



**KunLun Energy Company Limited**

(incorporated in Bermuda with limited liability)

**昆 侖 能 源 有 限 公 司**

(Stock Code : 00135.HK)

Environmental,  
Social and  
Governance  
Report

**2019**





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## ABOUT THIS REPORT

This is the 2019 Environmental, Social and Governance (“ESG”) report of Kunlun Energy Company Limited for 2019. It provides an overview of the Group’s fulfilment of economic, environmental and social responsibilities in 2019.

### REPORTING ENTITY

Kunlun Energy Company Limited.

### REFERENTS

“Kunlun Energy Company Limited” may also be referred to as “Kunlun Energy”, “we” or the “Group” in this report. Kunlun Energy’s parent company, PetroChina Company Limited, is referred to as “PetroChina” or “parent company”. The Stock Exchange of Hong Kong Limited is referred to as the Hong Kong Stock Exchange. Environmental, Social and Governance Reporting Guide, Appendix 27 to the Listing Rules of the Hong Kong Stock Exchange is referred to as the “ESG Reporting Guide”. Sustainability Reporting Standards of Global Reporting Initiative are referred to as “GRI Standards”.

Unless otherwise stated, all amounts stated in this report are in Renminbi (RMB).

### REPORTING PERIOD

The reporting period of this report is the financial year 2019, being the period from 1 January 2019 to 31 December 2019 (referred to as “the Year”). Part of content within the report extends to the early of 2020.

### SCOPE OF THE REPORT

This report covers the Group’s management policies, objectives, commitments, key projects and measures in relation to ESG matters and activities relating to the operation of the Company. For the list of the Company’s subsidiaries covered in the report, please refer to Note 42 “Principal Subsidiaries” in the consolidated financial statements set out in the Group’s annual report 2019.

### BASIS FOR PREPARATION

This report is prepared in accordance with the requirements of the Environmental, Social and Governance Reporting Guide, Appendix 27 to the Listing Rules issued by the Hong Kong Stock Exchange.

## INFORMATION AND FEEDBACK

All information disclosed in this report are derived from the Group's internal documents, statistical data and summaries and statistics of the fulfilment of responsibilities by the subsidiaries of the Company. The contents of this report have been reviewed by the management and relevant departments of the Group and approved by the Board. The Group looks forward to hearing your valuable opinions and suggestions, so that we may continue to improve our sustainable development performance and enhance our ESG capability. We welcome any comments or suggestions. If you have any comments, please contact our Group at:

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## ABOUT KUNLUN ENERGY

### COMPANY PROFILE

Kunlun Energy Company Limited is a comprehensive energy company incorporated in Bermuda (British), with the Company's stock listed on the Main Board of the Hong Kong Stock Exchange with the stock code 00135.HK, and controlled by PetroChina. The Company is one of the constituent stocks of the Hang Seng China — Affiliated Corporations Index. To-date, Kunlun Energy's businesses focus in four segments: natural gas sales, liquefied natural gas (LNG) processing and storage, natural gas pipelines, and exploration and production.

PetroChina, Kunlun Energy's controlling shareholder, is one of China's major oil and gas producers and sellers. As an important participant of oil and natural gas industry chain in China, Kunlun Energy undertakes the function of financing platform and investment entity in oil and natural gas industry chain in China, as well as the role of management platform of natural gas terminal utilization business. Kunlun Energy has become one of the biggest natural gas terminal utilization seller and LPG sellers in PRC. LNG and compressed natural gas (CNG) terminals covered across the whole country. The gas pipeline network covers about 37,000 kilometers, with 11.277 million end users. The Group was repeatedly elected into the S&P Global Platts Top 250 Global Energy Company Rankings, and ranked 88th in the Fortune China 500 in 2019. In the 7th, 8th and 9th China Securities Golden Bauhinia Awards, the Group was honored the "Best Investment Value Award for Listed Companies", "Best Listed Company Award" and "Outstanding Contribution Award at 70th Anniversary of the Founding of the People's Republic of China".

Kunlun Energy succeeds from its parent company's corporate tenet of "supplying energy and creating harmony" and the core corporate motto of "integrity, innovation, performance, harmony, safety". By leveraging its parent company's comparative edge due to the full-industrial chain operation, as well as seizing momentous tidal trend, our Group is poised to help ecological civilization and the construction of a beautiful China and is committed to providing safe and stable gas supply and high-quality and efficient customer services rendered to various users. The Group also aims at creating an impressive value for shareholders, making positive contributions to promote better economic and social development, and endeavour to build a leading, world-class comprehensive utilization company of natural gas terminal at local level.

### ***Kunlun Energy's Economic Performance***

	Unit	2019	2018	2017
Sales revenue	RMB in 100 millions	1,133.13	1,054.70	887.06
Profit attributable to owners of the Company	RMB in 100 millions	55.51	46.34	47.60
Earnings per share (basic)	RMB in cents	66.71	57.41	58.97
Total assets	RMB in 100 millions	1,478.97	1,405.87	1,405.58
Sales volume of natural gas	100 million cubic metres	280	220	188
Annual sales volume of LPG	10,000 tonnes	607	700	658





## BUSINESS PHILOSOPHY

### CORPORATE TENET

Supplying energy and  
creating harmony

### DEVELOPMENT STRATEGY

Resources, Market,  
Capital, Innovation, and  
Globalization

### OPERATING PHILOSOPHY

To generate value for customers  
To seek development  
for enterprise  
To create prospect for employees

### DEVELOPMENT OBJECTIVE

Building a global  
first-tier company in  
clean energy

## BUSINESS DEVELOPMENT PLANS

The steady development of the national economy and society promotes the sustainable growth of energy demand, and natural gas has always asserted an important role in China's energy transformation. Based on national development visions and energy transformation strategies, among others, together with national ecological civilization, the construction of a beautiful China and air pollution control, defending the blue sky, and other factors, we estimate China's natural gas consumption will continue its sustainable growth by 2050, and the natural gas market will exhibit an optimistic market potential. Since 2019, the country's authority has successively rolled out "Notice on Amending the Administrative Measures for Gas Operation Licenses", "Measures for the Supervision of the Fair Opening of Oil and Gas Pipeline Network Facilities", "Guiding Opinions on Regulating the Installation Charges of Urban Gas Projects" and other issues related to the development policies and regulations in the natural gas industry, this has reinforced the reform effort in the management mechanism in the industry, vigorously promote the fair opening of oil and gas pipeline network facilities, improvement of the approval method, along with optimizing the business operating environment. All such measures have been conducive to the sustainable and healthy development in the natural gas industry.

Against the aforementioned backdrop, Kunlun Energy attaches great importance to the instrumental role asserted by the blueprint in business development. The Group has established a sophisticated planned management system, while the system was updated and improved in 2019. The Group further streamlined the planning and management process of the headquarters, departments and related units to ensure the orderly progress of the planned work; formulated the Group's "Gas Business Development Blueprint form 2020 to 2030", with the specific focus on the strategic development of bigger and stronger terminal business; commenced research on the development of LNG business for vehicles and ships, natural gas and new energy hybrid developmental researches and market development potential for hydrogen energy. The Group also actively explores new business directions and new paths of development, strives to take the leading role in the industry development and facilitates the industrial development trends.

### Major Progress in the Planning and Management in 2019:

Our Group will enhance the business guidance initiatives for provincial-level institutions and second tier units; completed the planned management details of second tier units, streamline the planning and management processes of second tier units; standardise relevant planning templates; focuses on project development for gas terminal; edited and compiled natural gas business developmental blueprints for the 31 provinces, autonomous regions and municipalities; while each of which were assessed on individual basis. Our Group endeavours to improve the quality and standard of planning and intends to provide consolidate support for the business development of the Group.



Based on predesignated plan, the primary objectives of our Group in the subsequent phases include the following 4 aspects:

#### **Step-up on market expansion, to materialise improvement in both efficiency and quality of retailing business of natural gas**

- to leverage on comparative edge resulted from the integrated development of natural gas business; strengthen collaboration effort with local government and regional enterprises of gas; engage in developing sustainable market and projects with premium quality, high effectiveness and benefits; to increase the operation scale of city gas business, along with launching a batch of key projects; speed up the production progress of new projects, plus facilitating circulating development and market layout for stock market, boasted market share and capacity to increase efficiency.
- scale up development on distributive energy projects featured with constant energy consumption utilisation; with prime focus on facilitating thermoelectric in industrial park.
- actively promote branch pipeline construction to drive development of end-user markets.

#### **Promote quality and efficiency development in LPG business, press forward with sales promotion and scale of production for end-user LPG business**

- expand resources channel; consolidate existing resources base; develop new resource channels at domestic level, increase the scale of import.
- develop end-user markets; to build end-user network with certain degree of operation scale; develop and standardise direct sales services for end-users; to help resolve government's dilemma in regulating the industry.
- to expand scope of business; press forward with LPG supply at terminals business; coordinate side by side development of natural gas and various other gas supply businesses.

#### **Continue to promote the integrated operation of LNG business**

- Leverage on the integrated advantage featured with “terminals plus processing plants”, construct a full-chained LNG liquefied sales system, that “based on terminals and plants, supported by Kunlun Energy's gas stations, targeted on the end-users of the terminals, improved logistics delivery services, complemented by tank container delivery services”, exercise the integrated operation potential of LNG sector.
- Focus on efficiency and benefits; continue to optimise operation efficiency at LNG terminals; to boast the operation rate in LNG plants; to extend the utilisation of natural gas to transportation sector; to optimise market layout for refill stations.

#### **Actively promote integrated development of natural gas and new energy; develop the high-efficiency end user market in natural gas; to steer the natural gas business along the line of high quality development**

- to strengthen collaboration and communication with government authority, to construct the peak-modulation mechanism for gas and electricity under the tidal development of new renewable energy; actively promote the implementation of new policies; strategically plan ahead for market layout; formulate new path of development for natural gas and new energy business.
- to develop new energy and related sectors, to lead the Group into the world stage of first-tier clean energy players.



## MESSAGE FROM CHAIRMAN

Welcome to read this report. Thank you for your concerns and support for Kunlun Energy.

In 2019, amid the context of the global economy falling into greater uncertainty due to trade frictions, the PRC government steadfastly adheres to making steady progress and initiates the reform in product and price as the mainstream of measure to enable high-quality development. At the same time, at countrywide level, the authority strengthened pollution prevention and ecological construction, continued to increase investment in the environmental protection, and intensively promoted the “Three-Year Action Plan for Defending the Blue Sky.” The national production volume and net imported volume of natural gas was 306.7 billion cubic meters, achieving an year-on-year increase of 9.4% with its proportion in total primary energy consumption exceeding 8% for the first time.

Seized by the complexity of the environment with escalating risk and challenges at home and abroad, Kunlun Energy always concerned its shareholders, employees and society. While our Group actively adapts to the overwhelming trend of national oil and gas system reform, it also grasps the opportunities for high-quality development of the energy industry. As the Group aims to provide various users with safe and stable gas supply, along with premium and highly efficient customer services, the Group contributes to the national objective to reduce emission, as well as to facilitate the transformation of the high-quality development in the energy industry.

In 2019, our Group continued to listen to various feedback from stakeholders through a variety of channels and actively respond to their expectations all communicative channels. We highly regard the establishment of a compliance management system and promote the formulation of fair and integral policies and proceed with anticorruption and antimonopoly work. We commit to create sustainable value for users, extending the coverage of resource warranty and refine on supply guarantee mechanisms. The Group has completed the “Coal-to-Gas Conversion” project in the Xiong’an New Area; opened up the continental access to China-Russia LPG energy trade, which has allowed sufficient gas supply to meet the needs for the local residences. We persist on people-oriented mindset that we strictly comply with the relevant laws to safeguard various employees’ rights. We aim to join hands with employees to pursue mutual development and progress. We still adhere to the rationale of green and low-carbon development, while continuing to intensify pollution control, re-define objectives and implementation plans for energy-saving and water-saving, step-up effort to boost transformation capacity for energy-saving technology, and build a clean, low-carbon, safe and highly efficient energy system. We actively take up responsibility assumed by a state-owned enterprise and return to society through financial sponsorship to schools, as well as volunteering services. Since the outbreak of the COVID-19, we have quickly responded to government and social callings, to support the construction of gas pipelines in epidemic affected areas; while, at the same time, we make the best effort to resume work and production, contributing to the prevention and control of the epidemic and stable gas supply.

In the future, the Group will continue to work together with all sectors within the communities to overcome the difficulties and to win the battle against the epidemic with our best endeavour. We will also continue to stay true to our corporate tenet of “supplying energy and creating harmony”. The Group will unswervingly respond to the national policy that calls for sustainable rapid and healthy development of natural gas industry in PRC. Therefore, we serve to provide clean and efficient natural gas to foster economic and social development and ecological civilization construction.

Kunlun Energy Company Limited  
Chairman and Executive Director  
**Ling Xiao**



# SUSTAINABLE DEVELOPMENT POLICIES



As a socially responsible listed company, Kunlun Energy is always abided by the safety concept of people oriented, quality first, safety first, and environmental protection priority, continuously improves the quality, health, safety, and environmental protection management system, and continuously works to mitigate the risks related to environmental, social, and governance (ESG) in operation.



## SUSTAINABLE DEVELOPMENT POLICIES

### SUSTAINABLE DEVELOPMENT STRATEGIES

The functional role played by natural gas in a global attempt to combat climate change has received increasing popularity. To achieve the 2030 emission reduction targets set in the “Paris Agreement”, the PRC government vigorously promotes the use and development of clean energy. In 2019, the PRC government has step-up support for the development of the natural gas industry. Various local governments have issued policies to promote the healthy development of the natural gas industry. The “Coal-to-Gas Conversion” policy has been further promoted. The national production volume and the net imported volume of natural gas was 306.7 billion cubic meters, year-on-year, an increase of 9.4%. With the continuous adjustment and optimization of PRC’s energy structure, the tightening of environmental protection policies, and the relaxation of the international natural gas supply status, the natural gas prices will remain low within certain timeframe. Yet, as the clean energy sources, the natural gas will continue to grow steadily in PRC.

As one of the main natural gas utilization enterprises in PRC, Kunlun Energy is abided by its corporate tenet of “supplying energy and creating harmony”, while adhering to its development strategy of “resources, market, capital, innovation and internationalization”. The Group leverages on emerging market opportunities accessible, as well as advantages endowed by the parent company and set up several resource safeguard systems, strengthens capital operation, increases the scale of end-users sales, accelerates the construction of branch pipelines, continues to carry out the “Coal-to-Gas Conversion” business. The Group also takes the advantages of the industry-chain to promotes the utilisation of natural gas in city gas, transportation, industrial fuel, natural gas power generation, distributive energy, etc. so that the business can provide stable and reliable source of clean energy. It is also to meet the energy consumption needs for a better living standard, assist PRC in emission reduction and the transformation of high-quality energy industry.

As a socially responsible listed company, Kunlun Energy is always abided by the safety concept of people-oriented, quality first, safety first, and environmental protection priority, continuously improves the quality, health, safety, and environmental protection management system, and continuously works to mitigate the risks related to environment, society, and governance (ESG) during operation. Our sustainable development focuses on the major expectations and concerns of stakeholders, including compliance and trustworthy management, product responsibility, employee rights and interests, green operations and giving back to the society. While we continue to explore room for development for the company, creating value for shareholders and customers, and granting prospect for employees and the community. The mutual growth with stakeholders will be the key point in achieving the prospect of the future development, to create the maximum value for shareholders, and to achieve the ultimate goal of harmonious development for enterprises, customers, employees and communities. On the other hand, we adhere to the concept of green and low-carbon development, strive forward a profit-making scale of operation, speedy production with quality products, and a high-standard structure. The Group strives to proceed with the rapid development of the natural gas business so as to ensure the complementary pace of development in line with the economy in context, while we also give our best effort to mitigate the negative impact on the environment and society during the production.

## COMMUNICATION WITH STAKEHOLDERS

Kunlun Energy's major stakeholders include customers, government and regulatory authorities, suppliers, employees, communities, media and shareholders/investors. Their support and trust is a prerequisite for the Group's sound long-term development. As such, we strive to maintain good communications. Through multiple channels, we listen attentively to their expectations, concerns and opinions, and in due course respond with appropriate action.

