

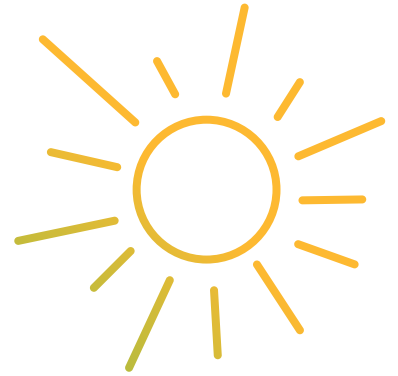


中國地能產業集團有限公司

CHINA GROUND SOURCE ENERGY INDUSTRY GROUP LIMITED

(Incorporated in the Cayman Islands with limited liability)

Stock Code: 8128



**ENVIRONMENTAL,
SOCIAL &
GOVERNANCE**
Report 2017

China Ground Source Energy Industry Group Limited

2017 Environmental, Social and Governance Report

Table of Content

I. Company Overview-----	3
II. Report Introduction -----	5
III. The Company’s core concept and management system -----	6
3-1 Core concept	
3-2 Quality, environmental, occupational health and safety management system	
IV. Stakeholder participation and communication -----	10
V. Environmental responsibility (Aspect A1-A3) -----	12
5-1 Use energy morally, utilize energies of different grades rationally	
5-2 Save fossil energy, over 50% of heating energy is renewable shallow Geothermal Energy	

5-3	Obtain heat only, free of water consumption and pollution, and protect underground water resource	
5-4	Reduce one-off investment and operation cost of heating	
5-5	Zero emissions, reduction of air pollution	
5-6	Promotion of Energy Conservation and Emission Reduction Vigorously	
5-7	Use of Resource and Statistics	
VI. Social Responsibility (Aspect B1-B4) -----		23
6-1 E	employment, remuneration and welfare	
6-2	Employees' health and safety	
6-3	Development and training for employees	
6-4	Labour standards	
VII. Operating Practices (Aspect B5-B8) -----		31
7-1	Supply Chain Management	
7-2	Product Responsibility	
7-3	Anti-corruption	
7-4	Striving for Better	
7-5	Community Investment	

I. Company Overview

China Ground Source Energy Industry Group Limited. (hereinafter referred as “the Company”, together with its subsidiaries referred as “the Group” or “we”) is the sole listed company in Hong Kong engaged in the research and promotion of the development and utilization of geothermal energy as alternative energy for building heating (cooling). The company through Ever Source Science & Technology Development Group Co., Ltd (hereinafter referred to as “HYY Company”), the industrial operation headquarters in Beijing, is committed to the industrialization development of the original technology which can accelerate the all-around upgrade and transformation of the traditional heating industry with combustion, emissions and pollution to an emerging industry of combustion-free integrated heating and cooling system with shallow geothermal energy.

HYY Company is a high-tech enterprise incorporated in the technology park in Haidian District, Beijing in 2000. It mainly focuses in the field of energy and environmental science and is dedicated to the research and development of new renewable energy as well as engaging in research, design, production and comprehensive technical services of the promotion and development of the utilization of shallow geothermal energy

HYY Company takes the original "single-well circulation heat exchange geothermal energy collection technology" as its core, realizes the industrialization development of original technology and owns the industrial chain operating unit integrated with technology research and development, design consultation, equipment manufacturing, engineering construction, energy contract management and system maintenance which can provide regional energy planning in different regions and provide a complete solution for heating (cooling) energy for all types of buildings, thus realizing the regional development of industrial parks of integrated heating/cooling with geothermal energy. With the support of integrated heating/cooling industrial park, research and development of collection of shallow geothermal energy and production of corresponding full set equipment can be

strengthened for the different regions and climate conditions, hence achieving safe, sustainable, reliable and rapid development of regional heating with geothermal energy and ensuring to realize the strategic goal for promotion of non-combustion regional heating. Further, to strive to become the most competitive company in the field of promotion of geothermal energy as alternative heating(cooling) energy.

Hong Kong-listed company, China Ground Source Energy Industry Group Limited and HYY Company adopt the "two-pole (capital and industrial) two-places (Hong Kong and Beijing) integrated flat-style" management model, that is, the same business management team under the flat organization structure responsible for the development of capital operations in Hong Kong and the promotion of industrial development in Beijing.

II. Report Introduction

About the Report

The purpose of this report is to disclose management philosophy of the Group in respect of environmental, social and governance and its performance in 2017 so as to promoting better communication and understanding between the majority of stakeholders and the Company. This report has been prepared in both Chinese and English and has been published on the websites of the Stock Exchange and the Company. If there is any discrepancy between the Chinese and English versions, the Chinese version shall prevail.

Scope Covered

This report focused on the Group's operations related to the principle business of the development and utilization of geothermal energy as alternative energy for building heating (cooling) and also covered the headquarters of Hong Kong and business headquarters in Beijing. This report covering the period from January 1, 2017 to December 31, 2017.

Compilation basis

This report is prepared in accordance with the relevant provisions of the “Environmental, Social and Governance Reporting Guidelines” in Appendix 20 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, and with consideration of the key concerns of the Company’s stakeholders and the Company’s business characteristics.

Approval and Release

This report was approved by the board of directors and was released on 29 June 2018.

