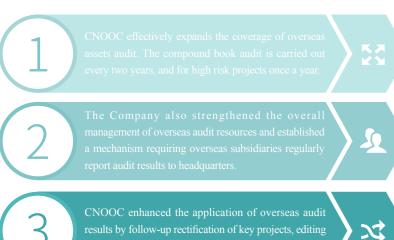
## STRENGTHENING SAFETY AND COMPLIANCE MANAGEMENT

Safety and compliance management is the very resource of CNOOC operating business in the world.

The Company pays close attention to overseas operations and personnel safety, formulates rules for overseas security management, constructs overseas security information exchange platform, maintains communication with international security organizations, keeps following up tracks of security risks of the overseas projects, and effectively improve the efficiency of emergency response to overseas security.

The Company continues to strengthen overseas asset risk management and control, improve overseas major project investment decision-making procedures and normalize mechanisms for overseas audit, which lays a solid foundation for preventing overseas operation risks.

### Normalization of Overseas Audit

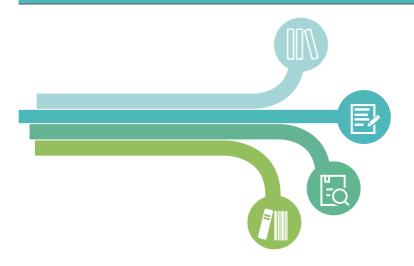


#### COOEC Won the "Petroleum" Security Award" in Thailand

In virtue of Zawtika1B project, COOEC won the Petroleum Security Award issued by Petroleum Authority of Thailand (PTT) on February 24, 2017. It is the first time for COOEC to win the high-level security honor from PTT.

COOEC developed a security, safety, health and environmental protection (SSHE) plan for the project. The mechanical completion achieved one month in advance by taking effective measures such as risk classification, trend analysis and compliance of leading indicators. COOEC created a "Zero Accident" record for operations from offshore to onshore, thus was highly praised by the project owners.

J International Company Strengthening Overseas Assets Audit



- carried out internal control audit in 2 overseas exploration projects and 1 development project
- carried out compound book audit in 3 non operator projects
- fully cooperated with SASAC for focused inspection and special audit of overseas stateowned assets
- coordinated subordinate units in Indonesia to receive the Indonesian government led audit of higher level administrative fees

#### COSL Safety Management Manual in Indonesian Version

For its foreign employees better understanding the concept of safety management of the company, COSL Indonesia Base carefully edited Hand Protection Manual in Indonesian version.

The manual includes not only the knowledge

### Nexen Promoting Life Safety Rules in the Management

Nexen upgraded the Life Saving Rules in 2017, on the basis of industry standards and CNOOC rules. To ensure each member in the company to understand the importance of these LSRs, members of the ELT and Senior Management each sponsored one for 2017,

#### **ELT and Senior Management**

FANG Zhi, CEO Alan O'Brien, Senior Vice President, General Counsel & Secretary LIANG Yu, Senior Vice President, operation services Marilyn Schonberner, Senior Vice President, CFO Patrick McVeigh, Senior Vice President, Global Exploration & Interna Patrick McVeigh, Vice President, US Gulf of Mexico, and President, Nex Quinn Wilson, Vice President, Global Support Services Ray Riddoch, Senior Vice President, UK Managing Director, Europe

Tilak Nithiyeswaran, Vice President, oil sands

## No smoke. No mirrors. Just safety.









of hand protection, but also 55 summary cases, 12 typical cases and 124 identified nipping hands points.

To make learning more effective, in addition to individual learning, security officers take various measures such as organizing collective

open class in every morning meeting and reading the manual contents aloud, besides daily publicity of 2 case analyses and safety warnings, 5 nipping hands points and control measures, and 1 typical case, to enhance safety consciousness of the staff.

made personal commitment and set example to subordinates in practice.

