



中油燃氣集團有限公司

CHINA OIL AND GAS GROUP LIMITED

(Incorporated in Bermuda with Limited Liability)

(於百慕達註冊成立之有限公司)

Stock Code: 603

股份代號：603

2017

ENVIRONMENTAL,
SOCIAL AND GOVERNANCE
REPORT

環境、社會及管治報告



Environmental, Social and Governance Report 2017

二零一七年年環境、社會及管治報告

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CHAIRMAN'S STATEMENT

主席致辭



Dear stakeholders,

Welcome to our Environmental, Social and Governance report for Year 2017, this report is prepared in accordance with the *Environmental, Social and Governance Reporting Guide* set out in Appendix 27 of the Main Board Listing Rules of the Hong Kong Stock Exchange and with reference to the *Sustainability Reporting Guidelines* published by the Global Reporting Initiative.

As a clean energy company, China Oil and Gas Group Limited shoulders the mission of "Develop business of clean energy, contribute sustainability to society". We have been promoting the use of natural gas since our establishment, and we have been supplying economical and clean natural gas to over a million households and over 10 thousand commercial and industrial users in 75 areas across the country. In 2017, the Group's total sales volume of natural gas was 3,309 million cubic meters, which is equivalent to the reduction of 4.4 million tonnes of coal used, and this contributed to the reduction of carbon dioxide emission by approximately 16.22 million tonnes. The Group continues to work together and makes contributions to the transformation of China's energy structure and the reduction of carbon emissions and smog pollution.

各位尊敬的利益相關方：

歡迎閱讀我們根據香港聯合交易所主板上市規則附錄二十七所載之《環境、社會及管治報告指引》及參考全球報告倡議組織發佈的《可持續發展報告指南》所編制而成的2017年環境、社會及管治報告。

中油燃氣集團作為清潔能源公司，肩負著「發展清潔能源事業，保障人類持續發展」的使命，自成立以來不斷地推動天然氣的廣泛應用，至今已為全國75個地區、過百萬戶家庭用戶、及逾萬戶工商業用戶供應經濟、潔淨的天然氣。2017年間，集團總天然氣銷售量為33.09億立方米，相當於減少使用煤炭4.4百萬噸，有助減少排放約16.22百萬噸二氧化碳。集團上下齊心，為我國能源結構低碳轉型及減碳降霾持續作出貢獻。

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Our emphasis on occupational safety is second to none, and we strictly regulate every detail of the production process. To prevent and reduce the occurrence of safety incidents, the Group has established a comprehensive management system with clear accountability based on the laws and regulations promulgated by China, such as the *Guideline of China Occupational Safety and Health Management System (GB/T33000)*, the *Safety Technical Specification for Operation, Maintenance and Rush-repair of City Gas Facilities* and other standards. The Safety Supervision Department is responsible for supervising various safety activities and emergency drills, and safety audits are organised twice a year for each of the Group's subsidiaries. No severe safety accidents of general (level B) or higher severity were recorded from any subsidiaries of the Group in the Reporting Period. Furthermore, the Group continues to optimise the information management platform, striving to build a highly efficient and intelligent enterprise to supply clean energy stably and reliably.

The Group firmly believes that human resources are the most valuable assets and the accomplishment of the Group today are attributed to a joint effort of our talents. To this end, the Group not only focuses on creating a harmonious and encouraging cultural atmosphere and enhancing the integrated quality and professional skills of employees, but also makes every effort to help employees to have a strong work-life balance. The Group sincerely abides by the laws and regulations relating to labour in all locations of business and has established an excellent employment management system. The Group has also formulated an annual training plan and organises various activities to enrich the lives of employees and to grow together with employees.

In respect of the continuous development of the economy of China, a safe, stable, clean and efficient energy system plays a pivotal role in the path of the country's sustainable development. As a clean energy company, the Group will persistently innovate and make energy-related technological breakthroughs with international competitiveness, satisfy the needs of economic development and sustain the energy safety of China. Looking towards the future, the Group will continue to liaise closely with stakeholders (including investors, customers, employees, suppliers and the communities), understand and respond to the concerns of all parties, make efforts for business development and sustainable development and work hard to become an influential clean energy company!

Xu Tie-liang
Chairman

一直以來，集團高度重視燃氣生產運營安全，並嚴格把控生產經營過程中的每一個環節。為防止及減少安全事故的發生，集團依據國家頒佈的《企業安全生產標準化基本規範》(GB/T33000)及《城鎮燃氣設施運行、維護和搶修安全技術規程》等標準制定了全面細緻、責任明確的安全管理辦法，並委派安全監察部負責督促各所屬公司組織各項安全活動和應急演練，以及每年組織兩次全覆蓋性的安全檢查。年內，各所屬公司概無錄得任何一般(B級)或以上安全生產責任事故。同時，集團持續優化信息管理平台，致力打造一個全新的高效運營智能化企業，以確保集團能夠穩定可靠地供應清潔能源。

集團堅信員工是企業最大的財富，集團能發展成如今的規模皆有賴團隊的共同努力。為此，集團不僅注重營造和諧向上的文化氛圍、提升員工的綜合素質和職業技能，亦努力幫助員工平衡工作與生活。集團認真遵守業務所在地有關勞工的法律法規，建立了良好的用工管理制度，並且每年制定年度培訓計劃及組織各項活動來豐富員工的生活，實現員工和企業共同發展。

隨著我國經濟持續發展，安全穩定及潔淨高效的能源體系將會給國家的可持續發展帶來舉足輕重的作用。作為一家清潔能源公司，集團將會努力不懈地創新與突破具有國際競爭力的能源相關技術，滿足國家經濟發展需求並支撐國家能源安全。展望未來，集團將會繼續與各利益相關方(包括投資者、客戶、僱員、供應商及社區)作緊密溝通，持續瞭解和回應各方的關注事項，為業務發展和可持續發展作出應有的貢獻，為將集團建設成有影響力的清潔能源公司努力奮鬥！

許鉄良
主席

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SUMMARY OF SUSTAINABLE PERFORMANCE

可持續發展表現摘要



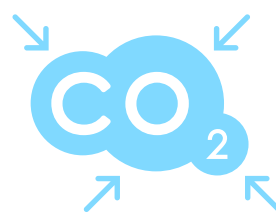
7,651 million HKD
百萬港元

Total Revenue
總營業額



3,309 million m³
百萬立方米

Total Sales Volume of Natural Gas
總天然氣銷售量



16.22 million tonnes
百萬噸

Reduction of CO₂ Emissions
by approximately
銷氣量相當於減少二氧化碳排放



4.4 million tonnes
百萬噸

Helps to replace coal usage by
協助減少使用煤炭



52,557 tonnes
噸

Reduction of SO₂ Emissions
by approximately
銷氣量相當於減少二氧化硫排放



Baccalieu's Oil Field Wastewater
Recycling Rate
石油井區污水回收率

Management System Certification

管理體系認證



ISO 9001



ISO 14001



OHSAS 18001



Q/SY1002.1

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1. ABOUT ESG REPORT

1.1 Reporting Basis

The Environmental, Social and Governance Report (“ESG Report”) is prepared in accordance with the *Environmental, Social and Governance Reporting Guide* set forth in Appendix 27 of the *Main Board Listing Rules* issued by The Stock Exchange of Hong Kong Limited (the “HKEx”). This ESG Report discloses the concept of sustainable development and the responsibility of fulfilling corporate citizenship of the company in 2017. In order to fully understand the environmental, social and corporate governance performance of the Group, this ESG Report should be read in conjunction with the “Corporate Governance Report” within the Group’s annual report.

1.2 Scope of Report

Unless otherwise specified, this ESG Report covers the core business of the Group in China and the core business of the Group’s subsidiary, Baccalieu Energy Inc. (“Baccalieu”) in Canada for the period from 1 January 2017 to 31 December 2017 (the “Reporting Period”). The core business of the Group includes the operation of city gas pipelines, pipeline design and construction; transportation, distribution and sales of compressed natural gas (“CNG”) and liquefied natural gas (“LNG”), and the development, production and sales of crude oil and natural gas, along with other upstream energy resources.

1.3 Information and Feedback

For information on environmental and social aspects of the Group, please refer to the ESG Report on the Group’s official website (www.hk603.com). If anyone has any comments, suggestions or feedback on the content of the ESG Report, please feel free to email us at info@hk603.com.

1. 關於 ESG 報告

1.1 編制基準

集團按照香港聯合交易所有限公司（「聯交所」）發佈的《香港聯合交易所有限公司證券上市規則》（《上市規則》）附錄二十七《環境、社會及管治報告指引》編制「環境、社會及管治報告」（「ESG報告」）。ESG報告披露集團於二零一七年年內實行之可持續發展理念及履行企業公民責任所推行的各項工作。ESG報告應與年報中的「企業管治報告」章節一併閱覽，以便全面了解集團在環境、社會及企業管治方面的表現。

1.2 報告範圍

除有特別註明外，ESG報告範圍為集團於二零一七年一月一日至二零一七年十二月三十一日（「本年度」）在中國內地以及附屬公司Baccalieu Energy Inc.（「Baccalieu公司」）在加拿大的核心業務。ESG報告的內容涵蓋集團重要的核心業務，包括城市管道燃氣營運、管道設計及建造；壓縮天然氣（「CNG」）及液化天然氣（「LNG」）之運輸、分銷及銷售；原油及天然氣等其他上游能源資源開發、生產及銷售。

1.3 信息及反饋

有關集團環境及社會方面的資訊，請詳閱上載至集團官方網站(www.hk603.com)的ESG報告。如任何人士對ESG報告的內容有任何意見、建議或反饋，歡迎以電郵形式發送至info@hk603.com。

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2. ABOUT US

2.1 Enterprise Culture



2. 關於我們

2.1 企業文化

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2.2 Concept of Sustainability

China Oil and Gas Group Limited (the “Company”) (stock code: 603) and its subsidiaries (the “Group”, “We”) are principally engaged in natural gas and energy related businesses. It is the responsibility of the Group to “Develop Business of Clean Energy, Contribute Sustainability to Society” and we pay close attention to global issues such as climate change, environmental protection and employee rights and interests. In response to the *Paris Agreement* and the national policy of “Reducing Carbon Emissions and Mitigating the Problem of Smog”, the Group actively contributes to refining the energy mix in China, increasing the market share of natural gas and strongly supporting the development of clean energy.

2.2 可持續發展理念

中油燃氣集團有限公司(「公司」)(股份代號：603)及其附屬公司(「集團」)主要從事天然氣及能源相關之業務。集團視「發展清潔能源事業，保障人類持續發展」為己任，熱切關注氣候變化、環境保護、員工權益等全球性議題。為響應《巴黎協定》的簽定、國家「降碳除霾」政策的落實，集團積極配合調整能源結構並致力提高天然氣的市場佔比率，大力支持發展清潔能源的大方向。

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As a natural gas service provider, it is our duty to promote and spread the use of natural gas and make contributions to the improvement of the atmospheric environment. Through years of efforts and effective operational management, the Group has successfully eased the effects of global warming; in 2017, 3,309 million cubic meters of natural gas were successfully promoted and sold, equivalent to the reduction of 4.4 million tonnes of coal used, contributed to the reduction of carbon dioxide emissions by approximately 16.22 million tonnes.