III. The Company's core concept and management system

3-1 Core Concept

We not only make efforts to develop good products, but also cultivate the company's spirits. The company's spirits, or enterprise culture, is formed in enterprise development and is the total value concept, behaviour standard and image that have dominant effect in the enterprise development of the company. The basic contents of spirits of the Company is "one base and five meanings", i.e.:

- People-oriented core concept.◦
- Realistic and innovative development concept.◦
- Honesty and promise-keeping operation rules.◦
- Ecology protection responsibility awareness.◦
- Free and harmonious atmosphere.◦
- Scientific and civilized image.◦

With the people-oriented concept, it links all the work in the enterprise to form the company spirits by focusing on development concept, operation standards, responsibility awareness, environment atmosphere and image.

Realistic and innovative development concept: only being realistic and pragmatic to capture the development tendency; only with continued innovation could enhance competitiveness; only with accelerating development could solve problems in development.

Honest and promise-keeping operation rules: the Company's survival depends on the clients, hence, the fundamental guarantee for the company's survival and development is to realize every commitment to the clients and partners.

Ecology protection responsibility awareness: it is always our responsibilities and conscience to seek for a harmonious co-existence of human and nature, improve ecological environment, promote social progress to provide quality life for the general public.

Free and harmonious atmosphere: fully respect the employee's personal

freedom, highly promote equality of personality; encourage a healthy competition of personal development, realize appointment of the employee on the basis of talent; advocate serious criticism and friendly forgiveness and establish error correction mechanism.

Scientific and civilized image: be strict with scientific working methods; form prudent working order; create a good working environment; keeping of full spirit and civilized behaviours.

Code of Conduct:

With safety first, standard speaks;

To form a solid foundation, to make all strategies practicable;

All develop sense of responsibility, and achieve pleasure at work.

Our Mission: Pragmatism and Innovation

Our Pursue: Harmonious Coexistence of Human and Nature

Our Dedication: Improve comfort level of the people's livelihood

Our Vision: Work for greater industrialized development of the original technology for ground source energy collection, while promoting the use of shallow ground energy as the substitute energy of heating for buildings; furthering scientific utilization of energies by grades; propelling combustion-free intelligent heating (cooling) for buildings with ground source energy; and forcefully boosting the new industry of integrated heating and cooling with ground source energy.

3-2 Quality, environment, occupational health and safety management system

The Company is committed to the research and development of renewable energy. Since its inception, it has focused on standardized management of product quality. Based on the social responsibility for environmental protection and the occupational health and safety of employees and the related personnel, the Company has passed the certification of ISO9001 quality management system, ISO14001 environmental management system, and OHSAS18001 occupational

health and safety management system to form a trinity management system model of quality, environment, and occupational health and safety. Put forward feasible policies, guidelines and objectives for quality, environment and occupational health and safety:

- Quality Policy:

We will provide high-quality products and sophisticated projects in a realistic manner. With quality service to satisfy customers' demands and with continuous improvement to highlight technological innovation in order to develop the Company to be the most competitive company in the field of development and utilization of shallow geothermal energy.

- Quality Objectives:

Focusing on customers, we provide a complete set of system services with an aim in achieving qualified rate of one-off product delivery with more than 98%, and customer satisfaction with over 92%.

- Environmental Policy:

Strictly compliance of regulations, pollution prevention, saving energy and reduction in consumption and continue to improve. Establish the brand of energy conservation and environmental protection and create a sustainable future to achieve a harmonious symbiosis between human and nature.

- Environmental Objectives:

Improve the environmental awareness of all employees and rationally develop and use of new energy sources. Vigorously promote the Company's three closed-recycle advanced technologies and 100% not to pollute water resources.

- Environmental Indicators:

1. to achieve pollution prevention with control measures to 100% control the environmental factors that are important to the Company.
2. In the HYY geothermal heat pump environmental system, 100% use the closed loops recycling to protect water resources.
3. to control energy consumption, the per capita energy value of electricity

and water in the Company's office area shall be reduced by 1% year-on-year within three years.

- Occupational Health and Safety Policy:

Safety first, prevention foremost;

Full participation, common benefit;

Compliance with disciplines and laws, civilized construction;

Our tenet: people-oriented, cherish life.

- Occupational Health and Safety Objectives:

No major personal injury or death accidents during the year;

The company's annual accident rate of work injuries shall be less than 2%;

Prevent food poisoning and fire accidents.

IV. Stakeholder participation and communication

The company actively engages in communication with stakeholders, timely understands the needs of stakeholders, responds and communicates positively. Based on the Company's products and business characteristics, our main stakeholders include: government and regulators, investors/shareholders, customers, suppliers, constructors and employees. The concerns of different stakeholders are different and the communication methods are also different. In addition to the Internet, there are other different communication forms as follows:

