



ENN 新奥

ENN Energy Holdings Limited
(Stock code: 2688)



2018

ENVIRONMENTAL,
SOCIAL AND
GOVERNANCE REPORT

ABOUT THIS REPORT

This Report is the second standalone annual environmental, social and governance (“ESG”) report (“Report”) of ENN Energy Holdings Limited (hereinafter referred to as “ENN Energy”, “the Company”, “we”). The purpose of this Report is to report on articulate concepts and practices of the Company and its subsidiaries (hereinafter referred to as “the Group”) in fulfilling their environmental, social and governance responsibilities in 2018, and to address material issues of concern raised by major stakeholders. This Report has been reviewed by the ESG committee who is responsible for the authenticity and validity of the information disclosed and ensuring the Report is free from false information and misleading statements, and guarantees the truthfulness, accuracy and completeness of its content. Through establishing channels of daily communication with stakeholders, the Group identifies ESG risks related to its business and ensures the establishment of appropriate and effective ESG risk management and internal control.

Reporting Period

From 1 January to 31 December, 2018. The time period may be extended appropriately for some of its contents.

Reporting Cycle

This Report is published on an annual basis.

Sources of Information

Information is sourced from summaries and statistics of the company documents, statistical reports as well as the performance reports of its subsidiaries. All information has been reviewed by the Company’s senior management, heads of departments and its subsidiaries.

Data Description

Some of the operational and financial data of this Report are cited from the Group’s annual report in 2018. All information and data disclosed in this Report other than the Group’s business operational data which includes the operational data of the joint ventures and associates, are in the scope of the Group’s consolidation. Unless otherwise specified, the amount disclosed in this Report is denoted in RMB.

Preparation Basis

This Report is mainly based on the reporting principles of materiality, quantitative, balance and consistency in Environmental, Social and Governance Reporting Guide (ESG Guide) under Appendix 27 to the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (hereinafter referred to as the “Listing Rules”) issued by the Stock Exchange of Hong Kong Ltd. (hereinafter referred to as the “Stock Exchange”). It also refers to GRI Sustainability Reporting Standards issued by the Global Sustainability Standards Board (GSSB), Guidelines on Corporate Social Responsibility Reporting in China (CASS-CSR 4.0) and ISO 26000 Guidelines on Social Responsibility issued by the International Organisation for Standardisation.

Availability

This Report is released in printed and online versions and both in Chinese and English. The online version is available for browse and download at the website of the Stock Exchange (www.hkexnews.hk) and of the Company (<http://www.ennenergy.com/>). If there is any conflict or inconsistency between Chinese version and English version, the Chinese version shall prevail.

Contact

If you have any questions or need a printed edition of this Report, please feel free to contact us via our email enn@ennenergy.com or at (852)2528-5666.



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EXECUTIVE CHAIRMAN'S STATEMENT

ENN Energy has always been clearly positioned to develop its business in the clean energy industry, taking the harmonious development of energy and the environment as its responsibility, and striving to find clean, efficient and innovative solutions for the energy issues in China and the world. We believe that adhering to sustainable development enables people to have a better living environment. In 2018, we actively promoted the use of natural gas in 187 city-gas projects which were managed by the Group in China, to replace coal and other fossil fuels with high emissions which cause serious pollution to the environment. We successfully developed 29,226 industrial and commercial users and 2.3 million residential users to use natural gas, a cleaner fuel. At the same time, we vigorously developed integrated energy business which was based on the concept of “integrating multiple energy forms, adapting to local conditions”, to tailor-make integrated energy solutions according to customers' energy needs, and reduced the total cost of energy consumption for customers while improving energy efficiency and reducing emission. With the Company's technological advantages, 257 new integrated energy projects were signed during the year, and the number of projects that were put into operation doubled to 62. Driven by natural gas distribution and integrated energy businesses, the Company's revenue increased by 25.7% to RMB 60.698 billion in 2018.

Fulfilling Responsibility and Practicing Sustainable Development

We integrated the concept of sustainable development into operational management and decision-making process of the Group, constantly improved the management system for sustainable development, optimised its implementation mechanism, and progressively established collaboration between the Board of Directors, senior management, functional departments and subsidiaries in ESG matters. To optimise ESG performance management, the Group has established ESG information system since 2017, and continuously optimised the system in accordance with internal and external regulatory requirements and stakeholders' concerns. ESG performance was included in the annual performance review of executive managers in the

corporate office and subsidiaries, so as to incentivise them to actively perform ESG responsibilities relevant to their duties, ensuring that ESG performance is incorporated into the company's operational management.

Intelligent Operation and Building a Modern Energy System

“Building a Modern Energy System, Improving the Quality of Life” is the mission of ENN Energy. With the Company's excellent management team and technological innovation, we constantly improved city-gas distribution services, and actively innovated operation and management, while accelerating scalable development of integrated energy business at the same time. We aimed at building a modern energy system through the adoption of renewable energy and clean use of traditional fossil fuels which provided supplemental advantages, to facilitate social development and environmental improvement while achieving our economic growth. We also fully upgraded and digitalised the Group's customer service platforms, process, quality control and other aspects leveraging on the internet technology. While ensuring stable energy supply, we also brought convenient and efficient energy use experience to customers. In 2018, customer satisfaction surveys conducted online and offline by the Group showed good performance with an average score of 90.29 (full score of 100).

Safety Management and Security of Energy Usage

Guided by the Group's safety management principle of “People's Life First, Safe Development”, we have continuously improved the safety management system by formulating high-standard internal policy “Regulations on Safety Production Management”, strengthening safety training for our staff, and constructing a safety culture. At the same time, to further ensure the safety operation, information technology and visualisation system were used for data collection, transmission, analysis and application, so as to realise safety supervision covering all aspects of construction and operation. During the year, the Group's visualisation system was applied to 20,667 construction projects with a coverage rate of 99%.

Protecting Environment and Adhering to Green and Low Carbon Development

We helped our customers reduce greenhouse gas and pollutant emissions, at the same time strictly controlled emissions during our own operation, by saving resources, reducing emissions, more stringent post-emissions treatment and other measures. We uphold the idea of “Powering a Better Future” to construct a modern energy system, so as to achieve green management throughout the life cycle of energy consumption. In 2018, the total comprehensive energy consumption of the Group decreased by 32.67%, and the energy consumption density decreased sharply by 46.45% year-on-year.

People Oriented and Promoting a Harmonious Society

We made every effort to guarantee the legitimate rights and interests of employees, and support their career development, by promoting fair and diversified employment system. We created a positive, harmonious and happy workplace, and an employee development plan which helped them to realise their personal value, while achieving sustainable development of the enterprise. At the same time, we also actively participated in community and public welfare activities, continued to invest our effort in the fields of education, environmental protection, vulnerable groups and so on, to practice corporate social responsibility actively. In 2018, the Group's charitable donations amounted to RMB 73.15 million.

Looking forward, ENN Energy will continue to improve and optimise its sustainable development management, enhance the ability of value creation, adopt practical ways to fulfill its economic, social and environmental responsibilities. We will also create greater value for customers, shareholders, employees, communities and other stakeholders through the innovation of business model and the enhancement of excellent operational capability.

Executive Chairman

Wang Zizheng

21 May 2019



ENN's Mission
Become a respectable,
innovative and intelligent
enterprise

ENN's Philosophy
Customer-oriented,
creating win-win,
co-building the ecosystem

ENN's Vision
Create a modern energy
system and improve the
quality of people's life

ENN's Values
Integrity, self-motivation
data-driven, willingness
to share





1 ABOUT ENN ENERGY

1.1 Company Overview

ENN Energy Holdings Limited (stock code: 2688.HK) started its city-gas distribution business since 1992. It is one of the largest clean energy distributors and a leading integrated energy service provider in China. In addition to creating sustainable returns for shareholders, the Company is also committed to promoting green development and contributing to building a better China.

The principal businesses of the Group are the investment, operation and management of natural gas pipeline infrastructure, vehicle/ship refuelling stations and integrated energy projects, the sales and distribution of piped gas, liquefied natural gas and other multi-energy products in China. The Group also carries out integrated energy business, energy trading business and provides other services in connection with energy supply

in China. As of December 31, 2018, the Group had 187 city-gas projects in 17 provinces, municipalities and autonomous regions in China, including Anhui, Beijing, Fujian, Guangdong, Guangxi, Hebei, Henan, Hunan, Inner Mongolia, Jiangsu, Jiangxi, Liaoning, Sichuan, Shandong, Yunnan, Zhejiang and Shanxi. The Group has built a total length of 46,397 kilometers of natural gas pipelines, providing natural gas supply and related services for 121,105 industrial and commercial users and 18.52 million residential users. During the year, the Group's total natural gas sales volume amounted to 23.3 billion cubic meters, with an increase of 18.9% year-on-year. Meanwhile, the Group developed integrated energy business in key regions of 26 provinces and municipalities in China. It provided tailor-made integrated energy solutions for local governments and

users based on their multi-energy needs. While helping users meet the increasingly stringent environmental protection and emission policy requirements of the government, the Group promoted energy efficiency, reduced energy consumption per unit of GDP, and realised the overall upgrade of energy use and supply. By the end of 2018, the number of integrated energy projects that were put into operation, under construction and newly signed-up was 323. We provided customers with integrated energy such as electricity, steam, cooling and heating in a more energy-efficient way, with a potential integrated energy demand of more than 100 billion kilowatt hours (kWh). Within the year, the sales volume of integrated energy reached 2.886 billion kWh, which increased by 162.4% year-on-year.



The Group had
187
city-gas projects
in China

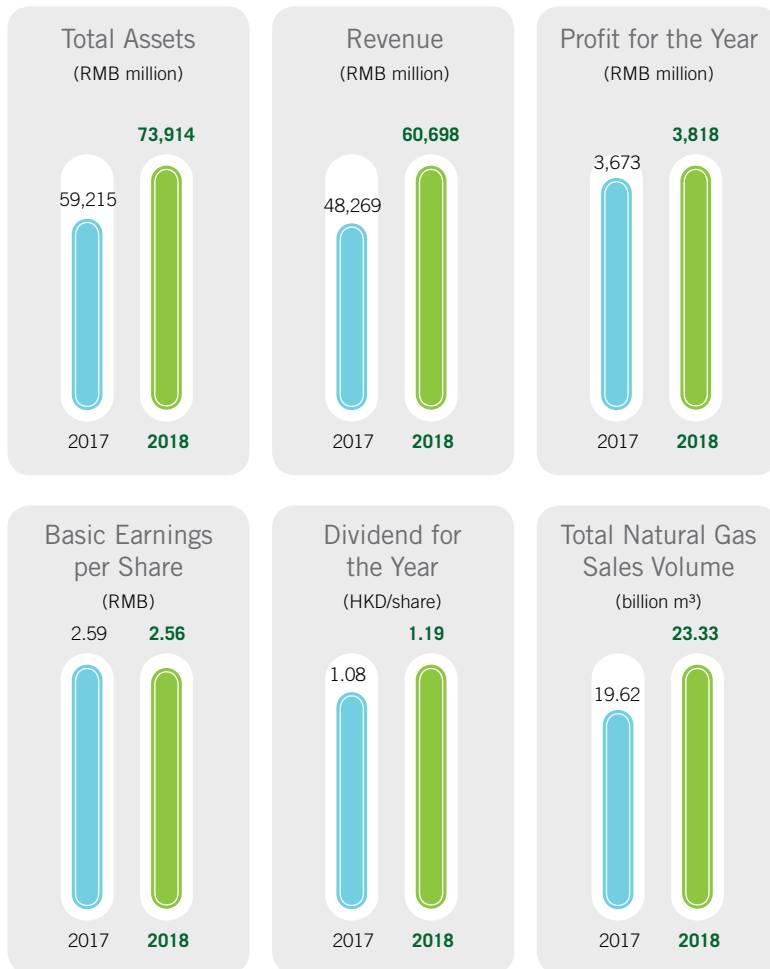


Covering a
connectable
urban population
of over
94.57 million

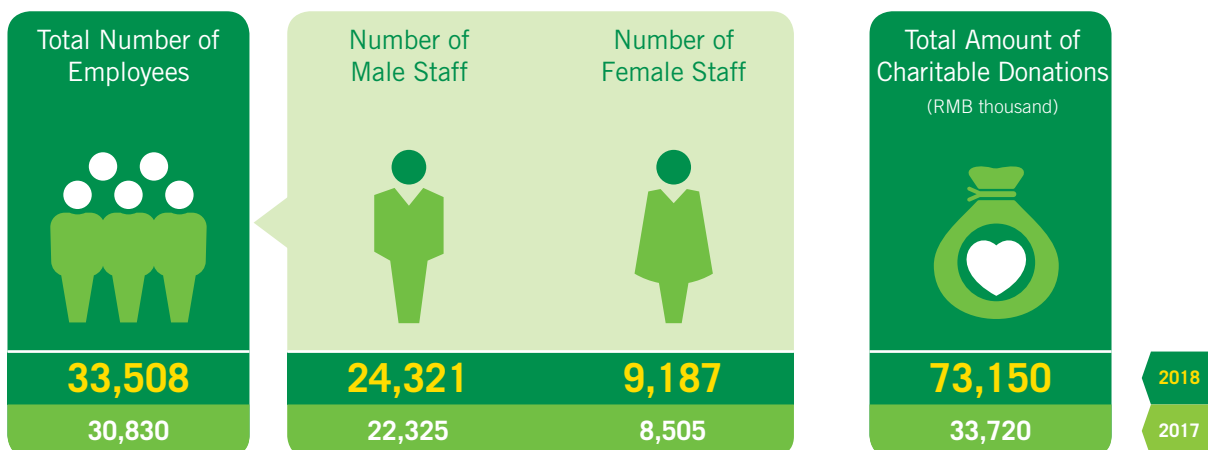


1.2 Key Performance Indicators in 2018

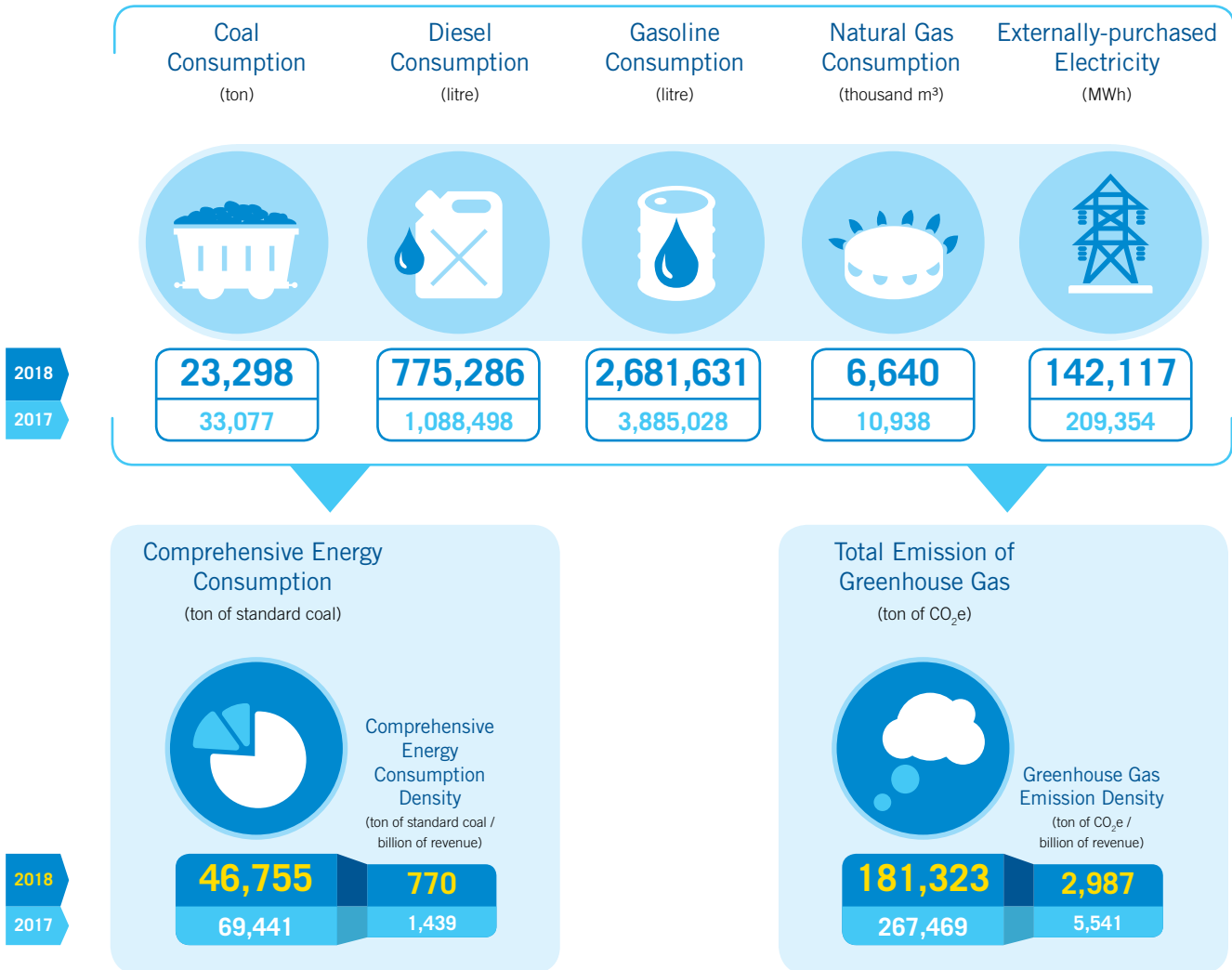
Economic Performance Indicators



Social Performance Indicators



Environmental Performance Indicators



Awards and Honours

- The title of “Most Honoured Company”, “Best IR Company (ranked No. 2 overall)”, “Best Corporate Governance (ranked No. 2 overall)”, “Best Analyst Day (ranked No. 2 overall)”, and “Best IR Professional (ranked No. 3 overall)” in Power Sector in 2018 All-Asia Executive Team Rankings by Institutional Investor, an international financial magazine highly recognised by investment professionals;
- “Certificate of Excellence” in the “4th Investor Relations Awards 2018” organised by Hong Kong Investor Relations Association;
- Ranked 166 in “China’s Top 500 list” by Fortune Magazine in 2018, up 20 places from last year;
- “2018 China Energy Innovation Breakthrough Award” and “2018 Excellent Clean Energy Integrated Service Provider” at the 4th China Energy Development and Innovation Forum; and
- “Outstanding Enterprise Award” at the 2018 National Energy Internet Conference.