Stakeholder	Communication channel	Communication frequency	Focus issues	Key communication performance in 2019
Customer	Security check at door	Throughout the Year	<ul style="list-style-type: none"> <li>Protection Safety</li> <li>Price</li> <li>Service quality and response time</li> <li>Steady supply</li> </ul>	<ul style="list-style-type: none"> <li>The user's security management is implemented pursuant to the relevant national and local government regulations, to perform inspections on: "residents, with no less than once every 24 month", "industrial and commercial users with no less than once every 12 months", and "rural users, with no less than twice every 12 months". The system aims to establish complete inspection standard and procedures to reduce the potential risks of users' gas facilities.</li> <li>In 2019, there were 5.12 million resident users of security inspection, with a security inspection rate of 54%; approximately 70,000 non-resident users of commercial, industrial, and heating system security inspection, with a security inspection rate of 100%.</li> <li>Strengthen price negotiations with suppliers, lock-up price and quantity through contracts, and based on natural gas price policy as stipulated by the local governments, as well as market demand condition to set price for natural gas on rational basis.</li> <li>Telephone inquiry, questionnaire surveys, feedback on operation venue, security inspection services and other measures were adopted to improve the customer service throughout the Year; to conduct users' satisfaction inspection with prime focus on service quality, attitude, response time; processing outcome, indoor security training and other aspects; 99% of surveyed users responded with satisfaction.</li> <li>Strengthen policy control, enhance the linking up of upstream and downstream client resource plans, allocate resources on rational basis, prepare contingency plan, and ensure a stable supply of resources.</li> </ul>
	Publicity (through internet, TV and community bulletin boards)	Throughout the Year		
	Customer services (through stores, customer service telephone, WeChat public account)	Throughout the Year		
Government and regulatory authorities	Meetings	Irregular intervals	<ul style="list-style-type: none"> <li>Energy policies</li> <li>Safety, environmental protection and other regulatory requirements</li> <li>Gas development plan</li> <li>Supply safety</li> <li>Steady supply</li> <li>Stable price</li> <li>Pay taxes according to law</li> </ul>	<ul style="list-style-type: none"> <li>The local government project-based inspection on multiple occasions, with no major issues found.</li> <li>Two times participation in the meetings hosted by the China Gas Association Distributed Energy Committee.</li> <li>Operating areas with certain level of sophistication will participate in the editing of local government's LPG industry specifications.</li> <li>Strictly implement the price ceiling requirement for the residential use of gas stipulated by the price regulatory section of the local government; maintain a stable supply of resources in accordance with the market demand and to ensure a steady supply of gas for residential use.</li> <li>Strengthen policy control, enhance the linking up of upstream and downstream client resource plans, allocate resources on rational basis, prepare budget for contingency events, and ensure a stable supply of resources.</li> <li>Pay taxes in compliance with laws and regulations.</li> </ul>
	Work reports	Irregular intervals		
	Research reports	Irregular intervals		
	Government documents	Irregular intervals		
	Special reports	Irregular intervals		
	Routine inspections	Irregular intervals		

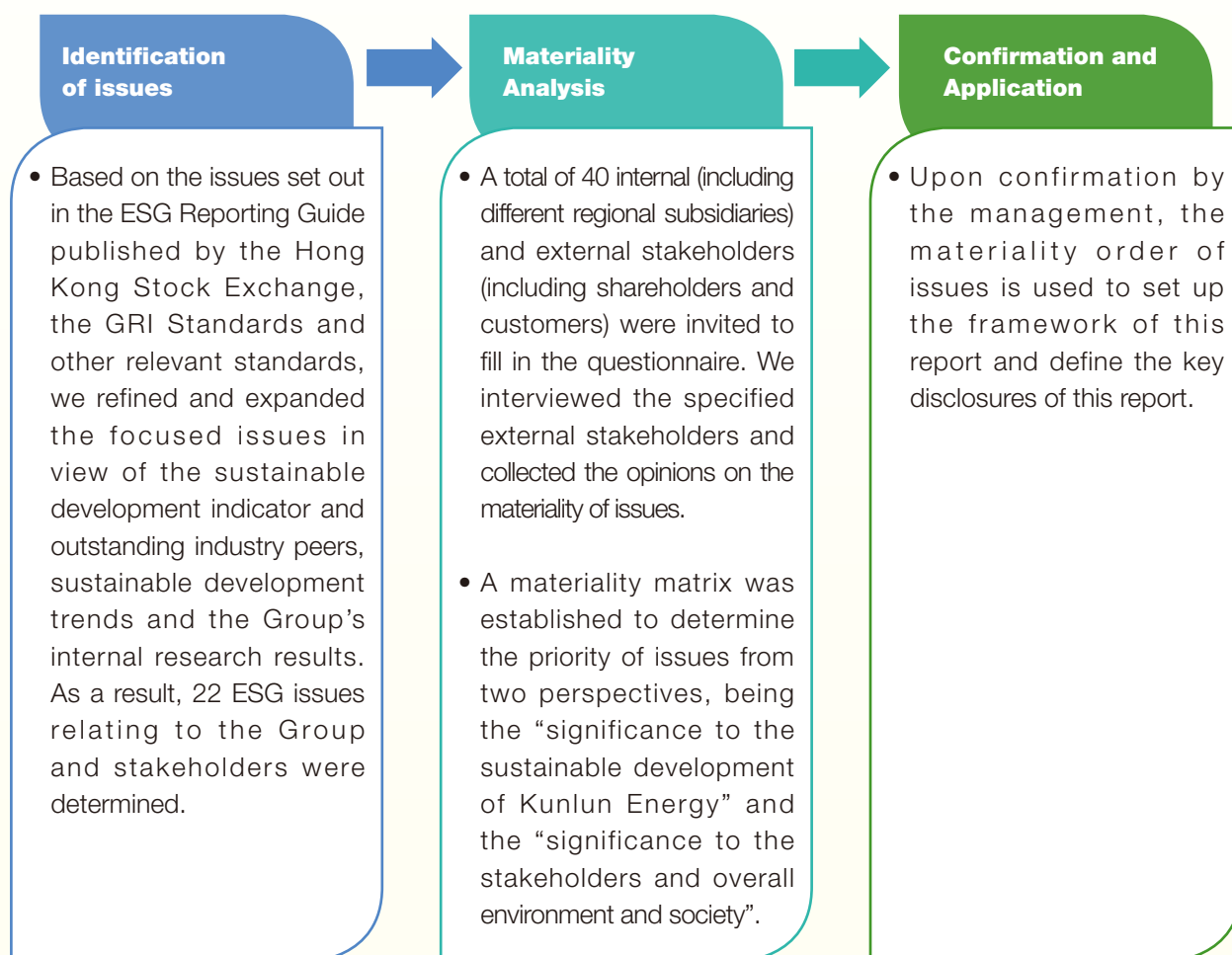


Stakeholder	Communication channel	Communication frequency	Focus issues	Key communication performance in 2019
Suppliers	Meeting	Once each quarter	<ul style="list-style-type: none"> <li>Equilibrium of resource inventory, demand and supply</li> <li>Performance of price and market</li> <li>Anti-corruption</li> <li>Information disclosure</li> <li>Procurement practices</li> </ul>	<ul style="list-style-type: none"> <li>Hold a quarterly meeting to address to resource supply to ensure stable and controllable sales in operation.</li> <li>Irregular visit to suppliers to ensure the balance of resources and market demand is sustained.</li> <li>Draw conclusion from the combined effect of seasonal changes and market changes, to predict the forthcoming demand for resource, strengthen communication and collaboration channels between upstream and downstream vendors, actively sourcing the resources to ensure the balance between supply of and demand.</li> <li>Perform centralized bidding process for bulk materials via the material procurement platform; resort to open bidding online for major engineering projects; to screen for contractor, and implement supervision.</li> </ul>
	Electronic trading platform	Throughout the Year		
	Organisation of bidding and tendering	Irregular intervals		
	Negotiation of purchases contracts	Irregular intervals		
	Day-to-day business communication and exchange (telephone or interview)	Recurring		
	Strategic cooperation on resources and equipment	Irregular intervals		
Employees	Labour union	throughout the Year	<ul style="list-style-type: none"> <li>Remuneration package</li> <li>Career path</li> <li>Cultural and recreational activities</li> </ul>	<ul style="list-style-type: none"> <li>Comply with equal pay for equal work; materialise the synchronised promotion of employees' income level and enterprise efficiency level, in compliance with the law to pay for various social insurances for employees, to share the gain derived from corporate development with employees.</li> <li>Provide consolation and assistance to 943 employees, grant assistance to 6 seriously ill employees, and distribute consolation allowance and relief fund amounted to approximately RMB1.04 million throughout the Year.</li> <li>To adequately nurture incentive and creativity among staff members, intensify and manage the control to each particular post, as well as to broaden the career development path for each staff member.</li> <li>To adopt a sophisticated education and training system, to devise multi-level, multi-perspective, full-coverage training programme; throughout the Year, training projects at corporatewide level totalled 55, number of employees attended the training totalled 5,252.</li> <li>To enlist employees to join the 7th China Petroleum Workers Art Festival Dance Contest and hosted the "70th Anniversary of the Founding of New China" Calligraphy and Photography Contest. for staff members.</li> </ul>
	Staff training	as planned		
	Work meetings	once or twice per year		
	Company website	Throughout the Year		
	Interviews, cultural and recreational activities	Throughout the Year		
Community	Volunteer activities	Irregular Intervals	<ul style="list-style-type: none"> <li>Knowledge dissemination</li> <li>Environmental greening</li> </ul>	<ul style="list-style-type: none"> <li>818 safety publicity information desks formed, 1,055 accident case publicity and education events and 531 safety education seminars hosted.</li> <li>Conduct various community service activities related to psychological counselling, tree planting and green protection, garbage collection, removal of illegal posters, cleaning and disinfection of public venues, poverty alleviation assistance, among others, with 1,220 participants in aggregate and 2,323 hours of social welfare services accumulated, an investment fund amounted to RMB2 million.</li> </ul>

Stakeholder	Communication channel	Communication frequency	Focus issues	Key communication performance in 2019
Media	Results Announcement Seminar	Twice a year	<ul style="list-style-type: none"> <li>• Future development</li> <li>• Ensure people's livelihood</li> <li>• Breakthroughs in work or progress</li> </ul>	<ul style="list-style-type: none"> <li>• To host a media open day event.</li> <li>• 2,990 articles were posted on Kunlun Energy Intranet, 222 articles posted on WeChat public account, and 312 articles on external paper-based media channel.</li> <li>• To accept 120 interviews with external media.</li> </ul>
	Annual/Interim reports	Once per year for each		
	Website submissions, information related to internal activities	Update daily		
	Media open day	Irregular intervals		
	Special reports on major events	Irregular intervals		
Investors/ shareholders	Special reports on major issues/ information disclosure	Regular disclosure as required by the Hong Kong Stock Exchange	<ul style="list-style-type: none"> <li>• Economic benefits</li> <li>• Sustainable development</li> <li>• Risk management and control</li> <li>• Shareholders' equity and profit</li> <li>• Incentive measures for management</li> </ul>	<ul style="list-style-type: none"> <li>• Throughout the Year, an aggregate of 11 shareholders' meeting, directors meeting and professional committee meetings convened, during which 83 resolutions passed.</li> <li>• Complying with the regulatory requirements of the Hong Kong Stock Exchange, an aggregate of 39 announcements were published in relation to changes in directors, change in conversion price of convertible bonds, and the exercise of conversion rights while issuing new shares, the founding of China Oil &amp; Gas Pipeline Network Corporation., and results announcement.</li> <li>• Attend and host 113 investors' conferences in various forms, met with more than 370 institutional investors, proactively responded to the pressing concerns of the capital market, and earned recognition in the capital market.</li> </ul>
	Annual reports/interim reports	Once per year for each		
	Roadshows and reverse roadshows	Irregular intervals		
	Corporate Open Day	Irregular Interval		
	Shareholders' Meeting	Convene as required by the Hong Kong Stock Exchange		

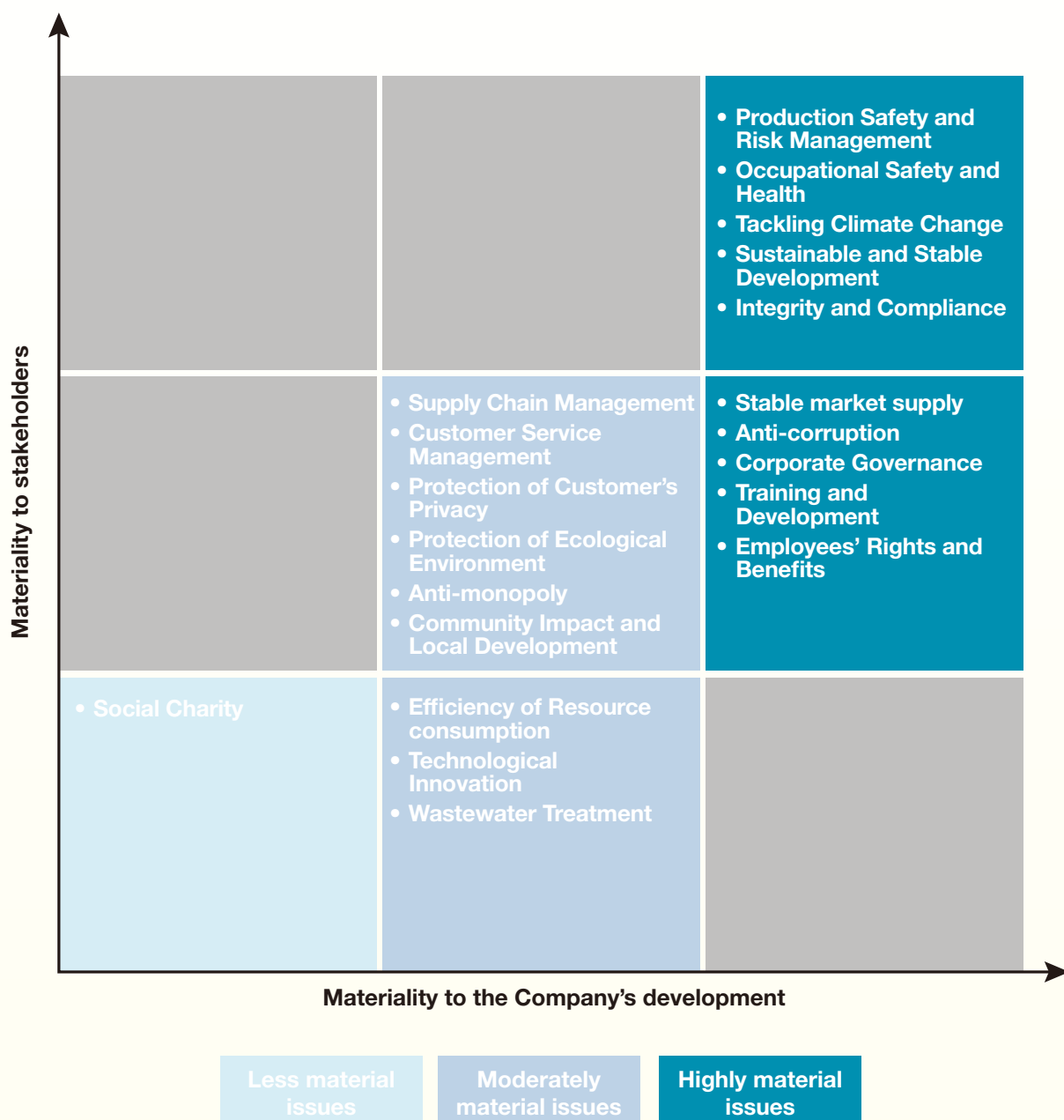
## MATERIALITY ASSESSMENT

The materiality assessment is not only conducive for Kunlun Energy to identify the risks and opportunities relating to sustainable development, optimize resource allocation and define the direction for improvement, but also improve the disclosure of the ESG Report and enhance the capital market's understanding of the Group's sustainable development process. In 2018, our Group's materiality assessment process included these three main steps:



In 2019, with the assistance provided by an independent third-party consultant, we conducted an internal review and benchmarking analysis based on the materiality assessment in 2018. We consider the overall perspective the issues confronted by the leading international and local peer companies, international sustainable industry guidelines and the sustainable development trend and has updated and revised the issues and their rankings in 2018 accordingly. We ultimately derived 20 ESG issues. The following materiality matrix shows how these 20 issues were prioritised. The closer an issue is to the upper right-hand corner, the more significant it is to Kunlun Energy and the stakeholders. The closer an issue is to the lower left-hand corner, the less significant it is.





After due consideration on the significance of respective issues on Kunlun Energy and on stakeholders, 10 highly material issues, 9 moderately material issues and 1 less material issues were identified. While focusing on material issues, this report also responds to the major concerns of external stakeholders. The following table shows the prioritised issues and their corresponding sections in this report. The policies and management measures in all material aspects specified in the ESG Reporting Guide issued by the Hong Kong Stock Exchange are set out in the relevant sections of this report. For details, please refer to the index table in the appendix.