	Life Saving Rule
	Stop Work Authority
	Conduct Hazard Assessment
	Energy Isolation
	Drive Safely
national Developments	Permit to Work
xen Petroleum USA Inc.	Working at Heights
	Confined Space Entry
9	Safe Lifting Operations
	Alcohol & Drug Free





## PROTECTING A BALANCED ECOSYSTEM

CNOOC attaches great importance to protecting the balance of ecosystem in overseas areas where it operates, through all kinds of technological means and actions for biodiversity protection, carbon emissions management and ecological restoration, to achieve a high degree of adaptation, coordination and integration of each part of the ecosystem.

In 2017, CNOOC carried out a series of management activities like international benchmarking of QHSE management,

researched on carbon emissions management of overseas subsidiaries, established a framework of overseas QHSE management system which matches to the world-class international energy company with CNOOC's characteristics.

Initial Assessment on the Impact of

Carbon Emissions from Overseas

The initial assessment on carbon emissions

of 16 projects was made, such as Canada's

Long Lake oil sands, the British Golden Eagle

Storage Space

Economic Cost

**Carbon Emission** 

Cost

Oilfield and the Brazil Libra.

actors to

actors to be

actors to be

Projects

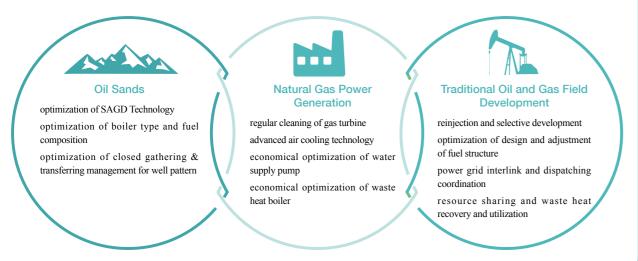
### Research on Low-carbon Regulations and Policies Related to Overseas Projects

Study on the Policies of Carbon Emission Reduction in the Countries Where the Projects are Undergoing

The Company made a study on the regulations and policies of carbon emission reduction and carbon pricing in 10 countries including Canada, the UK, Brazil, Indonesia, Guyana, Nigeria, Iraq, Uganda, Argentina and Algeria.



Suggestions on Energy Saving and Emission Reduction in Different Fields of Production



#### Bird Protection Activities

Nexen sponsored and participated in local activities for bird protection in the dawn of the Canadian Environment Week, from June 5 to 11, 2017. Nexen installed signal trackers on birds in the vicinity of the Long Lake operation area to monitor breeding and migration of birds, in order to provide useful data for research on bird behaviors in oil sands operation areas.

Adam Judd, Compliance and Environment Manager of Nexen, explained the significance of the company's participation in the project. "Nexen supports this program because it helps

#### Restoring Catchment Areas to Green Wetlands

In the mining of NEBC shale gas zone from 2008 to 2014, Nexen built several catchment areas for fracturing activities. After drilling, Nexen did not disregard these areas, but carried out ecological restoration and returned green lakes and wetlands to the region.



### CNOOC Uganda Relieving Worries of Local Residents

CNOOC Uganda made efforts in understanding the needs of local residents, communicating with local village committee and villagers' representatives on potential impacts and disputes of debris disposal site construction of a project, and finally relieved their concerns.



us understand how birds use disturbed and reclaimed habitats in the oil sands region. The data we receive from MAPS is an indication of how well bird populations are able to survive in disturbed habitats, and allows us to think progressively in our abilities to lessen our future impact on the environment."