Stakeholder	Focal point	Communication method
Government departments	Compliance of rules and regulations	Participate in government meetings and receive policy documents
	Social support	Participate in the declaration of government-supported project, etc.
	Environmental impact	Accept inspections by regulatory authorities and achieve energy conservation and emission reduction
Investors/ Shareholders	Compliance management	Shareholders' meetings
	Market and economic benefits	Financial report, annual report and announcement of the Company
Customers	Product advantages and innovation	Network promotion and display for potential customers, etc.
	Product quality and benefits	Pre-sales, sales, after-sale services
	Client feedback	Spring and Autumn maintenance, satisfaction survey, etc.
	Protection of	Customer Service Center, 24-hour hotline

	customer interests	
Suppliers	Transparent procurement	Post request information
	Equal competition	Choose qualified suppliers
	Mutual benefit and win-win	Procurement by price comparison
Constructors	Project scale	Project tender notice, etc.
	Work safety	Contracts, security agreements, etc.
	Environmental requirements	Civilized construction requirements
Employees	Employee rights and benefits	Staff Representative Conference, Employee Handbook
	Remuneration system	Publication and execution of remuneration system
	Training and Development	Various forms of training and promotion

V. Environmental Responsibility (Aspect A1-A3)

5-1 Use energy morally, utilize energies of different grades rationally

Frugality is a traditional virtues of the Chinese nation, we advocate not only saving in quantity but also have deeper meaning in frugality, which is, “use the best material at the key point”, that it is, use the top-quality resources to the place most needed, and don’t put large material for petty use. We still stick to it even though it may bring extra burden to the Company because it meets our moral standard.

Thermal energy is of grade, generally speaking, the higher the temperature is, the higher the grade is. Natural gas is a high-grade energy as it could reach 1,000°C in combustion. However, building heating with approximately more than 20°C would be sufficient, so use natural gas combustion for heating is a waste of energy grade.

The Company sticks to the concept of using energy morally, and use shallow geothermal energy which is the nearest to heating demand of energy grade for building heating. The high-grade energy such as natural gas shall be made available to the field of steelmaking and power generation and let them play a greater role in society. Currently the price of natural price is relatively low. In comparison with natural gas heating, higher technology is required for heating with shallow geothermal energy and more investment is required. However, with our continued efforts, our user’s operation expense is currently lower than operation expense of natural gas which is the achievement we stick to the concept of using energy morally.

5-2 Save fossil energy, over 50% of heating energy is renewable shallow Geothermal Energy

“Shallow Geothermal Energy” refers to thermal energy embedded in the soil, sandstone and water within an underground depth of dozens of meter to several hundred meters. Generally speaking, the depth where Shallow Geothermal

Energy exists in the area called “underground constant temperature zone” by geologist. Taking example of Beijing, the temperature in this zone is about 15°C in all four seasons which is almost remained unchanged.

With adherence to the purpose of saving energy and benefiting the society, the Company has successfully developed “HYY geothermal energy heat pump environmental system” based on the self-developed single-well circulation heat exchange geothermal energy collection well as the core so as to utilize shallow geothermal energy as alternative energy for building heating which has realized classified utilization of heating energy according to their grades. The single-well circulation heat exchange geothermal energy collection technology takes underground water as medium, utilizes one well and the heat transfer device in the well with semi-closed circulation loop to realize heat exchange between water and the shallow soil & sandstone to absorb heat from soil and sandstones.

We take the renewable shallow geothermal energy as alternative energy for northern heating (northern heating energy 3.0), systematically construct a most reasonable energy utilization industry chain for northern clean and smart heating: close to the energy source of the power plant to achieve localization of energy with is safety and secured, cost of environmental governance is the lowest. Use one portion of electricity to drive heat pump system to transport three portions of geothermal energies (low grade geothermal energy of less than 25°C) which is free and stable to obtain over three portions of heating generated by electricity in equivalent, achieving clean and smart heating for the building with no combustion, zero emission in the region. (at supply side: the system indirectly enlarges electricity generating efficiency over three times, equivalent to construction of two simulated power generation plants; at demand side, the system lowers 70% electricity consumption of the user, and saves government environmental treatment cost for combustion heating). In the new era, emerging industry of integrated heating and cooling system with shallow geothermal energy has improved the quality of people's lives according to local conditions and is the right way to effectively solve the haze caused by combustion of primary energy for heating.

5-3 Obtain heat only, free of water consumption and pollution, and protect underground water resource

It is unavoidable to reach underground water in development and utilization of shallow geothermal energy. The fundamental difference between the technology of “single-well circulation heat exchange geothermal energy collection well” and traditional underground pumping well –recharge well technology is that the of single-well circulation heat exchange geothermal energy collection well technology is a closed-circulation heat collection device which takes water as medium. In the operation process, there will be no water consumption and has been no impact on the conditions of underground water and geological structure in the area.

Since 2001, the Company started to monitor the quality of underground water in typical engineering project by appointed independent professional party. The results of water quality inspection showed that , except incoming and outgoing water temperature changes with periodic changes of operation conditions, it doesn't affect the quality of underground water.

5-4 Reduce one-off investment and operation cost of heating

The shallow geothermal energy collection technology independently developed by the Company has solved the bottleneck problem of large scale collection of shallow geothermal energy. Investment on exploration of energy per kilowatt is less than 20% of development investment on wind power, hydropower, coal power.