Materiality	Issues	Elaboration on Relevancy	Corresponding section in this report
Highly material issues	Production safety and risk management	Kunlun Energy is engaged in natural gas, liquefied petroleum gas and other gas businesses, while gas is flammable and explosive. Therefore, Kunlun Energy's has high safety risks in its production and operation process. Production safety management is the guarantee for sustainable development of an enterprise. It is also related to the health, high-quality development and sustainable development of an enterprise; therefore, production safety management is of vital importance.	Production Safety
	Occupational safety and health	The primary obligation of every enterprises is to create a safe and healthy working environment for employees, which is also prerequisite requirement for the production and operation of Kunlun Energy. Therefore, we are highly concerned with the occupational health management of the employees.	Occupational Health Management
	Tackling climate change	To address to climate change has been one of the national policy requirements, as well as a corporate social responsibility. As an enterprise providing clean energy, we should actively respond to national initiatives. While we strive to supply clean energy, we should reduce carbon emissions generated by our own production and operation process.	Tacking Climate Change
	Sustainable and stable development	Continuous and stable development is not only related to the Company's better fulfilment of social and economic responsibilities, but also to the business performance of the Company and the interests of shareholders and stakeholders.	Business Development Plans
	Integrity and compliance	Integrity and compliance are necessary requirements for companies to implement their social responsibilities and legal compliance operations, and underlying code of conduct and principles of Kunlun Energy in its business operation. Non-compliant behaviours will adversely affect the company's reputation and image, along with the sustainable development of the Company.	Compliance Management
	Stable market supply	The promotion of PRC's coal-to-gas conversion policy and the increasing demand of natural gas have further aggravated the seasonal shortage of domestic natural gas resources. As a large-scale gas company, it shall shoulder and attach great importance to the political responsibility of protecting people's livelihood and corporate social responsibility in ensuring gas supply.	Ensuring Steady Supply
	Anti-corruption	Corruption not only hinders the healthy development of enterprises, but also negatively affects the corporate social public image. The Group maintains zero-tolerance toward corruption.	Integrity Construction
	Corporate governance	Good corporate governance is a vital condition to determine the quality of the corporate's operations and development, and is a key factor affecting business performance.	Corporate Governance
	Training and development	Talent determines the scale of development of the Company. Building an excellent operational and technical team can drive the rapid and high-quality development of the Company.	Talent Training
	Employees' rights and benefits	Employees are the core of business operations. Safeguarding employees' rights and interests and establishing good relationships between the company and employees positively promote the healthy and sustainable development of the Company.	Compensation and Welfare

Materiality	Issues	Elaboration on Relevancy	Corresponding section in this report
Moderately material issues	Supply chain management	As natural gas and liquefied petroleum gas are hazardous chemicals, the entire supply chain is a high-risk operation. Therefore, the risk management and control of the entire supply chain is an essential requirement to reduce risks from the source, improve risk management and control capabilities and reduce the incidence of accidents.	Supply Chain Management
	Customer service management	Customer relationship management and maintenance is the key to enhancing the competitiveness of the Company. Kunlun Energy has different kinds of customers with total 11.277 million at the end of 2019. Therefore, improving customer satisfaction and loyalty and maximizing customer development require good customer management.	Customer Services
	Protection of customers' privacy	Customers' information and their respective interests are closely related. Kunlun Energy noted that it has the prime obligation to ensure that customer privacy is respected and safeguarded, and regards such privacy protection as the prerequisite for establishing a long-term cooperative relationship with its customers.	Customer Privacy Protection
	Protection of ecological environment	One of the fundamental national policies is the protection of the ecological environment. Although Kunlun Energy operates clean energy business, there will still be a small amount of solid waste, wastewater and waste gas generated in the production process. According to the national policies such as the "Three-year Action Plan for Defending the Blue Sky", the Group needs to strengthen environmental risk management and control and fulfil its environmental protection responsibility.	Ecological Protection
	Anti-monopoly	The PRC government will accelerate the revision of the laws so as to the enforcement of anti-monopoly will be more professional and refined. Enterprises should strengthen their anti-monopoly compliance and resist any act that undermines the market order.	Anti-monopoly
	Community impact and local development	The production and operation of enterprises directly affect local economies and living environments. The Group has a responsibility to drive local economic and social development with its own development to achieve win-win results.	Aiding Local Development
	Efficiency of resource consumption	Kunlun Energy's resource consumption mainly consists of electricity for production as well as gas and water required for production and domestic use. Efficient use of resource can reduce costs, increase efficiency and reduce environmental pollution.	Resource Conservation
	Technological innovation	Innovation is an important driving force for enterprise development. Only through innovation can enterprises strengthen and improve their core competitiveness and adapt to the needs of social development and market competition.	Research, Development and Innovation
Less material issues	Wastewater treatment	Water pollution not only harms human health and destroys the ecological environment, but also exacerbates the crisis of water shortage. Sewage will be discharged during the production and operation of Kunlun Energy. Properly treating sewage and avoiding water pollution is the focus of the Group's ecological protection.	Ecological Protection
	Social charity	As a responsible corporate, the Group carries out social welfare activities to promote a harmonious society.	Community Public Welfare Helping to Fight COVID-19



Based on the results of this Year's materiality assessment, the core content of the report is divided into five chapters when presented to the readers. The framework is illustrated in the figure below.



# COMPLIANCE AND TRUSTWORTHY OPERATION

Corporate governance  
Compliance management  
Integrity construction  
Anti-monopoly

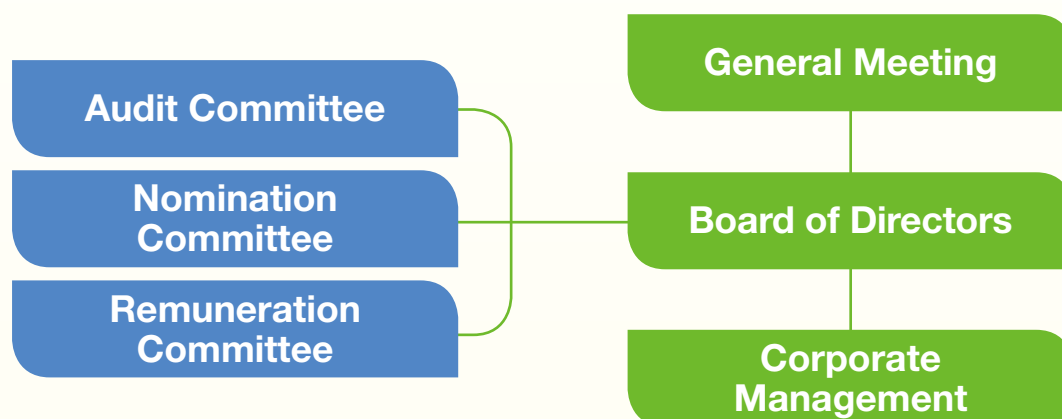
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# COMPLIANCE AND TRUSTWORTHY OPERATION

## CORPORATE GOVERNANCE

Kunlun Energy strictly abides by the Company Law of the People's Republic of China, the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited and other relevant laws and regulations. It defines the responsibilities of corporate governance entities, strengthens compliance, risk management and control in order to improve corporate governance.

As of 31 December 2019, the Board of the Group comprises 9 members, including 5 executive directors and 4 independent non-executive directors. Three committees – an audit committee, remuneration committee and nomination committee – have been established under the Board to oversee specific corporate affairs and support the Board's decision-making. The following chart shows the Group's governance structure. For details on corporate governance, please refer to the "Corporate Governance Report" in the Group's Annual Report 2019.



The Group's ESG Report Preparation Committee is responsible for preparing the ESG Report and formally reporting to the Board on an annual basis. In 2019, the ESG Report Preparation Committee was chaired by Mr. Zhong Wenxu, deputy manager of Kunlun Energy, while each of 22 relevant departments assigned a member of its management to act as vice chairman and an employee to be a working member of the committee. In order to continuously promote sustainable development capacity and enhance ESG management and reporting work, Kunlun Energy arranges for relevant training related to sustainable development at least once per year and invites the ESG Report Preparation Committee for participation. It also invites the management and the ESG Report Preparation Committee to attend the training hoisted by professional body.



## COMPLIANCE MANAGEMENT

Compliance with laws and regulations constitutes the baseline of codes of conduct and principles in the corporate management of Kunlun Energy. The Legal Affairs Department founded in the Headquarters is the department in charge of legal compliance management and the performance assessment in legal compliance issues. In 2019, the Group regarded the improvement in professional legal services and legal management standards as its primary objective and strengthened its functional role in decision-making, safeguarding transactions, and protecting rights and interests. The Group will continue to improve its standard of governance in compliance with laws and regulations, to standardize management, and be obliged by compliant operations.

In 2019, we commenced a series of effective measures in the aspects of institutional compliance, review and publication, legal team building, contract management, dispute case handling, legal risk prevention and control, as well as comprehensive compliance management, among others. This enables Kunlun Energy to set up a legal compliance management system that corresponds to our strategic operation goals and high-quality development. Throughout the Year, rules and regulations totaled 312 items were issued or amended, including the “Compliance Management Methods” and “Legal Demonstration Management Methods for Major Legal Matters” for the Group. Pursuant to the guidelines set out by “Performance Assessment in Compliance to Law and Regulations and its Implementation Rules (Trial)”, these provides strong legal support and guarantee for the Group to proceed the performance assessment in compliance with laws and regulations, which is related to the standardised operation and stable development. Meanwhile, we also actively arrange for legal compliance training. Two training courses on legal compliance were held during the Year, applicable to all branches, the deputy leaders of legal business in the second tier subsidiaries, as well as the backbone personnel of legal sector.



Meanwhile, during the Year, we focus on strategic development goals of Kunlun Energy, while strengthening the risk management and control and on acquired projects in the early and takeover stage. Our Group has prepared and issued the “Safety Assessment Requirements for Share Acquisition Project” and “Safety Risk Management and Control Requirements for Acquired Projects during Takeover Phase”. These measures are to ensure the legal compliance, operation and safety standard of the acquired projects.

## INTEGRITY CONSTRUCTION

### ***Anti-corruption Mechanism***

Corruption has always been one of the greatest hurdles to business development. Kunlun Energy pays due honesty, respect and conscience to each business partner, disapproves of any forms of commercial bribery, and requires partners to comply with our anti-bribery and anti-corruption policies.

In “Employee Code of Conduct”, we specially stated that employees show ample degree of fairness to customers, shareholders, suppliers and business partners of the Group and abide by the integrity and self-discipline regulations; staff members are prohibited from participation in activities that may lead to conflicts of interests with the Group; employees own the right and obligation to report to the supervisory division on violation of national laws of one’s own or others, on internal regulations and professional ethic code of our Group. Besides, the Group will observe strict confidentiality of information pertaining to the whistle blower, and no one is allowed to retaliate and revenge; for employees who violate the code of ethics, the Group will impose penalty as well as termination of the employment contract. In the forthcoming phase of operation, we will further refine the Company’s “Employee Code of Conduct”, which specifically requires all employees to learn and implement the rules and guidelines as contained therein, with the primary aim to further refine and standardize code of conduct among staff members.

Based on relevant national laws and the anti-corruption policies and regulations set out by the parent company, we have implemented the “Reporting System for Important Circumstances related to Discipline Inspection and Supervision”, “Implementation Methods for Letters and Visits from Discipline Inspection Section” and “Administrative Methods for Inspection Section to Participate in the Investigation and Handling of Accidents”, among others. These policies are applied to Kunlun Energy and all its subsidiaries, and they are issued by Mr. Ling Xiao, Chairman of the Group. We have also formulated the “Further Implementation of the Spirit of the Eight Regulations of the Central Committee”, to regulate business entertainment activities and strictly prohibit facilitation payments, including gift of cash and shopping coupons, debit cards, commercial prepaid cards and other valuable securities, payment vouchers and valuables, among others. We also restrict any kinds of political contributions.

To ensure that the best governance and supervision methods are applied to manage the anti-corruption plan, coordination of the discipline inspection, on-site inspection, audit, finance, internal control, and the law, and other supervisory measures, optimization of the structure of the supervision system, re-definition of the boundary of responsibility, and specification of the scope of responsibility, the content of supervision, conference system and operating mechanism, we studied and issued the “Working Rules for the Establishment of the Company’s Integrity Supervisory System”, and formulated the “Three-year Work Plan for Comprehensive Supervision” so that the anti-corruption mechanism will be well defined, institutionalized, and standardized. To tighten control, the Group integrates supervisory forces, applies the shared resources on supervisory measures, and promotes joint supervision. Various supervision and inspection plans are submitted to the discipline inspection committee for review, and various supervision and inspection results reported to the discipline inspection committee for filing; sharing and application of supervision and inspection outcome are strengthened; while the analysis and risk assessment of supervision and inspection results enhanced; the Group implements discipline inspection, on-site inspection, auditing, financial control, internal control, and laws and regulations, and other supervisory measures to achieve resource sharing, effective communication, strategic collaboration, and collaborative synergy. These initiatives facilitate the conversion of overall inspection results into governance capacity. The Group strictly implement supervisory and disciplinary requirements and standards of “Four Non-tolerance”, “Two Separate Investigations per Case” and “Two Reports Submission per Case”, strengthen coordination capacity within the organization, chase and follow on supervision and accountability, enlisted and supervise all leading cadres at all levels to identify problematic issues, tackle and rectify problems, promptly mitigate the risks related to bribery in business activities, and promote the three-pronged target of “not dare to corrupt, infeasible to corrupt, and not tempted to corrupt”.

Regarding the procurement section, where high corruption risks are involved, we have implemented systems such as “Management Protocol for Material Procurement”, “Evaluation Management and Implementation Guidelines for Material Supplier”, “Management Protocol for Market Access” and other guiding and regulatory systems”. Supplier selection is conducted via public bidding. During the bidding process, we conduct investigations and assessments on business ethics of suppliers (including third-party intermediaries and external security providers), where suppliers are requested to provide credit records disclosed on relevant websites. If we find that the supplier has committed commercial bribery, engaged in unfair competitive practices, or exhibited any other dishonest behavior, we will disqualify the supplier to participate in the bidding process. Before the supplier is admitted into our supplier registry, he will be required to sign the “Supplier’s Declaration”, which includes obligations to comply with business ethics, not succumbed to unfair competitive behavior, and bribery.

For the approved suppliers, we review and evaluate their compliance status and arrange for eradication of unqualified suppliers once every year. If any unfair practices to seek benefits and interests such as commercial bribery or unfair competition practices, the respective annual assessment result of the concerned supplier is directly identified to be unqualified. In addition, we also regularly monitor the compliance status of service providers through the electronic surveillance system, which includes online monitoring of the compliance performance of suppliers and service providers.

## Training and Regulatory Measures

In the “Corporate Culture Handbook” of Kunlun Energy, “honesty and trustworthiness, compliance with laws and regulations” is stated as one of the important management morale. The Group is committed to promote the formation of “clean and upright norm, nurturing integral working environment, and a long-term mechanism of integral operation”, and other integral culture. In various internal and external trainings and meetings, the company’s ethical standards and the aforementioned anti-corruption related constitutional measures have been emphasized. In the early 2019, we convened a work meeting on building up the norm of integrity and anti-corruption initiatives, and invited all staff members (including all full-time and part-time employees) to sign a commitment letter for the building up the norm of integrity, which serves to identify responsibility awareness and re-define self-responsibility. We incorporate integrity related content into training courses for the chief accountant of the affiliated units. By studying and reviewing on few typical cases, we concretely emphasize the work requirements of integral operation. We also conducted training courses for business backbone on disciplinary inspection and supervision, training courses for secretary of inspection committee of affiliated units; enlisted specialised disciplinary inspection cadres to participate the training courses hosted by the parent company across 6 regions, and coverage rate regarding discipline inspection personnel training reached 100%. In order to further enhance the training and supervision of suppliers, we will issue notification in the following stage to strengthen the management and training of contractors, regularly host relevant training courses with content related to contractors’ ethical standards, and the knowledge on such standards will be set as one of the assessment criteria on the promotion and implementation of corporate culture; the Group, via all such trainings and endeavours, strives to achieve promotion and implementation of ethical operations, feedback, and constraints.

Kunlun Energy has established a supervision department and relied on four discipline inspection and supervision centers in the north, east, south, and west districts; these supervisory centres are mainly responsible for the centralised handling of issues and traces on complaint letters, public feedback, and handover inspection. Disciplinary inspection committees and disciplinary inspection and supervision divisions are set up within the Group and its affiliated second tier subsidiaries, and each disciplinary committee under the second tier subsidiaries will report regularly to the disciplinary committee of the Group on supervision and inspection proceedings. As of the end of 2019, the Group’s full-time and part-time discipline inspection and supervision staff totaled approximately 163 (2018: 150).

We strictly implement the penalty regulations applicable to management personnel on violations of any disciplinary issues, clearly defined the disciplinary penalty (according to the national authority on disciplinary inspection undertakings) on corruption and non-compliance behaviour of management personnel, and has established standardised regulatory framework and procedure for letter admission and acceptance, as well as follow-up on cases; specifically regulate the withdrawal system and confidentiality system in supervisory and disciplinary undertakings. We have established multiple channels for anonymous whistle blowing, and employees or external stakeholders can report any violations or suspicious activities. Related units will accept and carry out preliminary verification according to the traces of information. Any found case of corruption will be filed for review and transferred to judicial authority for following up.