1.3 Corporate Governance

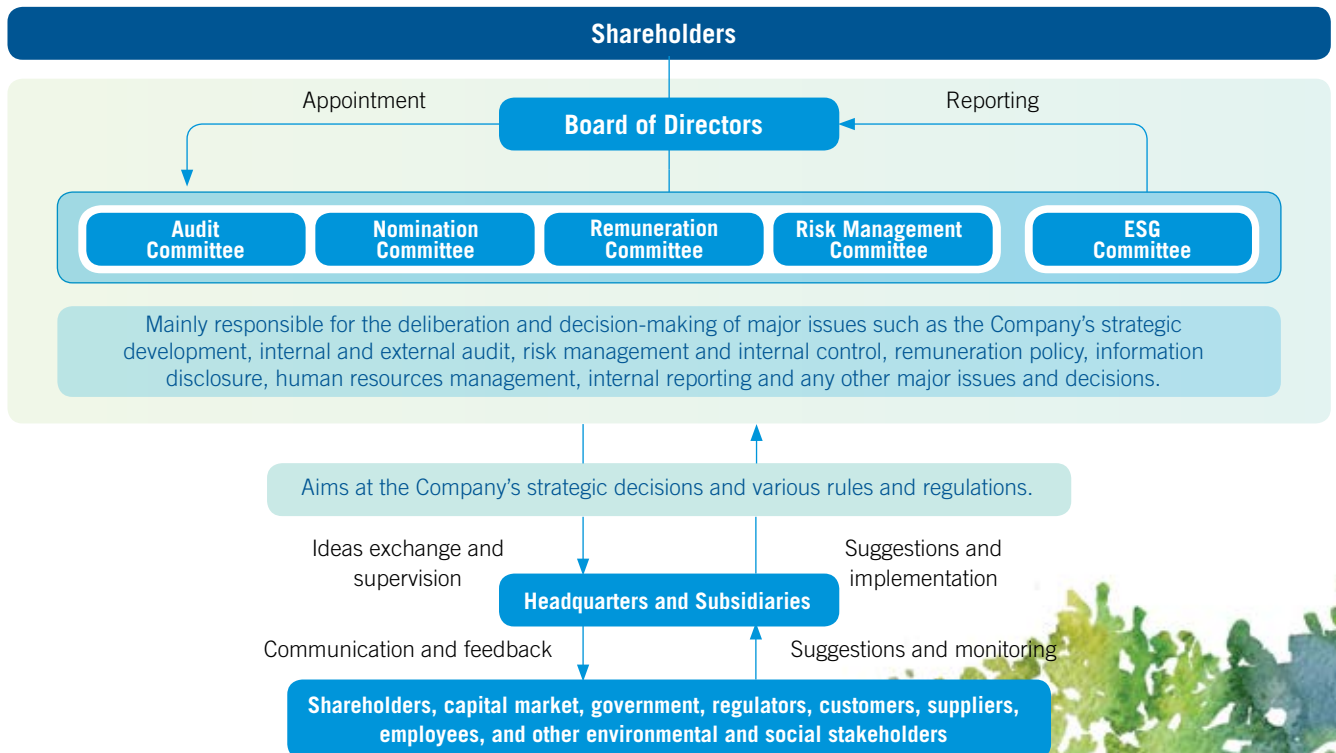
The Group followed the Company Law of the People's Republic of China, Hong Kong Companies Ordinance and other relevant laws and regulations. We built and improved a corporate governance structure which ensured stable operation of the Company in accordance with the requirements of Code on Corporate Governance Practices under Appendix 14 to the Listing Rules issued by the Stock Exchange.

We are well aware of the benefits of having a diverse board to accomplish the company's strategic objectives and sustainable development. Therefore, the Company actively promotes and implements the board diversity policy. When selecting and appointing board

members, the Nomination Committee shall take into account various factors, including (but not limited to) skills, region and industry experience, background, gender and other characteristics. At the same time, the Nomination Committee will also increase the proportion of independent non-executive directors according to the Company's needs which can introduce sufficient independent opinions to the Board. During the reporting period, the board of directors (the "Board") of the Company increased from nine members to ten members after appointing a female independent non-executive director. The Board of the Company is composed of six executive directors and four independent non-executive directors (accounted for

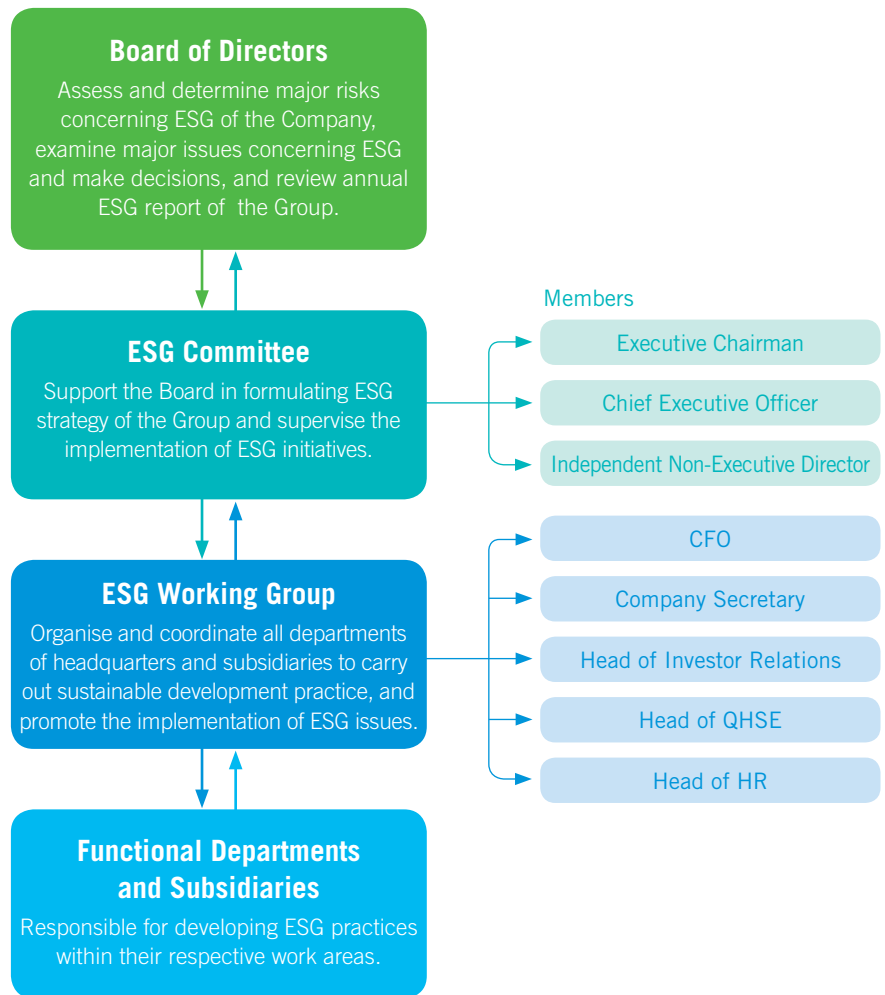
more than one third of the board) as at the reporting day. The Board is committed to promoting good corporate governance in order to protect shareholders' rights and interests and enhance the value and accountability of the enterprise. The Board comprises an Audit Committee, a Remuneration Committee, a Nomination Committee and a Risk Management Committee, which are appointed and authorised by the Board and operate effectively in accordance with its terms of reference. In order to optimise the management of implementing ESG reporting and related initiatives, the Company established an ESG Committee on 21 March 2019.

Corporate Governance Structure





The Group strictly abides by the stipulation of the ESG Guideline. The Board is responsible for assessing and determining major risks, and examining and making decisions concerning ESG issues of the Company. The Group established a ESG Committee on 21 March 2019 which composed of Executive Chairman Mr. Wang Zizheng, Chief Executive Officer Mr. Han Jishen and Independent Non-Executive Director Mr. Ma Zhixiang to support the Board in formulating ESG strategy of the Group and supervise the implementation of ESG initiatives. At the same time, an ESG working group was set up, including the Chief Financial Officer (“CFO”), the Company Secretary, the head of investor relations department, the QHSE (Quality, Health, Safety and Environment) department and the human resources department, to ensure that all aspects of ESG are properly managed and implemented. Under the authority of the Board, ESG Committee and ESG working group will continue to improve the ESG indicator system and ESG performance reporting process, hold regular meetings to report on the progress of ESG work and exchange opinions on ESG matters, and gradually optimise the ESG management capability of the Group.



Risk Management and Internal Controls

The Board of the Company is responsible for establishing and maintaining appropriate and effective risk management and internal control system. To safeguard the overall interests of the Group and its shareholders as a whole and promote the sustainable development of the Group, the Board regularly assesses and continuously monitors the effectiveness of the system.

The Risk Management Committee under the Board of the Company is responsible for assisting the Board in assessing and determining the types and extent of risks that the Company is willing to accept in achieving its strategic objectives.



The Company established enterprise risk management framework to effectively manage various risks of the Group, including health and safety, social and environmental risks. In the process of risk identification, the management communicates with functional departments to ensure that the major risk factors which significantly affect the Group are fully covered from bottom to top.



After establishing the range of risk assessment, the management judges the importance of risks according to their potential impact and occurrence probability, formulates internal control measures to deal with risks, and continuously monitors them.

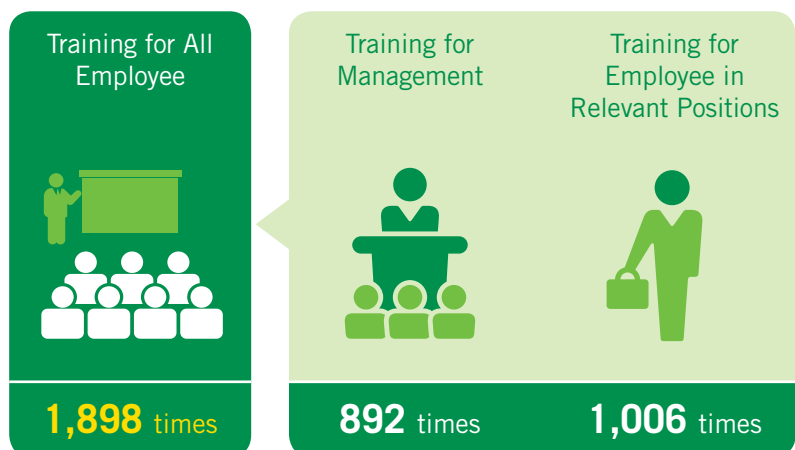
For more information, please refer to the chapter of the Corporate Governance Report of 2018 Annual Report.

1.4 Anti-corruption Management

As corporate integrity is an important part of corporate culture, the Group always adheres to honest business operation and professional conduct. The Group abides by the Criminal Law of the People’s Republic of China, the Anti-Unfair Competition Law of the People’s Republic of China, the Company Law of the People’s Republic of China, the Interim Provisions on Banning Commercial Bribery of the State Administration for Industry and Commerce of the People’s Republic of China and other relevant laws and regulations. Besides, the Group formulates and strictly implements the Code of Conduct for Employees, the Regulations on Penalties for Employees Violating Rules and Regulations, and the Administrative Regulations on the Accountability of Cadres and specifies terms and penalties for preventing bribery, fraud, and corruption. During the reporting period, the Group further

improves the whistle-blowing policy and maintains the whistle-blowing hotline and e-mail address for receiving relevant reports and conducting investigations in accordance with procedures. At the same time, employees and business partners may report to the Audit Committee and the Board the irregularities of the Group on a confidential basis. During the reporting period, the Group did not receive any significant complaints regarding corruption.

The Group actively organised training on tackling anti-corruption, anti-bribery and related issues, developed various training for headquarters and regional management personnel, general managers, department heads, finance directors, engineering directors and risk control directors of subsidiaries, publicised relative knowledge to management and employees, so as to improve overall compliance and awareness throughout the Group.



The Group also places great emphasis on the management of anti-corruption in its supply chain and stringently abides by the requirements of the Bidding Law of the People's Republic of China. Tender and bid activities followed the principles of openness, fairness, impartiality and good faith. The Group supervises the whole process before and after bidding, to avoid commercial bribery and fraud. In order to promote a fair, impartial, simple and transparent partnership and regulate the integrity management of both parties, the Group requires suppliers to sign the Integrity Agreement simultaneously when signing contracts. Through the Group's purchasing platform which provides integrity track record of suppliers, and leveraging on the big data technology to provide risk alert function, the Group improves the capability of identifying risks involving illegal procurement of core businesses in early stage. Once any corruption occurs, the Group will pursue legal responsibility for relevant personage in accordance with the law.



Risk management training for financial employee by Chief Risk Officer of ENN Energy

1.5 Sustainable Development Management

Philosophy and Objective of Sustainable Development

The Group incorporates sustainable development principles into its management and decision-making processes, ensuring its business operation complies with laws and regulations and practising various social responsibilities such as strengthening the management of supply chain, improving the quality of services, achieving low-carbon and environmental protection, creating career paths for employee development and focusing on the public welfare. Establishing good communication and exchange opinions with governments, shareholders, customers, employees, partners and communities by applying innovative transparent and cooperative approaches, the Group constantly receives the recognition and support from stakeholders, creates a responsible corporate image, increases its economic, social and environmental value, and has become a well-respected, innovative intelligent enterprise.

Sustainable Development Management System






The Group puts stress on the sustainable development, constantly improves the sustainable development management system, optimises the implementation mechanism and improves an interactive approach that involves the participation of the Board, the ESG Committee, the ESG Working Group, and the other functional departments and subsidiaries, improves the capability of sustainable development

management. To gradually promote routine management and supervision, the Group has established an ESG information system with multiple functions, including reporting, reviewing, investigating, and analysing ESG information, real-time monitoring the fulfilling and practice of responsibility carried out by headquarter and subsidiaries. It aims to enhance the awareness of performing duties and sustainable development management level.



Stakeholder Communication

The Group consistently improves its social responsibility disclosure system, actively listens to stakeholders' requirements and expectations in time, regularly communicates with stakeholders and accepts their supervision. Stakeholders can use online and offline channels to obtain the Group's corporate social responsibility information. We distributed questionnaires to all stakeholders through a public platform and collected 64 feedbacks. The Group established extensive and efficient communication channels with stakeholders to enhance mutual trust and respect in order to better meet their expectations and demands.