The Group concentrated in the investment of high-quality city gas projects, intensified efforts in developing possible markets and strived to obtain concession rights in various regions of China; the Group seized every opportunity, improved efficiency, increased market share of gas and provided sufficient and clean natural gas resources for users in different regions. As of 31 December 2017, the Group has established 144 project companies in 15 provinces and autonomous regions of China, obtained 75 concession rights, and has provided clean and efficient natural gas to more than 1.23 million residential users and over 10,000 industrial and commercial users. The Group owned 55 natural gas refuelling stations and 1,073 kilometres of high-pressure long-distance pipelines. Utilising a structure wherein city gas projects act as the primary body, and resource development and energy services act as the wings, the Group has composed a diversified and coordinated development of unified upstream and downstream operations. In the future, the Group will further explore the domestic market of gas, allocate resources accordingly, ensure the provision of stable gas supply and promote natural gas to become the main force in the energy consumption structure of China.

集團作為燃氣公司，協助國家推廣天然氣的廣泛使用以貢獻空氣治理，我們責無旁貸，經過多年孜孜不倦的努力，配合行之有效的營運管理，本公司2017年度成功推廣及銷售天然氣33.09億立方米，相當於減少使用煤炭440萬噸，減少排放二氧化碳當量16.22百萬噸，舒緩地球溫室效應。

集團集中投資高品質的城市燃氣項目，加大力度開發市場，努力獲取中國多個地區的燃氣特許經營權，搶抓機遇，提高效率，努力提高燃氣市場佔有率，為不同地區的用戶提供充足、清潔的天然氣資源。截至二零一七年十二月三十一日，集團已在中國15個省及自治區成立項目公司144家，擁有75個燃氣特許經營權，為超過123萬戶居民用戶及過萬戶工商業用戶提供潔淨、高效的天然氣資源。集團擁有55座天然氣加氣站及高壓長輸管道1,073公里，形成以城市燃氣項目為主體，資源開發、能源服務為兩翼，上下游一體，多元化協同發展的發展格局。未來，集團將進一步開拓國內的燃氣市場，做好資源配置，確保提供穩定的燃氣供應，推動天然氣成為中國能源消費結構中的主力軍。

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3. VALUE THE PARTICIPATION OF STAKEHOLDERS

We value the opinions of stakeholders on the topic of sustainable development. In order to collect and understand the opinions of stakeholders on the environmental and social development of the Group, we regularly communicate with employees, customers, investors, suppliers and communities, etc. Based on the guidelines stipulated by the HKEx, the Group communicated with stakeholders through a diverse and unobstructed way to understand their expectations and needs, and adjusted the strategies and policies of sustainability development according to material issues prioritised by stakeholders in a timely matter.

Stakeholders	Channels of Communication
Employees and Management	– Internal Communication Activities – Internal Training
Shareholders and Investors	– General Meetings – Announcements and Annual Report
Customers	– Customer Satisfaction Survey – Customer Hotline
Community	– Organisation of Green Community Activities – Promotion in the Community

3. 重視利益相關方參與

本集團定期主動與員工、客戶、投資者、供應商及社區等進行溝通，以便收集且了解各利益相關方對集團在環境和社會發展方面的意見與觀點，並視為中油燃氣在可持續發展管理中的重要一環。本集團以聯交所報告指引為基礎，透過建立多元、通暢的溝通方式與利益相關方進行溝通交流，了解利益相關方的期望與需求，針對利益相關方優先關注的重要議題，適時調整可持續發展策略及政策。

利益相關方	溝通渠道
員工、管理層	– 內部溝通活動 – 內部培訓
股東、投資者	– 股東大會 – 公告、年度報告
客戶	– 客戶滿意度調查表 – 客服電話
社區	– 舉辦綠色公益活動 – 社區宣傳



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3.1 Identifying and Prioritising Material Issues

With reference to international, national and industrial standards, and benchmarking with leading corporates in the industry, the Group identified 25 issues that reflect the sustainable development of the business. Through questionnaires, the Group extensively consulted with both internal and external stakeholders as to their degree of concern for each issue. A total of 229 valid questionnaires were received.

3.2 Materiality Analysis

The Group conducted materiality analysis using the feedback and the result of questionnaire from the stakeholders and determined 17 material issues that stakeholders were the most concerned about. The performance of each material issue is addressed in this Report.

3.1 識別及釐定實質性議題的優先次序

中油燃氣參考國際、國內及行業標準，對標同行領先企業，識別出反映本集團業務可持續發展的議題共25項，並透過問卷調查的方式，廣泛諮詢內外利益相關方對各個可持續發展議題的關注程度。此次問卷調查過程共收到229份有效問卷。

3.2 實質性分析

本集團利用利益相關方的反饋與問卷結果對相關可持續發展議題開展實質性分析，同時確定中油燃氣2017年度利益相關方最關注的17項議題，並以此為ESG報告的基礎，在報告中進行重點披露。



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Materiality Matrix 實質性矩陣



- | | | |
|--|---|---|
| 1 Prevention of Oil and Natural Gas Leakages
石油天然氣洩漏預防 | 10 Protection of Employees' Right
保護員工權益 | 20 Influence to and Interaction with the Community
當地社區影響和互動 |
| 2 Energy Consumption
能源消耗 | 11 Safe and Stable Supply of Gas
安全穩定供氣 | 21 Elimination of Discrimination in the Workplace
消除工作場所的歧視 |
| 3 Contribution to Air Emissions Control
貢獻空氣治理 | 12 Employee Training and Development
員工培訓及發展 | 22 Avoid Forced Labour and Child Labour
避免強制勞工和使用童工 |
| 4 Avoidance and Mitigation of Land Deterioration and Pollution during Piping Installation Works
燃管鋪設時避免及修復土地退化和污染 | 13 Caring for Employees
員工關愛 | 23 Certification of Environmental and Quality Management System
環境管理、品質管理體系認證 |
| 5 Greenhouse Gas Emissions
溫室氣體排放 | 14 Safeguard Occupational Health and Process Safety
保障職業健康與工藝安全 | 24 Launching of Environmental Charity Work
開展環保公益慈善 |
| 6 Compliance with Environment-related Laws and Regulations
關於環境方面的法規遵循 | 15 Quality of Products and Services
產品及服務質量 | 25 Prevention of Bribery, Extortion, Fraud and Money Laundering
防止賄賂、勒索、欺詐及洗黑錢 |
| 7 Wastewater and Waste
污水和廢棄物 | 16 Customer Service Management
客戶服務管理 | |
| 8 Management of the Retired Natural Gas Facilities
石油天然氣設施退役管理 | 17 Reasonable Price
合理的價格 | |
| 9 Other Air Emissions
其他大氣排放物 | 18 Safeguard Customers' Information Privacy
保障客戶資料私隱 | |
| | 19 Assessing and Monitoring Environmental and Social Impacts of the Supply Chain
評估及監控供應鏈對環境和社會的影響 | |

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17 issues that the stakeholders were most concerned about:

利益相關方最關注的 17 項議題：

Environmental Performance

環境表現

Prevention of Oil and Natural Gas Leakages
石油天然氣泄漏預防

Energy Consumption
能源消耗

Contribution to Air Emissions Control
貢獻空氣治理

Avoidance and Mitigation of Land Deterioration
and Pollution during Piping Installation Works
燃管鋪設時避免及修復土地退化和污染

Greenhouse Gas Emissions
溫室氣體排放

Compliance with Environment-related
Laws and Regulations
關於環境方面的法規遵循

Wastewater and Waste
污水和廢棄物

Social Performance

社會表現

Protection of Employees' Rights
保護員工權益

Safe and Stable Supply of Gas
安全穩定供氣

Employee Training and Development
員工培訓及發展

Caring for Employees
員工關愛

Safeguard Occupational Health and Process Safety
保障職業健康與工藝安全

Quality of Products and Services
產品及服務質量

Customer Service Management
客戶服務管理

Reasonable Price
合理的價格

Safeguard Customers' Information Privacy
保障客戶資料私隱

Assessing and Monitoring Environmental and Social Impacts
of the Supply Chain
評估及監控供應鏈對環境和社會的影響

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4. DEDICATION TO GREEN DEVELOPMENT

Climate change has caused major environmental and social impacts on today's society. In order to cope with the rapid deterioration of the environment and ecosystem, the Group is dedicated to promoting the green business, aiming for the balance of long-term corporate development, economic interests and environmental protection, and improving itself to be an outstanding and sustainable corporation. Moreover, to fulfil corporate social responsibility, the Group never ceases to listen and respond to the everchanging needs of stakeholders and strives to protect the environment at all times.

4.1 Environmental Management

Environmental management is an inseparable part of the Group as its core business is supply and distribution of gas. The Group strictly complies with environment-related laws and regulations and industry standards in China and other locations of operation, such as the *Environmental Protection Law of the People's Republic of China*, the *Law of the People's Republic of China on Environmental Impact Assessment*, and the respective federal and provincial laws and regulations in Canada and Alberta. Baccalieu has developed a Corporate Safety Management System and meets and outperforms the regulations relating to the extraction, storage, and sale of oil and natural gas set forth in Canada and Alberta, whilst adhering to the regulations issued by the Alberta Energy Regulator ("AER"). In 2017, Qinghai COG Chaofei Information Technology Co., Ltd. ("Qinghai COG Chaofei"), a subsidiary of the Group, was certified with the ISO 14001 Environmental Management System.

4. 深耕綠色發展

氣候變化為現今社會帶來重大的環境及社會問題。為應對環境及生態系統的急劇惡化，集團致力推動綠色事業，以平衡企業的長遠發展、經濟利益及環境保護為目標，使集團成為可持續發展的優秀企業。與此同時，集團細心聆聽各利益相關方的訴求，積極回應利益相關方不斷變化的需要，力求時刻保護環境，勇於承擔企業社會責任。

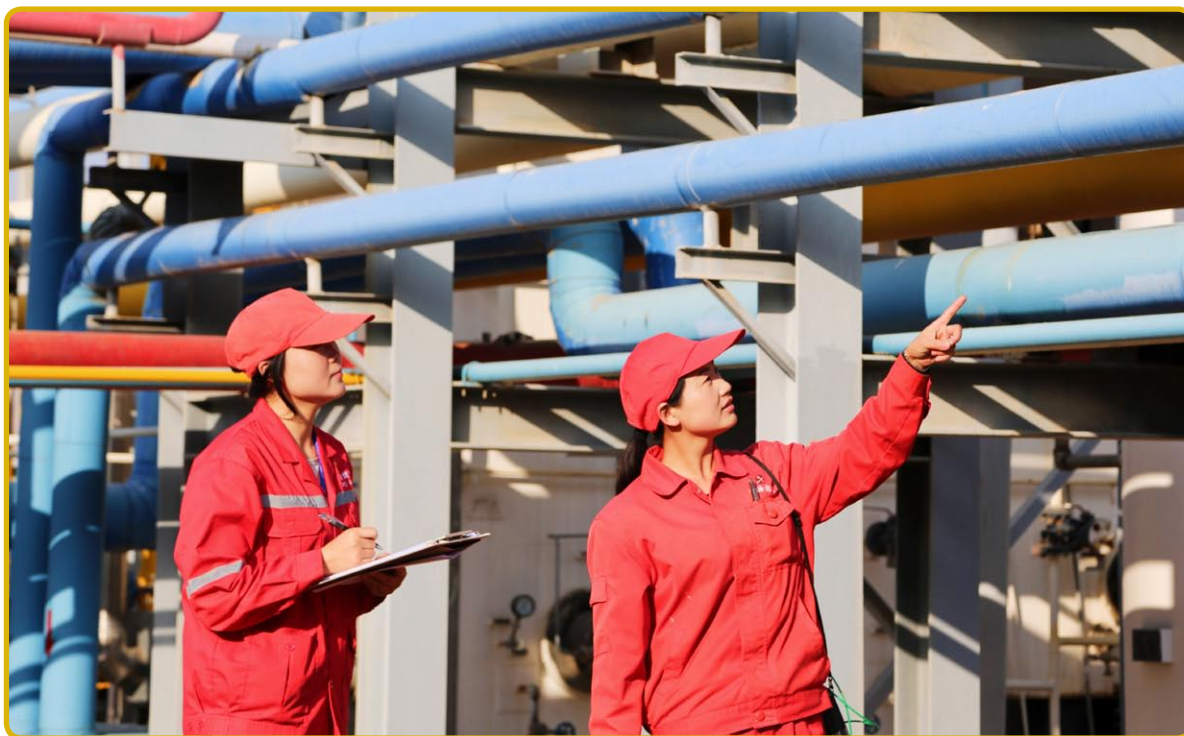
4.1 環境管理

集團作為一間以燃氣供應銷售為主營業務的企業，環境管理是企業立足之本。集團嚴格遵守中華人民共和國及其他營運所在地有關環境保護的法律法規和行業標準，例如《中華人民共和國環境保護法》、《中華人民共和國環境影響評價法》、加拿大聯邦及阿爾伯塔省級法律法規等。Baccalieu公司制定企業安全管理制度(Corporate Safety Management System)，務求符合並高於加拿大聯邦及阿爾伯塔省級有關石油和天然氣開採、儲存和出售的規定，同時亦恪守阿爾伯塔能源監管機構(「AER」)頒佈的各項規定。2017年，集團附屬公司青海中油超飛信息技術有限公司獲得環境管理體系(ISO 14001)認證。