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During the Year, we continued to promote the integrity construction and anti-corruption initiatives: the supervisory division of the Group reinforced the guiding and supervisory and coordinative functionality of the four disciplinary inspection and supervision centers, and further improved the efficiency and quality of the handling of issues and its traces with regards to letter complaints, public feedback, and inspection handover. Based on the prior arrangement and deployment of our parent company, we formulated a four-year inspection plan and conducted inspections of 10 affiliated units by 6 groups. We commenced digging into the project supervision and inspection; supervising the rectification and implementation; rectifying the issue related to leaders and their relatives on non-compliance with their commercial enterprises; arranging for individual project declarations totaled to 11,214, and undertook review and screening test and interview. We joined hands with the finance division to commence an on-site inspection of compliance management in relation to the fund management business, where, on-site inspections will be undertaken, 719 affiliated units under 42 second tier subsidiaries were inspected for 2 months. No corruption was found. The Group researched and formulated Kunlun Energy's "Accountability Methods of the Leading Cadres Work Practices", clarified the specific regulations for the accountability issues among leading cadres. with problematic behaviour afloat, continued to maintain damping pressure to defend against corruption, and exercise strong hold on measures to deter the impulse to corrupt.

In 2019, the Group did not have any major corruption and litigation cases that violated laws and regulations related to bribery, extortion, fraud and money laundering.

## ANTI-MONOPOLY

With the continuous improvement of relevant laws and regulations on anti-monopoly, along with the transformation within enforcement institutions of anti-monopoly, the state has adopted a more stringent approach in anti-monopoly in terms of executive, legislature and judiciary level. As one of the operators in the oil and gas industry, Kunlun Energy strictly abides by the "Anti-monopoly Law of the People's Republic of China" and other relevant laws and regulations, always adheres to the rationale of equality and respect, mutual benefit and win-win results, and abides by business ethics and maintains market order on a voluntary basis. This Year, we focused on the following three aspects:

In response to the enforcement and supervision risk of anti-monopoly confronted by the Group, we firmly hold on “compliance with laws and regulations”, the underlying requirement, press ahead with system-based prevention and control, and resolutely determined to mitigate any kinds of restrictions and eliminated hidden risks stemmed from competition.

Conduct a comprehensive review on anti-monopoly risks, a list of anti-monopoly laws and regulations, and formulate relevant guidelines, including prevention and control of anti-monopoly risk.

Proceed to conduct contract-based anti-monopoly risk assessments, including installation of gas pipeline facilities.

In order to enhance awareness on anti-monopoly, we have incorporated legal compliance management on anti-monopoly management as an independent course into the middle-level cadre training course and legal affair training course. In response to the promulgation and implementation of supporting regulations on anti-monopoly laws, such as the “Provisional Regulations on the Prohibition of Conduct Abusing a Dominant Market Position”, we specially invited State Administration for Market Regulation to concretely draft and law enforcement personnel to deliver detailed training directives and publicity briefing to the provisional regulations. At the occasion of Group’s development seminar, we proposed relevant work recommendations in response to the provisions of the “Guiding Opinions on Regulating Installation Charges for Urban Gas Engineering Works” issued by the National Development and Reform Commission; In 2019, we comprehensively enhanced training on anti-monopoly laws and regulations, hosted 6 phases of training courses on anti-monopoly laws and regulations, and more than 1,370 personnel had received training.

In addition, we also exercised control by signing performance contracts with the person-in-charge of various units. In the performance contract, anti-monopoly compliance management was assessed as a key performance indicator of legal compliance level, which, in turn, was based on provisions as provided by Kunlun Energy’s “Detailed Rules on Compliance Performance Evaluation (Trial)” to proceed with assessment; while the provision also stipulates fines and fees imposed by the judicial and administrative authorities on account of economic losses to the company or its affiliated units due to any violations of anti-monopoly laws and other laws and regulations, or any other faults.

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# PRODUCT RESPONSIBILITY

## PRODUCTION SAFETY

### Concept on Production Safety

As one of the major natural gas suppliers in PRC, Kunlun Energy always regards production safety as the top priority among other enterprise developmental objectives. Production safety has also grown to be the primary concern of stakeholders of the Group. The Group operates in full compliance with the “Production Safety Law of the People’s Republic of China” and other relevant laws and regulations, as well as seriously adopt the approach featured as “safety first, prevention as prime, comprehensive control”, and adhere to the humanitarian conscience and baseline mindset that “in no case should development be pursued at the cost of human lives.”

To achieve the strategic objective of “Four Zeros and One Reduction”, Kunlun Energy’s QHSE (quality, healthy, safety and environment) management system has fully incorporated the safety concepts of “human-oriented, quality foremost, safety first, giving priority to environmental protection”. During the Year, we published a new edition of our QHSE management system manual, and successfully obtained certifications from external, to ensure that the requirements of each system comply with laws and regulations and cover all necessary areas, and that the QHSE system is scientific, and regulated and operating efficiently.



### Responsible Bodies for Production Safety

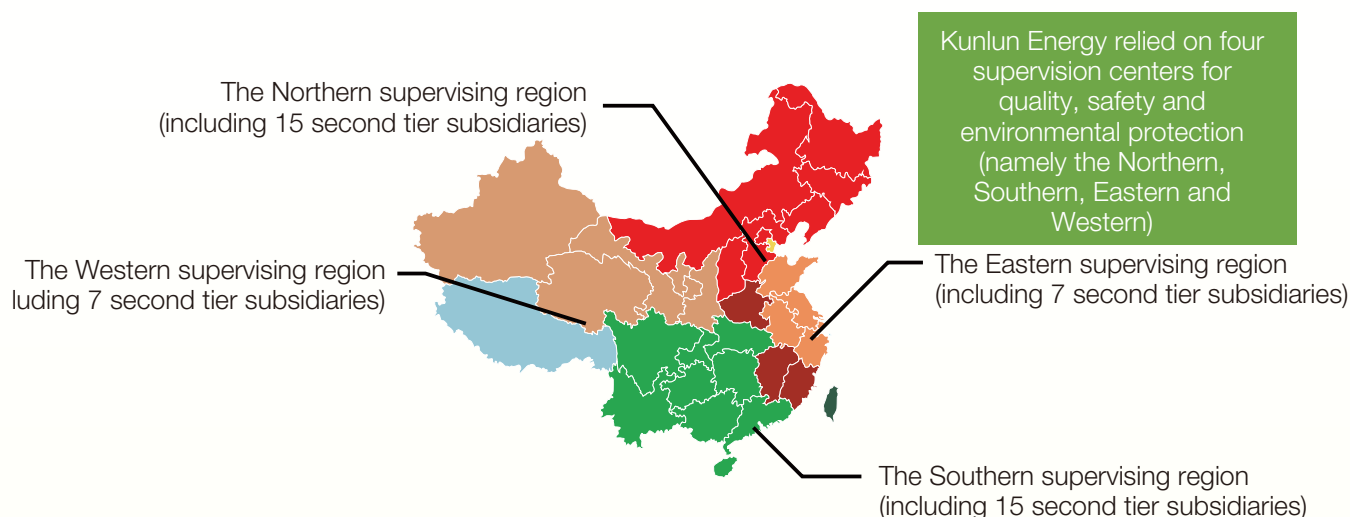
The HSE committee is the decision-maker for Kunlun Energy’s production, leading the production safety work of the Group. Individual units within the Group are responsible for production safety in their particular regions. There are management departments for safety, environmental protection and production operation within individual units, responsible for managing the Company’s production safety operation, and overseeing and managing its safety and environmental protection. We have also relied on four supervision centres for quality, safety and environmental protection (namely the Northern, Southern, Eastern and Western) to independently oversee operation safety in their respective regions and carry out review, supervision, examination and guidance for the annual QHSE performance of each unit.

#### HSE Committee

Composition: The Group’s chairman serves as committee chairman, while the general manager and deputy general manager in charge of production safety act as vice chairmen. Department heads are members of the committee.

Duties and responsibilities: to implement a production safety expense budget each year, hold quarterly meetings, review the completion status of safety and environmental protection work, and decide major safety and environmental protection matters.





During the Year, we continued to strengthen the accountability systems, and implemented the system of “one position, two sets of responsibilities”<sup>1</sup> through preparing and publishing a detailed list of the production safety responsibilities for 21 departments and 242 positions. Under this system, staff from each level are required to sign a letter of responsibility regarding their production safety responsibilities, with the aim of managing production safety responsibilities through a detailed list. Now staff perform their duties and are accountable according to the list. We strongly promoted the idea that production safety is not just “everyone’s duty”, but “everyone should know his/her responsibilities” and “the whole staff take their responsibilities”. We also continued to enhance our safety and environmental protection performance appraisal, completing the safety and environmental protection performance appraisal of 53 newly promoted or transferred division-chief-level cadres and raising cadres’ awareness of their safety and environmental protection performance duties.

### **Production Safety System Development**

During the Year, the Group carried out a comprehensive review of its safety and environmental protection system, revising and publishing 42 of Kunlun Energy’s management systems, including the “Administrative Measures for Safety Production”, “Administrative Measures to Prevent and Control Risks of Production Safety”, “Administrative Measures to Appraise the Safety and Environmental Protection Performance of Employees”, “Administrative Measures for Contractors’ Safety Supervision”.

Meanwhile, we continued to enhance the HSE standardisation development in our stations. In 2019, the HSE development in the Group’s stations met all requirements. After a comprehensive review of our experience of HSE standardisation development, we completed the preparation and review of “1+6”<sup>2</sup> “Standards for the Document Preparation of HSE Standardisation Development in Grassroot Station Teams”, continuing to standardise the on-site management of our stations. As the HSE development in the Group’s major operating stations met all requirements, the capability to manage and control safety risks was significantly strengthened.

<sup>1</sup> “One position” refers to the position in which an employee or a cadre is employed, while “two sets of responsibilities” refer to one set of responsibilities a position imposes upon an employee or cadre as well as another set of safety and environmental protection responsibilities that position entails.

<sup>2</sup> “1+6” is our corporate standard for the document preparation series of HSE standardisation development in stations, i.e. 1 general principle for preparation and the manuals for 6 business types (such as natural gas gate stations and CNG gas stations). The series will ultimately include “1+13” items. We plan to prepare the remaining 7 items in 2020.

## Developing a Culture of Safety

As part of our ongoing effort to foster a culture of safety, we organized a series of activities with the theme of “preventing risks, eliminating hidden hazards and curbing accidents”, including classes, speech contests, user safety publicity, emergency drills, education illustrated by cases, safety knowledge competitions, and safety publicity and education.



## Risk Prevention and Hazard Control

During the Year, the Group continued to strengthen our multi-level risk prevention and control work, assigning risk prevention and control responsibilities to different levels and guiding each unit to formulate risk prevention and control plans. Under the principle of “business management entails safety management and risk management”, responsibilities were assigned to each unit. 13 major risks, including the risk of damage to branch pipelines caused by third parties, the long-term operation risk of LNG terminals and the risk of natural disasters, were assigned to the relevant business departments, and “A Compendium of Plans for the Prevention and Control of Production Safety Risks” was prepared and circulated within the Group. As a result, the practice of managing safety risk through collective efforts began. In accordance with the “Interim Provisions on the Supervision and Management of Major Hazards of Dangerous Chemicals” announced by the state, 24 first-level major hazards were dealt with, and management ledgers were set up to carry out dynamic monitoring. In-depth hazard inspection and control were carried out. In 2019, an investment of RMB80 million (2018: RMB34 million) was made for hazard control, which focused on 43 hazard control works including those for the Changchang branch pipeline and the Wuxian branch pipeline. The supervision of hazardous operations was strengthened, the process of plan review and approval was improved, and on-site supervision management was enhanced. 25 first-level hazardous operations were approved during the Year, of which 24 were implemented. With operating hazards under complete control, the Group’s double preventive mechanism became more and more effective.

For emergency management, the Group established a “1+23+44”<sup>3</sup> contingency system based on its own management structure and the characteristics of the natural gas sales industry, while revising and publishing Kunlun Energy’s “General Contingency Plan for Emergencies” and “Special Contingency Plans for Emergencies”. Emergency drills were held regularly and emergency training was enhanced. In 2019, the Group held 1,176 (2018: 860) emergency drills during the “safety month”.

### ***Supervision and Inspections***

During the Year, the Group fully implemented its parent company’s general plan for the integrated supervision and management work of quality, safety and environmental protection, setting up 4 regional supervision centres for quality, safety and environmental protection, improving the supervision process, clarifying the work standards and enabling the centres to fully perform their supervision duties of inspecting, overseeing and steering. During 2019, 32 key and special missions, including the Company’s major activities, special inspections of hazardous chemicals, control of hot work and acceptance of standardised stations, were completed, and regular supervision was carried out 639 times covering 620,000 km. The effects of independent supervision were prominent.



Mr. Ling Xiao, Kunlun Energy’s chairman, convened a meeting of the review summary of the QHSE management system



Safety inspections

<sup>3</sup> “1+23+44” refers to the framework system of contingency plans for emergencies consisting of 1 integrated contingency plan for emergencies, 23 special contingency plans for emergencies and 44 contingency plans for emergencies for operating entities’ second tier subsidiaries.

We also conducted system reviews thoroughly. Led by the Group's leaders and under the requirements of "integration, differentiation and precision", we made meticulous plans, carried out strict on-site reviews, implemented scrupulous tracking of management actions, and took accountability seriously. A comprehensive and quantitative review was conducted twice during the Year, with a total of 3,392 issues identified and rectified. The scope, precision and efficiency of reviews were further enhanced.

During the outbreak of COVID-19, our top priorities were the prevention and control of the spread of the disease, and the resumption of work and production. We focused on the risk prevention and control of facilities and equipment, as well as the inspections and control of hazards. We enhanced the steering of the disease prevention and control work in our production and operation sites and adopted specific measures in key units. Meanwhile, production scheduling officers carried out non-scheduled inspections of various production and operation sites by means of video surveillance, documentary feedback and teleconversation to ensure orderly production and operation.

### ***Pipeline and Equipment Management***

During the Year, based on our basic pipeline management, the Group began to carry out internal inspections for key branch pipelines, formulating implementation plans for their transformation and distribution, which proved decisive in a thorough understanding of current pipeline status and in enhancing intrinsic safety. In a view to adopting digital management, we also launched our first online system for branch pipelines. We published our "Guide for City Gas Pipelines", achieved pilot results and completed its promotion within the Group in 2020 according to our two-year plan. The Group has been gradually establishing a comprehensive pipeline system to ensure the orderly operation of pipelines.

For equipment management, under the principle of the life cycle of the equipment management, we revised and improved the management system, optimized the management mechanism, and improved the appraisal system for equipment management. We strongly promoted the life cycle of the equipment management and, in response to the needs of the industry's development, bolstered our bases, encouraged enhancement, and improved efficiency. Guided by our three-year plan for station management enhancement, we engaged in key work, fully implementing efficient management for the selection, installation, operation, maintenance and repair of equipment and establishing a long-term management mechanism. During the Year, our equipment integrity rate was above 96%. Units receiving a scheduling order timely implemented the requirements of the order, and provided countermeasures for each of the requirements of the order by means of a feedback form, with a 100% execution rate of orders.





### Major Achievements in Production Safety in 2019

In 2019, Kunlun Energy scrupulously and thoroughly implemented its parent company's work safety plans, followed closely the new trend of integrated management in the natural gas sales industry, proactively tackled the new challenges facing enterprises with high safety risk, and implemented the requirements of "four keys and four adequacies"<sup>4</sup>. Under the QHSE system, we worked unflaggingly on risk prevention and control, assignment of responsibilities as well as enhancement of capabilities, meeting the parent company's 2019 QHSE responsibility indices fully. During the Year, there was no general type-A (or above) production safety accident<sup>5</sup>, and there was a 100% formulation rate of corporate-level risk prevention and control plans for production safety, as well as a 100% success rate of HSE standardisation development in our main operating station. During the "production safety month" period in 2019, Hainan Shennan Energy Company (海南深南能源公司) received a national honour, as it was selected as one of the "National Exemplars of Production Safety for the Youth in 2018" by Ministry of Emergency Management and the Central Committee of the Communist Youth League of China.



Work-related fatalities during the Year: **0**



Total lost worktime rate: **1.6048**

<sup>4</sup> The "four keys and four adequacies" are production safety concepts proposed by the Group's senior leaders and been implemented thoroughly within Kunlun Energy. The "four keys" refer to the fact that the keys to the prevention and control of production safety risks lie in the leaders, the grassroots, on-site management and the employees; and the "four adequacies" refer to the fact that it is essential to have adequate awareness, adequate risk identification, adequate assignment of responsibilities and adequate plans and measures.

<sup>5</sup> The general type-A production safety accidents refer to accidents causing the deaths of less than 3 people, or those causing serious injuries of more than 3 but less than 10 people, or those causing minor injuries of more than 10 people, or those directly causing economic loss of more than RMB1 million but less than RMB10 million.

## ENSURING STEADY SUPPLY

Due to seasonal factors, supply in winter has always been a major challenge for gas companies. PRC's "coal-to-gas conversion" policy and the rapid growth of demand for natural gas have further intensified seasonal shortages of natural gas. In 2019, PRC's capability to secure natural gas resources improved as compared to 2018, but seasonal shortages were still a pressing issue, and the industry was still under pressure to ensure the stable supply of natural gas. In order to cope with seasonal shortages, and in compliance with national requirements on the emergency gas storage in respect of the storage capacity of gas suppliers, the capability to meet the demand during the peak seasons (months) and interruption of gas supply, Kunlun Energy planned proactively to set up gas storage facilities for regulating peak demand and enhanced its storage capability in order to ensure a stable supply to the market and give emergency response.