Energy	Geothermal Energy	Coal power	Hydropower	Wind power
Investment (Yuan/kW)	500	4,000-8,000	5,000-10,000 (Large and medium-sized)	7,000-10,000

Traditional heating technologies such as coal-fired heating, natural gas heating, and electric boilers imply significant financial input of the nation which includes lots of indirect cost of primary energy extraction, fuel transportation, secondary energy construction, heat pipe network construction, solid waste treatment, and control of gaseous pollutants and others. Development and utilization of shallow geothermal energy by using this technology can be accomplished at the same time and in the same place. Development and utilization of shallow geothermal energy by using this technology for building heating, unit area price cost as well as construction and environmental treatment expense is lower than over 30% of traditional heating technology

Investment Comparison of Various heating methods (per square meter)

Item	Unit	Shallow geothermal energy	Coal	Oil	Gas	Electricity
National Energy Investment	Yuan	250	360	415	415	960
Owners investment	Yuan	120-150	50-150	50-150	50-150	50-150
Total construction cost	Yuan	370-400	410-510	465-565	465-565	1010-1110

Note:

- 1) The heating part only calculates the country's energy extraction and the regional thermal input for building heating by the nation ;

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- 2) Coal extraction 200 yuan/m²;

The second natural gas pipeline investment is calculated at 50% of the first one and the total is 255 yuan/m²;

Electricity investment 800 yuan / m²;

Thermal equipment of heat network 160 yuan / m²;

- 3) The interface fee (four source fee) paid by the owner is not counted temporarily;
- 4) The total investment is based on the central heating of the heating network. The national investment does not include the cost of the Thermal equipment of heat network.
- 5) Does not include end-material.

5-5 Zero emissions, reduction of air pollution

HYH geothermal heat pump environmental system has been applied to a total construction area of 16 million square meters. The types of buildings include: government office buildings, commercial office buildings, residential buildings, shopping malls, schools, exhibition halls, archives, gymnasiums, swimming pools, military barracks, apartments, villas, hotels, kindergartens, nursing homes, banks, hospitals, industrial plants. landscape pools etc.

Use of shallow geothermal energy as an alternative energy of conventional energy has no emissions of waste gas, waste residues and waste, to achieving zero emissions and zero pollution in the usage region.

The energy-saving and emission reduction effect for promotion and utilization of shallow geothermal energy for total area of 16 million square meters

Emission Reduction / Energy Saving Items	Unit	Data (heating per quarter)
Fuel saving	10,000 tons of standard coal	36.9
Emission reduction of CO ₂	10,000 tons	97.5
Emission reduction of SO ₂	ton	6093
Emission reduction of NO _x	ton	5760
Emission reduction of dust	ton	3542

5-6 Promotion of Energy Conservation and Emission Reduction Vigorously

In adherence to low carbon operation to meet the purpose of emission reduction, the Company implements green construction to all projects. The company is committed to reducing the impact of its operations on the environment and is in strict compliance with relevant laws and regulations such as the “Environmental Protection Law of the People’s Republic of China”, “Energy Conservation Law of the People’s Republic of China”, “Law of the People’s Republic of China on Prevention and Control of Atmospheric Pollutant”, “Law of the People’s Republic of China on Prevention and Control of Environmental Pollutant by Solid Waste”, “Preventive Rules on Atmospheric Pollutants in Beijing”, etc., the Company also positively advocates green office mode, reinforces the employee’s concept of energy conservation and environmental protection, and adopts measures in multiple aspects to meet the object of energy conservation and emission reduction:

1. Green Construction

Comply with the Group’s environmental management system, strictly implement all rules and policies of the owner and general contractor for civil

engineering, conscientiously carry out ISO14001 international environment management standard and OHSAS18001 occupational health management system standard, participate in periodic meeting held for the work of “ civilized construction and environmental protection on construction site”, execute environmental protection management and inspection system for construction site, formulate the Group’s environmental guideline, environmental objects, and environmental indexes, provide corresponding resources to prevent pollution and realize harmony between construction and environment to further meet requirements of environmental management standard.

In project construction, the Group strictly handle all emissions in strict compliance with relevant construction provisions and standards so as to reduce impact on surrounding environment; some preventive measures generally adopted in general course of project construction are listed as below:

Type	Emission Source	Name of Pollutants	Preventive Measures
Air pollutant	Construction period	Flying dust	Set up fences in construction zone, cover the exposed part, sparkle water on the roads in construction zone, prohibit temporary and random disposal of earthwork, reinforce management and civilized construction.
	Construction period	Carbon dioxide, nitrous oxide	Use electric construction tools, use fuel facilities as possible as it could to avoid pollutant discharge; when it is unable to use fuel equipment, adopt low-emission equipment which meets requirements of environmental protection.
	Commissioning period	Hydrofluorocarbons	Apply cooling medium with

			low global warming potential (GWP); all cooling medium shall be filled before the equipment delivery out of the factory to avoid leakage in filling operation on construction site.
Water pollutant	Construction period Domestic sewage	CODCr BOD5 SS Ammonia nitrogen	After treatment, discharge the pollutant to municipal sewage pipe network through compliant sewage discharge facilities.
	Construction period Washing wastewater	SS	Disallow external discharge, set up temporary sedimentation tank, recycle it for reducing dust and suppressing dust after treatment.
Solid waste	Construction period Solid waste	Construction solid waste	Authorize qualified disposal unit to gather and dispose the solid wastes on the basis of classification, don't abandon them randomly.
		Waste mud	Set up mud pit, periodically hand the waste mud to environmental sanitation department for clearing. Reasonably dispose it rather than abandon it randomly.
		Domestic garbage	Gather domestic garbage on the basis of classification, hand them to environmental sanitation department for treatment, reasonably dispose it rather than abandon it randomly.