Stakeholders	Expectations	Means of Communication	Our Response
 <p>Shareholders</p>	<ul style="list-style-type: none"> • Excellent business performance • Sustainable and stable growth • Clean and transparent operation • Timely disclosure of information 	<ul style="list-style-type: none"> • Shareholders' meetings • Daily communications through e-mails, phone calls and one-on-one meetings • Announcements and circulars • Interim and annual reports • Company website • Roadshows • Social media 	<ul style="list-style-type: none"> • Regular disclosure of business information • Keep good profitability • Improve corporate governance
 <p>Government</p>	<ul style="list-style-type: none"> • Safe operation • Lawful operation • Drive industrial and regional economic development • Contributions to people's livelihood • Contributions to air pollution control • Efficient use of energy 	<ul style="list-style-type: none"> • Daily communication • Information reporting • Routine check • Special reports • Government and enterprise cooperation • Participation in policy-making process 	<ul style="list-style-type: none"> • Enhance safety level • Improve risk management • Comply with relevant laws and regulations • Business operation in line with the needs of industrial and regional development • Actively promote clean, low-carbon, safe and efficient energy supply model • Actively promote "coal-to-gas" and "oil-to-gas"
 <p>Employees</p>	<ul style="list-style-type: none"> • Equal employment opportunities • Sound career development • Safe and healthy working environment • Education and training opportunities 	<ul style="list-style-type: none"> • Mobile application for iCome • Labour unions • Staff meeting • The "Employee Home" Platform • ENN University • Various internal and external training • Employee complaints and feedback 	<ul style="list-style-type: none"> • Diversified recruitment • Team-building activities • Care for employee health • "Self-driven and Sharing" culture • Online and offline training opportunities
 <p>Customers</p>	<ul style="list-style-type: none"> • Safe and stable gas supply • Effective and efficient service 	<ul style="list-style-type: none"> • National customer service hotline: 95158 • Service quality supervision hotline: 400-86-95158 • Community service stations and business centre • Online business centre • Mobile access to customer service 	<ul style="list-style-type: none"> • Safety checks • Timely and effective response to customer demands • Committed to providing good customer service • Customer Satisfaction Survey
 <p>Suppliers and Business Partners</p>	<ul style="list-style-type: none"> • Transparent procurement • Localised procurement 	<ul style="list-style-type: none"> • Suppliers' meetings • Strategic cooperation • Regular interview • Bidding 	<ul style="list-style-type: none"> • Public tendering • Establish of a supply chain management system • Continuous improvement of policies • Promote management efficiency



Stakeholders	Expectations	Means of communication	Our Response
Environment	<ul style="list-style-type: none"> Supply clean energy Reduce greenhouse emissions Recycling of resource user Protect natural resources and ecology 	<ul style="list-style-type: none"> Participate in environmental initiatives and actions Environmental data disclosure Periodically publish ESG reports Cooperate with government for air pollution control 	<ul style="list-style-type: none"> Participate in international environmental protection initiatives Formulate operation and environmental protection plans Enhance management of energy conservation and emission reduction Increase resource efficiency Promote green and clean energy Promote environmental friendly solutions Continuous environmental monitoring Actively participate in environmental protection
Community	<ul style="list-style-type: none"> Safe operations Contributions to community development Organise public welfare activities 	<ul style="list-style-type: none"> Popular science education Community publicity events Voluntary work Charitable activities 	<ul style="list-style-type: none"> Charity donation through ENN Group Charity Foundation Contributions to public welfare Contributions to construction of harmonious community Help the poor and those in need, give love Community voluntary services Care for the next generation
Media	<ul style="list-style-type: none"> Transparent disclosure Easy access to Management Maintain good relationship 	<ul style="list-style-type: none"> Press conference Media site visit Management interview 	<ul style="list-style-type: none"> Regular press conference Press release Business update on company website Response to media enquiry Communicate with media

Identify Substantive Issues

Referring to ESG Guideline and international standards, through questionnaire survey and stakeholder research, the Group benchmarked with international and domestic companies with best practice, screened material issues related to its business and having substantial impact on stakeholders. We also organised, sorted out, screened and ranked ESG issues, and discussed related issues to ensure that complied with the Group's sustainable development strategy. The material issues will be disclosed in detail in subsequent chapters of this Report.



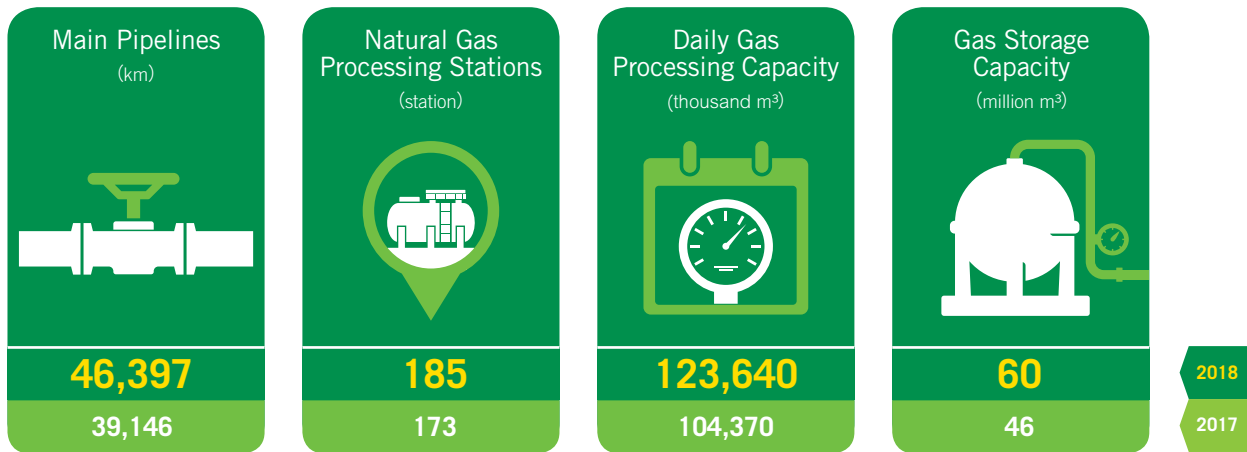
2 INTELLIGENT OPERATION



2.1 Safe and Stable Gas Supply

The Group's intelligent management and operation system ensured safe and stable gas supply to commercial and industrial (C/I) and residential users, which had increasing natural gas demand over the course of the implementation of "coal-to-gas" policy.

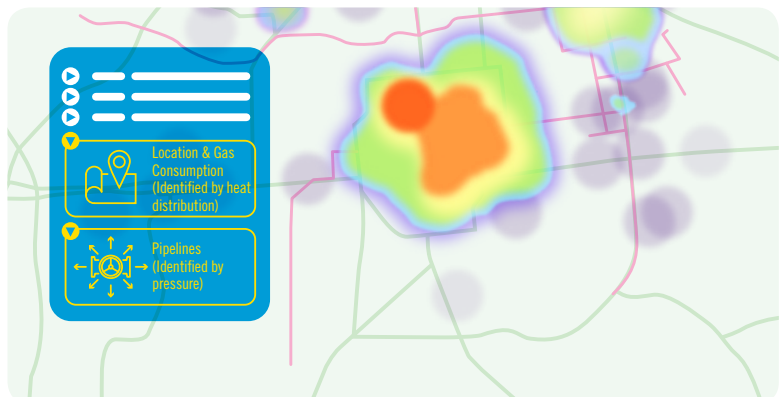
China is undergoing energy structure reform, which continues to shift its primary energy mix to a cleaner and low-carbon structure, natural gas is becoming a major energy source given its cleaner nature. With the implementation of various environmental protection policies including the "Plan on Winter Heating Using Clean Energy in Northern China (2017-2021)" and the "Three-year Action Plan to Win the Blue Sky Defense War" since the end of 2017, natural gas penetration rate has been bolstered throughout the country, stable supply of natural gas has become a key for the betterment of people's daily lives.



Over the years, the Group established a huge downstream customers network with natural gas supply facilities penetrated into numerous homes and C/I customer sites. Therefore, an advanced system for safe operation, gas resources dispatching and monitoring is indispensable. Through the application of innovative and intelligent technologies, we continued to enhance the service capabilities of gas distribution to ensure a safe and stable supply of clean energy. All member companies of the Group set up intelligent operation centres equipped with a comprehensive dispatching and monitoring system to monitor the operation conditions in real time, including the operating condition of gas pipeline network, the inspection route of the security and maintenance personnel, the location of the gas transport fleet and the road conditions, and the gas use/supply conditions of key customers in the region. By giving emergency alarm such as gas leakage, and prompting the best solution, this system ensures the normal operation of the city-gas pipeline network.



Regular inspection is provided by security and maintenance personal with mobile terminal application, and the dispatching system can master



The dispatching and monitoring system can achieve real-time monitoring of the status of piped gas, customers facilities and heat distribution within the district.

Case

The development and application of Cloud Intelligent Safety Management System

Due to the large number and scattered locations of refuelling stations, city-gate stations and heat exchanger stations, as well as the long-mileage and large-span of pipeline network, the supervision and management process is inevitably cumbersome and inefficient, which may lead to the delay of hidden risk supervision and management. In order to solve the problem, ENN Luoyang carried out the development and application of the Cloud Intelligent Safety Management System. This system adopts “Internet+” safety management mode, and uses GPS to locate and report the problems and hidden dangers found during inspection, so as to improve the timeliness of safety management, and allow ongoing data analysis and statistical management. Through the visualisation and recording of the work process, it provides the basis for the improvement of the work, and greatly improves the work efficiency. This system is also convenient to be used as it can be operated in the PC and mobile phones.

2.2 Integrated Energy Business

With the rapid development of society, meeting the rapid growth of energy demand in a sustainable way became a challenge. In recent years, the Chinese government paid attention to the construction of an environmental friendly ecology, and increased energy efficiency through better energy consumption management. In Government Work Report 2019, Premier Li Keqiang explicitly proposed that the energy consumption per unit of GDP should be reduced by 3% to promote the transformation of energy industry development focusing on quality and efficiency.

The Group is committed to the innovation of clean energy technology for many years, leveraging on leading technological advantages, whole-value-chain integrated servicing capability, ecosystem aggregating high-quality resources amongst the industry and customer service capabilities developed over the years in natural gas distribution, to provide customers with cleaner and more efficient, economical and intelligent integrated energy solutions according to their needs. We actively built a modern energy system which allowed co-development of renewable energy and conventional energy, and proactively developed integrated energy projects to establish a green eco-city.

Taking advantage of the opportunity arisen from the clean and low-carbon transformation of energy structure, the Group vigorously promoted the development of integrated energy business, and provided integrated energy supply and energy management services for stand-alone industrial users, industrial parks, urban complexes and district heating projects. The Group adopted various clean energy sources including natural gas, industrial waste heat, biomass, solar energy, geothermal energy, wind power, photovoltaic and other renewables, incorporating customers' existing energy facilities and their specific energy needs, to provide tailor-made integrated energy solutions comprising various forms of energy such as electricity, steam, cooling and heating, which helped customers improve their energy efficiency to 85% or more and reduce their total energy bills while meeting the government's increasingly stringent environmental regulatory requirements and reducing pollutant emissions.

Integrated energy solutions help customers improve energy efficiency to

85%



As of the end of 2018, the Group had 323 projects that were put into operation, under construction and newly signed up, with potential integrated energy demand of more than 100 billion kWh per year. Among them, 180 projects were provincial or national-level industrial parks with greater energy demand where a lot of high-quality industrial and commercial users were located. Once these projects commence operation, the Group can provide customers with integrated energy solutions and energy management services immediately, laying a solid foundation for the rapid growth of the Group's integrated energy business. The Group's integrated energy business spanned over 26 provinces and municipalities including Guangdong, Hebei, Shandong, Henan,


Anhui, Jiangsu, Zhejiang and Shanghai, etc. and many of the projects have been selected as national demonstrative projects with the titles including "First National Demonstration Project of Multi-Energy Complementary Integration Optimisation", "National Demonstration Project of New Energy Microgrid", "First National Pan-Energy Microgrid Demonstration Project", "National Green and Ecological Demonstration Urban Area", etc.

Total Number of Projects in Operation, Under Construction and Newly Signed



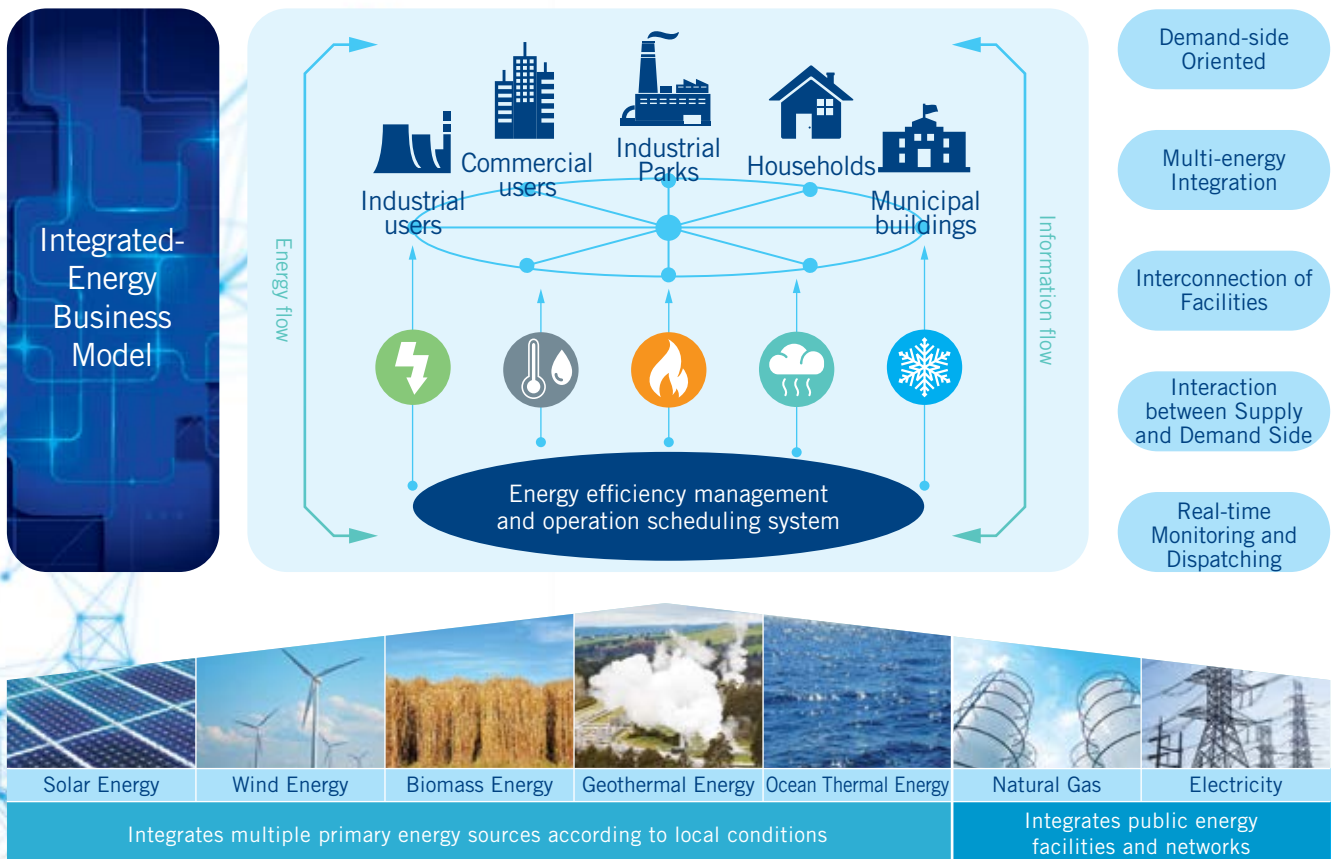
323

Potential Integrated Energy Demand (MWh/year)



+100,000,000

Depending on the category, quantity, time, and price of energy consumption of the customers in the region, and the supply characteristics of energy facilities, multi-dimensional Optimisation and dynamic matching is carried out to broaden sources of income for asset owners, and reduce energy bills for customers.



Case

Biomass integrated energy project to create a new form of sustainable economy

During the reporting period, the Group signed its first biomass integrated energy project, namely Guangxi Shanxu Timber Industry Park Project. It was not economical to produce power and heating only by using natural gas due to the high gas price in Guangxi, moreover, the waste wood produced during the industrial production process would be decomposed by direct combustion or abandoned directly which caused serious pollution to the local environment. The Group adopted integrated energy business model after considering these local conditions, to collect and process the waste wood as biomass fuel, to generate steam and heating for industrial users in the park, thereby reducing fuel costs for the customers, enhancing overall energy efficiency and realising recycle of resources.