## BUILDING PLATFORM FOR EMPLOYEE DEVELOPMENT

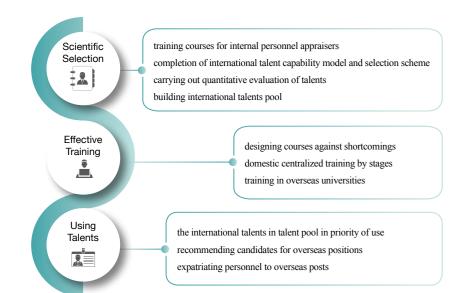
CNOOC adheres to the concept of "Respect, Mutual Trust and Win-win", optimizes the overseas employment system, actively implements the institution of localization of employees, builds career ladders and promotes the common development of local employees and enterprises. CNOOC respects customs and religious beliefs of employees from different regions and countries, strengthenes cultural communication and exchanges, enhances mutual understanding between Chinese and foreign employees so as to help all the staff better understand and build a harmonious corporate culture. CNOOC has 5,991 overseas employees, of which 4,767 are local employees. The localization rate of overseas employees reaches 80%.



**Overseas Employees** 

Localization Rate of Overseas Employees

#### Establishing a System of Training and Using International Talents





#### overseas posts, of which Sam Ash won the UK Oil & Gas Young Professionals Apprentice Award.

Since 2009, Nexen has been committed to the

In 2017, 11 apprentices were assigned to

developing the apprenticeship program.



### **Voice from Employees**



Olakunle Ogunjimi Seniority: 6 years Nationality: Nigeria

I have been working in CNOOC Nigeria for 6 years. It is in the company where I have the opportunity to do the international oil and gas business. The company is open to various suggestions, has good interpersonal and teamwork environment and provides many job training opportunities. I really feel that I am respected and valued here.



I joined CNOOC in August 2016. The Company gave me the opportunity to experience Chinese corporate culture and to enjoy myself while working. CNOOC focuses on team cohesion. So it provids various training programs for employees and organizes team building activities. I feel very lucky to be a member of the "CNOOC Family" and I'm looking forward to the promising future of CNOOC.

### UK Oil & Gas Young Professionals Apprentice Award

Sam Ash strictly observed his duty in the whole period of apprenticeship and continuously led his team to improve work performance with production safety as the prerequisite. He said after the award, "I keep Safety First top of mind all the time, and step

up whenever I can. It's great to be recognised as Apprentice of the Year and I hope in 10 years I'll be somebody that people can turn to for advice as I have with my peers and my supervisors over the last few years."

r Leadership Development training for senior managers	
nal Managers Training sional training for regional managers	
supervisor Traning training for new supervisor	4
rd Potential Program leadership capability traning	
Exchange Program	



Xu Shaohui Seniority: 1.5 years Nationality: Malaysia



Era Irawan Seniority: 4 years Nationality: Indonesia

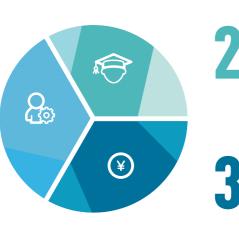
It is my honor to join the Asia Pacific Center of CNOOC EnerTech 4 years ago. During the years, I worked with people of different cultures, languages and customs and habits in a harmonious environment, like living in a family. I am growing up every day with the company. I enjoy the corporate culture that encourages cooperation and progress.

## **PROMOTING ENTERPRISE-COMMUNITY COMMON DEVELOPMENT**

CNOOC lives together with the local government and residents in a complementary community with a shared future. CNOOC has striven for a long time to integrate into the community through establishing communication and coordination mechanisms, creating jobs, providing professional training, carrying out extensively covered and effective public welfare activities, helping the residents improve quality of life and education, in order to maintain a harmonious development and create a sustainable future.



providing posts, hands-on opportunities and professional training



## Donations to Students and Education

renovating school buildings, donating teaching facilities, and training teachers

## Assissting People in Difficulty

organizing voluntary services and public welfare donations to improve community conditions

### Job Creation

Bridas (CNOOC's subordinate company in Argentina) has established a scholarship and a Youth Learning Program with local foundations. In 2017, the company received 1,000 students from 20 schools as trainees and interns. In addition, Bridas provides basic skills training in poor communities to help the poverty-striken people get out of difficulty.

In 2017, CNOOC SES Ltd. carried out underwater photography and coral reef training for 20 residents living in poverty of Thousand Islands Regency, in the vicinity of its operation area, and encouraged local communities to develop tourism and marine environmental protection industry.