During the Year, we implemented a management model that integrates wholesale and retail. As a result, the communication between the upstream and the downstream was greatly enhanced, management hierarchy and operation procedures were optimized, the wholesale plans and the retail plans merged holistically, emergency response became quicker, project management and control became more meticulous, management efficiency increased significantly, and our capability to ensure a stable supply was further strengthened. Our major initiatives included:

- We continually enhanced the co-ordination between the various processes, including production, transportation, sales and storage, stepped up the three processes of resource acquisition, contract signing and contingency planning, fully utilized the means of flow adjustments and price adjustments, and further diversified our resource channels. As a result, the supply in the winter of 2019 was much more well planned, and its safety and stability hugely improved, and the overall supply in the natural gas market was stable.
- Based on the actual supply in the natural gas market in 2018 and focusing on "coal-to-gas conversion" customers and household customers, we further improved our contingency plans, refining their details, clarifying the priorities of different customers and matching resource supply channels reasonably in order to avoid the lack or shortage of supply.
- We strengthened intra- and inter-group resource exchange. In response to seasonal shortages and emergencies, we adopted measures such as coordinated deployment of resources and simultaneous adjustments of plans. Our subsidiaries supported each other, while we and other gas companies in the region helped each other, with the aim of achieving multi-point supply of gas to meet the demand of the market.

For the supply of liquefied petroleum gas (LPG), we also took an active part in the use of clean energy as promoted by the PRC government. We developed "coal-to-gas conversion" and "firewood-to-gas" projects in regions with sufficient conditions, opened up new resource channels, and bolstered resource security to ensure a stable supply of gas to households. During the Year, we revised the "Administrative Measures for the Purchase and Sale of LPG" and the "Administrative Measures for the Allocation and Transportation of LPG", thereby further improving the security mechanism. Meanwhile, for its import of LPG through land transport, Kunlun Energy liaised between the relevant parties including China Railway and the State Administration for Market Regulation to open up resource and transportation channels. The latest breakthrough was the opening of the Manzhouli railway passageway for the import of Russian LPG, as well as the provision of imported Russian LPG to Daqing Petrochemical Company as a raw ingredient for ethylene.

**Case study:****The Opening of the Sino-Russia Land Route for LPG Trade**

On August 28 and 30, 2019, two Russian self-owned wide-track railway trains, starting from Irkutsk's oil fields in Russia and loaded with 30 tanks of imported liquefied petroleum gas (LPG) totalling 1,150 tonnes through the Manzhouli Port for the first time and successfully reached Far East Gas Company's LPG reloading base in Manzhouli Industrial Park, which marked the official opening of the Sino-Russia land route for LPG trade.



In 2019, the Group experienced no major disruptions to its energy supply.

**SUPPLY CHAIN MANAGEMENT*****Transportation Risk Management***

One of the major risks in the supply chain of Kunlun Energy is product transportation safety. LNG and LPG are dangerous chemicals, and there is significant safety risk during their transportation. In order to prevent and reduce accidents, when road transportation, we selected professional logistics companies with necessary qualifications and extensive transportation experience, and used various means including electronic seals and GPS satellite positioning. When railway transportation, we strictly implemented the relevant requirements of railway companies to ensure the safety and reliability of the transportation process. When each subsidiary entered into a logistics and distribution agreement with a transportation company or trader, the agreement clearly would set out the safety responsibilities during the process of logistics and transportation. At the same time, gas supply disruption may occur in the pipeline transmission of natural gas due to damage caused by third parties or natural disasters. As such, we comprehensively promoted integrity management and strengthened technical preventive measures to ensure that the risks of pipeline transmission were under control.

## Procurement Management

Procurement of supplies not only directly affects the quality of products and services of Kunlun Energy, but may also affect local environment and society. The Group highly paid attention to the product supply chain and attached great importance to and continued to improve its procurement management. We implemented a supply management system with “integrated management, multi-level accountability, centralised procurement and multi-level implementation”, and a tender management system with “integrated management, business-oriented and multi-level accountability”, thereby forming a “multi-level and multi-type management system implemented professionally that separates the role of the management unit and the business”. We established a tender management committee responsible for coordinating and guiding supplier selection and management.

Supply management system
integrated management, multi-level accountability, centralised procurement and multi-level implementation

Tender management system
integrated management, business-oriented and multi-level accountability

For the selection of our suppliers, we invited public tenders and adopted a vetting process to check the candidates' qualification. In order to reduce the impact of our supply chain on the environment and society, we required that our suppliers possess all certifications and production and operation licenses in relation to quality, safety and environmental protection as required by the relevant authorities of the countries in which they operated, the relevant industries, our parent company and the Group. All other things being equal, we gave priority to energy-saving, eco-friendly supplies that had passed the tests of quality assurance departments. We also carried out annual appraisal for suppliers to assess the quality of their products, their compliance of contracts, their after-sales services, their operational integrity and their synergy capabilities. Suppliers who failed the appraisal would be removed from the suppliers' list.

In order to guarantee the quality of our supplies, we continued to enhance the quality control of our procured supplies, appointed third parties to carry out spot checks on our procured supplies, and, in the case of important supplies, sent our staff to the supplier's plant to oversee the production process. We also helped the suppliers to understand the Group's actual and potential needs through on-site inspections, unannounced inspections and business communication to enable them to provide high-quality products and services targeted at the Group and meet the demand of the Group. For bulk common supplies, we carried out centralised procurement tendering in order to enhance the efficiency in procurement of individual units. For supervision and control, we shared our parent company's information platform for supply procurement management and electronic tendering and trade platform to carry out dynamic monitoring of the processes.



In 2019, the Group had more than 1,500 suppliers, most of which operated in the Yangtze Delta, Beijing-Tianjin-Hebei region, Sichuan and Chongqing, providing raw materials, auxiliary materials, equipment and tools for our construction works and production and operation. During the Year, we revised the “Administrative Measures for Supply Procurement Management” and the “Administrative Measures for Tendering” and formulated the “Implementing Regulations for Supplier Appraisal”. We also carried out unannounced inspections of individual units’ supply quality management and suppliers’ product quality control system, and spot checks on the quality of products such as galvanized pipes, polyethylene pipes and polyethylene fittings, which successfully enhanced the Group’s quality management of supply procurement.

## CUSTOMER SERVICES

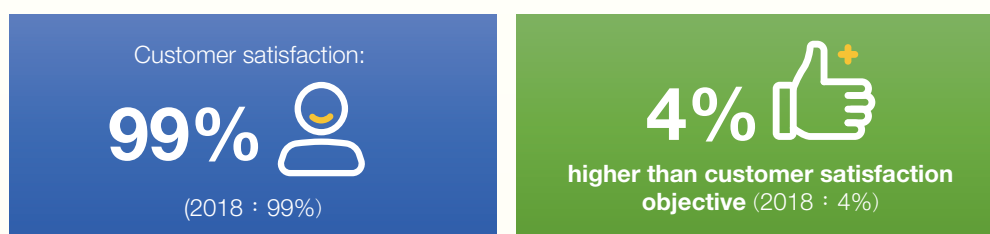
With the acceleration of the domestic natural gas market reform, the value of customers in the industrial chain is further revealed. Customer relationship management and maintenance is the key to enhance the competitiveness of enterprises. Kunlun Energy’s business covers all of PRC and has 11.277 million customers of various types as of the end of 2019. We are committed to “supply clean energy” and continue to improve our customer service work, listen carefully to customer demands, focus on enriching customer service content, establish and improve customer service information systems, strengthen the service awareness of our customer service staffs and provide service skills training for them, and focus on improving customer service quality.

The main focus of this Year’s customer service work include:

- Strengthen strategic planning, improve system, and revise and improve customer relationship management guideline.
- Further streamline the interface of the subsidiaries’ customer management.
- Carry out station service management improvement activities.
- Organise the customer data structure, build an integrated purchase and sales data system, and promote its application across all scenarios in various marketing business.

Regarding the promotion of station management, we considered customer service as an essential part, and we initiated researches on improving on marketing, customer service and management. We also established the tenet “laid a solid foundation, making up for shortcomings, strengthening on marketing, and focusing on services” as the managing philosophy of our marketing and customer service to further standardize all aspects of our stations, and emphasize the importance of standardize and clarify the service content and requirements of frontline works (i.e. gas filling service and gas selling service), which include the appearance, manner and politeness of the staff, ways of handling complaint, etc. We focus on building a healthy operation mechanism, and comprehensively improve the management level of marketing services at the stations.

This Year, the Group revised the “Customer Management Measures” and further refined customer development and management requirements, dividing customers into three levels: priority development, moderate development and prudent development. We have strengthened the management of our customers’ entry criteria, reduce sales with trader, and increase the proportion of direct sales to end customers. Reducing the intermediate links, we can reduce the cost of gas consumption for customers and knowing the actual demand, thus improving the reliability of gas supply. At the same time, we are establishing a “customer-centric” end-users service system. Some subsidiaries have established customer service centers, set up dedicated service hotlines, conducted customer seminars, and formulated a series of customer service systems. In 2019, the Group conducted customer satisfaction surveys on service quality, staff attitude, response speed of problems handling, handling results, indoor safety check training and other aspects through telephone interview, questionnaire surveys, business hall feedback, security inspection services, etc., and our interviewed customer satisfaction reaches 99%.



In order to ensure the stable operation of the Group and the safety of our gas supply, we have promulgated the “User Safety Inspection Management Measures”, which stipulates the management, control and supervision of the daily management of user safety inspection, institutional responsibilities, warranty, return visits, and publicity; setting up a comprehensive checklist for indoor safety check and the user’s gas usage, focusing on improving the system, safety inspection frequency, safety inspection content and procedures, ventilation ignition programs, return visits, file management, training, and assessment. Among them, our Beijing branch has formulated a proposal and plan for indoor safety check, especially for users who do not have indoor safety check for two years or with hidden safety risks, in order to implement risk accountability and ensure individuals to take the relevant responsibility, so as to achieve effective risk control. During the Year, the Group have inspected a total of 5.12 million resident users (with a safety inspection rate of 54%) as well as approximately 70,000 commercial, industrial, and non-resident users who purchased heating (with a safety inspection rate of 100%).

During 2019, the Group was not aware of any major non-compliance concerning health and safety, advertising, labelling and privacy matters relating to products and services.

## CUSTOMER PRIVACY PROTECTION

The Group has always regarded the security of customer information as an important aspect of customer services. In order to improve the safety and effectiveness of our customer information management system, we selected system developers with established technical strength to continue to upgrade and improve the functions of our customer relationship management system. We do not hesitate to invest and allocate specific funds annually to ensure the safe operation of our system. On the technical level, our customer information system restricts the export of customer information by taking measures such as internal and external network isolation, UKEY certification, and grading permission to ensure that our customer information is not leaked. We have also strengthened the education of customer privacy information protection for our employees, raising their awareness of confidentiality, and clarified the relevant confidentiality system procedures to ensure the safety of our customer information.

## RESEARCH, DEVELOPMENT AND INNOVATION

Innovation is a prime driving force for the long-term development of Kunlun Energy, as it provides impetus for improvements in safety, environmental protection and performance. New breakthroughs in the pipelines construction, process technology, operation and maintenance technology, risk management and control, and localisation of key equipment and accessories help to enhance our influence in the industry. As such, the Group has responded vigorously to the national strategy for scientific and technical innovation by strengthening its scientific and technical research and development, and by applying the results to improve production efficiency, safety management and control. Based on the existing science and technology innovation management, in accordance with the reform of the Group's management system, we have increased our support for the Gas Technology Research Institute of PetroChina Kunlun Gas Co. Ltd in terms of science and technology research to enhance the research and development capabilities and standards of science and technology personnel.

During the Year, we promulgated the "Technology Management Measures" and carried out researches on 8 science and technology topics. We completed research on "Certain Issues in the Transformation and Upgrading of City Gas in China" for the National Energy Administration, and the research results have been highly endorsed by the National Energy Administration and providing technical support for the city gas transformation and development. We completed research on "City Gas Pipeline Network Safety, Risk Control and Emergency Measures" for the parent company, formed 3 sets of polyethylene pipeline leakage maintenance and repair equipments, and 4 sets of platform software such as the "Intelligent Management of Steel Pipeline Corrosion Analysis and Application". The research results provide technical support for the improvement of the city gas pipeline network safety management and control level from three aspects, namely prevention and control in advance, monitoring and warning during the event, and emergency response after the event. At the same time, we completed 6 group-level science and technology research projects, and the research results provided technical support for our gas business, such as formulating

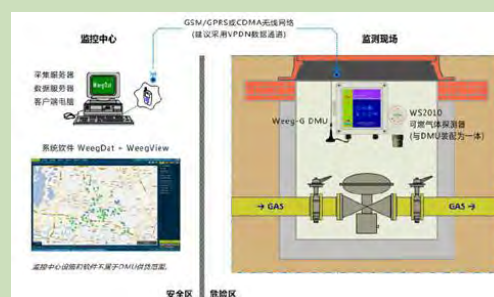
energy benchmarking and energy saving index and estimating liquefied petroleum gas price. We promote and apply 3 practical technologies and products with significant safety and economic benefits. Meanwhile, we participated in the formulation and release of the industry standard “The Method of Energy Consumption Test and Calculation for Natural Gas Filling Station” (SY/T745-2019), which provided effective guidance of energy consumption calculation for energy consumption equipment in natural gas filling stations.

The natural gas sales system has launched online and fully applied, which built a unified and centralized new generation sales management and customer service information platform, and laying the foundation for the digital, networked and intelligent development of the Group's business. We have carried out strategic cooperation with China Telecom and launched a smart gas meter based on 5G technology and domestic encryption algorithms. We plan to complete the group-wide smart transformation of end-users meters in 6-8 years.

The Company has always attached great importance to the maintenance and protection of intellectual property rights, and the Company's technology management measures clearly require the Company to categories intellectual property rights to different units and encourage all production units to actively apply for intellectual property rights in the process of production operation management. In 2019, we have obtained a total of 24 national intellectual property rights such as the “Vertical Multistage Pump Maintenance Device”.

### Case study: Integrated device for valve chamber for gas leakage alarm and effective signal transmission

In 2019, such devices were installed and applied in 5 gas valve wells located in Kunlun Energy's two companies in Gansu and Jiangsu, which at a large extent improved the safety and reliability of gas valve wells, enabled instant monitoring of pipeline network operations and immediate detection of gas leakage, thus greatly improved the early alarm for gas pipeline network when leakage; and at the same time the application of SCADA (Supervisory Control and Data Acquisition) system platform to improve the methods of on-site inspections by daily inspection staff, which can lower staff labour intensity and workload, reduce labour costs, raise optimization of human resources and management efficiency of production.





## Case study: Analytical System of Pipeline cathodic protection from corrosion

In 2019, such system was applied in the Yunnan company under Kunlun Energy. The system was able to conduct safety prediction and assessment under pipeline corrosion analysis, identify and have real-time monitoring of key factors (stray current) that affect pipeline corrosion, accurately control the cathodic protection status of pipelines, and promptly adopt safety precautionary measures to handle problematic pipelines, which improved work efficiency, significantly reduced management and operation costs of cathodic protection, effectively raised the operating efficiency and safety of daily management, and also effectively lowered operating risks.