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The Group continues to improve its risk management system, particularly relating to the management of oil and gas leakages, which are the top priority of environmental management. The Group has stipulated that each subsidiary shall formulate the "Policy of Emergency Rescue Management System" according to their own business characteristics, including formulating Emergency Response Plans ("ERP"), and organising emergency trainings and annual emergency drills. Each ERP is reviewed and approved by the Safety Supervision Department of the Group to ensure that accidents are handled quickly and effectively, and the impacts of the accidents are kept to a minimum. Baccalieu has designed an emergency plan based on the Code of Health, Safety and Environment ("HSE") to ensure that environmental emergency operations can be carried out promptly and orderly in the event of an accident. As a member of the Spill Co-ops, a spill emergency response cooperation, Baccalieu often liaises closely with several agencies through the cooperation to ensure that Baccalieu can mobilise resources in a timely manner and conduct collaborative rescues with agencies when spills or other emergencies occur.

集團持續完善其風險管理制度，尤其重視石油天然氣洩漏的風險管理，視之為環境管理的重中之重。集團規定各附屬公司按自身業務特點制定《應急救援預案管理制度》，包括設計應急預案（「ERP」），舉辦應急培訓及年度演練計劃等，各應急計劃需通過集團安全監察部作最後審核和批准，確保事故發生後迅速有效應對，將事故影響降至最低。Baccalieu公司根據健康、安全、環境（HSE）守則設計應急預案，確保緊急事件發生時能迅速有序地開展環境應急行動。同時，Baccalieu公司作為Spill Co-ops洩漏應急合作社的成員，經常透過合作社與個別機構保持緊密聯繫，確保發生重大洩漏事件或其他緊急情況時，Baccalieu公司能及時動員四海，發揮協作力量應急救援，攜手對抗緊急事故。

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Gas Leakage Emergency Drill
燃氣泄漏應急演練

The Group organized a natural gas leakage emergency drill, which simulated an occurrence of a gas leak and combustion, aiming to improve employees' emergency response ability.

集團舉辦燃氣管道事故應急救援演練，鍛煉各部門協同處置大型突發事件的能力。

Fire Emergency Drill
消防應急演練

The Group regularly organises fire emergency drills, enabling employees to evacuate swiftly and orderly in the event of a fire accident.

集團定期舉辦消防應急演練，讓員工在遇到消防事故時能在最短時間內迅速並有序地逃生。



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4.2 Air Emissions Control

The Group perseveres in promoting the concept of environmental protection and works towards development in green, low-carbon, environmental protection and energy saving aspects. As the Group is concerned about the air emissions generated from its business operations, it has established a monitoring system and used advanced technologies to control emissions. Low-energy and high-efficiency equipment is used in the production of LNG in Qinghai COG Pipeline Gas Co., Ltd. ("LNG processing plant"), such as the use of 13X molecular sieves to adsorb the small amount of water and carbon dioxide in natural gas, the use of expansion cooling technology to reduce energy input and the use of a simplifying processing system to reduce reliance on heating furnaces. In addition, Baccalieu is dedicated to implementing emission controls according to air pollution emission standards from the AER Directive 60 for oil wells and facilities of upstream companies in the oil industry.

4.2 空氣治理

集團始終堅持環保理念，推進綠色、低碳、環保及節能的發展方向。集團關注業務營運中大氣污染物的排放情況，建立完善的監測系統並積極利用先進技術控制排放。為減少大氣污染物的排放，青海中油管道燃氣有限公司（「LNG加工廠」）於液化天然氣的生產過程中積極投入能耗低且效能高的設備，如採用13X分子篩吸附天然氣中少量的水分和二氧化碳；採用膨脹製冷工藝減少能源投入，透過簡化處理系統減少對加熱爐的依賴，從而減少大氣污染物的排放。此外，Baccalieu公司根據AER指引60 (AER Directive 60)執行石油上游企業油井及設施省級標準中對大氣污染物的排放標準，致力控制排放。



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The Group upholds the concept of green development and is wary of greenhouse gas emissions. Baccalieu continues to closely monitor greenhouse gas emissions to ensure compliance with federal and provincial laws and regulations, as well as regulations issued by the AER. Flare combustion and electricity consumed in crude oil extraction are the two main sources of Baccalieu's greenhouse gas emissions, and the use of boilers and electricity consumption are the main sources of LNG processing plant's greenhouse gas emissions. In order to save energy and reduce consumption, advanced technologies are used in the LNG processing plant to recycle flash gas generated during the liquefaction of natural gas. Since the main component of flash gas is methane, direct emissions are potentially hazardous and are a form of energy wastage. In view of this, the LNG processing plants have commenced the recovery of flash gas and the transfer of this gas with other expanded gas to municipal gas pipeline networks. In addition, the Group pays close attention to international trends and actively seeks for more low-carbon, energy-saving and environmentally-friendly technologies to achieve the goal of sustainable development.

4.3 Handling of Waste

The Group strictly monitors waste generated in its daily operations and handles it in accordance with local laws and regulations. Through a comprehensive waste management system, the Group implements source and process control to reduce the disposal of land-borne and water-borne wastes. Generated hazardous wastes are sent to qualified treatment facilities for further handling. Other types of wastes are also disposed in accordance with national and location-specific discharge standards. With regards to gas pipe installations, the Group strictly monitors the management and handling of waste generated from construction sites. Qinghai Hongli Pipeline Construction Co., Ltd. ("Qinghai Hongli") strictly implements waste management policies according to the Code of HSE, including: 1) Domestic waste and industrial waste shall be treated separately, and the recyclables such as plastic bags, water bottles, etc. shall be sorted and collected; 2) Particulates shall be cleaned from pipelines prior to their full operation, waste products generated from the use of anticorrosive materials in repairing pipelines shall be removed and waste sand generated by sandblasting and rust removal shall all be collected and treated; 3) Specific recycling equipment shall be set up to collect liquid wastes such as industrial oil, used oil, antifreeze and sewage, which shall then be transported to a specialised treatment plant for processing; and 4) Other domestic waste

集團秉持綠色發展理念，關注集團溫室氣體的排放情況。Baccalieu公司一直密切監察溫室氣體的排放，確保其排放符合聯邦及省級法律法規以及AER頒佈的各項規定。Baccalieu公司所產生的溫室氣體排放主要來自於放空火炬的燃燒及原油開採過程中電力的消耗。另外，LNG加工廠所產生的溫室氣體排放主要源於使用鍋爐及電力。為實現節能減耗，LNG加工廠使用先進的技術回收於天然氣液化過程中產生的閃蒸氣體，其主要成分為甲烷，直接排放既存在潛在的危險，亦是一種能源的浪費。有見及此，LNG加工廠開展回收閃蒸氣體工作，使其隨膨脹氣體回送城市燃氣管網。此外，集團時常留意國際動向，積極尋找更低碳、節能及環保的技術，帶領企業實現可持續發展的目標。

4.3 廢物處理

集團嚴格監控日常營運中所產生的廢棄物，並按照國家及營運所在地的法律法規進行處理。集團通過完善的廢棄物管理，實行源頭治理和過程控制以減少向土地和水體等排放廢棄物。集團營運中產生的危險廢棄物均委託有資質的單位進行處理，其他廢棄物亦按照國家及營運所在地的排放標準進行處理。在燃氣管道鋪設工程方面，集團嚴格監管施工現場廢棄物的管理和處置。青海宏利燃氣管道安裝工程有限責任公司（「青海宏利」）嚴格執行集團健康、安全及環境（「HSE」）管理文件中有關廢棄物管理的政策，包括：1）生活垃圾與工業廢棄物分開處理，對可再利用的廢棄物如塑料袋、礦泉水瓶等分類收集並統一回收；2）管道投產及清管作業清出的污物、施工現場對管線進行防腐補口時產生的廢棄防腐材料、噴砂除銹產生的廢砂等，均需進行集中回收處理；3）設置專用回收裝置收集施工過程中產生的工業油污、廢機油、防凍液

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shall be sent to designated disposal sites near construction sites. If there are no disposal sites near construction sites, domestic waste shall be buried in permitted landfills to a depth of at least 1-meter. Since most of the Group's construction projects involved external contractors, it is difficult to quantify the amount of waste generated from operations across construction sites. Therefore, the corresponding data from external contractors cannot be reflected in this report. In the future, the Group will establish a data collection system for the handling of construction waste.

Baccalieu strictly enforces waste disposal requirements set in the Code of HSE regarding processes in light crude oil extraction in Alberta, Canada. Oil-based drill cuttings and water-based drill cuttings generated during the extraction, as well as solid and liquid waste generated in storage tank areas, are required to be stored according to the Alberta Transportation Guidelines, treated according to the AER regulations and subsequently transported to government approved landfill sites. During the Reporting Period, Baccalieu legally abandoned 12 crude oil wells in compliance with the AER Directive 20 to minimise impacts on the environment. In addition, Binzhou CCNG Gas Equipment Manufacturing Co., Ltd ("Binzhou Equipment"), which specialises in the manufacture of gas pipelines, instrumentation, and pipeline-related products, mostly generates polyethylene pipe waste during its operations and all pipe waste are regularly recycled by a qualified third party.

Wastes generated in the daily operation of the Group's offices, including paper, batteries, ink cartridges and other recyclables, are collected by property management companies for recycling. Other office wastes are disposed of by local municipal departments. Sewage generated from the office are discharged directly to the municipal pipe networks without polluting local water resources. In contrast to the traditional paper-based office, the Group has implemented an Office Automation System to minimise paper waste; it encourages employees to use duplex printing and to use environmentally-friendly papers to print publications and leaflets; unused leaflets are stored for later use and other related measures are taken to save resources.