Noise	Construction machinery and equipment		Reasonably plan construction time, formulate construction plan, select low-noise equipment and implement operation in an closed environment.
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2. The Company has newly established exhibition hall of the Information Monitoring Platform of Smart Heating for Buildings with Combustion-free Geothermal Energy, equipped with high-speed internet, audio and visual equipment, multimedia equipment, used for dispatcher in monitoring project progress in different places. The Company has installed monitoring equipment in each construction site to monitor the real construction status by dispatcher. It could also support teleconference for product demonstration, technical explanations, employee training as well as advertising and visit, Group introduction, core technology display, product display, achievement report and promotion of information exchange.

With continued improvement of information monitoring platform of smart heating for buildings with combustion-free geothermal energy, the display hall's functions would gradually increase and in future the display hall would be used for displaying project operation data, monitoring full operation course, detailed dispatch control, comprehensive information collection and distribution, failure pre-warning and emergency coordinated command and treatment, operation data gathering summary and analysis, service hotline, etc.

By above measures, the Company has fully utilized network and remote control method for conducting project management in daily operational activities, which would achieve energy conservation and emission reduction.

3. Green office, efficiency improvement: for a long term the Company has properly implemented purchase, use, storage, repair, allocation, stocktaking, disposal and recovery of fixed asset through fixed asset efficiency management plan, which greatly enhances utilization efficiency of fixed assets in the office and reduces resource consumption. At the same time, in the course of daily work, we advocate the employees to improve utilization efficiency of office articles, reduce and re-utilize wastes, recycle resources, repair articles and refuse purchasing products which don't meet the environmental protection concept; fully utilize office automation (OA) system, solve problems online, simplify documentation so as to improving the flow of official documents.

4. Energy consumption saving: In respect of energy consumption, the Company sticks to start from small things in energy conservation and emission reduction. The Company uses power saving fluorescent lamps in all offices and lighting will be used in accordance with the need. In addition, lamps are off when people leave. In respect of use of electric appliances, unused electric appliance will be shut off in time to avoid putting them on standby mode for a long time so as to reduce wasting. At the same time, electric appliance with high electricity consumption will be managed rationally, such as air-conditioner will rationally be adjusted to proper temperature in accordance with the weather condition to avoid energy wasting.

5-7 Use of Resource and Statistics

The Group did not conduct carbon emission audit in 2017. The following emission data are based on the valuation of the Company's energy and fuel consumption. The Group's direct greenhouse gas emissions mainly come from company vehicles, and indirect emissions mainly come from purchased electricity and office use of paper and water.

Type of energy consumption	Energy consumption	Energy consumption density	Equivalent to standard coal (tons)	CO ₂ emissions (tons)	SO ₂ emissions (tons)	NO _x emissions (tons)	Dust emissions (tons)
Electricity (KWh) (Beijing)	646,486	Approx, 114KWh/M ²	203.64	537.62	3.36	3.18	1.95
Electricity (KWh) (H.K.)	15,456	Approx, 55KWh/M ²	4.87	12.85	0.08	0.08	0.05
Natural gas (m ³) (Beijing)	6,185	Approx, 1.99M ³ /M ²	7.51	19.83	0.12	0.12	0.07
Gasoline (litres) (H.K.)	7,907.53	Approx, 395 litres/person	8.61	22.73	0.14	0.13	0.08
Gasoline (litres) (Beijing)	19,099	Approx, 29.8 litres/person	20.79	54.89	0.34	0.32	0.20
Total			245.42	647.92	4.05	3.83	2.36

In 2017, the total water consumption of the Group's Beijing office was approximately 16,668 tons. The water consumption density is approximately 2.96 tons/square meter. In addition, due to the office rented in Hong Kong, water use was under the unified control of the management company of the building, and no water meter was installed. Therefore, no water consumption data was provided.

In 2017, the total paper consumption of the Group's office in Hong Kong and Beijing was approximately 465,000 sheets. The paper consumption density is approximately 704 sheets/person.

VI. Social Responsibility (Aspect B1-B4)

6-1 Employment, remuneration and welfare

1. All employment of staff of the Company are complied with relevant local regulations and policies, including Employment Ordinance, Mandatory Provident Fund Schemes Ordinance and Occupational Safety and Health Ordinance, etc. for Hong Kong and the Labor Law of the People's Republic of China, Labor Contract Law of the People's Republic of China, etc. for Mainland China, as well as such internal rules and systems formulated in accordance with the law, such as the Administrative Measures for Human Resources, Staff Remuneration Management System, Administrative Measures for Employee, Overtime Management System, Employee Leave System, etc. Strictly prohibited hiring of child labor and forced labor, guarantee all labor rights of the employees by law to ensure fair, just and open selection of talented employees.

All contract employees in service have signed the labor contracts with the Company. In the process of signing, renewal, termination and cessation of the labor contract, the Company strictly complies with statutory procedures and guarantees all relevant processes are conducted in a fair, open and just manner which is not affected by sex, race or other relevant diversified factors, to actually protect legal rights and interests of the labors. The Company makes efforts to provide equal employment chance to all qualified persons in irrespective of race, complexion, religion, original nationality, disability, sex, age, marital status, etc.