**管网阴极保护腐蚀分析系统**

功能导航: 自定义菜单, 数据查询, 历史数据, 评估模块, 系统管理

区域菜单: 彩云路星云小区路

时间范围: 2017-04-04 22:00 至 2017-04-05 22:00 时间间隔: 分 基准时间: 00:00 至 04:00

采样时间	站点名称	通道	平均值	电位偏差	基准值	直流电流干扰度	建议
1 2017-04-05 21:59	彩云路星云小区路边阴极桩	通电电位	-1.04	-0.23	-0.81	弱	
2 2017-04-05 21:58	彩云路星云小区路边阴极桩	通电电位	-0.81	-0.17	-0.64	弱	
3 2017-04-05 21:57	彩云路星云小区路边阴极桩	通电电位	-0.64	0.31	-0.95	强	建议排流
4 2017-04-05 21:56	彩云路星云小区路边阴极桩	通电电位	-0.95	-0.01	-0.94	弱	
5 2017-04-05 21:55	彩云路星云小区路边阴极桩	通电电位	-0.94	-0.22	-0.72	弱	
6 2017-04-05 21:54	彩云路星云小区路边阴极桩	通电电位	-0.72	0.05	-0.77	中	持续监测
7 2017-04-05 21:53	彩云路星云小区路边阴极桩	通电电位	-0.77	0.04	-0.8	中	持续监测
8 2017-04-05 21:52	彩云路星云小区路边阴极桩	通电电位	-0.8	0.08	-0.88	中	持续监测
9 2017-04-05 21:51	彩云路星云小区路边阴极桩	通电电位	-0.88	-0.03	-0.85	弱	
10 2017-04-05 21:50	彩云路星云小区路边阴极桩	通电电位	-0.85	0.11	-0.96	中	持续监测
11 2017-04-05 21:49	彩云路星云小区路边阴极桩	通电电位	-0.96	-0.09	-0.87	弱	
12 2017-04-05 21:48	彩云路星云小区路边阴极桩	通电电位	-0.87	-0.13	-0.73	弱	
13 2017-04-05 21:47	彩云路星云小区路边阴极桩	通电电位	-0.73	0.22	-0.95	强	建议排流
14 2017-04-05 21:46	彩云路星云小区路边阴极桩	通电电位	-0.95	-0.14	-0.81	弱	
15 2017-04-05 21:45	彩云路星云小区路边阴极桩	通电电位	-0.81	-0.06	-0.75	弱	
16 2017-04-05 21:44	彩云路星云小区路边阴极桩	通电电位	-0.75	0.26	-1	强	建议排流

# EMPLOYEES' RIGHTS AND INTERESTS



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# EMPLOYEES' RIGHTS AND INTERESTS

## OCCUPATIONAL HEALTH MANAGEMENT

Kunlun Energy attaches great importance to occupational health management of its employees. We abide by the “Law of the People’s Republic of China on the Prevention and Treatment of Occupational Diseases” and other relevant laws and regulations, as well as set up and rigorously implement a series of management systems such as Kunlun Energy’s “Administrative Measures for Detection of Occupational Hazards at Workplaces”, the ““Three Simultaneities” Management Rules for Occupational Disease Protection Facilities for Construction Projects” and the “Administrative Measures for Occupational Health Monitoring”. We take active measures to reduce the impact of occupational hazards such as noise, welding dust, frostbite and high temperatures on employees, including:

### Main measures for occupational health management

Carry out identification and prevention and control of occupational hazards among all employees	Establish occupational health monitoring files for employees and strictly implement occupational health physical examination before, during and before leaving the position	Strictly implement the requirements for “Three Simultaneities” management of occupational disease protection facilities for construction projects and major construction	Set up warning signs and instructions at eye-catching locations	Carry out regular education on occupational health knowledge, strengthen emergency rescue training and drills in order to improve employees’ ability to identify and prevent occupational hazards	Carry out publicity and training in various forms about mental health knowledge in order to guide employees to establish a positive and healthy mentality	Provide complete labour protection articles and personal protection facilities in a timely manner, and strengthen inspections, maintenance and update	Strictly implement measures to prevent heatstroke of field workers and occupational hazards at workplaces	Strengthen supervision, inspection and improvement to ensure full and effective implementation of occupational health management
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During the Year, we make revisions and improvements to occupational health related systems such as Kunlun Energy’s “Administrative Measures for Occupational Health Monitoring”, “Administrative Measures for Labour Protection Products” and “Administrative Measures for Detection of Occupational Hazards at Workplaces”; establishes health and safety management system, and passes the Occupational Health and Safety Management System GB/T28001 (OHSAS18001) certification; with the examination rate of occupational health and the detection rate of occupational health hazards both reach 100% for the Year. We regard employee’s occupational health and safety as a significant matter in respect of corporate safety production management. Details of other occupational health management measures, please refer to the section headed “Production safety” in this report.

Besides protecting the safety of the staff, Kunlun Energy’s “Administrative Measures for Production Safety Accidents” also provides that: injuries suffered by visitors within the production and operation zones will be treated and managed as industrial production safety accidents. Meanwhile, such rule also clearly states that: industrial production safety accidents suffered by internal contractors will be reported respectively by the construction unit and internal contractors; industrial production safety accidents suffered by external contractors will be reported by the construction unit.



Subsequent to the COVID-19 outbreak, Kunlun Energy puts great emphasis on the health and protection of its employees and their families, as well as strictly complies with the Law of the People's Republic of China on the "Prevention and Treatment of Infectious Diseases" and other relevant laws. Units of all levels have rapidly formed leading groups for prevention and control of epidemic, set up offices of epidemic prevention and control, and successively published four editions of the "Guidebook on Epidemic Prevention and Control for Employees". Units of all levels have also distributed emergency supplies, such as masks, alcohol and sterile tissue paper to employees and have planned the allocation of resources, so as to ensure that employees have adequate protection during work. At the same time, Kunlun Energy published 15 work regulations including "Plan for Regular Epidemic Prevention and Control", set up daily case and "zero case" reporting as well as "one-person-one-policy" mechanisms, tracked the activities of its employees, their families and close contacts, actively responded to policies of local governments, properly conducted quarantine, nucleic acid testing and other related work, and reduced the health and safety risk of employees.

In 2019, the Group did not have any major non-compliance concerning occupational health and safety.

## COMPENSATION AND WELFARE

Kunlun Energy believes that employee is the basis foundation of the Company's development. We fully abide by the "Labour Law" of the People's Republic of China, the "Labour Contract Law" of the People's Republic of China and all other relevant laws and regulations. We adhere to the people-oriented principle of creating an equal, diverse and non-discriminatory employment environment, fully respecting the rights and interests of each employee, and aligning corporate value with employee value.

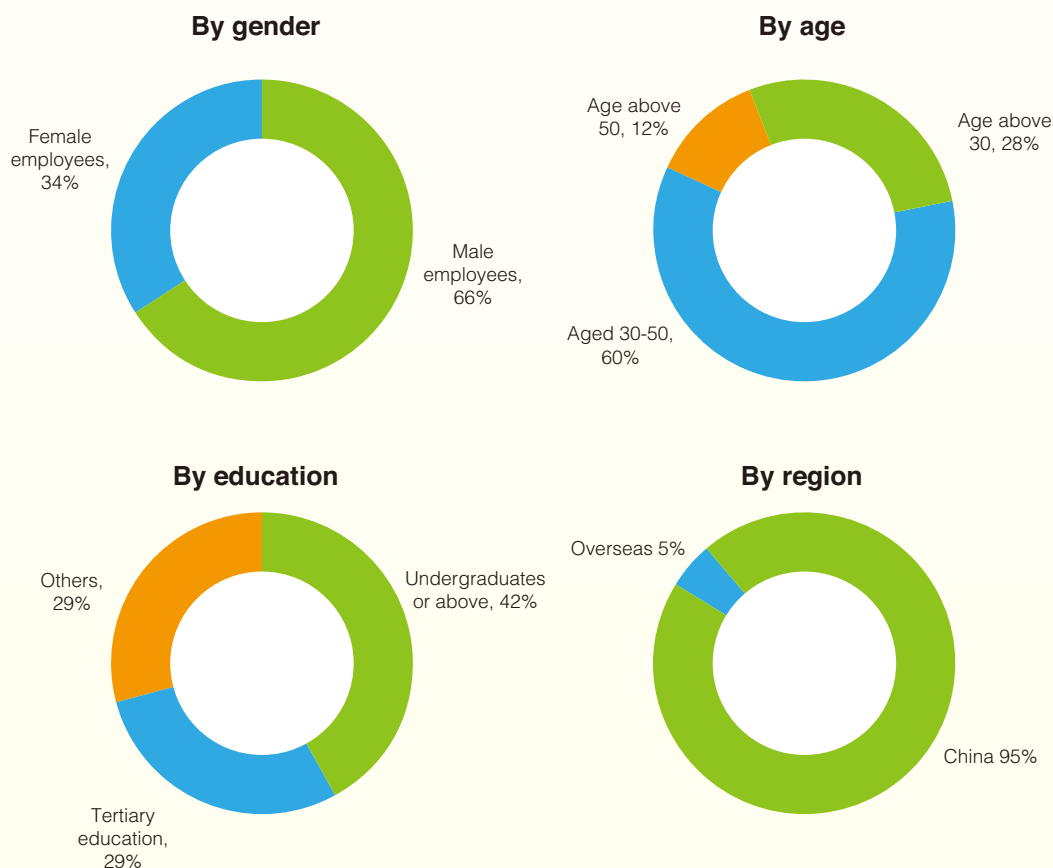
We provide in the "Employee Code of Conduct" that, any form of discrimination, violence and disrespect of employees is prohibited, which include: prohibition of discrimination in respect of nationality, gender, age, ethnicity, race, religious belief and education; prohibition of discrimination against employees with mental and physical disability; prohibition of any form of disrespect for employees, including inappropriate anger, violence or any hostile situation at workplaces that result in coercions, threats or other forms; prohibition of any form of harassment of employees, including verbal or actual harassment.

The Group has clear policies and regulations regarding employment, staff turnover management, salaries and welfare, insurance, vacations, working hours and attendance. Our recruitment methods are open to the public, and we ensure that employees are treated equally regardless of nationality, ethnicity, race, gender, religious belief and cultural background. The Group absolutely prohibits the employment of child labour. We also uphold the principle of labour localization of enterprises, promote the employment of local residents, women, ethnic minorities and university students, and strive to improve employment opportunities in local communities. Currently, over 90% of employees of the Group are local employees.



We support the concept of equal pay for equal work, achieve simultaneous growth of both employee's remuneration level and the Group's performance, make social insurance contributions for employees in accordance with the law, and share the Group's fruitful results with all employees. To stimulate employees' enthusiasm and creativity, the Group reform the system in three aspects such as positions, performance and remuneration management while strengthening the link between remuneration and performance. This ensures that employee remuneration grows in concert with the Group's performance and productivity. We implement differential compensation system, establish salary-based compensation allocation mechanism and also set up special rewards and precise incentives. The Group also makes various social insurance and housing fund contributions for employees in accordance with national and local government regulations. It strictly implements provisions for maternity and breast feeding leave for female employees to protect their rights and interests. In terms of working hours, we strictly implement working hour standards and rest and vacation systems in accordance with the law, and we also implement other systems such as paid annual leave system, so as to ensure that every employee enjoys the right to rest and have leisure. We prohibit all forms of forced and compulsory labour. When overtime work is needed, employees are provided with compensatory rest (equal to the amount of time for overtime work) or overtime pay in accordance with the law.

As of 31 December 2019, the Group had approximately 38,557 employees around the world (other than those engaged through entrustment contracts) (2018: 42,278 employees). Among which, the percentage of employees by gender, age, education and region are shown in the following graphs<sup>6</sup>:



<sup>6</sup> In the graph by region, "Overseas" includes: Kazakhstan, Oman, Peru, Thailand, Azerbaijan.

In 2019, the Group did not have any non-compliance with laws and regulations on compensation, dismissal, recruitment, promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, benefits and welfare, nor were there any instances of employment of child labour or forced labour.

## TALENT TRAINING

While attaching great importance to talent introduction, Kunlun Energy also stresses on talent training and potential development to meet the expectations of stakeholders on the professional quality of personnel. By continuous innovation in talent policies and making talent training as the corporate strategy over the years, Kunlun Energy strives to build a learning enterprise and has built a high-quality team with strong business expertise and team spirit.

The “Management Selection and Appointment Guide”, the “Management Rules for Technical Position Qualifications and Appointment” and other management systems of Kunlun Energy aims to regulate talent appointment and selection, provide smooth channels for promotion, and maximize employee motivation. We have also implemented policies such as “Management Measures for Professional Skills Assessment”, established professional and technical position qualification assessment committees at all levels, and improved the skills and team cohesion of employees through professional skill competitions and instilling an enterprise culture.

We have adopted a mature educational and training system and formulated multi-level, multi-angle full-coverage annual training plans. Training consists of induction training, on-the-job adaptability training and job transfer training. While stressing on internal talent training, we also put great importance on the training of new employees. Through identifying the competence requirements for basic managerial and technical positions, defining training objectives and establishing training system for new employees, we manage to arrange new employee trainings with clear goals and procedures. By providing comprehensive centralized training and systematic practical training, new employees will be able to quickly understand an overview of Kunlun Energy and to establish sense of belonging and identity; by providing practical trainings to frontline employees and conducting multi-dimensional tracking and reviewing the performances of new employees, training efficiency and effectiveness can therefore be improved; discover talents through the provision of short-term internships for various positions, so as to lay a solid foundation for job-matching and talent cultivation.

During the Year, Kunlun Energy emphasised on its major businesses, expanded training platform, standardized training management and innovated in training models. It also put full efforts on training in several business areas such as capital operations, legal contracts, market development and sales management, focused on training of key talents including middle management personnel and outstanding team leaders. Specific training details are as follows<sup>7</sup>:

## Talent and team cultivation

### Management talent

In view of the reform and development situations of the enterprise, mainly business skills for ideological politics, Party spirit cultivation, situations and tasks, leadership ability, policies and regulations, style moulding, corporate culture and position business skills

- For middle management, training should focus on management ability, execution ability and the ability to coordinate and handle disputes. They are trained in rotation every five years, and the total on-the-job training hours during the five-year period shall be no less than three months or 550 hours;
- For general management, training should focus on team management ability, on-site production organisation ability, cultural communication ability and execution ability, and total training hours per person per year shall be no less than 90 hours.

### Professional and technical personnel

In view of the expertise and position features, training is arranged in the form of on-the-job self-study, technical exchange, external study and special lectures, mainly involves new technologies, new processes, new theories and new methods, and focuses on technical innovations and ability to tackle key problems

- Technical experts and technical backbones in key positions are trained in rotation every three years;
- Total training hours accumulated in three years for technical experts are no less than 360 hours;
- Total training hours accumulated in three years for technical backbones are no less than 270 hours;
- Total training hours for other professional and technical personnel per person per year are no less than 90 hours.

### Highly skilled personnel

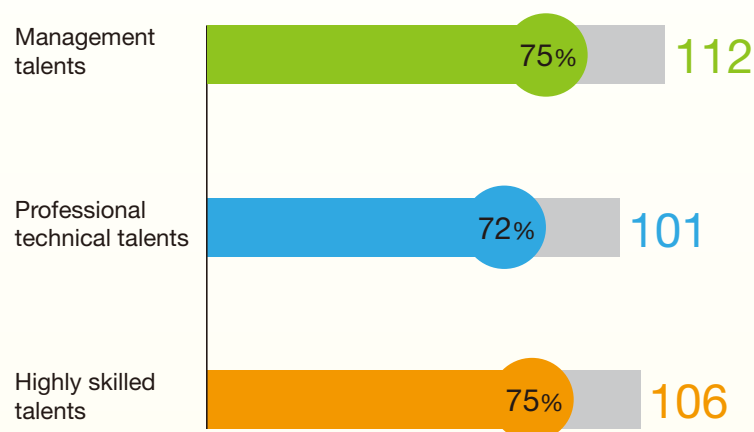
In view of the work types and position requirements, training mainly involves basic theory, standardised operation skills and safety and environmental protection knowledge and is aimed to improve operational skills and production safety ability

- Skilled operators shall not take up positions before obtaining operational qualification certificates, and persons involved in special operation, special equipment operation and key controlled positions shall not take up positions before obtaining the relevant qualification certificates upon receiving training and assessment in accordance with national regulations;
- Highly skilled personnel are trained in rotation every three years, with total training hours of no less than 270 hours during the three-year period;
- Total training hours for other skilled operators per person per year are no less than 90 hours.

## COMMUNICATION AND CARE

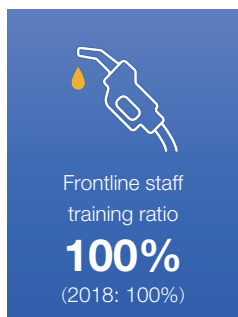
The growth and progress of Kunlun Energy depends on the hard work and dedication of its employees. Because we highly treasure each employee, we are committed to solving the problems and challenges they may face, and we fairly share the achievements of our corporate developments with all employees. In 2019, we extended our regards to and helped 943 employees, supported 6 seriously ill employees, granted relief funds of approximately RMB1.04 million. In addition to maintaining a sound system of distributing

**Percentage and average training hours of each employee by types of employee**



<sup>7</sup> The scope of statistics only includes employees directly managed by the Group.





Undertook PetroChina's "Practical training projects for Russian gas experts in China"



Organized trainings for outstanding team leaders



Organized trainings for middle management personnel

remuneration, we created a suitable platform for growth and career development so as to retain talents, and we also work to strengthen cohesion within the Group by creating a good cultural atmosphere.

The Group has established and continuously improved a comprehensive and diversified platform that encourages free communication with all employees. Employees may express their opinions through ways such as opinion boxes and interviews with management, and all are encouraged to share suggestions on how to improve corporate management. In addition, we actively organized various recreational activities to enrich employees' leisure time.

Besides caring for the daily work and life of employees, in order to protect the health of employees and their families during the special period of fighting the COVID-19 epidemic, the Group formulates and issues the "Notice regarding the Provision of Temporary Work Subsidies to Certain Employees during the Prevention and Control of COVID-19 Epidemic", grants Chinese New Year's subsidies to employees in major epidemic zones, provides temporary work subsidies to employees working in the epidemic zones during the epidemic, and sets rules for special wage payments during the epidemic. We also enhance our care and concern for frontline staff in areas such as Hubei. The Group's labour union sets up special epidemic funds, with

Staff representatives participated in the dance competition of PetroChina's 7th Staff Art Festival, and won gold medal, the "Outstanding Director", "Outstanding Creative Award" and "Exceptional Organization" awards for dance "Rhyme of Qi" 《氣之韻》



In "Celebrating the 70th anniversary of the founding of new China" staff calligraphy and photography contest, a total of 736 pieces of calligraphy painting and photography from 37 subsidiaries were received

Kunlun Energy opened its first staff innovation workshop and successfully held its innovative work exchange meeting, which build a platform for innovative work and staff communication



expenditures of approximately RMB3.42 million allocated to 45 grassroots-level labour unions to ensure that they have adequate epidemic preventions and controls, to show concern of the physical and mental health of employees, to extend regards to dedicated frontline staff during the epidemic period, and to help staff who came from different regions to solve their difficulties such as unattended family members so as to reduce their worries.