和污水等廢液，並運到專門處理廠進行處理；4)其他生活垃圾送到施工現場附近指定的處理場。如無處理場，生活垃圾會被埋入當地有關部門許可的填埋地，並保證填埋深達到1米或以上。由於集團大部分的建設工程均聘請外部承包商，故難以對工程產生的廢棄物數量作出統計，因此有關數據未能在本報告反映。未來，集團將建立工程廢棄物排放數據收集體系。

Baccalieu公司在加拿大阿爾伯塔省的輕質原油開採過程中，嚴格執行HSE守則中關於廢棄物處理的要求。對於開採過程中產生的油基鑽屑和水基鑽屑以及儲油罐區產生的廢棄物和廢液等，均需按照阿爾伯塔省運輸準則(Alberta Transportation Guidelines)進行儲存以及按AER頒佈的各項規定進行處置，方可運輸至核准的省政府填埋場。於本年度，Baccalieu公司根據AER指引20 (AER Directive 20)要求合規棄置12個石油井區，確保對環境造成最少的影響。此外，濱州中油中泰燃氣設備製造有限責任公司(「濱州設備」)專營燃氣管道、儀表及管道相關產品的製造，營運過程中主要產生的廢棄物為聚乙烯管材廢料，濱州設備將管材廢料定期交由合資格的第三方回收處理。

集團辦公室收集日常營運中產生的廢棄物，包括廢紙、廢電池、廢墨盒等可循環再利用的廢棄物交由物業管理公司回收處理，其他的辦公室垃圾則由當地市政部門統一處置。辦公室產生的生活污水直接排入市政管網，堅持不讓排放物污染當地的水資源。集團亦推行電子辦公系統(OA System)以取代傳統的紙張化辦公；鼓勵員工雙面打印紙張、使用環保紙張打印出版物和宣傳單；將未發放完的宣傳單留作下次使用等節約資源措施。

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4.4 Utilisation of Resources

The Group places the good use of resources at the core of its business and it constantly reviews its management of natural resources; it also pays strong attention to source control to enhance the efficiency of resource usage. During the Reporting Period, no violations of laws and regulations relating to resource usage at the federal, provincial and AER level were reported in Baccalieu. During Baccalieu's operation of crude oil wells and battery sites, electricity is the major energy resource used, followed by natural gas and liquefied petroleum gas. In addition, Baccalieu recycles and treats wastewater from hydraulic fracturing during light oil exploit works, and subsequently reuses treated wastewater from oil and natural gas extraction to both reduce the use of water and reduce the generation and storage of wastewater. Baccalieu also pledges that 100% of wastewater is recycled in crude oil well areas.

4.4 善用資源

集團以善用資源為核心，時刻審視天然資源管理制度，同時重視源頭管控，提升資源使用效率。本年度，Baccalieu公司並無發現違反聯邦及省級及AER頒佈有關資源使用的法律法規。在營運石油井區及儲油罐區過程中，Baccalieu公司主要的資源使用為電力，其次為天然氣和液化石油氣。同時，Baccalieu公司會對輕質石油開採過程中水力壓裂產生的廢水進行回收處理，並重複利用於萃取石油及天然氣的過程中，既可減少水資源使用，亦可減少廢水量的產生及儲存。Baccalieu公司亦承諾在石油井區的污水回收利用率是100%。



Qinghai Hongli requires employees to turn off the power supply of mechanical equipment to reduce energy consumption during intermittent periods of operation. With regard to the daily operation of its offices, the Group has installed energy-saving features such as T5 fluorescent lamps and light-emitting diode (LED) lamps in offices, and has installed water-saving faucets, dual flush urinals and water closets in the washrooms. Moreover, the Group promotes a green office and encourages employees to turn off their computers, printers, lights, drinking fountains and other equipment during non-office hours. The temperature of air-conditioning is controlled at approximately 25 degrees Celsius. Messages are communicated via emails, posters, the intranet and other means to conserve resources.

青海宏利要求員工在各機械設備間斷性施工期間，及時關閉其電源以減少能源消耗。日常辦公室營運方面，集團安裝T5熒光燈及發光二極管(LED)燈具等節能設備，並於衛生間安裝具有節水功能的水龍頭、雙沖水的小便器和馬桶等。同時，集團倡導綠色辦公，鼓勵員工在非辦公時間關閉電腦、列印機、電燈、飲水機等設施，並將空調溫度控制於約攝氏25度，以及透過電郵、海報、內聯網等方式，呼籲節約資源。

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4.5 Caring for the Environment

As a responsible energy company, the Group has always attached importance to the protection of the environment and endeavors to eliminate major environmental pollution and damage to the ecological environment. Qinghai Hongli implements the measures listed below to protect the local ecological environment and to avoid environmental pollution at construction sites: 1) Piles of soil which cannot be transported immediately during excavation are covered with dust nets and sprayed with water to suppress dust emission; 2) For construction projects located in areas with vegetative cover, trees and turf are transferred with protection and replanted after the construction process; 3) Soil in situ are used for backfilling after the construction work to maintain the characteristics of landforms. Extra soil is taken from the facilities prescribed by the local authorities for backfilling; 4) During sidewalk construction, mud sedimentation tank is set up to prevent mud water from entering the river; 5) Crossover or directional drilling techniques are used for the construction of river courses; 6) When repairing mechanical equipment at construction sites, mats are placed under mechanical equipment to prevent oil, lubricant or other materials from infiltrating into soil or water; and 7) Education relating to water and soil conservation are provided to construction workers to increase their awareness. Baccalieu has also adopted environmental protection measures during oil extraction, which mainly includes the use of batch drilling technology to reduce the number of machines engaged with drilling, reduce the frequency of drilling, and avoid large-scale land destruction. Baccalieu also pledges not to operate in ecologically vulnerable areas.

Regarding noise pollution, equipment such as compressors, expanders, pumps, etc generate a certain level of noise during LNG's production processes. The Group compiles construction plans for urban pipelaying operations for the prevention and control of noise pollution. The measures taken mainly include, installation of silencers at the point of noise emission; regularly conducting occupational hazard assessments by qualified institutions and providing annual occupational health checks to employees exposed to noise hazards; prioritising and arranging the ordering of construction sections according to traffic conditions; fencing construction sites; banning the use of equipment which generate high volumes of noise at rest hours during the day and at night; and making traffic adjustment plans and announcement plans.

4.5 愛護環境

作為負責任的能源企業，集團一直重視環境保護，致力杜絕重大環境污染和生態破壞事故的發生。對於施工項目，青海宏利採取以下措施保護當地生態環境，避免施工現場發生環境污染：1)開挖作業時對不能及時運走的堆土進行防塵網覆蓋，現場進行灑水降塵。2)植被覆蓋地作業時，對林木、草皮覆蓋層等進行保護性轉移，待施工完畢後進行種植。3)施工完畢後盡量使用原土回填，保證地貌的原有性，額外回填的泥土需在當地有關部門規定的取土場上取土。4)人行道施工時，充分考慮環保要求，設置剩餘泥漿沉澱池，防止泥漿水進入河道。5)遇河道施工時，採用隨橋跨越或定向鑽技術。6)在施工現場進行機械設備維修時，需在機械設備下鋪墊以防燃油、機油、潤滑油或其他材料流入土壤或水中。同時，7)各施工單位對職工進行水土保持知識教育，提高員工水土保持的意識。Baccalieu公司在石油開採過程中亦採取有關環境保護的措施，主要包括：使用批量鑽井技術以減少投入鑽井的機械，減少鑽土次數和避免大面積的土地破壞。同時，Baccalieu公司承諾不在生態易受破壞的地區運作。

環境噪音方面，在LNG生產過程中，壓縮機、膨脹機、泵等生產設備運行會產生一定強度的噪音，針對噪音污染的防治，集團編制城區敷管作業施工方案，措施主要包括：於噪音排放源加裝消音器等設施；定期請有資質的機構做職業病危害因素檢測，對接觸噪音危害的人員提供年度職業健康檢查。在方案中根據各路段的交通情況協調各施工段的先後順序，對施工場地進行圍封，嚴禁高噪聲設備在夜間和中午休息時間使用，並做好交通調整計劃、公告計劃等。

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5. CARING FOR EMPLOYEES

The Group values employees as our most valuable assets and is devoted to protecting the rights of our labour and actively strives to improve employee welfare. The Group has established a diverse work team, respects employees from different cultural backgrounds and protects their privacy. The Group hopes to provide employees an ideal career development pathway, while creating a healthy and pleasant working environment to nurture a rich and warm cultural life.

5. 關注員工需求

集團一直視員工為最寶貴的資產，致力保障員工依法享有勞工權益，並積極爭取改善勞工待遇。集團專注建設多元化的人事團隊，尊重來自不同文化背景的員工，並注重保障員工的私隱。集團期望能為員工提供理想的職業發展，同時營造健康愉快的工作環境，締造豐富溫馨的文化生活。



5.1 Employee Rights

The Group strictly complies with the *Labour Law of the People's Republic of China* and the *Labour Contract Law of the People's Republic of China* and has established a comprehensive human resources management system. The Group takes pride in its diverse work team and adheres to the principle of anti-discrimination. Employees of different races, nationalities, beliefs, genders, ages, marital statuses, and those with special legal protection, are treated equally during recruitment, training, promotion and salary adjustment processes to offer equal opportunities for development. During recruitment processes, the human resources department verifies identity documents of persons to be employed and eliminates the use of child labour. If an employee violates the policies and regulations of the Group or the law, the Group retains the right to terminate the labour contract. The Group provides employees with opportunities for promotion, salary adjustment or reward based on performance and contribution, and provides employees with benefits such as pensions, medical care, work-related injury insurance, maternity insurance, housing funds and holiday expenses in accordance with local laws and regulations.

5.1 員工權益

集團嚴格遵守《中華人民共和國勞動法》、《中華人民共和國勞動合同法》等政策法規，並以此建立完善的人力資源管理制度。集團以多元化的人事團隊為傲，堅守反歧視的原則，在招聘、培訓、晉升和薪酬制定等流程中，堅持對不同種族、國籍、信仰、性別、年齡、婚姻狀況及受特殊法律保護的員工一視同仁，確保所有員工享有平等的發展機會。在招聘的過程中，人力資源部會核實擬錄用人員的身份證件，杜絕僱用童工。如員工違反集團規章制度或違法犯罪，集團有權與其解除勞動合同。集團根據績效和貢獻給予員工晉升、調薪或獎勵的機會，並依照營運所在地的相關法律法規為員工提供養老、醫療、工傷、生育社會保險、住房公積金、過節費等福利。

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In terms of working hours, the Group has implemented three types of working hour systems, namely the standard working hours system, the irregular working hours system and the integrated working hours system. Each subsidiary may, after receiving approval from the Human Resources Department, have the flexibility to arrange a suitable working hour system for employees based on their operational characteristics and requirements, and shall resolutely ban forced labour. Each subsidiary must also arrange compensatory time off or overtime pay for employees in accordance with the laws and regulations of China and the policies of the Group. With respect to holidays, employees are entitled to sick leave, casual leave, marriage leave, bereavement leave, maternity leave, work-related injury leave, annual leave and statutory holidays.

5.2 Platform for Growth

The importance of employee training is emphasised in the Group and we treat talent as the driving force for corporate sustainable development. The Group actively promotes various forms of talent training, lays a development path for employees and actualises the mindset of growing together with employees. The human resources department of the Group sets a well-rounded employee training program each year and provides continuous training and diversified development opportunities for employees. The Group also arranges external training activities from time to time, such as sending employees to Japan and Canada to learn advanced management skills from experienced foreign companies in the same industry.