Senior managerial staff, managers and supervisors shall assure fairness of all personnel decisions, including but not limited to recruitment, employment, salary, promotion, demotion, transfer, dismissal, welfare, training and selection for training as well as other employment acts.

2. The Company decides salary standard with comprehensive consideration mainly on the basis of factors, such as the average market salary standard, the Group Company's salary paying capability, the employee's position level, qualifications, skills, performance, etc.

3. Employment Overview

In 2017, the total number of employees of the Group was 660.

Category	Indicator	Unit	2017
By gender	Male employees	people	506
	Female employees	people	154
By age	30 and below	people	141
	30-39	people	230
	40-49	people	148
	50-59	people	109
	60 and above	people	32
By region	Mainland China	people	641
	Hong Kong	people	19
By type	Engineering design	people	39
	Property maintenance	people	408
	Management	people	64
	Marketing	people	121
	Finance	people	28
Employee turnover rate		percentage	13.6%
Employee turnover rate by gender	Male	percentage	13%
	Female	percentage	15.6%

4. Welfare :

(1) Social Insurance: in accordance with provisions of the government, the Company purchases social insurance including pension, medical, unemployment, work-related injury and childbirth for local and non-local in-service contract employees of the Group or its subsidiary companies in Mainland. *Mandatory Provident Fund Schemes* as well as medical and labor insurance are provided for employees of Hong Kong companies.

(2) Festive Subsidy: the Company issues festive subsidies to each

formal employee who has become a regular worker on every important festival.

(3) Employee Condolence: in case of major events such as serious illness of the employee or their family member and gives birth by female employee, the trade union, together with competent leader and Human Resources Department, on behalf of the Group, would pay visit to employee and to express condolence. Relevant assistance will be provided as far as they can. Special circumstances will be discussed and decided separately by the president executive office.

(4) Pension: when the employee's spouse, parent, child or spouse's parent passes away, the Company's Trade Union would console the employee and issue pension of RMB 1,000 to the employee. Special circumstances will be discussed and decided separately by the president executive office.

(5) Holidays Specified in Local Employment Place: the employee is entitled to specified paid statutory holiday, annual leave, martial leave, maternity leave, funeral leave, sick leave, work-related injury leave, leave for personal affairs, etc.

6-2 Employees' health and safety

1. The Company attaches high importance to health and safety of the employee. Besides all medical insurances, work-related injury insurance specified by the State, it has established a safety management system through certification of OHSAS18001 occupational health and safety management system. On the basis of different working positions and natures, it implements safety preventive measures to the employees and periodically issues labor protective articles. In every summer, it dispenses high temperature allowance and heatstroke prevention drugs, etc to the employees who work in outdoor high-temperature environment, so as to assure health and safety of the employees, and periodically organizes

employee physical examination. To guarantee a healthy and safe diet of the employees, it establishes a canteen and has obtained food safety and health permit according to requirements of food and safety standard in catering industry, and implements strict physical examination to workers in canteen to assure they work with health certificate.

2. The Company attaches high importance to production safety, complies and implements such laws and regulations as Work Safety Law and Fire Prevention Law of the State; signs safety responsibility statements with each departments, emphasizes each department principal is first responsible person for safety and has formulated a whole set of the Safety Management System and appoints Safety Director for supervision and examination of all safety work. It periodically holds safety meetings and emphasizes safety education, safety examination in specific periods and on national holidays, which effectively eliminates all safety accidents. Specific to particularity of the Company's business, in each engineering project it shall sign the Safety Responsibility Statement, Safety Agreement with installation and construction enterprise, and assign special person for safety examination, irregular selective examination, etc in the course of engineering construction, and make timely correction upon discovery of potential safety hazards to assure production safety first and people foremost.

There are no work-related death events and no records of any work-related loss of working days within 2017.

6-3 Development and training for employees

1. The Company enriches all professional forces by introducing high-end talents, continuously reinforces backup talent reserve and constructs hierarchical talent teams, advances construction of learning organization and reinforces the concept of lifelong learning; provides training specifically to the employees and fully transfers them for specific

task temporarily, reinforces cultivation of project management talents and technical talents. It adopts flexible employment mechanism to talent absorption and team stabilization, fully displays the Company's resource advantage, stresses cultivation on highly-educated young people, and promotes technical backbones who are young and promising with comprehensive business. In the past years, the Company has assigned multiple technical backbones to such countries as the U.S.A., Switzerland, France, Germany, Britain and Mongolia, etc for international academic exchange, which not only lays a good foundation for international cooperation but also greatly improves the Company's technical and management level.

2. The Company cherishes every excellent talent, motivates talents to make continued progress by performance assessment, position competition, training selection, etc. encourages and supports each employee in career development. In principle, all employees who have been working on current positions for 6 consecutive months are qualified for applying for new working chances through "Internal Employee Position Application Procedure". Department supervisor is responsible for supporting its department employee's career development, to provide backup force to its sustainable and stable development.