Biomass fuel is a carbon-neutral energy source, which can effectively reduce greenhouse effect. The Group also conducted dedusting, desulphurisation and denitrification of the emissions produced during combustion, to meet the national emission standards.



Guangxi Shanxu Timber Industrial Park Project

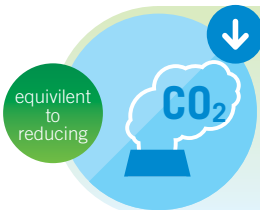
It is expected that the Project will be able to achieve the following emissions reduction every year upon full operation:

Reduce Annual Coal Consumption
(ton of standard coal)



63,145

Carbon Dioxide Emission
(ton)



equivalent to reducing

167,966

Sulphur Dioxide Emissions
(ton)



2,070

Nitrogen Oxides Emission
(ton)



399

Dust Emission
(ton)



857

Honor

Integrated energy solutions won several awards

In 2018, numbers of the Group's integrated energy projects were awarded as "First National Demonstrative Project of Multi-Energy Complementary Integration Optimisation", "National Demonstrative Project of New Energy Micro-grid", "First National Pan-Energy Micro-grid Demonstrative Project", "National Green and Ecological Demonstrative Urban Area", etc. In addition, the Group also won the title of "2018 China Energy Innovation Breakthrough Award" and "2018 Excellent Clean Energy Integrated Service Provider" in the 2018 Annual Energy Conference and the 4th China Energy Development and Innovation Forum.



ENN Energy won the title of "2018 Excellent Clean Energy Integrated Service Provider" and "2018 China Energy Innovation Breakthrough Award".



Zhu Lei, Senior Vice President of ENN Energy, delivered a keynote speech entitled "Building a pan-energy network to promote the implementation of modern energy systems" at the 2018 Annual Energy Conference.

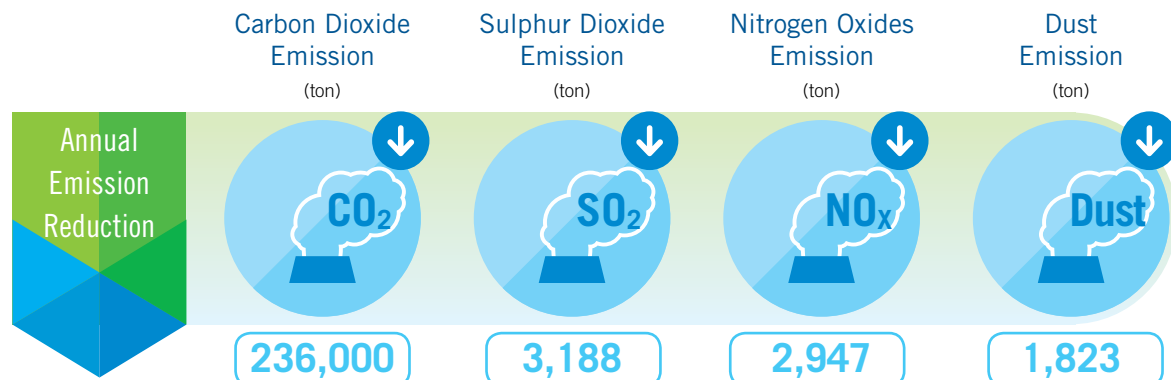
Case

The first integrated energy project breaking through the barriers of city-gas concession rights: Project of Zhejiang Yuhang Economic and Technological Development Zone

Zhejiang Yuhang Economic and Technological Development Zone is a national-level mature industrial park with more than 200 sizeable commercial and industrial plants, including Fortune 500 Companies. Key industries in the park included equipment manufacturing, textile and clothing, food and pharmaceuticals, showing strong demand for steam and electricity, with an annual total steam consumption of 1.2 million tons and an annual total electricity consumption of more than 100 million kWh. In recent years, Zhejiang provincial government vigorously promoted coal-to-gas and clean energy projects, shut down the original coal-fired thermal power plants in the park and sought integrated energy solutions. Yuhang District is not within the gas concessions of ENN, but the Group was selected by the government as the integrated energy service provider of the industrial park due to its market, technology and resources advantages, which can satisfy the dual needs of energy security and environmental quality in the park.

The project consisted of existing steam pipeline network and newly-constructed integrated energy stations. The Group efficiently utilized these energy facilities to compose an integrated energy solution which incorporated the models of centralized and distributed energy supply, as well as the complementary use of traditional and renewable energy sources. The first phase of the project was put into operation in March 2018, and already sold 612 million kWh of steam and heat to customers in the park within 10 months. The project was awarded “2018 China Distributed Energy Excellence Project Award” at the 14th China Distributed Energy International Forum.

Upon full operation, the project will meet the overall integrated energy demand of 1 billion kWh per year, and realise more than 23,600 tons of CO₂ emission reduction per year, 3,188 tons of SO₂ emission reduction, 2,947 tons of NO_x emission reduction, and 1,823 tons of dust emission reduction.



2.3 Technological Innovation and Invention Patent

In order to provide the society and users with services in line with future energy consumption and innovation trend, and devote to help the society to achieve the goal of improving energy efficiency and reforming the energy structure set out by the government in the “13th Five-Year Plan for Energy Technology Innovation”, the Group continued to encourage R&D and innovation, reasonably allocated capital expenditure in technology R&D, and stimulated the enthusiasm of employees in the realm of invention and creation, focused on the innovation of construction engineering, the innovation of equipment related to gas business such as refuelling station equipment, methane recovery equipment, gas pipeline connectors and gas meter control system, etc., and the innovation of technologies and equipment

related to integrated energy business such as gas heat pump, renewable energy heat pump, commercial pan-energy machine and heating supply management systems, as well as the innovation of information technology.

In 2018, focusing on four aspects namely project management, construction technology, material and device innovation, the Group carried out an appraisal program internally to promote technical innovation, requiring projects that participated in the appraisal program to solve technical or construction problems encountered as well as to help save costs and increase efficiency during operational activities. During the year, 56 technical innovation projects were submitted, 19 projects were selected as excellent technical innovations.



In addition, the Group obtained 5 patents for construction utility models, 35 patents related to gas sales business and

2 INTELLIGENT OPERATION

information construction (including design patents for various equipment, various management methods and devices, and invention patents for information technology, various practical and innovative gas equipment patents, etc.), and 16 invention patents for integrated energy business were obtained. By the end of 2018, the Group has obtained 432 patents and software copyrights.

By applying new technological innovations and invention patents in the daily operation

of the Group and the products and services provided to users, the Group is able to continuously reduce cost, increase efficiency, improve the ability of safety management, and reduce its gas loss so as to reduce its own greenhouse gas emissions during operation. In addition, it also helps the Group to effectively improve the quality of its products and services, and provide users with advanced technology, more energy-saving and environment friendly, safe and stable products and services.



Innovation System

We made every effort to promote the innovation capability of the Group and constantly improved our innovation system.

An innovation platform among the member companies was set up within the Group, as well as a database of experts was established. We also strengthened efforts to protect intellectual property rights, and created a standardised and healthy R&D environment. During the reporting period, the Group also actively carried out the industry-university-research cooperation with academic and research institutions and widely participated in academic conferences, so as to promote innovation in our industry.

	Built an innovation platform	<ul style="list-style-type: none"> Carried out the construction of group innovation platform to realise the linkage between the research institute and the innovation departments of member companies.
	Established a pool of experts	<ul style="list-style-type: none"> Organised experts to review innovative achievements, new technologies, etc., and carried out points-based appraisal and motivation for experts.
	Carried out the industry-university-research cooperation	<ul style="list-style-type: none"> Carried out technical research cooperation with Southeast University and Southwest Jiaotong University in the field of gas and heating; Carried out close cooperation with Tianjin University and many energy technology companies in the field of integrated energy technology; and Cooperated with research institute and drilling institution for market-oriented application of hot dry rock technology.
	Participated in academic conferences	<ul style="list-style-type: none"> Attended the meetings of the Science and Technology Committee of China Gas Association as a member, exchanging innovation achievements in the past two years, and discussing current situation and development of industry innovation; and Attended the annual meeting of the Gas Branch of China Civil Engineering Society, sharing the theme of gas storage planning.
	Intellectual property protection	<ul style="list-style-type: none"> Issued the Measures of ENN Energy on Reward for Intellectual Property and Papers to standardize the management of patents, software works, papers and other knowledge results published by employees, and protect intellectual property rights; Appointed professional staff to provide intellectual property service support for technical research and development; and Analysed and warned the patent infringement, and made the corresponding plan according to different risks.

Case

ENN Energy heating supply management system was officially put into operation

The system is a heating supply management tool which intellectual property right owned by ENN Energy. It aimed to provide supporting tools for the operation of heating supply stations, support users to reduce labour cost and energy consumption, and guide the standardisation of heating supply business of the Group since its commencement of operation in 2018, the tool was installed and deployed at 15 stations by the end of 2018.

The system can issue instructions to adjust corresponding equipment automatically according to the preset control strategy, based on historical data, user's indoor temperature, outdoor temperature or weather forecast, and the indoor temperature requirement in different time intervals of the day, so as to provide comfortable indoor temperature for users, and control the amount of gas consumed reasonably. The system can also monitor the status of equipment in real time during business operation according to the preset rules and immediately alarm when abnormalities occur to ensure safe operation.

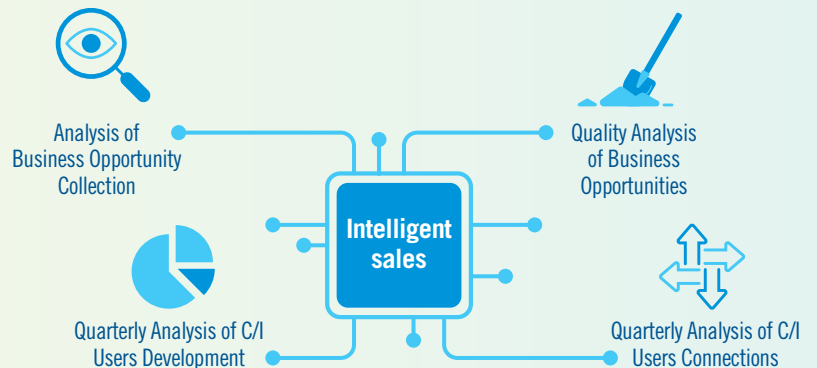
2.4 Intelligent Management

The Group put forward the corporate value of “Data-driven”, set up the strategic goal of digital transformation, and improved the management efficiency through new technologies. The Group built an integrated data analytic center to carry out intelligent data analysis and visualisation for its daily operations. The Group linked up its data analytic and business operation system to provide support for business decision-making, real-time monitoring and convenient access to information, thus, driving business growth from data and improving data accuracy from business growth.



Intelligent Sales

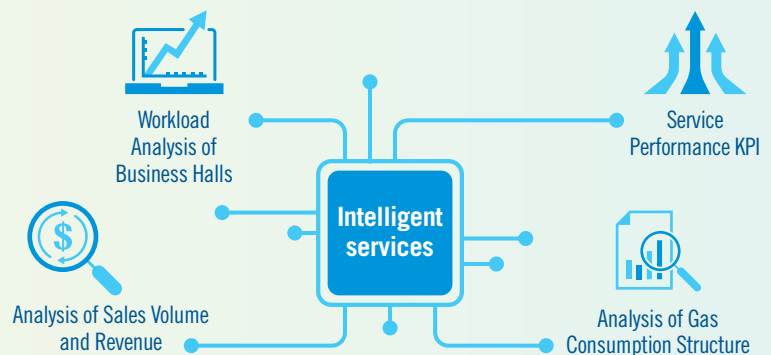
The intelligent energy sales system used big data computing model to monitor the whole process of market development, and carry out efficiency analysis and early risk warning in real time, so as to help the healthy and orderly market development and management. The system enabled PC terminal to realise three functions namely sales management, energy solution and customer relationship management. In addition, the sales process was managed and maintained instantaneously by mobile application to realise intelligent, digitised and standardised sales management.



Intelligent Services

Data tools run through the entire process of customer service provision, delivering value in key business points such as major C/I customer management, analysis of residential gas consumption for, business coordination amongst sales centres, etc.

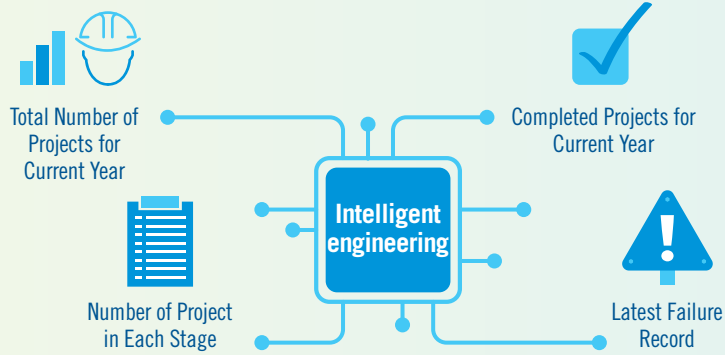
- The pattern of C/I customer's energy usage unveiled through data analysis, provided references for the Group to procure and allocate gas resources, and allowed the Group to understand the future needs of customers in advance to predict business opportunities;
- The analysis of residential gas consumption could detect whether there was unpaid gas consumption for a long time and the gas usage safety risks in the community, thus, issued warning to alert the Group of the risks;
- The data tools facilitated the Group to provide more efficient and targeted customer services. For example, when the sales person visit a customer, all previous visiting records can be retrieved so as to identify customer's key concerns. Understanding the customer's needs prior to the visit greatly improved the efficiency and effectiveness of communications.





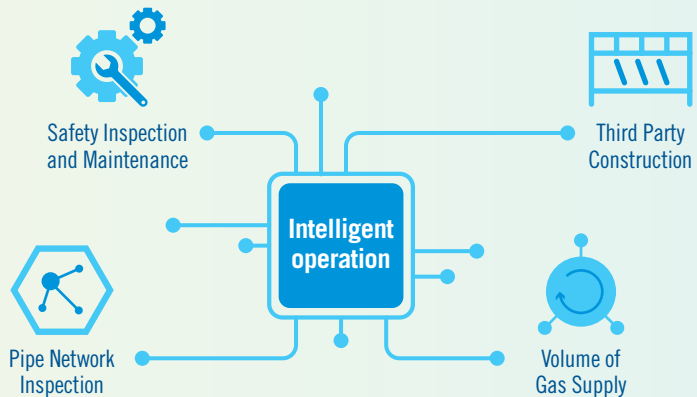
Intelligent Engineering

The engineering visualisation system realised the visualisation and traceability of the construction process through real-time on-site photos and live streaming functions. The Group monitored various construction data, like technical disclosure, completion inspection, warning of construction problems, records of problem rectifications, etc., so as to be alerted of and rectify errors on-site on a timely basis, thus, enhancing the Group's construction standards and effectively managed the Group's construction costs.



Intelligent Operation

The Group monitored and analysed its daily operations through this function, including the progress and conditions of safety inspection for customers, gas supply stability, daily pipelines inspection and maintenance.



2.5 Customer Service Upgrade

The Group adhered to the policy of “Regulations on the Administration of City-gas” where it operated, strived to provide a convenient and efficient energy consumption experience to its customers.

Service Quality Assurance



Upgrade of information technology system

- Created an intelligent operating platform which effectively improved the quality and efficiency of customer service by optimising and upgrading the SAP-CCS system, national call center, client application program (Mobile App), residential remote transmission management platform, BHP fee collection system and C/I customer management platform, etc.



Enhancement of customer experience

- The Group adapted to nowadays' customers behavior to better satisfy their needs through the establishment of on-line and mobile servicing platforms, to provide a wider scope of services to customers; and
- Allowed topping-up through online platform, WeChat, Alipay and other mobile payment channels, which further diversified the payment methods so as to offer a better customer service experience for the Group's customers.



High-quality customer service team

- The Group carried out various on-line and offline training, and organised exchange program to companies with best CRM practice, so as to strengthen the professionalism of the team and to provide high-quality service to customers.

Case

ENN Xiangtan adopted near field communication to provide more convenient services

ENN Xiangtan developed a Near Field Communication (NFC) sign containing city-gas services information, with a view to providing customers with more accessible and instant services anytime and anywhere. NFC is a kind of wireless connection technology which information can be transmitted through magnetic field induction, providing an easy, secure and rapid communication for users. By loading relevant information into the NFC chip, even when the 4G communication data of the mobile phone is limited, the wireless network signal is unstable and the power is cut off, users can still call the Group's customer service hotline, and other emergency maintenance direct lines, by approaching the NFC chips, bringing more convenient service experience to customers.