Nexen actively encourages girls to learn STEM (science, technology, engineering and mathematics). On May 4, 2017, it invited 15 female students from 11 schools to visit the company and invited 40 female employees to introduce their own experiences, so that the female students were given a vivid lesson on designing development plan.

## Donations to Students and Education

CNOOC Uganda carried out for five consecutive years the CNOOC Scholarship program to primary and middle school students in Hoima, with 330 students benefited. The company has sent totally 8 students to study in China, of which Lamech won the first prize in the second session of China University of Petroleum (East China) Debate Contest in 2017, Rahman won the Chinese Government Scholarship for Excellent Foreign Students in China 2017 and in August 2017, Patrick and Silage earned master degrees and returned to Uganda for educational work in local colleges and universities

In 2017, CNOOC SES renovated 3 local primary school buildings, funded the local middle school to set up library and computer rooms, carried out the training program "Knowledge Impartment: Strategy and Practice" for 30 teachers. These activities effectively improved the levels of both soft and hard ware for local education.

#### Assissting People in Difficulty

On August 17, 2017, when celebrating Canada's 150th anniversary, Nexen actively participated in the "Sisters' Soup" initiative proposed by local charities. 150 volunteers boiled 900 bowls of soup for women, youth and children in the rescue center. This is the sixth time that Nexen participated in the charity event.

Representative of the volunteers of COSL Mexico Company carried out the public welfare activity "Love without Border, Caring for the Orphans" in San Pedro church orphanage on the Children's Day of 2017. They sent greetings and materials of love to the children in orphanoge. The activity was a practice of the company's commitment to "Serving the Society, Peopleoriented and Fulfilling the Corporate Social Responsibility".



## Country Report

During the past seven years in Iraq, CNOOC Iraq has strictly abided by local laws and regulations and actively fulfilled corporate social responsibilities by integrating into the local culture, promoting local employment and purchasing localization. The company has emphasized enterprise-community communication, personnel training and technical exchanges, so as to realize the value of the company, balance between economic growth, environmental protection and social progress.

## **CNOOC** in Iraq

In 2010, CNOOC signed the Technical Service Contract for the Missan Oil Fields and started its business in Iraq, focusing on oil exploration, development and production.



The Social Responsibility Management System of CNOOC Irag

### **Building up Excellent Projects**

Missan Oil Fields have long history of development. In order to provide energy for the re-construction of post-war Iraq, CNOOC Iraq adheres to the philosophy of "One Team with One Goal" and carried out various methods to rejuvenate the old oilfields, such as building mutual trust and cooperation mechanism with the Iraqi employees; strengthening the Iraqi experts' participation in technological

development, and improving communication and mutual aid in the daily work.

Missan Oil Fields project has reached production achievement in 2017. On December 28, Chairman Yang Hua sent a congratulation letter to the company with sincere gratitude to the overseas staff working in Iraq during the New Year Festival.



### Chairman's Congratulation Letter

Through implementation of optimal and fast drilling program and a number of plans to increase production in the whole year of 2017, CNOOC Iraq created the record for the fastest drilling in the horizontal well MISHRIF of Missan Oil Fields, with every aspect of the project achieving the best performance in the past 7 years. On behalf of the Leading Party Members' Group of CNOOC, I would like to extend my warm congratulations to CNOOC Iraq, and to express my high respect and heartfelt thanks to the comrades who are still working in Iraq during the traditional Chinese New Year. The Company hopes that the staff of CNOOC Iraq and CNOOC International would remain sincere and determined to our original aspiration, bearing the mission firmly in mind, and to continue performing their roles professionally for CNOOC's overseas business development and first-class international energy company with CNOOC characteristics!