# GREEN OPERATION



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## GREEN OPERATION

### TACKLING CLIMATE CHANGE

Natural gas is a high-quality, efficient and clean low-carbon energy. Increasing the percentage of natural gas consumption as a primary energy consumption is a necessary way to accelerate the pace of building a clean, low-carbon, safe and efficient modern energy system, and it is also an effective method to improve air quality, tackle climate change and protect the ecological environment.

Kunlun Energy is not only one of the largest retail natural gas suppliers in China, but also a provider and contributor of clean energy. We continue to explore business potential and improve performance, save energy and reduce emissions, expand its areas of operation, sales and application of natural gas to actively respond to the national “2+26” city<sup>8</sup> air pollution prevention plan, commence investigation and governance by strictly complying with PRC’s action plan for comprehensive treatment of air pollution in “Action Plan for Comprehensive Control of Air Pollution in Beijing - Tianjin - Hebei Region and its Surrounding Areas from 2019 to 2020”, respond to PRC’s policy of action for defending the blue sky, formulate Kunlun Energy’s action plan for winning the battle to defend the blue sky, strengthens effort in promoting “coal-to-gas conversion” project, enhances natural gas recycling as well as actively supplies quality natural gas resources. In 2019, Kunlun Energy sold 28 billion cubic metres of natural gas, and it is estimated to help to reduce an annual usage of approximately 37.24 million tonnes of standard coal, which is equivalent to the reduction of approximately 38.52 million tonnes of carbon dioxide (CO<sub>2</sub>) emissions and the reduction of approximately 63,428 tonnes of nitrogen oxide (NO<sub>x</sub>) emissions<sup>9</sup>.

2019 supply of  
natural gas

**28** billion  
cubic metres  
(2018: 22)



Equivalent to  
replacing of standard  
coal of approximately

**37.24** million tonnes  
(2018: 29.26)



Indirect reduction  
of CO<sub>2</sub> emissions of  
approximately **38.52**  
million tonnes  
(2018: 47.56)



Indirect reduction  
of NO<sub>x</sub> emissions of  
approximately  
**63,000** tonnes  
(2018: 41,000)



<sup>8</sup> “2+26” cities refer to Beijing and Tianjin, and 26 prefecture-level cities under the jurisdiction of these two provincial municipalities and 4 provinces within the radius of 700 kilometers.

<sup>9</sup> The indirect reduction of carbon emissions disclosed in 2018 includes the reduction of carbon emissions during the year due to natural gas recycling; while such information disclosed in 2019 only includes the Group’s reduction of carbon emissions from sale of natural gas.

While supplying gas to users, we also put great importance on the development of long-term carbon reduction, implement long-term and annual plans through various methods such as energy saving, consumption reduction, increase in operation efficiency of equipment and reduction of gas consumption, conduct strict assessment and management, strengthen supervision of procedures, and supervise the implementation of objectives according to PDCA (Plan-Do-Check-Act) closed-loop management model. On one hand, we reduce greenhouse gas emissions by measures such as actively exploring renewable energy, promoting the launch of photovoltaic power generation projects, implementing the recycling of BOG (Boil-off Gas, with methane as its major component): commencement of the operation of the distributed photovoltaic power generation project in the primary station of Jiangsu Donghai Company and Hebei Xushui city gate in 2019; BOG recycling project in Xinjiang Karamay LNG processing plant was put into production in December 2019, the BOG recycling volume at the current stage reaches approximately 10,000 cubic metres/day; BOG recycling project in Hubei Huanggang LNG processing plant completed feasibility report review in 2019. In addition, we also actively launched various projects such as reformation on de-heavy hydrocarbon devices, energy-saving transformation of circulating water pumps, optimization of coolant components, replacement of Saab Variable Compression (abbreviated as SVC) with Open Rack Vaporizers (abbreviated as ORV) in operations as well as transformation of energy-saving lightings. In 2019, the amount of electricity saved for the Year was approximately 7.60 million kWh, equivalent to the reduction of CO<sub>2</sub> emissions of approximately 5,174 tonnes.



Electricity saved for the Year was approximately **7.60** million kWh, equivalent to the reduction of CO<sub>2</sub> emissions of approximately **5,174** tonnes



Reduce BOG emissions through measures such as optimization of process design, addition of vaporizers and newly-built CNG primary station, annual investment in BOG recycling process was approximately RMB **5.43** million, methane recycled was approximately **610** million standard cubic feet (SCF)<sup>10</sup>



Actively carried out the recycling of scattered gas, the accumulated amount of scattered gas recycled for the Year was approximately **146** million standard cubic feet



The reduction of CO<sub>2</sub> emissions achieved through the adoption of carbon-reduction measures in 2019 was approximately **1.05** million tonnes



BOG recycling project in Xinjiang Karamay LNG processing plant

<sup>10</sup>

SCF is the abbreviation of standard cubic feet, it is a measurement unit in the natural gas industry.

### Case Study: Distributed Photovoltaic Power Generation Project of Donghai Gateway Station and Xushui City Gate

The Group actively promoted the development of clean energy project. In September 2019, the photovoltaic power generation project was completed and put into operation in Donghai primary station and Xushui city gate. As of the end of 2019, the accumulative power generated was 35,080.2 kWh, equivalent to energy conservation of approximately 4.3 tonnes of standard coal and reduction of CO<sub>2</sub> emissions of approximately 23.9 tonnes. Solar power generation not only is low carbon and environmental-friendly and reduces air pollution, but also lowers indoor temperature which indirectly save electricity for air-conditioning. Currently, policy in Jiangsu province strongly encourages the construction of photovoltaic demonstration projects. The completion of such project will become a model for the gas station of Donghai county. The clean energy usage and photovoltaics aspects of Kunlun Energy's entire Jiangsu gas stations will be at the forefront, which play a leading role in such respect.



Installation of photovoltaic panels on the roof of the station and parking spaces

### Case Study: Use of Cleaner Sources of Energy

We will strengthen research on key energy-saving technology, incorporate energy-saving and emission-reduction projects, such as research on ORV seawater energy recycling, research on gas station pressure generation technology and research on Shougang Group's heat energy utilization technology, into the Group's energy-saving and technology plans, organize development and tackling with key problems as well as strive to achieve new breakthroughs.

Meanwhile, we will facilitate the promotion and application of unconventional energy utilization technology, focus on developing the promotion and application of solar energy, geothermal energy, photovoltaic power generation in gas stations. We establish a photovoltaic energy-saving technology development company jointly with the holding subsidiary of Yingli Group, and we conduct survey on more than 1,000 gas stations of Kunlun Energy, planning to launch the transformation project of distributed photovoltaic power station on more than 400 of those gas stations.

In the future, Kunlun Energy will continue to adhere to its corporate objective of “supplying energy and creating harmony”, further strengthen carbon management, commence benchmarking and formulate three-year enhancement plan in respect of carbon emissions, strive to reach industry-leading standard after three years, assist PRC in dealing with climate change and achieve energy transformation and green development.

## ECOLOGICAL PROTECTION

Kunlun Energy strongly believes that “clear waters and lush mountains are invaluable assets”, and therefore strictly complies with environmental laws and standards such as the “Environmental Protection Law” of the People’s Republic of China, the Law of the People’s Republic of China on “Prevention and Control of Water Pollution”, the Law of the People’s Republic of China on “Prevention and Control of Environmental Pollution by Solid Waste”, and the Law of the People’s Republic of China on “Prevention and Control of Atmospheric Pollution”. We actively put the idea of the construction of an ecological civilization into practice, promote the establishment of long-term environmental protection mechanisms, enhance environmental protection accountability, and keep improving the supervision of the entire process of the discharge of pollutants.

We have established an environmental management system and obtained the environmental management system GB/T24001 (ISO14001) certification, while complying with the environmental laws and regulations of PRC. We have formulated and strictly implement company policies such as the “Administrative Measures for Environmental Protection” and the “Three Simultaneities” Management Procedures for Safety, Environmental Protection and Occupational Health in Construction Projects”. We have adopted an accountability system for environmental protection duties. We have also developed an environmental protection incentive system, making environmental protection performance part of our performance appraisal. We require that all our subsidiaries and contractors strictly follow our “Three Simultaneities” management procedures when carrying out new construction, alteration and expansion projects.

We acknowledge the importance of exploiting natural resources reasonably and conserving biodiversity. The “Administrative Measures for Environmental Protection” states clearly our requirements regarding ecological conservation, and ways to reclaiming habitat and disturbed land. For example, we always carry out concurrent ecological conservation and restoration and take whole life-cycle ecological conservation measures when carrying out development and construction projects. All involved units are required to identify ecological and community impacts before the commencement of production and operation activities, draw up and carry out plans regarding ecological conservation and community compensation, choose construction periods that are conducive to ecological conservation, use eco-friendly construction methods, technology, materials and equipment, collect and preserve separately topsoil stripped in the course of development and construction, which will be used later preferentially for land restoration, soil amelioration, land making and afforestation as long as its quality fits the purpose. Timely ecological restoration is carried out both during and after the construction process. The use of industrial solid wastes with high content of poisonous and toxic chemicals, domestic wastes and contaminated soil for land restoration is strictly prohibited. For industrial and mining areas and contaminated lands, the extent of soil contamination and groundwater pollution will be investigated and monitored, risk assessment will be made, and risk management and control, as well as restoration work, will be carried out.



Kunlun Energy's main pollutants are domestic waste water, construction waste, a small amount of solid waste generated during the production process, process emissions (gas) and equipment noise, etc. To minimize these, we start at the source, carrying out in-depth investigation and control of hazards, and has established a "multi-level" prevention and control mechanism. We require that all projects of our subsidiaries not only comply with laws and regulations, but also meet the general requirements of Kunlun Energy's environment, health and safety management system, its policy on clean production technology, its environmental risk management and its control on the total amount of pollutants during the periods of their planning and construction. We also carry out environmental impact analyses and formulate risk prevention measures for new construction, alteration and expansion projects, and use them as the bases for the approval of these projects' feasibility studies. While strengthening risk control at the source, we also actively promote clean production processes, strictly control emissions during processes, and strive to further reduce the emissions of pollutants in compliance with laws and regulations through measures such as process recovery, outsourcing of disposal, and research and development of the best ways to use equipment and facilities.

During the Year, we amended a number of Kunlun Energy's measures including "Administrative Measures for Environmental Protection", "Administrative Measures for Environmental Events", "Administrative Measures for the Safe Production and Environmental Protection Accountability System", and "Administrative Measures for HSE Training". In order to enhance the reduction and control of pollution and continue to improve the regional environmental quality, we formulated the "Plan for Upgrading Pollution Control", clearly stating our goals of and measures for upgrading pollution control. We further optimized our environmental information management, including our quarterly reporting mechanism for the emissions of the "three wastes" and greenhouse gases, our pollutant emissions ledger and our green facilities ledger. We completed anti-seepage reconstruction for the underground storage tanks of 17 gas stations, began a study of BOG emissions control measures to explore the potential of emission reduction. Meanwhile, we greatly improved the quantitative review standards of our Quality, Health, Safety and Environment (QHSE) management system, with more extensive and penetrating review of environmental management, in order to continually enhance Kunlun Energy's environmental management performance.

### ***Waste water management***

Waste water discharged by Kunlun Energy comprises production waste water and domestic waste water. Production waste water is discharged through municipal pipeline networks after a pollutant discharge permit is obtained. Production waste water is collected and treated in accordance with agreements entered into with local qualified entities, or discharged after treatment at process environmental protection facilities to ensure compliance with laws and regulations. Waste water from extinguisher pool with state specifications, that may be produced during accidents and we prohibits unregulated discharge of waste water.

## Solid Waste Management

Solid waste discharged by Kunlun Energy includes construction solid waste and production solid waste. Construction solid waste is removed and treated by qualified entities engaged by construction units. Solid waste generated in the production process is treated by local qualified departments, and mainly includes molecular sieves, filter elements, compressor lubricating oil waste, generator/ air compressor oil, waste hydraulic oil, waste dyes and coatings, generator charge battery, and waste motherboards of tankers and dispensers.

## Waste Gas Management

The process waste gas generated in the production process of Kunlun Energy mainly comes from inspection, maintenance and repair processes, accidental and fugitive emissions, flare burning, boiler or heater burning. The gas released or burned is methane. In order to reduce gas losses, we implement process management and gas loss assessment, and promote the recycling of process waste gas. As such, we have adopted measures to optimise working conditions, make technical adjustments and adopt recycling technology to reduce fuel gas consumption and venting. We strengthened patrol inspections and adopted gas pipeline network detection vehicles for leakage detection, adopted internal anti-corrosion measures for old pipelines, and continued to strengthen the safety performance of pipelines. We have installed kitchen fume purification equipment to reduce waste gas emissions, and surveillance equipment at flare stacks to allow real-time monitoring of flares. In 2019, we adopted process measures to recycle approximately 610.00 million SCF (2018: 45.50 million SCF) of methane. Xinjiang Borui, a subsidiary of Kunlun Energy, conducted oil field associated gas recovery work and recovered approximately 146.00 million SCF (2018: 49.67 million SCF) of oil field associated gas.

## Data on Emissions in 2019

In 2019, the Group's emissions of solid waste, waste water and waste gas met all applicable standards, and all indicators were controlled within the target range. Data on major emissions are provided in the following table.

Type of emission	Description	Unit	2019	2018
Waste water	Total	10,000 tonnes	112	71
	Domestic waste water	10,000 tonnes	78	47
	Industrial waste water	10,000 tonnes	35	24
Construction waste	Total	tonnes	251	2,198
	Hazardous solid waste <sup>11</sup>	tonnes	244	2,192
	Hazardous solid waste intensity <sup>12</sup>	Tonnes/100 million cubic metre	0.87	Undisclosed
	General solid waste	tonnes	7	6
	General solid waste intensity	tonnes/100 million cubic metre	0.03	Undisclosed
Greenhouse gas	Total emissions	tonnes CO <sub>2</sub> -e	1,589,246	Undisclosed
	Emission intensity	tonnes CO <sub>2</sub> -e/ 10,000 cubic metre	0.57	Undisclosed
	Emissions of methane released during processes <sup>13</sup>	tonnes	6,168	270

In 2019, the Group had no substantial incident of environmental non-compliance.

<sup>11</sup> The 2018 data represents the total amount of hazardous solid waste produced during that year and stored during the previous year, while the 2019 data represents only the total amount of hazardous solid waste produced during the Year. Meanwhile, some of the materials (such as molecular sieves and filter elements) reached the end of their product lifetime or replacement cycle, and therefore the total amount of hazardous solid waste in 2018 was significantly higher than that in 2019.

<sup>12</sup> The amount of hazardous solid waste produced for the sale of 100 million cubic metre of natural gas (similarly for the other intensity data in the table).

<sup>13</sup> In 2019, we further clarified the calculation methodology and scope of greenhouse gas emissions, taking into account process releases at gas stations. As a result, emissions of methane released during processes in the Year were significantly higher than those in 2018.

## RESOURCE CONSERVATION

### ***Energy and Water Conservation Management Mechanism***

The aggravation of resource shortages will not only affect the social and economic development, but also will increase enterprises' operating costs. Kunlun Energy is fully aware of this and, guided by the scientific development concept, pays equal attention to development and conservation while giving priority to the latter. By centering on the Group's production and operation objectives, it continued to strengthen management and supervision of energy and water conservation, promoted the application of new technologies, processes, equipment and materials, and continued to improve the efficient utilization of energy and water resources through the concept, mechanism, technologies and management for energy conservation in order to support its sustainable development.

During the Year, based on our existing energy and water conservation management mechanism, we focused on the following work:

- Dedicating the annual water conservation mission to staff of different levels and making it part of the performance appraisal of the chief leaders of each level, with strict review and strong demand for results;
- Strengthening the energy and water conservation systems; for each unit, the departments, positions and staff responsible for energy and water conservation management were clearly defined, according to the duty management implemented by the Group, in order to ensure that the energy conservation goals would be achieved;
- Improving the management of energy and water conservation statistics, further optimising the functions of our energy and water conservation management system, developing corporate internal energy management modules and carrying out statistical analysis of production and energy consumption data by level and by type, thereby providing reliable data for energy conservation appraisal and scientific decisions.



### Data on Resource Consumption in 2019

The main resource consumption of Kunlun Energy includes electricity, natural gas, gasoline, diesel fuel, liquefied petroleum gas and water. Its consumption of various resources in 2019 is as follows. The Group's total energy consumption and total water consumption in 2019 approximated those in 2018.