Understanding Customer Needs

The Group continued to improve and innovate better customer services through customer feedback, as their feedbacks facilitated the Group to understand their needs in a deeper level. The Group actively fulfilled its performance commitments and constantly improved the “Measures on the Administration of Customer Complaints Management” to ensure that customer feedback can be resolved in a timely, fair and reasonable manner. Through the effective management of customer feedback, the two-way communication between customers and the Group’s member companies can be realised. At the same time, relying on the use of customer complaint information system and office management platform, the problems raised by customers were systematically analysed. Through the continuous improvement of the function of the complaint system and the problem solving mechanism, and continuous Optimisation the risk display function of customer complaint supervision, as well as the formulation targeted corrective and preventive measures, the Group is more close to the market and integrates the potential needs of customers into products and services in advance, so as to achieve the goal of responding to customer needs and fulfilling external service commitments in a timely manner.

	<p>Improved customer communication channels</p>	<ul style="list-style-type: none"> • Set up the national service quality supervision hotline and comprehensively promoted the application of client APP so as to facilitate customers to give feedback and suggestions more conveniently and quickly; • Conducted a return visit to the customers who are unsatisfactory to evaluation and have complaint tendency, knew the specific details, accurately recorded customer needs and suggestions, and submitted them to the relevant business leaders; • Promised to respond to customers within 24 hours after receiving customer complaints, and submitted solutions and gave clear responses within 3 natural days; • Standardised external communication, and formed a unified communication mode that customer service department is responsible for connecting with customers and following up until the problems are solved, so as to avoid the situation that failure to find a counterpart or no one to follow up on the issues; and • Set up special customer service to provide customised services for different customers.
	<p>Improved the function of customer feedback system</p>	<ul style="list-style-type: none"> • Add customer complaints, acceptance and treatment function of opinions and suggestions in information system, like SAP-CCS system, national call center, client application program (app), civil remote transmission management platform, BHP fee collection system and customer management platform, etc., pay attention to the processing limitation of customer problem and customer satisfaction evaluation of processing results, monitor the quality of complaint service.
	<p>Improved the mechanism of problem improvement</p>	<ul style="list-style-type: none"> • Took the initiative to collect and grasp the hot spots and focus which customers concerned about in real time, tracked the long-term complaints, systematically analysed them and formulated corrective and preventive measures to form closed-loop management.
	<p>Optimised customer feedback and supervised risk prompt</p>	<ul style="list-style-type: none"> • Made full use of the internal iCome office management platform to publicise customer complaints in time, and further improve the service monitoring index by identifying, collecting and counting the number of customer complaints.
	<p>Conducted customer satisfaction survey</p>	<ul style="list-style-type: none"> • According to the national standard of Customer Satisfaction Evaluation Model and Method Guide (GB/T19038), a customer satisfaction management system with the characteristics of combination of online and offline, and comprehensive return visit with key tracking was established for timely implementation of on-site customer satisfaction evaluation for various services provided by the company, mobile phone application (app) online customer satisfaction evaluation, SMS and telephone follow-up, to achieve multi-level evaluation and management on service quality, customer service satisfaction, product quality satisfaction, etc., from the Group’s headquarter to member companies, member companies to customer service team, customer service team to individual.
<p>Average Score of Customer Satisfaction (out of 100)</p>		
<p>2018</p>	<p>90.3</p>	<p>Staff of ENN Energy customer service center returned a visit to “coal-to-gas” users</p>
<p>2017</p>	<p>89.3</p>	<p>Staff of ENN Energy customer service center returned a visit to customers</p>

3

USING ENERGY SAFELY



3.1 Promoting Safe Operations

During the reporting period, the Group actively took innovative and digitised approaches to carry out safety management throughout its operating process. Visualised safety management system was adopted, the technology of supervision and warning issuance was continuously improved, and special campaign featuring safety management was organised, coupled with the increasing efforts to identify hidden risks, the Group strived to ensure safe operations comprehensively.

Improving Safety Management System

The Group strictly adhered to the national laws and regulations such as the “Work Safety Law of the People’s Republic of China” and the “Labor Law of the People’s Republic of China” for engineering construction. The Group continuously improved the safety management system and formulated the internal guideline “Regulations on Production Safety

Management” which clearly indicated the responsibility of safe production for employees at all levels and positions. The Group also issued the “Notice on Comprehensively Enhancing Production Safety Workplan” in the beginning of 2018, and emphasised key safety risks in the “Safety Liability Agreement” signed with its member companies, so as to ensure the safety and stability of production and operation of the Group.



Safety Management System



Engineering Quality Control

- Formulated the Standard of Image Acquisition of Engineering Visualisation, the Rewards and Punishment Measures of Engineering Visualisation Management, the Scheme for Special Governance Activities of Concealed Works, the Selection Scheme for High-quality Projects, and Special Working Rules for Insurance against Quality of General Energy Engineering Delivery, and established an effective mechanism for engineering quality management, so as to ensure that the engineering accords with requirements of design specifications, and effectively improve the ability of engineering management and control.



The pictures provided by visualisation system - construction site of gas pipeline



The pictures provided by visualisation system - construction site of LNG storage facilities in city-gate station



Accidents Management and Emergency Measures

- Carried out accident classification and hierarchical management strictly in accordance with the Accident Report and Rules for Investigation and Handling of ENN Energy Holdings Limited, clarified the report, investigation, handling, accountability and procedures of accidents to ensure that the accidents were disposed of according to laws and standards, so as to meet requirements that “the cause of accidents must be clear; the persons and employees concerned of accidents must be educated; precaution and improvement measures must be implemented; the responsible person of accident must be punished”; and
- Strictly implemented the Measures for the Administration of Emergency Plans for Production Safety Accidents and Rules for Safety Management of ENN Energy Holdings Limited; required all member companies to formulate emergency plans, and conduct emergency drills.



Standardisation of Project Operation

- Formulated and implemented 14 standards of operation and management, such as Regulations on the Production and Operation of Station, and Regulations on the Maintenance and Management of Station Equipment; clarified the relevant requirements of business technology, defined safety standards and measures, and provided technical support for stations, pipeline network, emergency repair, operation and dispatch, so as to ensure safe operations.

Ensuring Safety throughout the Operating Process

During the reporting period, the Group organised trainings on the visualisation system for employees in the construction and engineering department, conducted spot checks and compiled reports on the progress of construction projects, so as to ensure safe and effective construction of city-gas network. The Group strived to ensure the health and safety of employees and customers by continuously strengthening the safety management in every aspect of its operation, including the construction of city-gas network, gas transmission and transportation, gas supply to households and industrial sites, etc.



The number of construction projects with visualisation systems reached **20,667**, with a coverage ratio of **99%**



Construction and Engineering

- For pipeline positioning system, automatic mapping function was adopted on a pilot basis. The system automatically collected pipeline coordinates and attributes to ensure that the as-built drawings generated were consistent with the actual situation through precise positioning by BeiDou satellite positioning system;
- Promoted visualisation of project delivery, formulated application management methods and image acquisition standards of engineering visualisation systems, implemented visualisation management of key processes for 167 key dangerous areas of online projects, clarified rewards and punishments for relevant parties, and realised safe and civilised construction;
- Checked the scene by the means of real-time broadcast for construction engineering, sought for problems and hidden dangers, and corrected them in time. Took the common problems occurred in the construction process as the starting point to produce image data and carry out training and education;



Gas Transmission and Transportation

- Promoted technology and innovation, used vehicle intelligent detection, laser leak detection and other technology applications to ensure the quality of engineering construction; and
- Completed the revision of safety evaluation tools covering five aspects of engineering safety, station safety, pipeline network safety, customer safety and comprehensive safety based on the lessons of internal and external accidents.

- ADAS facial recognition system and driver's identification device were installed in the Group's LNG trucking fleet, which could effectively identify signs of fatigue and dangerous driving;
- Utilised SCADA, GIS, GPS and other professional systems to effectively monitor location and driving speed of the LNG trucks, and to locate emergency vehicles and personnel during emergency situations, ensuring the gas transmission and distribution process undisrupted;
- Adopted new technology and new construction methods, carried out internal and external pipeline inspection, established the control of pipeline network corrosion and safety service evaluation mechanism, so as to improve the management of pipeline network; and
- Established simulation system of the pipeline network which played an important role in the reasonable allocation of gas sources, analysis of pipeline conditions, pipeline network operation and planning, risk prevention and so on.



Gas Supply to End-users

- Conducted experience-exchange meetings, training and emergency drills for the operation and management departments of member companies each year. Carried out year-end assessment and evaluation on each operating procedure, making sure the gas supply process was detailedly managed;
- Carried out indoor gas safety inspection for users, promised to carry out at least once a year for ordinary users, and at least twice a year for "coal-to-gas" users; and
- For household safety check, the safety check and visualisation system can realise the door-to-door reminding, photographing and uploading of hidden danger, arranging maintenance workers for quick door-to-door maintenance of hidden danger through client application program, and online uploading and checking of the past annual safety check reports, which the interaction with users is enhanced while the quality of the safety check is improved.

Case

Launched the first internal inspection of high-pressure pipeline ensuring gas supply safety

ENN Quanzhou completed the first application of DN500 high pressure pipeline inspection technology in the Group, deploying 139 people taking 126 days to complete the inspection of the 23.7 kilometers long high-pressure pipeline from Xiamei Station to Jinjiang Station. The team tackled with problems including ice blockage in the voltage regulator, frosting of pipelines and huge station noise properly, laying a strong foundation of pipeline safety management for the Group. This inspection technology provides safety insurance when the pressure of pipeline increases, and thus helps improve the gas transmission capacity of pipeline. The gas transmission capacity from Xiamei city-gate to Jinjiang city-gate was increased from 3 million cubic meters per day to more than 6 million cubic meters per day after the inspection.



The staffs carried out internal inspection of high pressure pipeline

Special Safety Activities

The Group continuously improved the self-inspection and self-correction mechanism of projects, established safety inspection teams, stepped up efforts to hidden risk control and management, and regularly carried out joint inspection and special management of key regions, key projects and key hazards.



Management for Concealed Works

- Conducted trainings and composed training materials on concealed works for team leaders and middle management every quarter; monthly training was organised by team leader targeting the quality management of specific concealed works; and
- Established a special joint inspection team for concealed works to organise weekly inspection and upload photos of the inspection works to the engineering visualisation management system.



Winter Safety Precaution

- Organised 12 working teams to complete winter safety precaution works for 108 member companies, including safety inspection, risk warning and emergency management.



Safety Management for Gas Storage Sites

- According to the national standard named GB18218 Identification of Major Hazard Installations of Hazardous Chemicals, the site where storing more than 50 tons of natural gas is deemed to be the major hazard installation. For 96 gas storage sites deemed as major hazard installations, the Group reviewed, recorded, reported and monitored their locations, reserves, peripheral risks, so as to issue warning and tackle with potential emergency situation immediately.

3.2 Occupational Health and Safety

The Group adhered to safety management idea of “People Oriented, and Safe Development”, actively promoted the construction of health, safety and environment management system, and committed itself to provide a healthy and safe working environment for employees and ensure their physical and mental health.

Ensure a Safe Working Environment

The Group attached great importance to building a safe working environment for employees, and strictly complied with relevant laws and standards, such as the Law on Prevention and Control of Occupational Diseases, Regulations on Occupational Health Supervision and Management in Industrial Places, Requirements for Occupational Health and Safety Management System, Selection Standard of Individual Protective Equipment, Guidelines for the Construction of Enterprise Safety Culture. The Group set up an occupational health and safety system, established and improved a series of occupational health and safety policies, such as Regulations on Safety Production Management and Measures for Management of Protective Gears for Workers.

At the same time, the Group continued to identify threats in new projects, implemented control measures and continuously updated the “identification list of dangerous and harmful factors”, monitored the health status of employees in real time, and took special protective measures against the positions which has occupational health risks. Through a series of effective measures, the Group completed the whole process of strengthening the monitoring of high-risk positions, implemented measures according to standards set by the administration of standardisation of national safety production, and created a safe and healthy working environment for employees.



Strengthening Occupational Health and Safety Management System

- Formed three-tier safety management network of holding company, co-ordination center and member companies;
- Established three-tier safety management network of companies, departments and teams in each member companies; and
- Strictly implemented the post-holding certificate system for operators.



Carrying out Identification of Occupational Risk Factors

- Carried out dangerous and harmful factors identification for new projects, implemented control measures and continuously updated the “dangerous and harmful factors identification list”; and
- Regularly carried out the monitoring and status evaluation of occupational disease hazard factors.



Monitoring the Health Condition of Employees

- Provided pre-work physical examination for new employees, including regular screenings and targeted screenings of hypertension, heart disease and hearing disorders. For employees suffering from hypertension, heart disease and hearing impairment, we would not assign jobs with occupational health hazards such as gas station and line patrol to them;
- Provided at least one physical examination of occupational health hazards each year for positions with occupational health hazards;
- Provided a physical examination of occupational health hazards for the departing employees; and
- Established personal record of occupational health exam, so that if employee is found to be suffering from occupational diseases after leaving the company, the record provides the reference for judgement that whether he/she suffered from occupational diseases during the employment. If the employee is identified as suffering from occupational diseases during his/her employment, he/she can apply for compensation from the company even after he/she has left the company, with a retrospective period of 10 years.



Providing Protection for Special Positions

- Provided protective equipment for employees with duties involving occupational risks and reasonably arranged rotation time for them;
- Required employees who work under noisy environment in a prolonged period to wear protective devices such as earplugs and to take rest regularly; and
- Adopted alternative schedule for employees with duties under high temperature to avoid health risks associated with prolonged exposure to high temperature and distributed cooling medical kits.

Carrying out Safety Education for Employees

In order to strengthen employees' self-awareness of safety, improve their ability of self-protection, and create a safe environment of “Paying attention to safety and life”, the Group attached great importance to employee safety education and training and required member companies to follow the “Regulations on Safety Training of Production Work Units”, “Guidelines for the Construction of Enterprise Safety Culture”, “Measures

for the Management of Production Safety Training”, “Measures for the Administration of Professional Training and Assessment for Employees of City-gas Operating Enterprises”, and other national and industrial regulations, provided three-tier safety education for new employees, and annual re-education for all employees to meet the required periods. For employees whose jobs involved occupational risks (especially the operators in natural gas

refuelling stations and patrolman of the pipelines), the Group carried out general occupational health training and regular on-job occupational health training. Through graded and diversified training, employees' awareness of occupational health and safety was enhanced, and the risk of occupational health and safety was mitigated.



Safety Education and Training

- Conducted “three-tier” safety education and training towards new employees to ensure that they have the knowledge and skills needed for safe operation, self-help and mutual rescue, and emergency response before beginning work;
- Carried out pre-work and regular occupational health training for posts with occupational health hazards, popularised occupational health risks and daily caution, occupational health protection and treatment measures, symptoms, diagnostic criteria and preventive measures of common occupational diseases, and application procedures for occupational disease compensation for the corresponding posts; and
- Focused on safety risk management, spot operation management, emergency management, safety management of special equipment and other modules; carried out staff safety training with the help of ENN University platform.



Promotion of Occupational Health and Safety Regulations

- Publicised the existing laws and regulations of the state on occupational health protection, so that employees can understand the rights of workers in occupational health and the responsibilities and obligations of enterprises;
- Conducted propaganda and training of Regulations on Production Safety Management and the Accident Report and Rules for Investigation and Handling; During the reporting period, the Group's Quality Control Safety and Environment (QHSE) department organised training for:



- Each member company also carried out its own safety training according to the regulations of the Group headquarters.



Safety Culture Activities

- Organised the activities of "Production Safety Month" and "No Accidents in Successive Hundred Days"; and
- Held health and safety knowledge contest, fire safety meeting of employees and other activities.

Case

ENN Baoding won the honorary title of the "Health and Safety Cup" in the national competition

ENN Baoding continuously promoted the concept of safety development to all employees, allocated production safety responsibility to each one of them. The company standardised safety management requirements, institutionalised and normalised safety and health education for employees, highlighted the effectiveness of hidden risks detection and improvement and special administration, actively carried out production safety month, three-tier education and training for employees and occupational diseases prevention seminar, and combined the standardisation of production safety, informatisation and safety culture construction, thus creating a strong safety production atmosphere of the company. ENN Baoding won the honorary title of winner of "Safety" and "Health" contest--"Health and Safety Cup", which jointly sponsored by All-China Federation of Trade Unions and the Ministry of Emergency Management of the People's Republic of China in August 2018.