3. The Company also advances a reward plan for employee's talent recommendation, its internal employee could refer and recommend talents to the Company. In case the candidate recommended by the employee could be recruited by the Group Company and passes probation period, the recommender would obtain reward in accordance with its "Reward Plan for Employee's Talent Recommendation"

4. In adherence to the concept of joint development of the employee and the organization, the Company would continuously update knowledge structure of organization and employees, to make the employee suitable for its high-speed development. The Group Company also attaches high

importance to employee training, and has established Hengyouyuan Vocational Training School. Besides training of professional technical talents, it also generally launches induction training, comprehensive training and professional training, etc. to the employees.

- Induction training mainly covers: overview of the Group, employee manual, rules and systems, basic knowledge of earth energy and safety education, etc. It is conducted by stages, in principle, all training contents shall be completed before the new employee is transferred to be a regular employee.
- Comprehensive training mainly covers: overview of the situation and tasks, organizational structure, rules and regulations, strategic policy, corporate culture, special work, product knowledge, work experience, etc..
- Professional training mainly covers: industrial standard, process specifications, design specifications, situations in technical field, solutions to puzzling questions, specific business process, etc.
- Training modes mainly cover: classroom face-to-face teaching, network video teaching, self-study training, skill practice, visit and investigation, etc.



Staff training

- Main Training Performances in 2017::

(1) There are 47 new employees. Organize new employees to take induction training in studying company profile and employee manual, safety education, etc. All the 47 employees passed examination, with a test passing rate of 100%.

(2) Organize firefighting safety knowledge training education and test, 323 employees participated in it, with a test passing rate of 100%.

(3) Organize 25 financial staff to participate in continued financial education training, with a test passing rate of 100%.

(4) Cooperate with such units as municipal construction commission, municipal building association, financial bureau, labor security bureau, production safety administration bureau etc, organize pre-job training for such special work types and important positions as refrigeration installation and repair staff, internal auditor, financial staff, electrician, welder, pipe fitter, machine room on-duty staff, etc. so as to meet the Company's demand of production and work, a total of 45 employees take the test and obtain certificates, with in-service rate with certificate meets 100%.

5. The Company also has established a positive reward system, to give certain material reward and spiritual reward to excellent employees and backbone employees who make contribution to the Company. To reinforce internal communication of the employees, enhance the Company's cohesion and improve the employee's sense of belonging, the Company organizes key staff to take outdoor training.



Annual Award Ceremony



Employee development training to cultivate teamwork spirit

6-4 Labour standards

In accordance with Labor Law of the People’s Republic of China, Labor Contract Law of the People’s Republic of China, relevant laws and administrative regulations, as well as local regulations in Beijing, the Company has prepared Employee Manual in accordance with actual situations, released and implemented it after it is passed by Congress of Workers and Staff through voting.

It is temporarily decided that Employee Manual is revised as per democratic process every 3 years. In case of changes of national regulations, local policies and the Group Company’s rules and systems, the Group Company may irregularly modify this Manual to make it meet the said changes. It is an integral part of Labor Contract, applicable to all employees who have signed labor contracts with the Group and its subsidiaries, holding companies and branches.

This Manual has summarized the Group Company’s culture, policies and rules and systems, etc, to make all employees work in a safe, innovative and vital working environment for a long-term through mutual compliance and execution.

VII. Operating Practices (Aspect B5-B8)

7-1 Supply Chain Management

1. The Group Company has professional companies for designing and producing heat pump heating and cooling devices (water, ground and low-temperature air source heat pump unit), providing installation, debugging and after-sales service for set engineering of cooling devices in order to provide one-stop comprehensive service to the clients.

2. Principle of sustainable purchase: to guarantee stable quality of the products, the Company provides top-quality engineering and service to the clients stably, and formulates a series of management measures for purchase of production materials: Purchase Management System, Price Management System of Purchase Department, Detailed Rules for Implementation of Material Quality Inspection, etc. On the basis of honesty and cooperation, win-win and mutual benefit, the Company has established a long-term partnership with multiple suppliers who are honest and trustworthy with qualifications, stable product quality, to provide sustainably stable support to development and utilization of superficial geothermal energy.

3. Management of Suppliers: the materials needed for producing the Company's products are diversified and are provided by many cooperated suppliers. To standardize supplier management, the Company has formulated the Management System for Qualified Suppliers of Purchase Department, Appraisal Specifications for Suppliers, in accordance with requirements of ISO9001 Quality Management System. The equipment, parts and materials used by the Company are provided by qualified suppliers approved by the Company. Qualified suppliers refer to those suppliers who have passed appraisal in legal operation permit, product quality, qualifications, production and supply capability, system quality management, etc. The Company prefers the enterprises which select

environment friendly and energy saving products and pass environmental system certification as qualified suppliers.

7-2 Product Responsibility

1. Customers Service and Protection of Customers' Rights & Interests

One successful enterprise not only designs and produces top-quality products to the users, but also provides top-quality service in the whole process including pre-sales, in-sales and after-sales. We launch activities along this guideline and has obtained a good effect.

To serve the clients better, the Company has provided 24-hour hot line service to accept requests of client service, and give a timely response of system failures reflected by the users on the basis of service provisions. At the same time it has established client archives file and analyze service information. It has formulated all service standards and process, examine and track service course and quality to assure service quality meet requirements of standards and process. On the basis of different natures of the clients, it customizes different service products, like: machine room on-duty service, energy saving operation service. Moreover, according to service provisions, it provides system overhauling in transition season (in every spring and autumn).

In 2017, no sold products shall be recycled for the reason of safety or health.