工作時數方面，集團實行標準工時制、不定時工時制和綜合計算工時制3種工時制度。各附屬公司可根據業務特點和崗位需要，經人力資源部審批並同意後，彈性為員工安排適合的工時制，同時堅決拒絕強制勞工工作。各附屬公司亦須為加班員工安排補休或按國家、集團規定支付加班費。在假期方面，員工依法享有病假、事假、婚假、喪假、產假、工傷假、年假及法定節假日。

5.2 成長平台

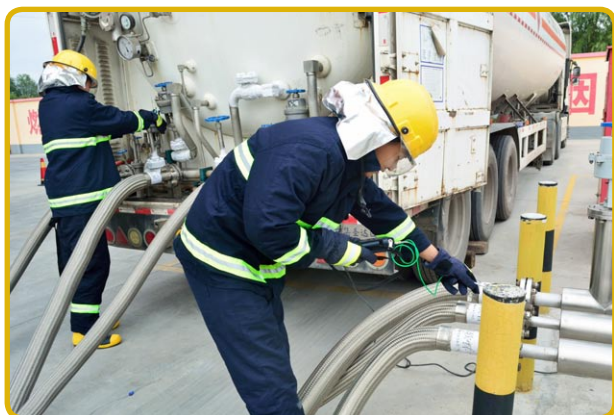
集團重視員工培訓，視人才為企業可持續發展的推動力。集團積極推進各項人才培訓，注重為員工鋪排發展的道路，實現員工與集團共同成長的理想。集團人力資源部每年均會制定完善的員工培訓計劃，按員工的職業生涯提供持續培訓和多元化的發展機會。集團亦不定期安排外部培訓活動，如先後派出員工到日本及加拿大進修，學習外國同類企業的優秀管理經驗。



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Safety Knowledge Assessment
安全知識考核



Professional Skills Assessment
職業技能考核鑑定

Thematic courses are provided in each subsidiary for employees in different job positions. During the reporting period, seminars on anti-monopoly and laws and regulations of restrictive competition were held; training courses on the development of distributed energy resource projects were provided; corporate crisis management training was provided for employees with positions as deputy manager and above; and training on the management system was provided to reinforce the management team's ability in executing policies and regulations of the Group during the mid-year meeting.

Safety training is a key part of the Group's training programme. In offering effective and diverse training methods of different levels and types, and adopting various measures, the awareness of safety and responsibilities among employees at all levels can be promoted. The Group stipulates that new front-line employees must participate in various aspects of safety education and training. To guarantee the depth of knowledge on safety management for employees in safety management positions, the Group requires all subsidiaries to conduct safety tests regularly to ensure employees possess adequate safety knowledge, improve their theoretical knowledge and enhance their awareness of safety.

各附屬公司亦根據實際需要為不同崗位的員工提供專項及專題培訓，於本年度舉辦了有關反壟斷、限制競爭法律法規的講座；分布式能源項目開發的培訓課程；為副總及以上管理人員舉辦企業危機管理培訓；以及年中工作會管理制度培訓，加強管理層執行各項規章制度的能力。

安全培訓是集團培訓課程中重要的一環，集團提供有效且多元化的培訓方法，通過分級分類的培訓並採取多項措施，提升各級員工的安全意識和責任意識。集團規定新入職的一線員工須參加多方面的安全教育培訓。集團為切實維持安全管理人員的安全管理水平，要求各附屬公司定期舉辦安全知識考試，保證員工時刻掌握安全知識，提高安全理論知識，增強安全文化素質。

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Well-rounded Employee Training Program 完善的員工培訓計劃

The Human Resources Department of the Group sets a well-rounded employee training program each year and provides continuous training for employees.

集團人力資源部每年均會制定完善的員工培訓計劃，按員工的職業生涯提供持續培訓。

Thematic Courses for Employees 為員工組織專項培訓

Thematic courses are also organised in each subsidiary for employees in different job positions, actualises the mindset of growing together with employees.

各附屬公司亦根據實際需要為不同崗位的員工提供專項及專題培訓，從各方面陪伴員工成長。



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5.3 Care for Employees

The Group sees work-life-balance as an indispensable part of employees' life and hopes to bring them satisfaction in their career achievements as well as a feeling of contentedness in their lives. The Group values employees as its greatest assets and has always focused on, and promotes, the well-being of employees. The Group has endeavoured to build a healthy, enjoyable and heart-warming working and living environment and has improved employees' sense of belonging by organising activities such as sports events, employee birthday celebrations and providing condolences to employees taken ill or hospitalised, etc.



Arranged "Mid-Autumn Festival Celebration and Mooncakes DIY" to share the joy of the festival
舉辦「慶中秋，DIY月餅製作」，
分享中秋佳節的喜悦

5.3 關愛員工

集團關注員工的工作生活平衡，期望帶給員工不囿於事業上的成就，更是身體上的健全、工作上的滿足。集團視員工為最大的財富，一直關注並促進員工全面良好的身心發展。集團透過舉辦員工活動，如舉辦體育活動、為員工慶祝生日、向生病住院的員工進行多次慰問等，努力建設健康、愉快、溫馨的工作及生活環境，致力提高員工的幸福指數，提升員工歸屬感。



Organised a walking activity
along the pipeline to strengthen teamwork
組織員工沿管線健步走活動，
加強團隊建設

6. SAFEGUARDING OPERATIONAL SAFETY

Safety production management is the top priority for the Group. In order to establish comprehensive safety management, the Group has fully adopted the requirements of safety production procedures, personal occupational protection equipment and measures, workplace safety management guidelines as well as related safety training and safety production skills. The Group has formulated a solid safety management system based on the operations of various business and has established a safety production responsibility system. Regular safety inspections are conducted and occupational safety training are provided for employees to enhance the mechanism of long-term safety production and to further improve the level of safety production management.

6. 保障營運安全

安全生產管理是企業的重中之重，集團為抓好全方位的安全管理工作，執行包括安全生產流程、員工職業防護設備和措施、工作場所安全管理指引、以及相關的安全培訓及安全操作技巧等方面的要求。集團跟據各類業務營運情況制定完善的安全管理制度，並建立安全生產責任制。在生產過程中，各附屬公司進行定期安全檢查並為員工提供職業安全培訓，從而完善安全生產長效機制的建設，進一步提升安全生產管理水平。

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6.1 Process Safety

The Group has established "Policy of Safety Production Management System", "Policy of Safety Production Supervision and Inspection System", "Policy of Employee Safety Management System", "Policy of Special Vehicle Safety Management System" and other policies according to the *Production Safety Law of the People's Republic of China*, *Regulation on the Administration of Urban Gas*, and other industry standards such as *Safety Technical Specification for Operation, Maintenance and Rush-repair of City Gas Facilities* to prevent and reduce accidents during production or transportation processes.

Employee safety meetings, safety production management committee meetings and safety transportation meetings are held regularly to implement the laws, regulations and safety instructions from superiors, and to discuss and formulate specific work programmes. The main contents of the work programme include conducting safety inspections regularly, strengthening the ability of employees to perform safety operations, providing safety education and training and carrying out rectifications of hazardous and emergency accidents.

6.1 工藝安全

集團依據《中華人民共和國安全生產法》、《城鎮燃氣管理條例》等法律法規和《城鎮燃氣設施運行、維護和搶修安全技術規程》等的行業標準，制定《安全生產管理制度》、《安全生產監督檢查制度》、《從業人員安全管理制度》及《專用車輛安全管理制度》等規定，以防止和減少因生產或運輸產生的安全事故。

集團定期舉辦職工安全大會和安全生產管理委員會工作會議，運輸人員定期舉辦安全工作例會等方式，貫徹各項法律法規和上級的安全指示精神並討論制定具體工作計劃。計劃的主要內容包括：做好安全檢查、強化員工安全操作自主性、提供安全教育培訓、進行事故隱患整改及應急事故處理等。



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The Group has also implemented the "Safety Production Liability System". All subsidiaries are required to sign a "Safety Objectives Responsibility Statement" with the Head Office each year and two safety inspections are conducted by the "Safety Supervision Department" each year. Individuals or teams with excellent and exceptional performance will receive rewards, and the departments with unsatisfactory performances will have to improve according to rectification plans. Furthermore, the Group has formulated the "Regulation for the Management of Equipment for Tank Trucks" and "Code of Pressure Vessels Usage" in accordance with relevant laws and regulations, such as the *Regulation on the Implementation of the Road Traffic Safety Law of the People's Republic of China*, *Regulations on the Safety Management of Hazardous Chemicals*, *Provisions on the Administration of Road Transport of Dangerous Goods*. The regulation and codes aim to strengthen safety management and control the transportation of dangerous chemicals, the use of traction vehicles and the use and repair of pressure vessels. According to the Code of HSE of the safety management system implemented, Baccalieu regularly conducts safety risk assessments, and it lists working procedures for operations with potential hazards, whilst establishing a complete monitoring mechanism. Currently, the sealed-space working system, the hot work permit system, the lock-up and signage procedures and the safe transportation of dangerous goods system have been stipulated in the Code of HSE to prevent the occurrence of major accidents.

集團亦重視落實《安全生產責任制度》。總部每年與附屬公司簽訂「安全目標責任書」，要求安全監察部每年進行兩次安全檢查，對檢查過程中表現優異的個人或班組給予獎勵，對安全檢查中不合格的部門下發整改計劃並跟進整改情況。與此同時，集團根據《中華人民共和國道路交通安全法》、《危險化學品安全管理條例》、《道路危險貨物運輸管理規定》等法律法規，制定《槽罐車設備管理規定》和《壓力容器使用管理規則》等規定，加強對危險化學品車輛運輸、牽引車輛和壓力容器使用及修理等的安全管理工作。Baccalieu公司嚴格執行企業安全管理系統中的HSE守則，其中包括定期進行安全風險評估，對有潛在重大安全危害的工序列明安全制度實施細則並制定完善的監測機制。目前HSE守則中已訂明密閉空間工作制度、熱工作許可證制度、上鎖掛牌程序、及安全運送危險品制度等，以期杜絕重大安全事故的發生。



Safety Production Month
安全生產月

Binzhou COG Co., Ltd. organised Safety Production Month in June 2017 to focus on corporate responsibility for safe production, enhance the risk management system and promote safe production.

濱州中油燃氣有限責任公司於2017年6月舉辦「安全生產月」活動，圍繞企業安全生產主體責任，深化風險管理工作體系，促進安全生產。

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6.2 Occupational Health

The Group attaches great importance to the health and safety of employees, and strictly complies with the *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases* and formulated policies, such as "Safety Management Measures" and "Employee's Position Operating Regulations" to provide guidelines on the use of protective equipment, educational training and health inspection with reference to the specific situation of each subsidiary. Instructions on the proper use of personal protection equipment are provided to ensure that the level of labour safety meets the standards set by the relevant departments in the locations of operation. Qinghai Hongli arranged safety inspections which are provided by safety management personnel during the construction period. The inspections included checking of high-risk processes, the uses of protective mask and fire extinguisher during welding and painting works, inspecting the conditions, the anti-freezing, anti-slippery functions of safety rope, the use of anti-skid measures, safety ropes, escape ladders, ventilation systems, and toxic gas emissions for the employees working in confined spaces such as trenches and wells. Currently, Qinghai COG Ganhe Industrial Park Gas Co., Ltd. is certified with Q/SY1002.1-2013 Health and Safety Environmental Management System and Qinghai COG Chaoferi is certified with OHSAS 18001 Occupational Health and Safety Management System.

Qinghai Hongli also provides clear policies regarding safety operation procedures. It ensures that on-site facilities, equipment and tools meet safety standards, a flat and barrier-free working environment and emergency escape route are provided, adequate lighting is provided for works conducted at night, anti-explosive lighting fixtures are used, distinctive warning signage is provided for works at road sides to caution pedestrians and vehicles and signal lights and on-duty personnel are provided for road side works in the dark.