Resource type	Description	Unit	2019	2018	Percentage change
Energy	Electricity	10,000 kWh	260,078	227,245	14.4%
	Gasoline	Tonnes	4,773	5,010	-4.7%
	Diesel	Tonnes	610	711	-14.2%
	Natural gas	10,000 cubic metres	23,521	26,213	-10.3%
	Liquefied petroleum gas	Tonnes	47	19	+145.5%
	Total energy consumption	Tonnes of standard coal	683,634	637,422	+7.2%
	Energy consumption intensity	Tonnes of standard coal/RMB10,000 of added value	0.25	Undisclosed	N/A
Water	Total water consumption	10,000 tonnes	419	405	+3.5%
	Water consumption intensity	Tonnes/RMB10,000 of added value	1.51	Undisclosed	N/A

## Key Work and Achievements for Energy and Water Conservation in 2019

The main energy conservation measures adopted and the results achieved during the Year are shown in the following table.

We divided the energy and water conservation indicators level by level, fully promoted the appraisal system regarding energy and water consumption and energy and water conservation, making the appraisal of energy consumption a routine.

In 2019, the whole Group achieved energy conservation of 3,450 tonnes of standard coal, with energy conservation value of RMB12,724,000, and water conservation of 18,000 cubic metres through technical measures with water conservation value of RMB98,900.

We implemented the upgrading and transformation of our energy and water conservation management system and developed the corporate internal energy management module.

We carried out statistical analysis of production and energy consumption data by level and by type, thereby providing data for energy-efficiency benchmarking and scientific decisions.

We strengthened energy-saving technological transformation, focusing on technological advancement as an important means of energy conservation and consumption reduction.

We prepare the implementation plan for the Group's energy- and water-saving technical-measure project annually, mobilizing each unit to kick off technological transformation projects for energy conservation and consumption reduction (including electricity, natural gas and gasoline).

Guang'an plant: During the average running load of 87%, its power consumption per tonne decreased by 27.41 kWh compared with 2018, with 405,800 kWh of electricity saved of an energy conservation value of RMB203,900, as it timely optimized refrigerant components according to the ambient temperature and operating conditions.

Guangyuan plant: It replaced circulating pumps, which have a higher original energy consumption, with energy-saving pumps under the BOT (build-operate-transfer) energy cooperation model. After the technological transformation, 10,000 kWh of electricity can be saved each day, and 3,300,000 kWh of electricity can be saved each year. It is expected that the annual electricity cost will reduce by RMB1.8 million

Xiaogan company: It completed the technological transformation of "oil return twice, flaring once". After nearly four months of observation of the operation and of data monitoring, it was recorded that the wastage of natural gas decreased from 1.5% to below 1.0%.

Yizheng company: It fitted heat shields on single-point direct-supply decompression levers in order to reduce electricity consumption caused by electric heating, which decreased from 1,000 kWh each month in winter to 700 kWh, with an annual electricity conservation of 4,000 kWh.

Baoying primary station: It overhauled the compressor's cooling water tank, increasing the volume of the water tank and eliminating the occurrence of water flow back in the cooling water system, thereby reducing the consumption of antifreeze. After the overhaul, the consumption of antifreeze decreased from 200 barrels per year to 28 barrels per year, saving RMB 51,600 each year.

In addition to the above measures, we improved employee awareness of environmental protection, encouraged employees to save resources in office activities and to reduce greenhouse gas emissions through conducting environmental protection publicity, implementing the green office practice, and providing employee training.

## Energy and Water Conservation Plan for 2020

During the Year, under the principles that the development of energy conservation should meet the requirements of China and our parent company, that the development of energy conservation should be in sync with technological advances, that regulation and control should work together with incentive policies, we completed the preparation of “Energy Conservation Plan of Kunlun Energy Company Limited for 2020-2025.” The Group’s energy and water conservation goals for 2020 are annual energy conservation of 600 tonnes of standard coal and water conservation of 3,500 cubic metres. We plan to further improve our energy and water conservation performance through the following means:

### Strictly implementing accountability for energy conservation goals

- We will refine energy and water conservation responsibilities and dedicate them to different levels, clarify duties, and enhance the tracking, analysis and appraisal of energy and water consumption as well as their conservation.

### Strengthening the basic management of energy conservation

- We will improve our statistical ledger of energy and water consumption as well as the relevant files of primary data. In 2020, all individual units will use the E7 system to provide consumption data.
- We will enhance the monitoring of energy conservation, focusing on major energy- and water-consuming equipment (systems) and key transformation projects on energy conservation.
- According to PRC’s catalogues of obsolete products of low efficiency and high energy consumption, we will carry out a survey of our electrical and mechanical equipment in use and promote the replacement of obsolete products of low efficiency.

### Strengthening the building of an energy efficiency indicator system

- We will enhance the promotion and application of “Study of Energy Benchmarks, Performance Parameters, and Indicator Framework for the Gas Business”, and complete the estimation and determination of the energy benchmark values of each business for 2020.

### Strongly promoting new technologies for energy and water conservation

- We will strengthen exchange of and training in energy- and water-saving technologies, formulate targeted plans and implementation programmes to tap the potential of major energy- and water-consuming equipment, and strengthen technological transformation and the investment in it, in order to continually increase our capability to achieve energy and water conservation through technological advances.

### Continually deepening corporate initiatives for energy and water conservation

- We will strongly, extensively and continually carry out corporate initiatives focusing on energy and water conservation and mainly aimed at cost reduction and efficiency enhancement, in order to build awareness of energy and water conservation among our staff and continue to increase the comprehensive utilisation efficiency of energy and water resources.

# GIVING BACK TO SOCIETY



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## GIVING BACK TO SOCIETY

### AIDING LOCAL DEVELOPMENT

As a responsible listed enterprise, Kunlun Energy has always regarded serving society as an important mission. It has responded to PRC's policies for targeted poverty alleviation and reducing the urban-rural gap by using its expertise as a clean energy supplier and investing in city gas end-user projects. In this way, the Group improves local ecological environments while supporting local economies and employment.

During the Year, the Group undertook an important coal-to-gas conversion project, which involved 136,124 households, 233 villages, 25 townships and 2 counties in Xiong'an New Area, Hebei Province and had to be completed in 5 months. Our staff worked efficiently to race against time. In 70 days' time, we completed the upgrading work of the distribution station on Babao Pipeline, built the new Gaobaoxu Lead Pipeline, Xiongba Branch Pipeline, Furuisi Xiong'an Connecting Pipeline which combine to measure more than 70 kilometres, and connected four gas transmission channels. Working closely with eight gas enterprises in the region, we established the required network with pipelines running through every street in the villages, thus ensuring the provision of gas to every household within the project area during the cold season. This has earned us high praise from the local governments of Hebei Province and Xiong'an New Area as well as from the local residents, while we have gained a foothold in Xiong'an New Area's end-user market – an all-win situation for the Company, the local governments as well as the residents.

#### Case Study: Green Development and Gasified Xiong'an

During 2019, the implementation of clean energy for heating was in full swing in Xiong'an New Area, in accordance with the planning of the Hebei Provincial Party Committee and Hebei Provincial Government. The Two Conversions (i.e. coal-to-gas conversion and coal-to-electricity conversion) can reduce the air pollution in the area and improve the well-being of its residents, with coal-to-gas conversion accounting for 98% of the total number of conversions. During 2019, nearly 10,000 staff from our Hebei Gas Sales Branch took up the challenge, working day and night for nearly six months in order to complete the necessary tasks for coal-to-gas conversion and gas transmission for 150,000 households in Xiong'an New Area, which account for 88% of the total number of coal-to-gas conversions in the area. The completion of the project proved as quick as the overall development of Xiong'an New Area itself, bringing about a "culinary revolution" among its residents who now have access to natural gas as well as clean energy for heating.



Benefiting from the strategic cooperation between PetroChina and Heilongjiang Province to promote the use of natural gas in the province, as well as the commencement of gas transmission of Sino-Russian Eastern Pipeline, we strongly promoted the integrated utilization of natural gas in Heilongjiang Province, in order to demonstrate the comprehensive application of clean energy to enterprises and local governments.

During 2019, we sped up the crucial construction of branch pipelines, completing and putting into operation key branch pipelines covering a total distance of 322.2 kilometres. They consist of six branch pipelines, including Guizhou Duyun-Kaili Branch Pipeline, Yunnan Xiangyun Branch Pipeline and Hunan Lianyuan-Xinhua Branch Pipeline, and play a key role in increasing the consumption of natural gas in the region, enhancing local economic development and boosting employment.

## COMMUNITY PUBLIC WELFARE

Kunlun Energy's business is widely distributed. It serves a large number of social groups, fulfils diverse and overlapping social roles, and shoulders a wide range of social responsibilities. We insist on integrating our own development into the sustainable development of the places where our business operates. In the process of carrying out our business, we advocate social care for people's daily living and for the underprivileged. In order to promote social harmony, we engage in charity activities in the forms of money donation for education as well as volunteer services.

During the Year, the Group utilized nearly RMB2 million to carry out various activities, including various consultations for safety information, psychotherapy, tree planting, garbage removal, removal of illegal bills and posters, cleanup and sanitization of public spaces as well as poverty alleviation. We donated a total of RMB196,000 for the refurbishment of the communal and cultural centre in the grand bazaar of Hotan City, Xinjiang Province and for the road construction and repair in Shesuoba Village, Mingjiu Township, Mengzi City, Yunnan Province. A total of 1,220 of our staff took part in activities in relation to Learn from Lei Feng, Youth Day, Kunlun Bursary Scheme, blood donation, care for the elderly, environmental protection, for a total of 2,323 hours of social welfare services.



Money donated:  
nearly

**RMB 2 million**



Number of participants:

**1,220**



Time dedicated to social  
welfare services:

**2,323 hours**



Activities in relation to Kunlun Bursary Scheme



Environmental protection activities



Care for the elderly activities



Poverty alleviation activities



## HELPING TO FIGHT COVID-19

Since the outbreak of COVID-19, Kunlun Energy, while taking necessary measures to protect its own staff, has been actively using its expertise to help to contain the spread of the pandemic with a number of initiatives.

Hospitals are the very frontline of the fight against COVID-19, and their supplies have to be ensured above all. In early 2020, the emergency construction of Huoshenshan Hospital in Wuhan was announced. Meanwhile, Kunlun Energy received a notice, pursuant to which the Company was to relocate the underground gas pipelines of the hospital immediately so that the hospital could be put into use on February 3. The Company rose to the occasion, sending staff to survey the site at once, executing a contingency plan, and confirming the plan, schedule and time of completion for the relocation. It took our staff only 9 hours to relocate the pipelines and ensure gas transmission. Our speedy work helped to pull off the equally speedy construction of the field hospital.

As the main natural gas provider in Hubei Province, the Group's gas sales branch in the region strengthened its cooperation with the local authorities responsible for public hygiene and energy. A gas consumption survey was conducted for key medical institutions and large enterprises catering for people's basic needs in the province, so that projections on their consumption could be made. Policies of unlimited gas supply were also implemented, with guarantees that supply would not be cut off due to unpaid bills and required amounts of gas would always be provided. The needs of designated hospitals for the treatment of COVID-19 and key pharmaceutical manufacturers were also prioritised. We allocated gas supply appropriately and proactively and implemented designated staff in order to provide monitored gas supply with regular communication and complete satisfaction of needs. We completed ahead of time the emergency pipe laying and gas transmission works for Shiyan Maternity and Child Health Care Hospital, Xiantao People's Hospital and Huangshi Hospital for Epidemic Prevention, which are designated hospitals for the treatment of COVID-19, and provided 241,000 cubic metres of gas to 76 manufacturers of protective supplies. All this has contributed to the fight against COVID-19.



Installation works at Xiantao People's Hospital



Pipeline relocation works at Huoshenshan Hospital



Looking forward, we will continue to take part in social welfare activities, help to build communities and enhance people’s well-being, in order to fulfil our responsibilities and give back to society.

## APPENDIX: INDEX OF THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDE ISSUED BY THE HONG KONG STOCK EXCHANGE

Aspects		Corresponding section	Page number	Remarks
A Environment				
A1 Emissions	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to exhaust and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	Ecological protection	58	
KPI A1.1	The types of emissions and respective emissions data	Ecological protection — <i>Data on emission in 2019</i>	61	Wastewater in total has been disclosed. As the Group is a provider of clean energy, emissions such as nitrogen oxides and sulfur oxides produced by the Group during its operation have no significant impact on the environment and society. As a result, the relevant data are not disclosed. We will continue to assess the impact of the type of emission and make relevant disclosures when its impact becomes significant.
KPI A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	Ecological protection — <i>Data on emission in 2019</i>	61	

	Aspects	Corresponding section	Page number	Remarks
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	Ecological protection — <i>Data on emission in 2019</i>	61	
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	Ecological protection — <i>Data on emission in 2019</i>	61	General solid waste in total and intensity have been disclosed. The domestic waste produced by the Group during its operation has no significant impact on the environment and society, and construction units are responsible for disposing construction solid waste. As a result, the relevant data are not disclosed. We will continue to assess the impact of this type of waste and make relevant disclosures when its impact becomes significant.
KPI A1.5	Description of measures to mitigate emissions and results achieved	Ecological protection	58	

Aspects		Corresponding section	Page number	Remarks
KPI A1.6	Description of how hazardous and nonhazardous wastes are handled, reduction initiatives and results achieved	Ecological protection	58	
<b>A2 Use of Resources</b>	Policies on the efficient use of resources, including energy, water and other raw materials	Resource conservation	62	
KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility)	Resource conservation — <i>Data on resource consumption in 2019</i>	63	
KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	Resource conservation — <i>Data on resource consumption in 2019</i>	63	
KPI A2.3	Description of energy use efficiency initiatives and results achieved	Resource conservation	62	
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved	Resource conservation	62	
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	—	—	The Group does not use a large amount of packaging materials in its business. As the issue is not material, the relevant data are not disclosed.



Aspects		Corresponding section	Page number	Remarks
<b>A3 Environment and Natural Resources</b>	Policies on minimising the issuer's significant impact on the environment and natural resources	Tackle climate changes	55	
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	—	—	The Group is committed to reducing the impact of its business activities on the environment and other natural resources. During the Year, it did not cause any significant pollution or damage to the nearby air, land, water resources and ecological environment. The Group's policies and measures for use of resources and emissions are detailed in Parts A1 and A2.
<b>B Social</b>				
<b>B1 Employment</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, antidiscrimination, and other benefits and welfare	Compensation and welfare Communication and care	46, 52	
KPI B1.1	Total workforce by gender, employment type, age group and geographical region	Compensation and welfare Communication and care	46, 52	
KPI B1.2	Employee turnover rate by gender, age group and geographical region	—	—	Not disclosed for the time being. Considered to be disclosed as and when appropriate in the coming years.

	Aspects	Corresponding section	Page number	Remarks
<b>B2 Health and Safety</b>	Information on: (a) the policies; and (b) compliance and material non-compliance with relevant standards, rules and regulations on providing a safe working environment and protecting employees from occupational hazards	Production safety Occupational health management	30, 45	
KPI B2.1	Number and rate of work-related fatalities	Production safety	30	
KPI B2.2	Lost days due to work injuries	Production safety	30	
KPI B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored	Occupational health management	45	
<b>B3 Development and Training</b>	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities	Talent training	48	
KPI B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management)	Talent training	48	
KPI B3.2	The average training hours completed per employee by gender and employee category	Talent training	48	

	Aspects	Corresponding section	Page number	Remarks
<b>B4 Labour Standards</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour	Compensation and welfare	46	
KPI B4.1	Description of measures to review recruitment practices to avoid child labour and forced labour	Compensation and welfare	46	
KPI B4.2	Description of steps taken to eliminate such practices when discovered	—	—	N/A
<b>B5 Supply Chain Management</b>	Policies on managing environmental and social risks of the supply chain	Supply chain management	37	
KPI B5.1	Number of suppliers by geographical region	—	—	Not disclosed for the time being. Considered to be disclosed as and when appropriate in the coming years.
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored	Supply chain management	37	

	Aspects	Corresponding section	Page number	Remarks
<b>B6 Product Responsibility</b>	Policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress	Ensure steady supply Customer services Customer Privacy Protection	36, 39, 41	
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	—	—	Not applicable due to the nature of the Group's business
KPI B6.2	Number of products and service related complaints received and how they are dealt with	—	—	Not disclosed for the time being. Considered to be disclosed as and when appropriate in the coming years.
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights	—	—	
KPI B6.4	Description of quality assurance process and recall procedures	—	—	Not applicable due to the nature of the Group's business
KPI B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored	—	—	Not disclosed for the time being. Considered to be disclosed as and when appropriate in the coming years.



	Aspects	Corresponding section	Page number	Remarks
<b>B7 Anticorruption</b>	The policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	Integrity construction	24	
KPI B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	Integrity construction	24	
KPI B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	Integrity construction	24	
<b>B8 Community Investment</b>	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests	Aiding local development Community public welfare Helping to fight COVID-19	67, 68, 70	
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport)	Community public welfare	68	
KPI B8.2	Resources contributed (e.g. money or time) to the focus area	Community public welfare	68	