2. Protection of Intellectual Property Rights

The superficial geothermal energy collection technology developed by the Company independently has obtained 35 invention patents and 9 new patents. The Group implements strict management measures to intellectual property and assures protection of its legal rights and equities with legal registration.

7-3 Anti-corruption

Honesty and law observation, integrity and work for public interest is the base for enterprise to keep a foothold as well as occupational ethics which shall be practiced by each employee. The Company strictly implements relevant laws and regulations, policies of the State, combats corruption and upholds integrity, positively launches internal control management risk troubleshooting and prevention measures, and adopts “zero tolerance” attitude to such illegal acts as bribery, blackmailing, fraud, etc. There are no illegal and undisciplined events or any related lawsuit occurred during the year. Specific to such links as purchasing by bid invitation which easily gives rise to corruption, the Company adopts strict monitoring measures, establishes bid invitation review group to assure fairness, publicity and justness in the course of bid invitation. The employees who work honestly, reject supplier’s gifts or dinners, and persuade the suppliers out of doing them would be rewarded accordingly.

7-4 Striving for Better

Since its incorporation, Hengyouyuan has established a good reputation in the heating industry, started its own brand, and has received support from various sectors of society and the government, and has awarded various honorary certificates.

Major award certificates in recent years			
No.	National Green Building Innovation Award third bronze medal	No.	High-tech Enterprise Certificate
1	China's Low-carbon Urbanization Contribution by Ground Source Heat Pump Branded Enterprises	10	2011, 2012, 2013 China Top Ten Systems Integrators of Ground Source Heat Pump Industry
2	2014 China Top 20 Clean Energy Award Winners Medals	11	2015-2016 Honorary Certificate of Advanced Enterprise in New Energy and Renewable Energy Industry
3	Bronze Medal Award for	12	Honorary Certificate of Beijing

	Contribution made to the Olympic Games		Famous Trademark
4	Bronze certificate of the High growth branded enterprise in China's manufacturing industry	13	Gold Certificate of Beijing Great Wall Cup for Engineering
5	Third Prize of Beijing Science and Technology Advancement Award (Central Liquid Cold and Heat Source)	14	Silver Certificate of Beijing Great Wall Cup for Engineering
6	Key Recommended Enterprise in Application of Renewable Energy to Building Construction	15	2013 Bronze Certificate for Advanced Enterprise of China Energy Conservation & Environmental Protection Group
7	2011 Excellent Technology Demonstration Unit of China Energy Saving	16	2017 China Excellent Project of Distributed Energy Award
8	Model Enterprise of Development and Utilization of New energy	17	2017 China Excellent Maintenance and Management of Distributed Energy Award
9	Technological Innovation Outstanding Achievement Award	18	Alliance Member of Carbon Trading Industry of China Energy Conservation Association

In June 2018, the Company also applied the following awards, certifications and certificates for campaign jointly organized by the Hong Kong Environmental Campaign Committee, Hong Kong Environmental Protection Department and nine institutions:

1. Hong Kong Awards for Environmental Excellence
2. Hong Kong Green Organization Certification
3. Carbon Reduction Certificate
4. Energy saving certificate
5. Fresh indoor air certificate
6. Environmental Product Practice Certificate
7. Carbon reduction certificate

7-5 Community Investment

1. The Company has invested and built engineering dormitory zone in No. 63, Xingshikou Road, Haidian District, and provided an experimental base for single well geothermal energy collection with circulation heat exchange and has monitored water quality of single pumping well of that project, and authorized Beijing Municipal Environment Monitoring Centre to provide appraisal report on water quality. The monitoring result indicates: there are not noticeable changes of 21 water quality indexes in effluent and recharged water except water temperature. Recharged water by single well pumping doesn't affect quality of underground water.

2. The Company deeply implements the strategy of strengthening talents, centers on actual situations of development of the enterprise's hi-tech industry, and reinforces cooperation of industry-college-institute cooperation between scientific research institutions and colleges and universities, fully utilizes unique advantages of abundant resources of academicians in Beijing. Through collection of such comprehensive advantages as technology resource, human resources, academic resources and professional resources, etc. it effectively displays high-end talents' role in development of major projects, cultivation of high-end talents, technology cooperation and exchange, etc, advances gathering of innovative elements into enterprise, prompt the enterprise to be a true entity for independent innovation, improves the enterprise's technical innovative capability and comprehensive competitiveness, to bring newer and more high-end technology to the enterprise, to provide a forceful technical support to enterprise development.

3. Targeted Poverty Alleviation

In response to "Green hills are mountains of gold and silvers", which is an important address of President Xi Jinping, we can't develop the poverty-stricken areas at the price of sacrificing the environment. Under the support of China Energy Conservation and Environmental Protection

Group, the Company provides poverty alleviation to Song County. It has signed a co-operation agreement with the Urban Construction Bureau of Song County for heating projects with geothermal energy for the “Three Pavilions” which solves livelihood issues for heating in poverty-stricken areas, but doesn’t affect local ecological environment.



The Company and the Urban Construction Bureau of Song County signed a co-operation agreement for heating projects with geothermal energy for the “Three Pavilions”



The Company participates in the Poverty Alleviation Meeting of Song County with the support of China Energy Conservation and Environmental Group