6.2 職業健康

集團重視員工的安全與健康，嚴格遵循《中華人民共和國職業病防治法》和根據按各附屬公司的實際營運情況制定的《安全管理辦法》、《從業人員崗位操作規程》等規定，為所有員工提供勞動保護用品、教育培訓和健康檢查。於生產過程中，指導員工正確佩戴和使用防護用品，確保勞動安全達到營運所在地有關部門規定的標準。青海宏利於施工期間安排安全管理人員現場檢查高危工序的進行，檢查工作包括在進行焊接和刷漆作業時，檢查工人的防護面罩、滅火器佩戴情況等；高空作業時檢查安全繩佩戴情況、防凍、防滑措施的使用情況等；以及員工於溝內、井下等密閉空間作業時檢查安全繩、逃生梯、通風系統及有毒氣體排放等情況，確保員工在安全情況下工作。目前，集團附屬公司青海中油甘河工業園區燃氣有限公司獲得健康安全環境管理體系(Q/SY1002.1-2013)認證、青海中油超飛信息技術有限公司獲得職業健康安全管理体系(OHSAS 18001)認證。

青海宏利亦對施工人員的安全作業制定明確的規定，確保現場設備、工具和材料擺放等須符合安全標準；作業現場必須保持平整暢通，設置緊急逃生通道等。夜間施工場地須設置足夠的照明，並確保作業帶內使用的照明燈具符合防爆要求。路邊作業須設置明顯的安全警示標誌，提醒行人和車輛注意過路安全，防止人員或車輛誤入作業坑。天黑後路邊作業亦須設置信號燈及配備值班人員，以策安全。

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In order to strengthen the safety awareness of employees, regular hazard identification training courses are provided at LNG processing plants every year. Employees engaged in dangerous works are equipped with personal protection equipment such as gas masks, safety helmets and anti-static workwear. To further reduce the possibility of occupational hazards occurring, LNG processing plants report possible occupational hazards to the local safety production supervision bureaus regularly and implement proper mitigation measures whenever necessary. Facilities and equipment are operated by trained operators with professional qualifications. For employees responsible for the transportation of natural gas, their "Special Equipment Operator Certificate" is reviewed and audited by relevant departments every review cycle. A daily safety meeting is held in Baccalieu to monitor the safety status of the working environment, rectify the identified problems or hidden dangers immediately and provide summaries and improvement of safety management work.

為加強員工的安全意識，LNG加工廠每年定期開辦危害因素辨識課程，向從事危險工作的員工定期發放如防毒面具、安全帽、防靜電工作服等的勞動防護用品。為進一步減低職業危害發生的可能性，LNG加工廠定期向地方安全生產監督管理局進行職業危害申報工作，並對可能造成職業危害的情況採取相應的措施。設備操作人員須經過特種作業操作培訓並取得專業資格後方能獨立上崗操作；需要持有《特種設備作業人員證》的天然氣危險品運輸人員，其有關資格證明必須於每個審核週期接受有關部門複核。Baccalieu公司也會定期舉辦安全日會，以期對作業環境的安全現狀做到實時監控，對發現的問題或隱患即時整改，並對安全管理工作做到及時總結與提升。



Inspection on Operation Safety
安全作業檢查



Regular Inspection of Work Equipment
定期設備檢查

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7. STABLE AND SAFE SUPPLY OF GAS

The Group upholds a strong sense of responsibility and commitment to ensure that our users enjoy a stable supply of gas and quality service. For this purpose, the Group selects suppliers rigorously to ensure a high quality of gas, gas safety inspections are conducted regularly and gas safety is communicated to the public, so as to enhance the level of safety from the supply side to the end use of gas.

7.1 Procurement Management

In order to standardise the management procedures for suppliers, establish a safe and stable supplier team and prevent accidents caused by procured materials, parts, and equipment, the Group has formulated the "Measures for the Management of Material Procurement", which is coordinated and executed by the Engineering Equipment Department. The Group aims to standardise procurement procedures through the mechanism of material procurement management. The Group also conducts audits and inspections on important suppliers regularly to examine the production process and management of suppliers. In addition, the Group has formulated the "Policy of Supplier Management System" and established a supplier catalogue. All subsidiaries are required to re-evaluate their suppliers every year and refrain from selecting suppliers with poor performance. To further establish a network of reliable service providers, the Group has formulated the "Measures for Market Access Management", and requires suppliers to bid for the Market Access Permit prior to any commercial activities such as bidding, contract negotiations, etc. The Group has rigorous review and approval procedures for Market Access Permit applications, and each subsidiary is required to evaluate suppliers' service quality, safety, environmental protection awareness, market reputation, sales performance and professional standard qualifications such as the ISO 14001 Environmental Management System to ensure the quality of the suppliers.

7. 安全穩定供氣

集團秉持高度的責任感和使命感全力確保燃氣安全穩定供應，多方面保障穩定供氣，確保各類用戶能安全及穩定地使用天然氣。為此，集團嚴格挑選供應商、確保燃氣質量，同時定期開展燃氣安全檢查、舉辦燃氣安全宣傳等，務求由供氣到用氣全方位保障燃氣安全。

7.1 採購管理

為規範供應商管理，建立安全、穩定的供應商隊伍，防止因外購材料、零件、設備等引發的安全事故，集團制定《物資採購管理辦法》，由工程裝備事業部負責統籌及執行，通過完善物資採購管理監督機制，規範物資採購工作。同時亦對重要供應商定期進行考查，掌握供應商生產和管理情況。此外，集團制定《供應商管理制度》，並建立供應商目錄，要求附屬公司每年對供應商進行重新評估，質量參差的將會被淘汰。為進一步建立可靠的服務商資源網路，集團制定《市場准入管理辦法》，要求供應商申辦《市場准入證》方可進行招投標、洽談合同等相關的商業活動。審核《市場准入證》的過程嚴謹，各附屬公司須關注各供應商在服務品質、安全、環保、服務意識、市場信譽及業績等多方面的評價及ISO 14001環境管理相關的專業資格等，確保供應商的資質和生產質量符合集團要求。

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The Group strictly follows the *Bidding Law of The People's Republic of China* for the selection of contractors and have formulated the "Regulations for the Bidding and Tendering Management of Project Service and Material Procurement" to ensure the quality of projects, to control project costs and to minimise procurement costs. To fulfil these requirements, the Group has established a bidding management team, which is responsible for the tendering and bidding procedures for project service and material procurement. For projects which have contracts collectively worth over RMB 300,000, the process of tendering and bidding is applied. During the procurement process of raw materials for construction, price comparison methods are used in Qinghai Hongli to select a proper supplier. In addition, the quality of the suppliers, their ability to provide supplies and supplied products' attainment of certified standards are also being assessed to ensure the quality of materials used.

7.2 Safe Usage of Gas

In order to improve the safe usage of gas, all subsidiaries conduct gas safety inspections in their serving regions and regularly detect leakages through using advanced monitoring instruments, conducting safety assessments and providing regular inspections for households and residents. With the aim of building the sense of gas safety, the Group carries out activities to promote the knowledge of gas safety to the public, such as organising educational and promotional activities in communities and schools to teach the public on the proper use of gas facilities and procedures to handle gas hazards when discovered.

在選擇工程項目供應商時，集團按照《中華人民共和國招標投標法》的法律法規，制定《工程服務和物資採購招投標管理實施細則》等，以確保工程品質、控制工程造價及降低採購成本。為此，集團建立招標領導小組，負責集團工程服務和物資採購招標活動。工程施工單項合同或綜合物資採購合同，金額達到30萬元人民幣以上的專案，必須啟動招標投標程序。青海宏利在購買建築原材料時，會根據規定採用詢價對比方式進行採購，同時亦關注供應商品質、供貨能力、產品合格證等資格信用情況，保證材料的質量。

7.2 用氣安全

為做好燃氣安全工作，各附屬公司在所服務地區開展燃氣安全檢查，利用先進儀器探測洩露風險及進行安全評估，為商戶及居民定期提供入戶檢查，確保用氣安全。同時開展普及燃氣安全知識的活動，包括在社區、學校舉辦宣傳活動，教授如何正確使用燃氣設施、發現燃氣隱患如何處理等基本用氣知識，共營安全用氣氛圍。





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8. EXCEPTIONAL QUALITY

The Group persistently operates with integrity and strictly follows national and operating location-specific standards, and strives to elevate the standard of the operational management system toward perfection. The Group strives to optimise procurement management, enhance the quality of products and services and actively boost the level of customer satisfaction in various aspects. Concurrently, the Group strictly complies with the laws and regulations relating to the protection of customer privacy, advertising, labels and intellectual property rights.

8.1 Quality of Products

In order to ensure product quality, the Group demands all upstream gas suppliers to supply gas meeting the National Class 1 or Class 2 standard. In order for the Group to monitor the quality of natural gas effectively, all gas suppliers are required to provide periodical gas quality reports and specify the gas composition in contracts. Subsidiaries formulate policies and regulations based on their business characteristics. For example, the quality of LNG produced and supplied by LNG processing plants must meet policies and regulations such as the "General Characteristics of LNG" and "Quality Assessment Criteria for Import and Export of LNG"; the quality of CNG supplied by CNG filling stations must meet the requirements of "Compressed Natural Gas for Vehicles". To ensure product quality, all pipes are sent to the Binzhou Special Equipment Testing Institution for inspection before they are sold. Currently, Qinghai COG Ganhe Industrial Park Gas Co., Ltd. and Qinghai COG Chaofei Information Technology Co., Ltd. are certified with the ISO 9001 Quality Management System.

8. 打造卓越品質

集團堅持誠信經營，嚴守國家與營運所在地的各項標準和要求，抱著力臻完美的決心提升營運管理水平。集團努力優化採購管理，積極提升產品與服務的質量，於多方面積極提高客戶的滿意度。同時，集團嚴格遵守有關維護客戶私隱、廣告、標籤及知識產權等的法律法規。

8.1 產品質量

為保證產品的質量，集團要求上游氣源供應商提供的管道天然氣品質需符合國家標準《天然氣》中的一類氣或二類氣標準。為更有效監控天然氣的質量，集團要求氣源供應商定期提供氣質報告，並於供氣合同中列明氣體成分。各附屬公司亦會因其業務特性，制定相關的標準制度。例如LNG加工廠生產供應的液化天然氣品質需滿足《液化天然氣的一般特性》、《進出口液化天然氣品質評價標準》等的國家及行業標準；CNG加氣站供應的壓縮天然氣品質需滿足《車用壓縮天然氣》的規定等。此外，濱州設備為確保產品質量，於管道產品出售前均安排送往濱州市特種設備檢測所進行檢驗。目前，集團附屬公司青海中油甘河工業園區燃氣有限公司、青海中油超飛信息技術有限公司均獲得品質管理體系(ISO 9001：2008)認證。

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In addition, the Group strictly complies with laws and regulations relating to advertising, labelling and intellectual property rights, such as the *Advertising Law of the People's Republic of China*, the *Trademark Law of the People's Republic of China*, the *Intellectual Property Law of the People's Republic of China* and the *Patent Law of the People's Republic of China*. We pledge not to infringe others' intellectual property rights, patents, copyrights and other rights and interests by implementing restrictions on sales and credit, and eliminating the use of false and misleading statements in the process of product promotion and trading. Regarding information security, disclosure of confidential information is strictly forbidden in private conversations and in public places, unless prior approval is received from customers.

除此之外，集團嚴格遵守《中華人民共和國廣告法》、《中華人民共和國商標法》、《中華人民共和國知識產權法》和《中華人民共和國專利法》等有關廣告、標籤及知識產權的法律法規，落實執行銷售和信用管制，杜絕在產品宣傳和交易過程中使用虛假及誤導性說明的行為，承諾不侵犯他人知識產權、專利權、版權等權益。另外，集團亦注重客戶的私隱保密及資訊安全，嚴禁在職員工和離職員工以任何形式洩露商業機密。在職員工未經批准不得將客戶資料外借或以其他形式透露他人。集團規定員工不可在私人交往和通訊中提及客戶資料，或在公共場所談論集團商業秘密。



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8.2 Excellent Services

The Group has always been committed to providing excellent customer services and established a comprehensive "Customer Complaint Management System". Customers can either provide feedback or complaints through communicating with lobby managers, a 24-hour complaint hotline, fax, suggestion boxes, opinion books, company website, etc. at any given time. A standardised complaint handling procedure is followed by our customer service team once a complaint is received. Should employees handle complaints in an improper manner such as ignoring customer complaints, stalling complaint processing times without valid reasons, covering customer complaints, fabricating false information and not reporting or taking measures promptly following a major incident, the responsible employee(s) shall be disciplined. In addition, the relevant personnel handling the complaints shall be responsible for keeping the customer information and complaints confidential.