4 ENVIRONMENTAL PROTECTION



4.1 Emissions Management

The promotion of a low-carbon and efficient energy structure is one of the most important methods to deal with global climate change today. As one of the largest clean energy distributors in China, the Group strived to reduce greenhouse gases (GHG) emissions through supplying cleaner and low-carbon energy to customers, and reducing carbon emissions arising from its own operating activities.

Fuel Substitution Reduced Carbon Footprint for Customers

Leveraging on its professional and technological advantages, the Group continued to promote “coal-to-gas” conversion, and provided customers with cleaner natural gas to replace coal, so as to reduce the emissions of greenhouse gases.

New Rural “Coal-to-Gas” Residential Customers
(household)



New “Coal-to-Gas” C/I Customers
(user)



Industrial Coal Boilers Replaced
(steam ton/h)



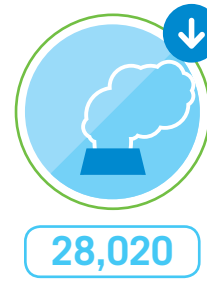
Gas Sold to Residential, C/I and Energy Trading Business
(million cubic metre)



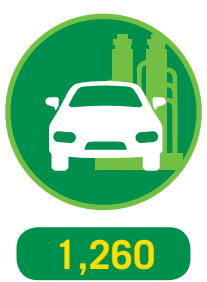
Equivalent to Coal Consumption Reduction
(thousand ton of standard coal)



Equivalent to GHG Emissions Reduction
(thousand ton)



Gas Sold to Vehicle Gas Refuelling Stations
(million cubic metre)



Equivalent to Gasoline Consumption Reduction
(ton)



Equivalent to GHG Emission Reduction
(ton)



Reduction in ENN's Greenhouse Gas Emissions

The Group helps customers achieve their energy-saving targets while continuously improving energy efficiency to reduce energy consumption at its own facilities.

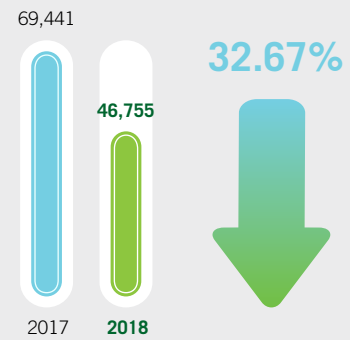
The Group upholds strict management of methane leakage in engineering construction and gas transportation process (For details, please refer to Chapter 3.1 Ensuring Safety throughout the Operation Process). During the reporting period, the Group retrofitted its natural gas refuelling stations by installing residual gas recovery devices, which managed to reduce the risk of methane

leakage and venting to a much lower level. The Group will expand the use of advanced energy-saving and gas-saving technologies, so as to further minimise greenhouse gas emissions and promote recycle of resources within the Group. In 2018, the Group's annual direct emissions of methane decreased by 34.22 tons year-on-year.

Sources of greenhouse gas emissions of the Group originated from the energy consumption at operations, office buildings, transportation vehicles, heating facilities and staff canteens.

Comprehensive Energy Consumption

(ton of standard coal)



Case

The Group took various measures to carry out residual gas recovery

Recovery of boil-off gas (BOG) from LNG transportation trucks and refuelling stations

By installing residual gas recovery devices on LNG transportation trucks and LNG refuelling stations, the remaining BOG in tanks after unloading can be transferred into city-gas pipelines or the compressors of CNG refuelling stations, thus realising the recycling of BOG and reducing the amount of methane released to the air. In 2018, the accumulated volume of residual gas recovered amounted to 6,079 tons.

Pilot BOG recovery project of cryogenic compressor

A pilot BOG recovery cryogenic compressor equipment was installed in Wangcheng Dongma L-CNG Refuelling Station in Hunan. The gas loss of this station was relatively high, and there was no city-gas pipeline network in its surrounding areas. After a three-month trial of operation after installing BOG recovery device, gas loss decreased from 11% to 0.9% which was equivalent to a decrease of 59 tons of LNG.



LNG refuelling station equipped with residual gas recovery equipment



Greenhouse Gas (GHG) Emissions

Total Amount of GHG Emissions
(ton of CO₂e)



Density of GHG Emissions
(ton of CO₂e/ RMB billion of revenue)

2018	181,323	2,987
2017	267,469	5,541

Direct GHG Emissions (Scope I)
(ton of CO₂e)



Density of Direct GHG Emissions
(ton of CO₂e/ RMB billion of revenue)

83,859	1,376
123,488	2,558

Indirect GHG Emissions (Scope II)
(ton of CO₂e)



Density of Indirect GHG Emissions
(ton of CO₂e/ RMB billion of revenue)

97,464	1,606
143,982	2,983

Notes:

The calculation of GHG emission refers to the Greenhouse Gas Protocol: a corporate accounting and reporting standard 2012 (Amendment) published by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), and the Fifth Assessment Report issued by Intergovernmental Panel on Climate Change (IPCC).

“GHG Direct Emissions (Scope 1)” covers direct emissions (coal, diesel, gasoline, natural gas) from operations that are owned or controlled by the Group.

“GHG Indirect Emissions (Scope 2)” covers energy indirect emissions resulting from the generation of purchased electricity consumed within the Group.

Direct Carbon Dioxide Emissions (Scope I)
(ton)



2018	83,539
2017	122,152

Direct Methane Emissions (Scope I)
(ton of CO₂e)



48
899

Direct Nitrous Oxide Emissions (Scope I)
(ton of CO₂e)



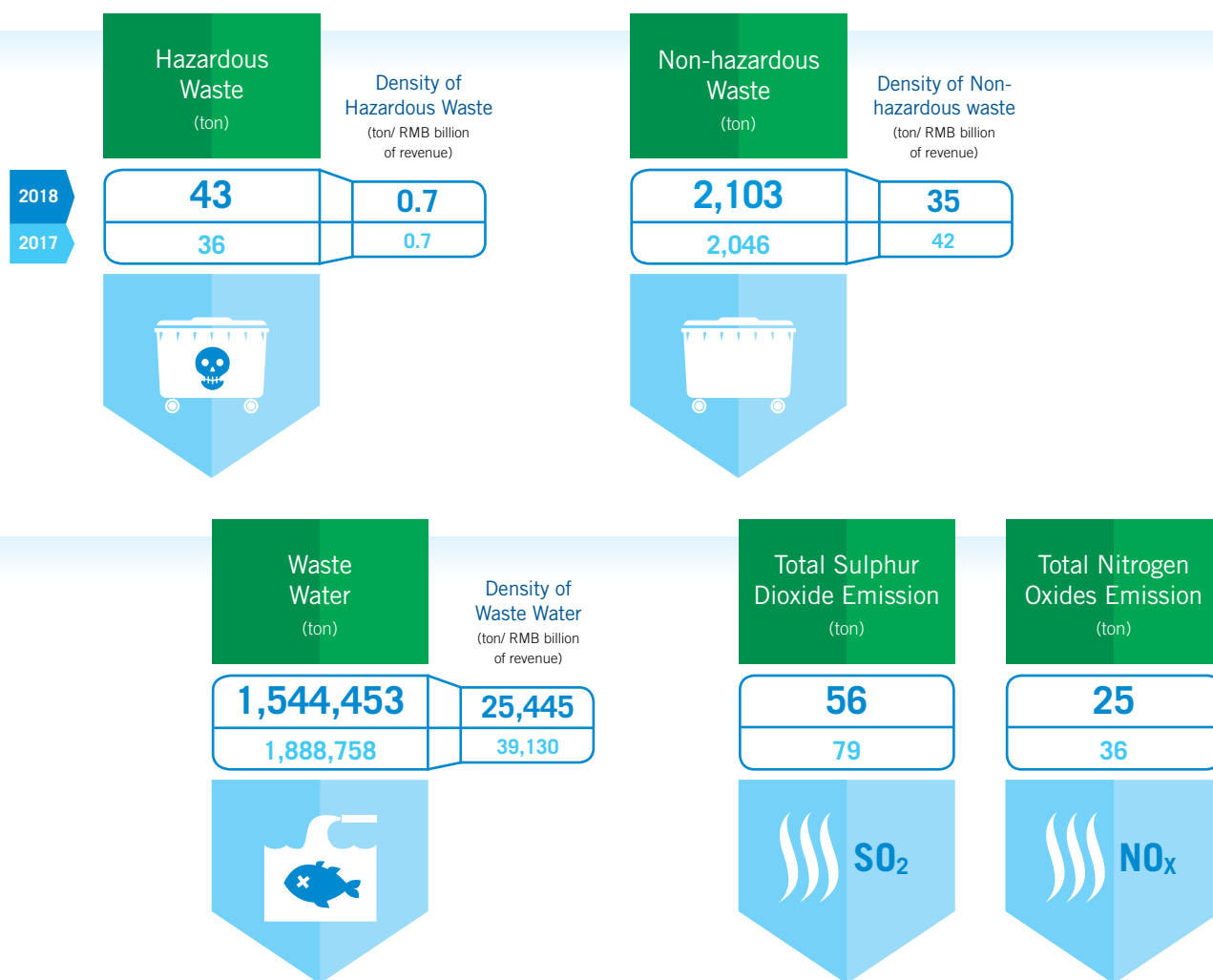
272
437



4 ENVIRONMENTAL PROTECTION

The Group actively promoted environmental protection by effectively controlling “three wastes and one noise (waste gas, waste water, solid waste and noise)” and strictly complying with national laws such as Atmospheric Pollution Prevention and Control Law of the People’s Republic of China, Water Pollution Prevention and Control Law of the People’s Republic of China, Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes and Law of the People’s Republic of China on Prevention and Control of Pollution from Environmental Noise. During the reporting period, the Group did not get involved in any material violation of environmental-related laws.

Emissions



Emissions Reduction Measures and Management

Solid wastes, which can be divided into hazardous wastes and non-hazardous wastes, are the major source of the Group’s emissions. Hazardous waste includes machinery waste oil, waste drums for deodorant, packaging made of chemical products, harmful metal elements in waste circuit boards of gas meters, etc. Non-hazardous waste mainly comes from office waste, scrapped pipelines,

harmless components produced in the manufacturing and maintenance process of gas meters, etc.

The Group strictly managed and reduced the pollution of waste gas, waste water and noise arising from the production process by complying with its own “Civilised Construction Management Measures”. The Group made continuous efforts to reduce

the impact on environment by introducing environmentally friendly equipment, improving the management of construction site, carrying out environmental protection monitoring on a regular basis, and setting standards for waste transfer treatment, etc, so as to ensure that emissions meets the requirements of national and local standards.



Measures to Reduce Air Pollution

- Cover earthmoving vehicles with tarpaulins; and
- Carry out semi-enclosed isolation construction in construction sites. Use dust-proof nets or dust collectors when doing earthwork excavation and backfilling to prevent dust pollution.



Measures to Control Water Pollution

- Set up drainage canals in construction sites to precipitate waste water and discharge it into urban sewage pipelines if emission standards are met; and
- Set up mud pools to collect mud during the construction of directional drilling so as to avoid infiltrating into groundwater or rivers.



Measures to Reduce Noise Pollution

- Avoid night construction;
- Take effective sound absorption and insulation measures for major noise sources such as forklift trucks to minimise the impact on residents when conducting constructions nearby residential areas; and
- Take sound insulation measures such as building noise barriers for refuelling stations and pressure regulating stations to reduce compressor noise and regulator facilities to nearby residents.



Measures to Reduce Hazardous Wastes

- Set up hazardous wastes management policies, manage daily accounts and formulate emergency plans;
- Strengthen the management of production facilities, optimise production process so as to reduce the production of hazardous wastes;
- Classify and store hazardous wastes and prevent storage place from fire;
- Strictly forbid to use toxic and hazardous wastes produced during construction as earthwork backfilling; and
- Authorise qualified hazardous waste treatment companies to conduct innocuous treatment.



Measures to Reduce Non-hazardous Wastes

- Conducted unified and centralised treatment of office waste, waste pipelines, non-hazardous components produced in the manufacturing and maintenance process of gas meters.

Case

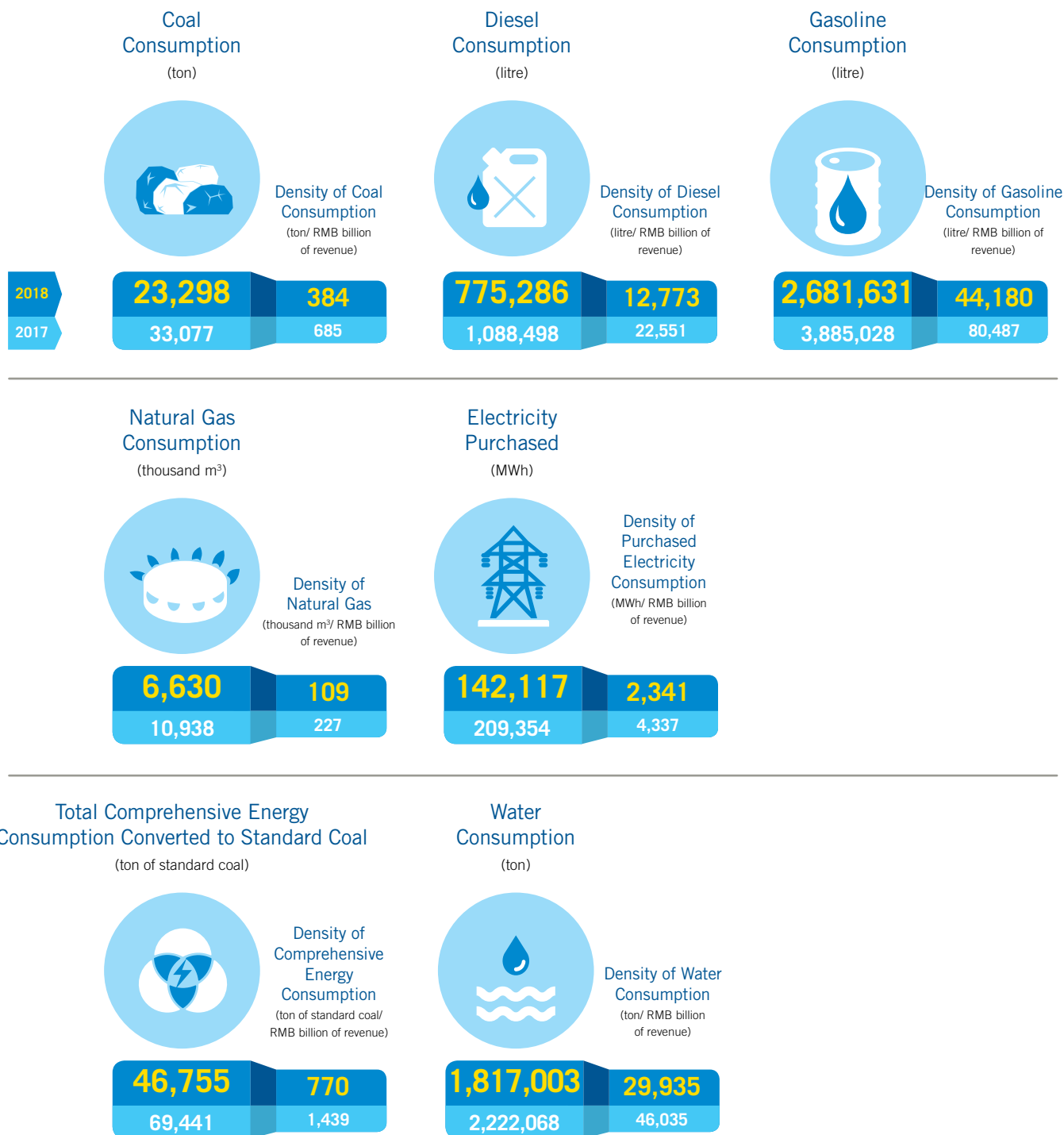
Energy trading company reduced emissions through networked operation

The Group's LNG trading company reduced emissions by replacing diesel oil used in transportation vehicles with natural gas. The Group's total transportation mileage in 2018 reached 26.07 million kilometers, which was equivalent to a reduction of diesel fuel consumption of 4.98 million liters, thus reducing nitrogen oxide emissions from diesel combustion by 42,700 tons, sulphur dioxide emissions by 49,800 tons and smoke and dust emissions by 8.96 tons. In addition, through vigorously implementing the networked operation of vehicles throughout the country, the deadhead mileage of vehicles was effectively reduced by about 150,000 kilometers, while diesel consumption was reduced by 51,000 litres, nitrogen oxide emissions was reduced by more than 1,200 tons, sulphur dioxide emissions was reduced by more than 1,500 tons, and smoke and dust emissions by 0.27 tons. In 2018, the LNG trading companies completed 41,641 trips, with the total amount of LNG transported reaching 5.958 billion cubic meters, equivalent to a reduction of coal consumption of 2.02 million tons, carbon dioxide emissions of 2.8 million tons, sulphur dioxide emissions of 480,000 tons, and nitrogen oxide emissions of 140,000 tons.