## 609

Local Employees

()% Localization Rate

5,94 (person-time Cumulative Trainees

CNOOC Iraq strictly abides by the laws and regulations in Iraq, resolutely upholds international conventions and business ethics, strives to improve employees' law-abiding consciousness,

In order to help the staff improve legal risk prevention capacity, prevent and control risk in advance and ensure healthy and orderly operation, CNOOC Iraq has organized legal training every month since April 2016, involving nearly 20 sectors such as Iraq Labor Code, Social Insurance Law, HSE Law, registration of company, tax compliance, import and export and custom operations, verdict, arbitration and enforcement, and anticorruption, etc.

### **Building Career Ladders**

CNOOC Iraq has created a number of stable jobs for local residents and has been maintaining high localization rate of employees in the foreign companies in Missan Province. The company attaches great importance to the development and training of employees and actively

#### Senior Engineer of Thirty Years Old

Seif was just 30 years old in 2017, but already promoted to be the senior engineer of electric submersible pump (ESP) in the Downhole Operation Department. He joined CNOOC Iraq in September 2014.

Before joining CNOOC, Seif majored in electricity with little professional knowledge of electric submersible pump. In the course of work, he received the company's systematic training and work shift, gradually mastered the ESP technology debugging and optimization, and extensively studied the management sciences including inventory management, construction coordination, and on-site supervision, etc. He is now a specialized technical expert.

Because of his excellent performance, Seif was sent as the company's technical backbone to Baker Hughes for ESP

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## **Compliance Operation**

strictly enforces contracts and agreements, constantly improves risk management system, prevents and reduces operational risks.

### Normalization of Legal Training

In 2017, CNOOC Iraq elaborated a two-stage training program on the Technical Service Contract of Missan Oil Fields, focusing on interpretation and analysis on protocol structure, system framework, introduction, contract terms, attachments and appendices. The program was expected to help the staff deepen the understanding of the contract and optimize the execution of contract terms.

advocates the team spirit of equality, cooperation, solidarity and dedication. The company continues to build career ladders for employee development and provide professional training for local employees in the fields of security, technology, management, etc.

technology training in April, 2017, and four months later, he was promoted to a senior engineer. He thanks deeply the company for giving him training and promotion. With great challenges of ESP installation in more than 30 wells in the year 2017, 3 times over that of last year, he closely cooperated with his colleagues and successfully accomplished the heavy task.



### Cenertech Training Center Completed

The completion ceremony of Cenertech Training Center was held in Missan Oil Fields on March 28, 2017, which is the first training center of CNOOC constructed in Iraq, and the second overseas training center of CNOOC following the training center in Indonesia.

The training center provides 20 physical training modules, more than 50 training themes and more than 200 practical exercises, covering more than 2,000 knowledge units, including: QHSE, drilling, production and operation. The training center will organize training on management skills and language as well as culture. The physical training will support the local development of Iraq and accelerate the skill upgrading of the staff.



## **Emphasizing Safety Management**

CNOOC Iraq adheres to CNOOC's core value of HSE, "People-oriented, Safety First, Environment Protection and Equipment Integrity". On the basis of well-functioning Safety Management System, CNOOC Iraq started from

traced and constrained.

rectification timely.

2

فرار شرفة ستوفر العراق السنيدية ندر وتقر والد تم





Staff Reflection

Faisal Akram Nationality: Pakistani Post: Maintenance Supervision

I have been working in CNOOC for 3 years. CNOOC allows me to work in an international and multicultural environment, so that I can not only enhance my professional skills, but also improve my multilingual abilities. The corporate culture is very attractive to the staff. We internalize the core value of CNOOC. This makes our team more cohesive and dedicated. I'm very proud to be a member of CNOOC.



Haider Abdul Rahman Fadhil Nationality: Iragi Post: Document Adminstrator

Graduated from University of Basra in 2013, I was engaged in field of HR management in several companies in Iraq. I joined CNOOC Iraq in June, 2017. Since then, I could feel my life interesting and my future became clear. Everyone here is in its own position and the work is undergoing in a good order. Under the help of my manager, I open up my mind and get many ideas about work. CNOOC advocates loyalty, self-confidence and cooperation. It is because of these spirits that I can do my job well.