Each subsidiary has set up dedicated task force to actively communicate with customers and provide comprehensive troubleshooting services, achieving the goal of "responding whenever reports are received, providing the best solutions to the problem" and hence satisfying the needs of customers. To ensure service quality, emergency repairmen set off within 5 minutes after receiving gas leakage accident warnings and arrive at the sites within 30 minutes.

8.2 服務周到

集團一向致力提高客戶服務水平，並制定完善的《客戶投訴管理制度》，客戶可通過大堂經理、24小時投訴電話、傳真、意見箱、意見簿、公司網站等渠道，於任何時候對產品和服務提出意見或進行投訴。如收到客戶對產品或服務提出的不滿或投訴，各附屬公司的客戶服務部會啟動規範化的客戶投訴處理程序，如發現忽視客戶投訴、無故拖延投訴處理時限、隱瞞客戶投訴、編造虛假資訊、重大事件發生時未有及時報告或採取措施等情況，將會處分負責的員工。此外，對於客戶資訊及投訴內容，處理客戶投訴的相關人員負有保密責任。

各附屬公司同時成立客戶專責小組，積極與客戶溝通，並提供全天候的故障報修服務，做到「有報必到，修必修好」，滿足客戶所需。為確保服務質素，搶修人員需要在接到燃氣洩漏事故警報後的5分鐘內出發，在30分鐘內到達現場處理。

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9. PRACTICE INTEGRITY

The Group considers the culture of integrity as an inseparable part of corporate development. The Group abides by laws and regulations such as the *Criminal Law of the People's Republic of China*, *Anti-Corruption Law of the People's Republic of China* and *Anti-Money Laundering Law of the People's Republic of China* and eliminates any form of benefit transfer, corruption and bribery. In the bidding and tendering process for engineering services and materials procurement, the Group strictly abides by the Bidding Law of the People's Republic of China and formulated the "Regulations for the Bidding and Tendering Management of Project Service and Material Procurement", which stipulates that the tendering and bidding activities shall be conducted in an open, fair and impartial manner. Rules and policies are set for the procedures of bid invitation, bid evaluation and bid determination. For example, bidders are prohibited from pressuring the tenderers during the process of tendering to eliminate any form of corruption or bribery. In addition, the executives of the Group must sign and obey the "Letter of Commitment for Anti-Corruption" and promise to firmly resist any form of bribery, extortion, fraud, intentionally making transactions with improper parties, money laundering, etc. If employees violate their commitments, they must take responsibility for breach of contract and legal consequences.

Furthermore, Baccalieu strictly complies with the *Alberta Commercial Corporation Law* and other federal and provincial laws and regulations relating to anti-corruption. Baccalieu has formulated management practices concerning commercial conduct and ethics to regulate conflicts of interest, receiving bribery, privacy confidentiality, etc. Baccalieu has also developed a whistle-blowing mechanism to encourage the reporting of any illegal or unethical behavior. If violations are found, the board will take control of the cases. During the Reporting Period, no cases of corruption lawsuits were received.

9. 廉潔從業

集團把廉潔文化視為企業建設的重要部分。集團恪守《中華人民共和國刑法》、《中華人民共和國反貪污賄賂法》、《中華人民共和國反洗錢法》等法律法規，杜絕任何形式的利益輸送和貪腐賄賂的行為。在工程服務及物資採購招投標中，集團嚴格遵守《中華人民共和國招標投標法》並制定《工程服務和物資採購招投標管理實施細則》，當中訂明招投標活動應當遵循公開、公平、公正和誠實信用的原則。於開標、評標、定標過程中訂立多項規定，如投標人在投標審查、澄清、評價、比較及評標的過程中，禁止對招標人施加壓力，以杜絕任何形式的貪污受賄行為。另外，集團規定高管人員上任時須簽署《反舞弊承諾書》，承諾堅決抵制任何形式的賄賂、勒索、欺詐、故意與不當關聯方交易、進行洗黑錢行為等；承諾書上亦訂明如員工違反承諾，需要承擔違諾責任和法律後果。

同時，Baccalieu 公司亦嚴格遵守加拿大阿爾伯塔省商業公司法、聯邦及省級反貪污的法律法規等，且制定有關商業行為和道德規範的管理辦法，規範利益衝突、收受賄賂、私隱保密等事宜。Baccalieu 公司並制定舉報機制，鼓勵舉報任何非法或不道德行為。如發現違規事件，將交由董事會處理。本年度，集團沒有接獲任何貪污訴訟的案例。

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10. ENGAGING WITH THE COMMUNITY

In responds to the target set forth in the “Transforming our world: the 2030 Agenda for Sustainable Development” by the United Nations, we immerse ourselves in understanding the needs of different groups in the society, spreading warmth and taking concrete actions to contribute to the improvement of social welfare. The Group and its employees demonstrate their kind-hearted spirit and dedication by establishing the COG Volunteering Team and participating in voluntary activities, including visits to the elderly, supporting disaster relief and other activities. The Group also periodically organises seminars regarding the safety of gas in communities and schools to raise awareness of gas safety amongst the public. Baccalieu encourages its employees to enroll in volunteering organisations and actively supports charitable activities in Calgary and other locations of operation. In the future, the Group will continue to shoulder the mission of serving society, accomplishing great love with good deeds, and contributing to society.

10. 溫暖同行

集團積極回應聯合國《2030年可持續發展議程》目標倡議，切身處地體會社會不同人士的需要，致力回饋社會，傳播溫暖，並付諸實際行動，全方位發展公益事業。集團成立中油燃氣義工隊，鼓勵員工參加義務工作，包括慰問老人、協助救災等活動，展現企業和員工的愛心和奉獻精神。同時，本集團不定期到社區及學校舉辦燃氣安全知識講座，提高用戶的燃氣安全意識。Baccalieu公司亦鼓勵員工加入義工組織，積極支持卡加利地區和其他營運所在地的社區慈善活動。未來，集團將繼續肩負服務社會的使命，以點滴善行成就大愛，回饋社會。



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Voluntary Blood Donation 義務獻血

The Group established COG Volunteering Team and encourages employees to participate in voluntary blood donation, contribute to society and spread warmth by taking concrete actions.

集團成立中油燃氣義工隊，鼓勵員工義務獻血，用實際行動展現企業和員工的愛心和奉獻精神。

Voluntary Cleanup Activity 義務清潔活動

The Group organized voluntary cleanup activity at Zhuhai Seaside Park, protecting the environment in the community and contributing to the betterment of society.

集團組織員工於珠海海濱公園義務勞動，清理海濱及園區內的各類垃圾，以點滴善行成就大愛，回饋社會。



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11. PERFORMANCE IN 2017

The Group formulated this performance summary¹ according to the HKEx ESG Reporting Guidelines. Since the Group outsourced most of its construction projects during the Reporting Period, the performance in this aspect was difficult to obtain. In the future, the Group will establish an environmental performance management system and collect the relevant data of construction projects.

11. 2017 年度績效數據

集團根據香港聯交所之《環境、社會及管治報告指引》制定以下績效數據匯總表¹。由於集團大部分建設工程均聘請外部承包商，本年度難以提供工程建設方面的環境績效數據。未來，集團將積極收集工程建設環境數據，並建立環境績效管理系統。

Environmental Performance 環境表現	Unit 單位	Quantity 數量	Intensity 密度
Consumption of Resources			
資源耗用總量			
Purchased Electricity	MWh	22,501.89	294.09 per hundred million HKD Revenue
外購電力	兆瓦時		294.09 每億港元營業額
Purchased Water	m ³	35,418	462.9 per hundred million HKD Revenue
外購自來水	立方米		462.9 每億港元營業額
Diesel	Litres	1,814.82	23.72 per hundred million HKD Revenue
柴油	公升		23.72 每億港元營業額
Natural Gas	'000 m ³	9,062.41	118.44 per hundred million HKD Revenue
天然氣	千立方米		118.44 每億港元營業額
Lubricant Oil	Litres	1,414	18.48 per hundred million HKD Revenue
潤滑油	公升		18.48 每億港元營業額
Liquefied Petroleum Gas	Litres	20,004	261.45 per hundred million HKD Revenue
液化石油氣	公升		261.45 每億港元營業額
Wastewater	m ³	86,400	1,129.22 per hundred million HKD Revenue
廢水量	立方米		1,129.22 每億港元營業額
Quantity of Waste by Types²			
按類別劃分的廢棄物總量²			
Oil-based Drill Cutting	Tonnes	2,800	36.60 per hundred million HKD Revenue
油基鑽屑	公噸		36.60 每億港元營業額
Water-based Drill Cutting	Tonnes	432	5.65 per hundred million HKD Revenue
水基鑽屑	公噸		5.65 每億港元營業額
Paper	Pieces	47,000	614.28 per hundred million HKD Revenue
紙張	張		614.28 每億港元營業額

¹ Data of Environmental Performance are from the Group's 5 selected divisions.

² Oil-based and water-based drill cutting were generated from Baccalieu's operations in the Reporting Period. Other waste was generated from the Group's office in the Reporting Period.

¹ 環境表現的數據來自集團選定的5家事業部。

² 油基鑽屑和水基鑽屑屬於二零一七年度加拿大業務的廢棄物，其他廢棄物為二零一七年度辦公室廢棄物。

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Environmental Performance 環境表現	Unit 單位	Quantity 數量	Intensity 密度
Ink Cartridge 墨盒	Box 個	53	0.69 per hundred million HKD Revenue 0.69 每億港元營業額
Battery 電池	Number 個	75	0.98 per hundred million HKD Revenue 0.98 每億港元營業額
Air Pollution Emissions³			
大氣污染物排放量³			
Nitrogen Oxides (NO _x) 氮氧化物(NO _x)	Tonnes 公噸	2,633.57	34.42 per hundred million HKD Revenue 34.42 每億港元營業額
Sulphur Dioxide (SO ₂) 二氧化硫(SO ₂)	Tonnes 公噸	6.05	7.91 x 10 ⁻² per hundred million HKD Revenue 7.91 x 10 ⁻² 每億港元營業額
Particulate Matter (PM _{2.5}) 懸浮顆粒物(PM _{2.5})	Tonnes 公噸	0.15	0.20 x 10 ⁻² per hundred million HKD Revenue 0.20 x 10 ⁻² 每億港元營業額
Volatile Organic Compounds (VOCs) 揮發性有機化合物(VOCs)	Tonnes 公噸	72	94.10 x 10 ⁻² per hundred million HKD Revenue 94.10 x 10 ⁻² 每億港元營業額
Greenhouse Gas Emissions			
溫室氣體排放量			
Direct Emissions ⁴ 直接排放 ⁴	Tonnes CO _{2e} 公噸二氧化碳當量	86,110.48	1,125.44 per hundred million HKD Revenue 1,125.44 每億港元營業額
Flame and Flare Combustion ⁵ 放空火炬燃燒 ⁵	Tonnes CO _{2e} 公噸二氧化碳當量	127,301.51	1,663.79 per hundred million HKD Revenue 1,663.79 每億港元營業額
Indirect Emissions – Use of Electricity ⁶ 間接排放 – 電力使用 ⁶	Tonnes CO _{2e} 公噸二氧化碳當量	12,707.76	166.09 per hundred million HKD Revenue 166.09 每億港元營業額

³ The calculation method and respective emission factor of air emissions were based on *Technical Guide for Air Pollutant Emission Inventory for Road Vehicles (Trial)* and the *4430 Thermal Production and Supply Industries (including Industrial Boilers)* published by the Ministry of Environmental Protection of the PRC.