4.2 Optimisation of Resources Utilisation

The Group strictly complied with the “Energy Conservation Law of the People’s Republic of China”, advocated energy saving and optimised resources allocation. The Group’s own energy consumption mainly came from the coals used for heating boiler; natural gas consumed for heating and staff canteen, as well as natural gas, gasoline and diesel oil consumed by the Group’s transportation vehicles. Water mainly consumed by daily operation activities such as office, equipment cooling, boiler water and fire protection. The Group intended to optimise the use of water by using reclaimed water and rainwater instead of fresh water, recycling water in production process, adopting water-saving appliances, and checking and maintaining the water supply systems to avoid water leakage and other measures to reduce water consumption.

Resource Consumption



Resources Management Policy and Energy Saving Measures

The Group strived to save energy and reduce emission arising from its own operations by continuously optimising resources consumption and promoting the philosophy of “Green Development”. It strictly abided by the “Energy Conservation Law of the People’s Republic of China” together with other national and local laws and regulations related to energy saving and environmental protection. The Group advocated a low-carbon, environmentally friendly and sustainable work and life philosophy in daily operation. It actively implemented energy saving and emission reduction commitments, and made contribution as much as it could to protect the environment.

Major measures taken by the Group to reduce energy and resources consumption:

- Used residual gas recovery devices and tank evaporation gas re-liquefaction devices to recover and utilise the natural gas released during loading, unloading and storage, so as to save resources and reduce greenhouse gas emissions;
- Promoted digital office and operation; via personal computer and mobile devices (icome) to facilitate paperless office;
- Cultivated employees’ energy saving awareness by incorporating daily office behavior into the code of conduct;
- Posted reminder in office areas to encourage employees to save water and electricity;
- Improved energy efficiency utilising geothermal heat pumps to generate cooling and heating for office buildings;
- Used energy-saving lighting equipment to reduce electricity consumption;
- Used less air conditioning to save energy; and
- Avoid wastage and make the best use of resources, and recycle consumables.

Case

Energy-saving renovation for Litian steam energy station

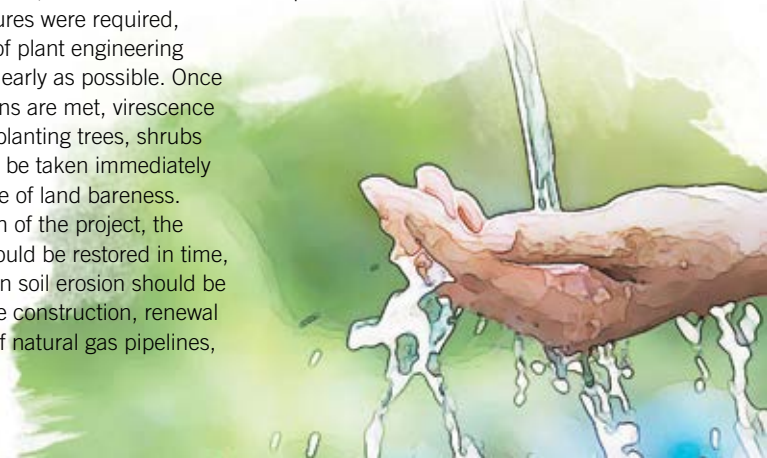
The Group actively carried out energy-saving renovation in operation to reduce energy consumption. During the reporting period, in view of Litian energy station’s high energy consumption, the Group carried out an energy-saving renovation in May 2018, to replace the original vortex street steam flow meter with a balanced steam flow meter which was more suitable under unstable working conditions. Upon the completion of the project, 10.24 cubic meters of natural gas consumption was reduced per ton of steam produced.

4.3 Biodiversity and Soil Protection

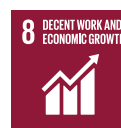
The Group is a downstream city-gas distributor which mainly purchases natural gas from other upstream gas suppliers, and distributes to its downstream gas customers. Its operations have limited impact on the ecological environment and biodiversity, as its core businesses involve the construction of natural gas pipelines and maintenance in urban cities in the PRC, with limited exposure to ecologically sensible and fragile areas. However, the Group attaches great importance to the protection of soil and biodiversity through strictly abiding by the requirements of the “Guideline for Risk Assessment of Environmental Construction Projects of the People’s Republic of China”. During the reporting period, in addition to carrying out strict environmental assessment before the approval of each pipeline construction project, the Group conducted in-depth investigation and interviews with the city dwellers in the operation sites, making sure the construction works created minimum disturbance to the community.

The Group prepared a plan for the protection of biodiversity and the conservation of soil and water for each project and treated it as one of the most important components in the planning stage. Measures taken to protect biodiversity and conserve soil and water varied according to the local conditions. In the aspect of soil protection, a comprehensive soil and water conservation scheme must be formulated from the design stage of the construction. In the process of construction, soil and water conservation measures were required, and the measures of plant engineering should be taken as early as possible. Once virecence conditions are met, virecence measures such as planting trees, shrubs and grasses should be taken immediately to minimise the time of land bareness. After the completion of the project, the surface and soil should be restored in time, and the influence on soil erosion should be reduced. During the construction, renewal and maintenance of natural gas pipelines,

the original galvanised tubes were gradually replaced by new materials such as carbon steel pipe and stainless-steel pipe with less environmental pollution, so as to avoid soil pollution. In the aspect of biodiversity conservation, trenchless construction and pipeline construction was adopted as far as possible to reduce the impact on vegetation and ecological environment. During the reporting period, the Group was not involved in any significant incidents arising from environmental-related litigation or punishment.



5 SUPPORTING TALENT GROWTH



5.1 Fair and Diversified Employment

The Group strictly complies with the national laws and regulations such as the “Labor Law of People’s Republic of China”, the “Labor Contract Law of the People’s Republic of China”, and the “Law of Employment Facilitation of the People’s Republic of China”, and formulates and strictly complies with internal labor management regulations such as the “Recruitment Management Rules”, adhering to the employment principles of

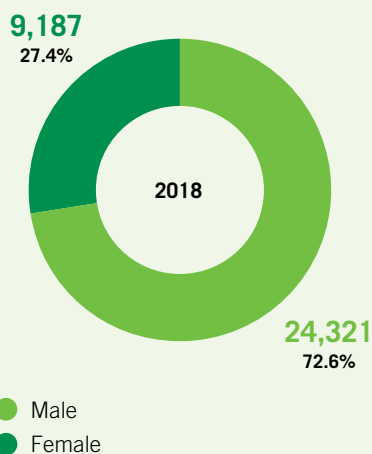
“fairness and openness” and preventing discrimination against any employee.

The Group values workforce diversity and assesses professionals’ qualifications from a compliance perspective in addition to their work attitude, performance and competence. The Group treats applicants from different background in terms of nationality, region, ethnical group, race, gender, academic experience, age, and

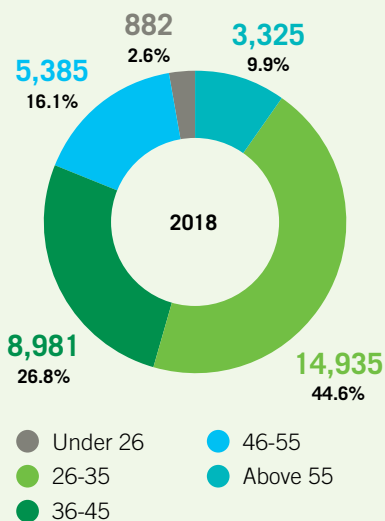
religious belief equally, while actively providing positions for disabled persons. The Group promotes workforce diversity by attracting talents from various background, and safeguard their rights and interests with labor contracts.

In 2018, no discrimination incident was reported in the recruitment towards candidates’ gender, nationality, age, and health conditions.

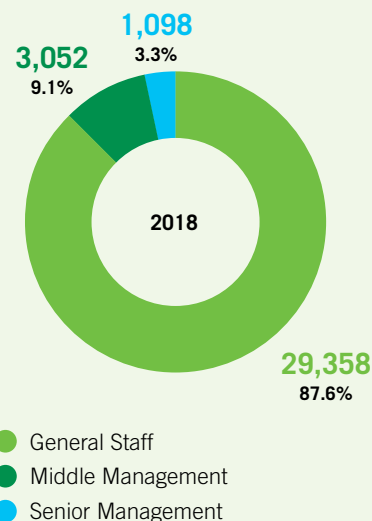
Staff Ratio by Gender



Staff Ratio by Age



Staff Ratio by Position



5.2 Protecting Employees’ Rights

The Group strictly complies with national provisions for remuneration, holiday and social insurance, banning against child labour and forced labour, and protecting legal rights and interests of the employees.

Safeguarding Rights and Interests of Employees

The Group continues to improve its remuneration management and pay salaries on time. It also introduced the 8-hour work day, and set reasonable workload and fixed piece rate for piecework employees. It strictly complies with the Labor Law of the People’s Republic of China and the Decision of the State Council

on Amending (the Provisions of the State Council on the Working Hours of Laborers), ensuring that employees’ working hours are reasonable. It strictly complies with the provisions of the Attendance and Leave Application management Guidelines, ensuring employees enjoy national statutory public holidays, annual leave and special leaves, such as the marriage leave, maternity leave, paternity leave, lactation leave, and funeral leave. It also adopts an overtime and days off policy, ensuring that employees are compensated with overtime pay in accordance with the labor law. The Group pays social insurance for employees

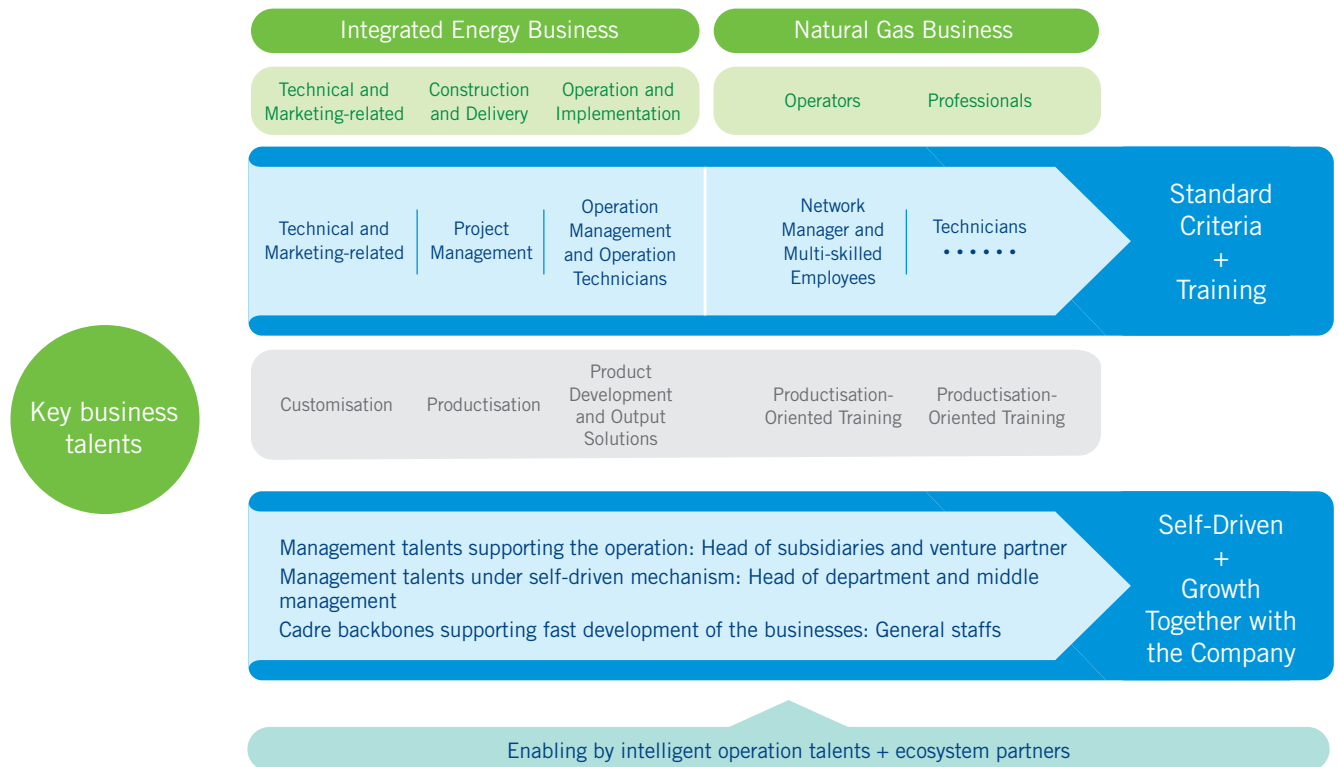
according to the Social Insurance Law of the People’s Republic of China, and maintains a harmonious labor relations with a careful consideration to employees’ needs.

Prohibition of Using Child Labour and Forced Labour

The Group strictly prohibits using child labour, forced labour and other illegal labours. It takes measures once violations or high risk factors are founded to nip them in the bud. During the reporting period, no employment of child labour and forced labour were reported.

5.3 Encouraging Employee Development

The Group provides standardised, fair, transparent, and open development opportunities for employees, continues to improve the diversified training system, and adopts a clear promotion mechanism together with some scientific incentives to motivate employees, so as to promote all-rounded development and growth of talents, and grow together with the Company.



Key Measures to Nurture the Group's Talent:

- Carried out training for core talents on the construction and delivery of integrated energy business, carried out training courses such as Theory of Integrated Energy Construction and Delivery and Operation, Life-Cycle Management of Integrated Energy Project, Integrated Energy Project Planning Management, Site Construction Management of Integrated Energy Project, Risk Management of Integrated Energy Project, and Approval Procedures of Project Construction Application, improved training module from time to time;
- Implemented the "Precise Working Plan" for operation technicians of integrated energy business, to cultivate a group of operation technicians with theoretical knowledge and strong operational ability in equipment operation and maintenance, malfunction handling, etc. to ensure the technicians can operate in an economic and safe manner;
- Effectively identified and solved the problems of employees in work by combining different scenarios during actual works with the study;
- The Group encouraged employees to pursue higher education and professional qualifications that could facilitate their personal growth and enhanced their capabilities of generating more value to the company. The Group provided sponsorship for examination fees;
- Developed uniform corporate culture courses together with the ENN University and combining online platform with on-site learning; carried out "New Culture" training courses for all employees and organised the "Great Cultural Discussion" to form a cultural consensus and improve the organisational cohesion.

Case

Special training camp for integrated energy operators under “Elite Plan”

In order to meet the huge demand for operational talents arising from the rapid development of integrated energy business, the Group introduced a “Elite Plan” for integrated energy operators. In October 2018, a seven-day special training camp for integrated energy operators have been jointly organised by the ENN Energy, ENN University and various integrated energy training bases. 27 people from provincial member companies and self-drive organisations participated in the training.

The training was divided into four stages: e-learning, big class training, practicing and certification, and on the job training. Appraisals have been conducted in each stage with the aim to cultivate operational talents with strong ability in theoretical knowledge, practical operation, equipment maintenance, problem-solving, as well as a deep understanding of an economic and safe operation.



Trainees under “Elite Plan” in the special training camp

5.4 Caring for Employees

The Group strives to create a positive, harmonious and happy working environment for employees by meetings employees’ various needs. The Group cares for employees from multiple aspects, such as hardware conditions and cultural environment, and strives to create a harmonious and warm working environment for employees to improve the sense of happiness of employees and enhance the team cohesiveness.

**Welfare Benefits**

- Providing free working meals, staff dormitory, shuttle bus, communication allowance, labour protection appliances on tops of other benefits; and
- Improving food quality in staff canteen and the environment of staff dormitory to improve employees’ satisfaction.

**Health conditions**

- Providing life insurance and body check for employees periodically.

**Take care of employees’ mental health**

- Providing mental consultation to help relieve employees’ worries and negative emotion arising from work and life, encouraging them to face the challenges from work and life with a positive and optimistic attitude.