Imambux Birmani Nationality: Pakistani Post: Document Administrator

I am proud of being able to work in CNOOC Iraq. Everyone here has a strong dedication to work with the same goal. Leaders of each department are not only the business experts, but also concentrating on health safety and environmental protection, so that the company's security policy can be rooted in peoples' mind and be implemented with good will. As an industry veteran with 17 years of work experience, my ability has been greatly improved in the company with better prospects.

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the local situation and improved upon international best practices, safety management with good planning, with no discount execution and timely feedback, to ensure safe oilfield operations.

#### **Continuously Deepening and Promoting** FOD HSE Management System

implementing 37 HSE procedures covering all operations in the oilfield.

#### Promoting "Training Passport" System ensuring that safety training is recorded,

#### Carrying out On-site Safety Inspection

focusing on drilling, completion and workover operations, and establishing classification system for hazards management, following up and

#### Mine Clearance for Oilfield Safety

Missan Oil Fields are located in a minefield, which pose a major threat to the employees' safety and the company's operation. In order to eliminate the risk of mine, the company organized a team of experts for mine action in the vicinity of Missan Oil Fields, and carried

out mine prevention education in the nearby villages. There is not even a single landmine casualty so far. The company has received honorary certificates issued by the Iraqi Directorate of Mine Action (DMA) and Civil Defense respectively, which is a precedent for



### **Promoting Local Development**

It has always been enterprise culture of CNOOC to stay in harmony with the local government and the public to promote the development of local society.

While carrying out oilfield operations, CNOOC Iraq attaches importance to tradition and builds brotherly feelings with the local people.

CNOOC Iraq dedicates a yearly budget

of USD 5 million for educational and infrastructural constructions and cooperated with the Local Government and Missan Oil Company to form the Social Contribution Committee, which is responsible for project recommendations and reviewing the annual social contribution projects proposed by the province-level government.

) million USD

Special Training Funds



Contracted Amount of Social Contribution Projects in 2017

Number of Social Contribution Projects





The Local Government and Missan Oil Company Social Contribution Supervision Committee MOC CNOOC Iraq Local Government Facility Construction Department FOD Manager and Other Departments ompletion and Acceptance of Social Contribution Project MOC IIII



#### Implementing Social Contribution Projects Elaborately

After well-orchestrated scheme, fully preparation and scientific management, 9 contracts with a total value of USD 4.46 million were signed, which include schools, road, power feeding sewer network and other infrastructure construction in Musharrah

for boys' and girls' school, the total building area is 5,500 m<sup>2</sup>. Each school contains 18 classes, advanced laboratory, administration building and all related facilities. These projects will be a symbol of friendship and win-win cooperation between two sides.

#### Difference Carrying Out Publicity and Sympathy Activities in Communities

CNOOC Iraq took the opportunity of the "Safety Production Month" campaign to carry out security publicity and send charity to villagers and school children living around the oilfield on June 29, 2017. During the event, Chinese employees of the HSE Department of CNOOC Iraq together with their local colleagues explained to villagers and school children about fire safety prevention and

protection of oilfield facilities in the hot season. They also brought various drinks and cakes to the local people for cool and refresh in the hot summer, as well as visors and footballs as gifts to the local participants. The company and its employees won the praise of the local people and achieved positive social responses.