⁴ The calculation method and respective emission factor of air emissions were based on the *Guidelines for Accounting and Reporting of Greenhouse Gas Emissions from Land-based Transportation Enterprises (Trial)* and the *Guidelines for Accounting Methods and Reporting of Greenhouse Gas Emissions in Enterprises in Other Industries (Trial)* published by the Ministry of Environmental Protection of the PRC.

⁵ The calculation method and respective emission factor of greenhouse gases were based on IPCC Guidelines for National Greenhouse Gas Inventories.

⁶ The calculation method and respective emission factors of GHG Scope II emissions were based on the *2011 and 2012 PRC's Regional Grid Average Carbon Dioxide Emission Factor* published by the National Development and Reform Commission of the PRC.

³ 大氣污染物排放的計算方法及相關排放系數計算乃根據中華人民共和國環境保護部發佈的《道路機動車大氣污染物排放清單編制技術指南(試行)》、中華人民共和國環境保護部環境標準研究所發佈的《4430熱力生產和供應行業(包括工業鍋爐)》所制訂。

⁴ 此溫室氣體排放的計算方法及相關排放系數計算乃根據中華人民共和國環境保護部發佈的《陸上交通運輸企業溫室氣體排放核算方法與報告指南(試行)》、《工業其他行業企業溫室氣體排放核算方法與報告指南(試行)》所制訂。

⁵ 此溫室氣體排放的計算方法及相關排放系數計算乃根據政府間氣候變化專門委員會(IPCC)發佈的「IPCC Guidelines for National Greenhouse Gas Inventories」所制訂。

⁶ 此溫室氣體範疇二排放的計算方法及相關排放系數計算乃根據中華人民共和國國家發展和改革委員會發佈的《2011年和2012年中國區域電網平均二氧化碳排放因子》所制訂。

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Environmental Performance 環境表現	Unit 單位	Quantity 數量	Intensity 密度
Flame and Flare Combustion			
放空火炬燃燒			
Natural Gas (Released)	’000 m³	496.80	6.49 per hundred million HKD Revenue
天然氣放空量	千立方米		6.49 每億港元營業額
Natural Gas (Combusted)	’000 m³	155.10	2.03 per hundred million HKD Revenue
天然氣燃燒量	千立方米		2.03 每億港元營業額
Condition of Employment		Unit	Quantity
僱傭情況		單位	數量
Information of Employment			
僱傭資料			
Total Number of Employees		No. of Persons	3,600
員工總數		人數	3,600
Proportion of Employees by Gender			
按性別分類的員工比例			
Male		%	65.30%
男性		百分比	
Female		%	34.70%
女性		百分比	
Proportion of Employees by Age Group			
按年齡組別分類的員工比例			
Aged 30 or Below		%	42.20%
30歲或以下		百分比	
Aged 31 to 50		%	49%
31歲至50歲		百分比	
Aged 51 or Below		%	8.80%
51歲或以上		百分比	

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Condition of Employment 僱傭情況	Unit 單位	Quantity 數量
Proportion of Employee by Types of Business		
按業務類型分類的員工比例		
Supply of Pipeline Gas	%	96.11%
管道燃氣供應	百分比	
Logistics and Transportation	%	1.78%
物流運輸	百分比	
LNG Production	%	1.78%
LNG生產	百分比	
Exploitation and Production of Crude Oil and Natural Gas	%	0.33%
開採及生產原油及天然氣	百分比	
Employee Turnover Rate by Gender		
按性別分類的員工流失率		
Male	%	7.50%
男性	百分比	
Female	%	3.10%
女性	百分比	
Employee Turnover Rate by Types of Business		
按業務類型分類的員工流失率		
Supply of Pipeline Gas	%	10.48%
管道燃氣供應	百分比	
Logistics and Transportation	%	0.28%
物流運輸	百分比	
LNG Production	%	0.08%
LNG生產	百分比	
Exploitation and Production of Crude Oil and Natural Gas	%	0.00%
開採及生產原油及天然氣	百分比	

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APPENDIX: HKEX ESG REPORTING GUIDE INDEX

附錄：香港聯交所之《環境、社會及管治報告指引》索引

General Disclosures and KPIs 一般披露及 關鍵績效指標	"Comply or explain" Provisions 「不遵守就解釋」	Section 本報告有關章節 或其他說明	Page 相關頁碼
Environmental 環境範疇			
Aspect A1: Emission 層面 A1：排放物			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	4	P. 13-20
一般披露	有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生等的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料	4	P. 13-20
KPI A1.1	The types of emissions and respective emissions data	11	P. 39-42
	排放物種類及相關排放數據	11	P. 39-42
KPI A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	11	P. 39-42
	溫室氣體總排放量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）	11	P. 39-42
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	11	P. 39-42
	所產生有害廢棄物總量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）	11	P. 39-42
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	11	P. 39-42
	所產生無害廢棄物總量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）	11	P. 39-42
KPI A1.5	Description of measures to mitigate emissions and results achieved	4	P. 13-20
	描述減低排放量的措施及所得成果	4	P. 13-20
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved	4	P. 13-20
	描述處理有害及無害廢棄物的方法、減低產生量的措施及所得成果	4	P. 13-20

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Aspect A2: Use of Resources 層面 A2：資源使用			
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials	4	P. 13-20
一般披露	有效使用資源(包括能源、水及其他原材料)的政策	4	P. 13-20
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)	11	P. 39-42
	按類型劃分的直接及／或間接能源(如電、氣或油)總耗量(以千個千瓦時計算)及密度(如以每產量單位、每項設施計算)	11	P. 39-42
KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	11	P. 39-42
	總耗水量及密度(如以每產量單位、每項設施計算)	11	P. 39-42
KPI A2.3	Description of energy use efficiency initiatives and results achieved	4	P. 13-20
	描述能源使用效益計劃及所得成果	4	P. 13-20
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved	4	P. 13-20
	描述求取適用水源上可有任何問題，以及提升用水效益計劃及所得成果	4	P. 13-20
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	N/A ⁷	
	製成品所用包裝材料的總量(以噸計算)及(如適用)每生產單位佔量	不適用 ⁷	
Aspect A3: The Environment and Natural Resources 層面 A3：環境及天然資源			
General Disclosure	Policies on minimising the issuer's significant impact on the environment and natural resources	4	P. 13-20
一般披露	減低發行人對環境及天然資源造成重大影響的政策	4	P. 13-20
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	4	P. 13-20
	描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動	4	P. 13-20

⁷ No packaging materials were used as the Group focus on natural gas provision and energy-related business and delivers the product through pipelines.

⁷ 集團主要從事天然氣及能源相關之業務，天然氣及能源以傳送管輸送至用戶，並無包裝材料的使用。

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Social 社會範疇			
Aspect B1: Employment 層面 B1：僱傭			
General Disclosure	Information on:	5.1 & 5.3	P. 21, 22 & 25
	(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, anti-discrimination, and other benefits and welfare		
一般披露	有關薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利的：	5.1 & 5.3	P. 21, 22 & 25
	(a) 政策；及		
	(b) 遵守對發行人有重大影響的相關法律及規例的資料		
KPI B1.1	Total workforce by gender, employment type, age group and geographical region	11	P. 39-42
	按性別、僱傭類型、年齡組別及地區劃分的僱員總數	11	P. 39-42
KPI B1.2	Employee turnover rate by gender, age group and geographical region	11	P. 39-42
	按性別、年齡組別及地區劃分的僱員流失比率	11	P. 39-42
Aspect B2: Health and Safety 層面 B2：健康與安全			
General Disclosure	Information on:	6	P. 25-29
	(a) the policies; and		
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards		
一般披露	有關提供安全工作環境及保障僱員避免職業性危害的：	6	P. 25-29
	(a) 政策；及		
	(b) 遵守對發行人有重大影響的相關法律及規例的資料		
KPI B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	6	P. 25-29
	描述所採納的職業健康與安全措施，以及相關執行及監察方法	6	P. 25-29
Aspect B3: Development and Training 層面 B3：發展及培訓			
General Disclosure	Policies on improving employee knowledge and skills for discharging duties at work. Description of training activities.	5.2	P. 22-24
一般披露	有關提升僱員履行工作職責的知識及技能的政策。描述培訓活動	5.2	P. 22-24

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Aspect B4:			
Labour Standards			
層面 B4：勞工準則			
General Disclosure	Information on:	5.1	P. 21-22
	(a) the policies; and		
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer		
一般披露	有關防止童工或強制勞工的：	5.1	P. 21-22
	(a) 政策；及		
	(b) 遵守對發行人有重大影響的相關法律及規例的資料		
KPI B4.1	Description of measures to review employment practices to avoid child and forced labour	5.1	P. 21-22
	描述檢討招聘慣例的措施以避免童工及強制勞工	5.1	P. 21-22
KPI B4.2	Description of steps taken to eliminate such practices when discovered.	5.1	P. 21-22
	描述在發現違規情況時消除有關情況所採取的步驟	5.1	P. 21-22
Aspect B5: Supply Chain Management			
層面 B5：供應鏈管理			
General Disclosure	Policies on managing environmental and social risks of the supply chain	7	P. 30-31
一般披露	管理供應鏈的環境及社會風險政策	7	P. 30-31
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	7.1	P. 30-31
	描述有關聘用供應商的慣例，向其執行有關慣例的供應商數目、以及有關慣例的執行及監察方法	7.1	P. 30-31
Aspect B6:			
Product Responsibility			
層面 B6：產品責任			
General Disclosure	Information on:	8	P. 33-35
	(a) the policies; and		
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer		
一般披露	有關所提供產品和服務的健康與安全、廣告、標籤及私隱事宜以及補救方法的：	8	P. 33-35
	(a) 政策；及		
	(b) 遵守對發行人有重大影響的相關法律及規例的資料		
KPI 6.4	Description of quality assurance process and recall procedures	8.1	P. 33-34
	描述質量檢定過程及產品回收程序	8.1	P. 33-34
KPI 6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	8.1	P. 33-34
	描述消費者資料保障及私隱政策，以及相關執行及監察方法。	8.1	P. 33-34

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Aspect B7:			
Anti-corruption			
層面 B7：反貪污			
General Disclosure	Information on:	9	P. 36
	(a) the policies; and		
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer		
一般披露	有關防止賄賂、勒索、欺詐及洗黑錢的：	9	P. 36
	(a) 政策；及		
	(b) 遵守對發行人有重大影響的相關法律及規例的資料		
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	9	P. 36
	於匯報期內對發行人或其僱員提出並已審結的貪污訴訟案件的數目及訴訟結果	9	P. 36
KPI B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	9	P. 36
	描述防範措施及舉報程序，以及相關執行及監察方法	9	P. 36
Aspect B8:			
Community Investment			
層面 B8：社區投資			
General Disclosure	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	10	P. 37-38
一般披露	有關以社區參與來了解營運所在社區需要和確保其業務活動會考慮社區利益的政策。	10	P. 37-38
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport)	10	P. 37-38
	專注貢獻範疇	10	P. 37-38
KPI B8.2	Resources contributed (e.g. money or time) to the focus area	10	P. 37-38
	在專注範疇所動用資源	10	P. 37-38