**Help employees with difficulties**

- Carried out more than 50,000 employee condolences activities in the reporting period;
- Carrying out “Mutual Assistance” half-day donation, providing assistance to employees with serious diseases. During the reporting period, more than RMB360,000 were donated to 26 employees.

**Recreational and sports activities**

- Organising one or more themed recreational and sports activities every month and carrying out family reunion activity on the Lantern Festival and organising Women’s Day activities, working skill competition, sports day, golden autumn bachelor party, the Double Ninth Festival caring activities, and team building in winter.

Case

A Labour Union of ENN Xiangtan was awarded “National Demonstration Employees’ Home”

The Gas Network Operation Department of ENN Xiangtan established a labour union based on the belief in “Building a Home for Everyone and Promoting Development with a Harmonious Home”. The labour union carried out activities to foster a democratic management style, to improve employees’ abilities, on top of the corporate culture construction, technology innovation and spiritual comfort, successfully turned the department into a “home” which was democratic, warm, safe, healthy and diligent. It was honoured as “Demonstration Employees’ Home in Xiangtan” and “Demonstration Employees’ Home in Hunan Province”. In November 2018, it was honoured as a “National Demonstration Employees’ Home” by the All-China Federation of Trade Unions.



The labour union of the Gas-gas Network Operation Department of ENN Xiangtan organised young volunteers to donate materials to welfare homes



Voluntary activity organised by the labour union to clean up silt of Xiangjiang River embankment



6 WIN-WIN COOPERATION

6.1 Supply Chain Management

The Group strictly abides by the Law of Bidding and Training of the People's Republic of China, formulates and strictly implements the Administrative Measures for Supplier Admission and Management, the Administrative Measures for Safety Production Violations, Regulations on the Supervision of Conventional Gas Engineering, Supplier Performance Assessment Scheme, Circular on Regulating the Bidding Work of Construction Units for Gas Engineering, while continues to improve its supplier management process in a scientific way, ensuring suppliers are selected fairly. The Group evaluates suppliers throughout its whole value chain and evaluates, eliminates and optimises suppliers through an open and transparent assessment, to strictly control the quality of suppliers. To practice responsible procurement, the Group takes business ethics, human rights protection, quality and safety, environmental impact and social impact into consideration when selecting suppliers and project contractors, to grow with suppliers together.



Domestic Suppliers
437

Mainly Supply:

- Natural gas
- Project outsourcing
- Pipeline material, production equipment, pipe fittings, instruments and apparatus, testing equipment, anticorrosive materials, etc



Overseas Suppliers
18

Mainly Supply:

- Natural gas
- Production equipment, instruments and apparatus, raw materials, etc



Screening of Suppliers

- Formulated internal requirements such as the Circular on the Adjustment of Authority of Qualification Audit for Subcontractor, to provide details and standard requirements for supplier screening so as to reduce risks.



Suppliers Evaluation

- Created file to record the basic information of existing and potential suppliers and updated constantly;
- Evaluated and assessed suppliers on a regular basis with concrete grading standards and transparent feedback on results;
- Incentive and eliminated suppliers according to evaluation results, establishing a dynamic supplier network maintained by member companies.



Establishing a Responsible Supply Chain

- Fulfilled green procurement and screened material suppliers according to environmental standards;
- Evaluated the qualifications of gas suppliers in respect of environment, gas quality, production safety, etc
- Paid attention to the safety management of the project contractor, focused on the qualification certificates of the construction personnel and special occupation personnel, as well as the purchase of accident injury insurance by the construction personnel, and the contracts and civilised construction agreements signed with the contractor, and evaluated the performance of safety and other performance in the construction process;
- During the reporting period, the proportion of suppliers of gas trading and material procurement meeting environmental requirements reached 100%.

7 HARMONIOUS COMMUNITY



7.1 Devoting to Public Welfare

The Group insists on giving back to the society with good deeds with a belief of “Serving the Society and Bringing Benefits to the Public”. It focused on community construction, poverty alleviation, practicing corporate citizenship responsibility and actively participating in public welfare and charity. The Group vigorously promoted the voluntary service spirit among the employees, relied on the “Rainbow Flower Volunteers” program, by carrying out branded, regular and diversified voluntary activities, and working with its employees, to deliver concern and love to the groups who need to help, and to give back to the society. During the reporting period, the Group’s total amount of charitable donations reached RMB 73.15 million.

Community Participation

The Group organises and encourages employees to participate in a number of community activities, leveraging on its professional knowledge and platform resources, so as to fulfill their social responsibilities with employees and create a good atmosphere to help community development and give back to society, promoting the harmonious development of the society.

Promoting local community development through various approaches:

- Donated RMB 250,000 for the construction of infrastructure and community culture of Changzhou local communities;
- Donated RMB 80,000 to improve the hygienic conditions and solve the garbage removal problems of Luoyang poverty villages;
- Participated in the united front consensus water tank project of Guangxi to mitigate water shortage in poor areas;
- Supported the city branding construction of Guigang and promoting the city culture of “lotus” ;
- Visited poverty elders in local communities of Quanzhou on the Double Ninth Festival for several consecutive years;
- Donated RMB 100,000 on road maintenance in Qinshui to improve the conditions of public transportation;
- Supported the construction of urban and rural infrastructures and the stadium construction in Bengbu;
- Established a “Moral Model and Good People Fund” in Langfang to assist typical figures with financial support. The Group assisted 43 typical models in 2018.

Case

Carried Out Public Benefit Activity “Reassuring Thousands of Households” to Popularise Gas Knowledge

To ensure the safe use of gas, reduce the risk of city-gas safety incidents, and popularise the knowledge of natural gas, the Group launched several large scale public benefit activities called “Reassuring Thousands of households” in Hangzhou of Zhejiang Province, Bengbu of Anhui Province, Shijiazhuang of Hebei Province, and Langfang of Hebei Province. During the activities, the Group organised technical staff to provide free door-to-door washing, stove maintenance, as well as gas safety inspection services, to popularise gas safety knowledge for thousands of families.



Gas knowledge popularisation activities carried out by volunteers in the community



Volunteers carried out household gas safety inspection

Case

Arranged Site Visit for little reporters from Southeast Morning Post to explain knowledge of natural gas

ENN Energy actively interacted with local communities and popularized the knowledge of gas to the public by inviting people to have a better understanding about the Group. In May 2018, volunteers in ENN Quanzhou received a visit of little reporters from the Southeast Morning Post. They led the little reporters to visit the city-gate station, refuelling station, labouratory, labour model studio, indoor combustion pipeline installation operation room and other workplaces, and explained the gas related business, notice for indoor gas usage and other gas knowledge on the spot, so that the little reporters could have a deeper understanding of ENN Energy and natural gas used in daily life.



Gas knowledge popularisation activities carried out by volunteers in the community



Young volunteers in involuntary blood donation

Poverty Alleviation

The Group attaches great importance to the development of western poverty areas and actively responds to the national policy on poverty alleviation by participating in the targeted poverty alleviation of “Thousands of Enterprises Helping Thousands of Villages”. In 2018, the Group donated more than RMB 2.75 million for reducing poverty by promoting industrial development and another RMB 5 million for poverty high school students, helping people in poverty areas to improve living standard.

Carried out targeted poverty alleviation work through multiple approaches

- Participated in the poverty alleviation action of Luoxiao Mountain, and promoting the poverty alleviation of the documented poor families of Suichuan County of Jiangxi Province;
- Assisted 9 villages in deep poverty of Yiliang County to construct livelihood projects such as sunshine book house, farmer’s market, and bridges to villages;
- Donated for the construction of public toilets and drinking water pipe network of Qiaojia County;
- Assisted the construction of the school public facilities and villager drinking water projects of Ludian County;
- Aided registered poor high school students of Beihai City, Hechi City, and Mashan County of Guangxi Province to solve their practical difficulties;
- Participated in local poverty alleviation and donation in Zhanjiang of Guangdong, Quanzhou of Fujian, Yongkang of Zhejiang, Chaoahu of Anhui, and Zhuzhou of Hunan.

Case

“Delivering Care and Warmth to Thousands of Families in Western China”—ENN Qingdao West Coast Energy Organised Clothes Donation Activities

To ensure low-income families in the western areas would have a warm winter, ENN Qingdao West Coast Energy, co-organised a social welfare activity “Sunshine Action” with Civil Affairs Bureau to donate clothes for thousands of low-income families in Western China. The activity, named “Delivering Care and Warmth to Thousands of Families in Western China”, was widely supported by employees and received thousands of clothes on the first day, which were soon delivered to families in need in Wudu District, Longnan of Gansu Province.



Volunteers visited needy families in Chaobi Village, Jiandou Town, Anxi



Volunteers visited bereft teenagers



Supporting Education

In 2018, the Group performed school building projects, inspirational projects and quality projects through ENN Group Charity Foundation, and promoted the development of education from multiple perspectives and through multiple channels.



School Building Projects

- Donated RMB2 million for the construction of the multi-functional building of Langfang No.6 Middle School, mitigating the problem of “large class” to a great extent;
- Donated RMB600,000 for the greening, road hardening, and construction of supporting facilities of Dongfeng Primary School of Dongfeng Village, Linpan Town, Jieyang;
- Supported the special education for deaf children of Dongguan, and purchased technical equipment and aids for the speech training center;
- Donated the “Ma Yun Rural Boarding School Plan- ENN Dawulan Central Primary School Project” and supported the reform and development of the education in rural areas; and
- Donated the project of ENN Engineering Building of Peking University and improved hardware condition for promoting the scientific research and teaching for higher education.



Inspirational Projects

- Established scholarships (subsidies) in Tongji University, Beijing University of Chinese Medicine, Chongqing University, Harbin Institute of Technology, helped and encouraged thousands of students;
- Continued the “ENN•Freshman Aid Plan”, donated fees for the first year students from low-income families in Langfang and helped 25 students to get into school; and
- Donated the “Rural Children with Dreams” project in poor areas of Hefei, Anhui Province. Donated for children from needy families and provided assistance in study, living, and health care to such children.



Quality Projects

- Supported the “Rural China Dream” quality development project;
- Continued to participate in the “ENN•Gardener Plan”, supported teachers from Bazhou No.4 Middle School and No.8 Middle School to receive trainings outside and carried out learning exchanges, so as to improve the culture and knowledge structure of the teachers and their teaching level; and
- Continued to carry out the “ENN•Principal Training Plan of Hope Primary Schools”, established a platform for improving the ability of the principals of 800 hope primary schools of Hebei Province.



Environmental Protection Activities

The Group actively devotes itself to environmental protection. Member companies in many regions have participated in the environmental protection activities such as “Protecting the Mother River” and “Rejecting plastic pollution”, delivering the environmental protection philosophy to the public while improving the awareness of environmental protection of the employees.

Case

Carried out the public benefit activity for environmental protection themed “Rejecting the Plastic Pollution and Protect the Green Home”

The Group carried out the public benefit activity for environmental protection themed “Rejecting Plastic Pollution and Protecting Green Home” on the ninth “ENN Public Charity Day” on September 15, 2018. The activity covered more than ten cities, including Langfang, Lhasa, Tengzhou, Quzhou, Chaohu, Huludao, Lanxi, Ordos, Wenshan, Kunming, and Dongguan, and attracted more than 300 volunteers and staff. During the activity, the volunteers popularised knowledge about plastics, its hazard to the natural environment, and measures to reduce white pollution in life to the citizens, and sent environment-friendly hand bags to the citizens, calling on the public to reduce the use of plastic products in their lives by rejecting plastic pollution and advocating low-carbon life.



Inauguration Ceremony of the Environmental friendly Public Welfare Activities of the “Rainbow Flower” program of ENN Energy

Caring for the Underprivileged

The Group organised voluntary activities to visit and support the underprivileged.

Case

ENN Shangqiu organised a visit to Children's Home on “Children's Day”

The labour union of ENN Shangqiu Gas actively carried out the “Special Care Activity of the Children’s Day” on May 31, 2018. The participants visited Shangqiu Municipal Children Welfare Association, and showed solicitude for the children. They also brought daily necessities for the children, and celebrated Children’s Day in advance, delivering the kindness from the society to support the growth of these children.



Volunteers of Quanzhou Gas offered condolences to autistic Children

APPENDICES

Index of ESG Indicators

Subject Area	Indicators	Location in the Report or Explanation
A1 Emissions	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P34
	A1.1 The types of emissions and respective emissions data.	P33-34
	A1.2 Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P33
	A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P34
	A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P34
	A1.5 Description of measures to mitigate emissions and results achieved.	P31-P32
	A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	P34-P35
A2 Use of Resource	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials.	P36
	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).	P36
	A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	P36
	A2.3 Description of energy use efficiency initiatives and results achieved.	P36-P37
	A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	P36-P37
	A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	The Group's business mainly involves energy sales which do not require packaging
A3 The Environment and Natural Resources	General Disclosure Policies on minimising the significant impact on the environment and natural resources.	P37
	A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P31, P37

APPENDICES

Index of ESG Indicators

Subject Area	Indicators	Location in the Report or Explanation
B1 Employment	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P38
	B1.1 Total workforce by gender, employment type, age group and geographical region.	P38
	B1.2 Employee turnover rate by gender, age group and geographical region.	Not mandatory item, to be disclosed later
B2 Health and Safety	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P28
	B2.1 Number and rate of work-related fatalities.	Not mandatory item, to be disclosed later
	B2.2 Lost days due to work injury.	Not mandatory item, to be disclosed later
	B2.3 Description of occupational health and safety measures adopted, how they are implemented and monitored.	P29-P30
B3 Development and Training	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	P39
	B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management)	Not mandatory item, to be disclosed later
	B3.2 The average training hours completed per employee by gender and employee category.	Not mandatory item, to be disclosed later
B4 Labour Standards	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P37
	B4.1 Description of measures to review employment practices to avoid child and forced labour.	P37
	B4.2 Description of steps taken to eliminate such practices when discovered.	P38
B5 Supply Chain Management	General Disclosure Policies on managing environmental and social risks of the supply chain.	P42
	B5.1 Number of suppliers according to geographical region.	P42
	B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	P42

Subject Area	Indicators	Location in the Report or Explanation
B6 Product Responsibility	General Disclosure Information on: (a)the policies; and (b)compliance with relevant laws and regulations that have a significant impact on the issuer	P23
	B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	The Group's business rarely involves recall of the products, therefore is not a material issue to the Group
	B6.2 Number of products and service related complaints received and how they are dealt with.	P24
	B6.3 Description of practices relating to observing and protecting intellectual property rights.	P20
	B6.4 Description of quality assurance process and recall procedures.	P26-27
	B6.5 Description of consumer data protection and privacy policies, how they are implemented and monitored.	Not mandatory item, to be disclosed later
B7 Anti-corruption	General Disclosure Information on: (a)the policies; and (b)compliance with relevant laws and regulations that have a significant impact on the issuer	P11-12
	B7.1 Numbers and results of adjudicated corruption lawsuit against issuers or their employees during the reporting period	P11
	B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	P11-12
B8 Community Investment	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.	P43
	B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	P43-46
	B8.2 Resources contributed (e.g. money or time) to the focus area.	P43-46

FEEDBACK

Thank you for reading our 2018 Environmental, Social and Governance Report. In order to enhance communication with you and other stakeholders and to continuously improve the environment, social and governance performance of our company and the preparation of future reports, we sincerely hope to listen to your valuable comments and suggestions, and we sincerely look forward to your feedback in the following ways:

Please provide us with specific feedback:

1. What is your overall comment on this report?
 Good Relatively good Average Below average
2. What do you think about the clarity, accuracy and completeness of the information disclosed in this report?
 Good Relatively good Average Below average
3. What do you think of the comprehensiveness of the economic responsibilities undertaken by the Group that were reflected in this report?
 Good Relatively good Average Below average
4. What do you think of the comprehensiveness of the environmental responsibilities undertaken by the Group that were reflected in this report?
 Good Relatively good Average Below average
5. What do you think of the comprehensiveness of the social responsibilities undertaken by the Group that were reflected in this report?
 Good Relatively good Average Below average
6. What do you think of the design and layout of this report?
 Good Relatively good Average Below average
7. Which part of this report do you think need improvement?
 Governance Safety Services Supply chain Employees Environment Society
8. Content that you wish to know about but is not disclosed in this report:

9. Your opinions and suggestions in respect of our environmental, social and governance performance and reporting:

Scan the QR code and submit your comments and suggestions online:





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