## OUTLOOK ON 2018

Promoting Economic Growth	<ul> <li>majoring in the oil and gas industry, promoting energy transition and exploring business of new energies in a prudent and orderly manner</li> <li>strengthening scientific and technological innovation for efficient oil and gas development with high-end products and services</li> <li>assuming the primary responsibility of safety, strengthening compliance operations and the comprehensive risk defense</li> <li>enhancing quality control, providing quality products and services and building world famous brands</li> </ul>	
Enhancing Environmental Protection	<ul> <li>adhering to the concept of green and low-carbon development and integrating environmental protection into the whole process of daily production and management activities</li> <li>strengthening water resource management and improving the utilization efficiency and sustainability of water resources</li> <li>taking the initiative to tackle climate change, promoting energy conservation and emission reduction and carrying on building a comprehensive low-carbon management system</li> <li>making efforts to protect biodiversity and protect the marine ecological environment for the construction of a "Beautiful China"</li> </ul>	
Driving Social Progress	<ul> <li>adhering to the "People-oriented" concept, assisting employees for a better life</li> <li>making efforts in targeted poverty alleviation, strengthening the responsibility of public welfare foundation of the Company</li> <li>expanding voluntary service, innovating service means and continuously enhancing the social influence of Blue Force</li> <li>integrating into communities, sharing resources with the society and repaying the society with our development outcomes</li> </ul>	
CSR Report Overseas	<ul> <li>implementing the "Going Out" strategy and the Belt and Road Initiative and deeply integrating into the global oil and gas industry</li> <li>implementing environmental protection management in the host country and ensuring sustainability of the local ecosystem</li> <li>attaching great importance to the development of overseas employees and actively</li> </ul>	

e to the development of overseas employees and actively integrating into the local community to achieve the common development of employees, communities and the Company.

## THIRD-PARTY ASSESSMENT

## Rating Report on China National Offshore Oil Corp. Sustainability Report 2017

Upon the request of China National Offshore Oil Corporation (hereinafter "CNOOC"), Chinese Expert Committee on CSR Report Rating invited experts to form a Rating Team. The Rating Team rated CNOOC Sustainability Report 2017 as follows (hereinafter "Report"):

#### 1. Rating criteria

Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 3.0) and Rating Standard on Corporate Social Responsibility Reporting for Chinese Enterprises (2014).

#### 2. Rating process

(1)The process assessment team interviewed members from the social responsibility department and viewed the relevant materials involving the preparation of the report on site.

(2) The rating team evaluates the management process and the information disclosed in the report and draws up the rating report. (3) The Vice Chairman of the Chinese Expert Committee on CSR Report Rating and the leader of the expert rating team sign the rating report together.

#### 3. Rating results

#### Process Management ( \*\*\*\*\*)

Establishing the organization structure of the report complied with the leading group, the senior leaders are responsible for theme, issue and frame of the report. The standardization process of the report writing is established and the CSR management level gets promotion. The editorial team identifies stakeholders and consults their advice by meetings, questionnaires and interviews. The substantial issues are defined according to material issues of the corporation, relevant state policies and industry benchmarking analysis and the stakeholders' opinions. It is planned to hold the special conference, and the report would be presented in printed papers, electronic version, Chinese and English version, H5 version as well as video version. Thus, the report progress management is super excellent.

#### Materiality ( $\star \star \star \star \star$ )

The report systematically discloses key performance issues on its industries such as "Implement the Macro Policy", "Improve the Quality Management", "Ensure Energy Supply", "Career Health", "Intensifying Safe Operation", "Focusing on the Technological Innovation", "Water Resource Management", "Tackling Climate Change", "Biodiversity Conservation" etc. with detailed description. The report has super excellent materiality.

#### Completeness ( $\star \star \star \star \star \Rightarrow$ )

The report systematically discloses key information on "Promote Economic Growth", "Enhancing Environmental Protection", "Driving Social Progress", "CSR Report Overseas" etc., with 89.5% of core indicators disclosed on its industries. The report has leading completeness.

#### Balance ( $\star \star \star \star \star \star$ )

This report discloses negative information on "Direct Contractor Casualties", "Employee Casualties", "Recordable Injury Events", "Incidence of Occupational Disease", "Employee Turnover Rate" etc. The report has leading balance.

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#### Comparability ( $\star \star \star \star \star$ )

This report discloses data on 37 key performance indicators of at least three consecutive years, including "Crude Oil Trading Volume", "R & D Investments", "Energy Conservation and Emission Reduction Investments", "Comprehensive Energy Consumption per RMB 10,000 Turnover", "Percentage of Female Employees", "Profit and Tax" and compares "Crude Oil Output", "Yield of Natural Gas", "Fertilizer Output" etc. to national data. The report has super comparability.

#### Readability ( $\star \star \star \star \star$ )

The report continued the theme of "Our Quality Energy for Your Blue Sea and Sky," and focused on the four aspects of economy, environment, society, and overseas responsibility, demonstrating the connotation and extension of corporate social responsibility performance in a properly detailed and concise manner. The cover creativity and content design adopted actual images of the Company, and integrated into elements of its main business, vividly highlighting the industrial characteristics and enhancing the report identification. The design style was natural and fresh, and the colors and pictures were harmonious and impressive, and benefited by associating together with the contents, improving the reading inspiration. It achieved excellent performance in the aspect of readability.

#### Creativity ( $\star \star \star \star \star$ )

The report responded positively to the United Nations Sustainable Development Goals (SDGs) and disclosed comprehensively the corporate social responsibility performance of the Company regarding to the 17 SDGs, showing the spirit of keeping up with the times and reflecting the responsibility guidance. The setting of seven responsibility features including "CNOOC and SDGs," "LNG: Technological Innovation Leading Development" "Internet +: New Experiences of Fast Service" showed the key practices of the Company in an all-around and multi-dimensional way, highlighting the responsibility duty of a central SOE. The featured country report of "CNOOC in Iraq" responded to the Belt and Road Initiative. The appraisal and selection work conducted by the Company for outstanding contacts for report preparation enhanced the engagement of internal stakeholders, being helpful to improve report guality and management value. The video-based report, which was the first of its kind released by the Company. was favorable to enhance publicity and communication value. It achieved excellent performance in the aspect of innovation.

#### Overall Rating ( $\star \star \star \star \star$ )

Through evaluation and deliberations, the rating team agreed to rate China National Offshore Oil Corporation Sustainability Report 2017 as super excellent by giving five-star rating to it.

#### 4. Suggested improvements

Increase report balance by disclosing more inadequacies and negative data.

#### Rating team

#### Team Leader: Zhang En, Vice Director of Research Center for Corporate Social Responsibility, Chinese Academy of Social Science

#### Team Members:

Guo Yi, Professor of School of Economics of Beijing Technology and Business University Wang Zhimin, Process Evaluators of Center





Wei Zichuan Vice Chairman of the Chinese Expert Committee on CSR Report Rating



Zhang En

Rating Team

Team Leader of the Expert

Scan QR code to view rating files of CNOOC



#### **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.

#### **Recovery Ratio**

Recovery ratio refers to the percentage of geological oil reserves accounted for by the amount of oil that can be extracted from oil reservoirs. This is a key criterion in evaluating the level of development of an oil field.

#### 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 gas fields 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 based on 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 organisation.

### 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.

### **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.

### Shale Gas

Shale gas specifically refers to an unconventional form of natural gas found trapped within shale formations.

### 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.

### **Ocean Energy**

Ocean energy refers to the renewable energies that are reserved in the ocean. The ocean receives, stores and emits energy through a variety of physical processes. These energies exist in the form of tides, waves, thermals, salinity gradients, and ocean currents.

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#### Continued

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## 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 hope that you could spare some time to give us your valuable feedback on the report and our work.

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	2
🗌 Very abundant 🛛 🗌 Quite abundant 🔹 Fair	□ Quite little □ Very little
3. What do you think of the quality of the information disclosed	d in the report?
□ Very high □ Quite high □ Average □ C	Quite low 🗌 Very low
4. Which form of design would you like to be used more in the	2018 report?
Expression of management thought Data graph	□ Case introduction □ Special topic □ Picture
5. Which theme would you like to be presented in the 2018 rep	port?
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 2018 report?

Economic growth, specifically	
Environmental protection, specifically	

Social progress, specifically		

CSR overseas, specifically

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