Scope of the Report and the Reporting Period

This is the Group's Environmental, Social and Governance report, covering the Group's overall performance in two main aspects (i.e., environmental and social) during operation of its main businesses (production and sale of coke, and the processing and sale of coking by-products), from 1 January 2018 to 31 December 2018 (the "Reporting Period").

For the Group's governance strategies, please refer to the section headed "Corporate Governance Report" of this annual report (Pages 28 to 39).

This report is prepared by the Group in accordance with the Environmental, Social and Governance Reporting Guide as set forth in Appendix 27 of the Listing Rules.

Stakeholder Engagement and Contact Information

The Group maintains close contact with its stakeholders (for instance, investors, shareholders, regulatory bodies, employees, customers and suppliers, etc.) and management and collects their views, conducts materiality assessment, and identifies and includes important environmental and social policies concerning the Group into this report.

The Group welcomes stakeholders to express their views on the environmental, social and governance principles and performance of the Group. Please provide your suggestions via email at paulwong@hnjmny.com.

Environmental Management

Emissions Management

Relevant laws and regulations

The Group stringently complies with laws, regulations and standards, including the Environmental Protection Law of the PRC (《中華人民共和國環境保護法》), the Atmospheric Pollution Prevention and Control Law of the PRC (《中華人民共和國大氣污染防治法》), the Water Pollution Prevention and Control Law of the PRC (《中華人民共和國水污染防治法》), the Law of the PRC on the Prevention and Control of Environment Pollution Caused by Solid Wastes (《中華人民共和國國體廢物污染環境防治法》), the Emission Standard of Pollutants for Coking Chemical Industry (《煉焦化學工業污染物排放標準》) (GB16171-2012), the Emission Standard of Air Pollutants for Boilers (《鍋爐大氣污染物排放標準》) (GB13271-2014), and actively implements the state's principles of construction of ecological civilization and concept of green development. The Group reduces pollutant emissions and develops new green coal chemical enterprise.

Relevant policies

The Group constantly formulates and improves environmental management rules and systems, it achieves shifting its development mode from uniflow of "resources – products – pollutant emissions" to recycling of "resources – products – renewable resources" and ultimately achieves the goal of "production with high efficiency, products being cleansed and doing no harm to the environment". Meanwhile, through effective management, the Group will achieve ultra-low emission of air pollutants, recycling and zero discharge of all of the wastewater, co-processing of hazardous wastes during the process and coal blending and coking, to achieve "zero" discharge of wastewater and hazardous wastes, to minimum the effects on the environment.

o Establish a sound environmental management system based on ISO14001 by forming an environmental management system with the Environmental Management Committee acting as the top management body, routine management provided by the Environmental Protection Department, technical support provided by the Technical Department, and each workstation assigned with an environmental officer responsible for environmental supervision. The responsibilities of all level of positions are specific while the objectives are clear, and ensure the operation of system continues to improve by establishment of an appraisal and incentive system. The Group has obtained the certification of ISO14001 Environmental Management System;

- Formulate and improve environmental management rules, such as Environmental Protection Management Rules, Regulations on Environmental Test Management, Regulations on Air and Dust Emissions Management, Regulations on Key Sewage Outfalls Management, Regulations on Solid Waste Management, 15 Rules for Environment Improvement of Jinma, etc.
- Increase the intensity of environmental inspection by focusing on supervision of pollution control facilities' operations, put more efforts more checking and increase frequency of checking by issuing Notice of Rectification with Time Limit for identified problems, and following up on the implementation to achieve closed-loop management; implementing comprehensive supervision on key places, thus ensuring that 24-hour, holistic, thorough supervision at all time and full coverage can be achieved;
- o Increase technological process innovations and cooperation between industries, universities and research institutes by focusing on researches to resolve prominent environmental problems, and make every effort to realize the utilization of "Three Wastes" as resources, and reduce pollutant emissions from the source. Technologies that the Group has taken part in their research and development, including advanced water treatment, dust removal from 5.5m coke ovens, salt extraction from desulfurized waste liquid, have won the Scientific and Technological Achievement Awards of Henan Province.

Measures to mitigate emissions Exhaust gas management

- Install coke oven coal gas recycling processor with utilization rate of coke oven coal gas reaching over 98%, which meets "Thirteenth Five-Year Plan" development plan requirements for coking industry;
- Install pollutant control measures and resource recycling devices for dust removal from flue gases, desulfurization and denitrification, chemical exhaust gas collection etc., and operate in stable condition and up-to-standard, and simultaneously link up with the pollutant monitoring and controlling platform of municipal environmental protection bureaus to achieve real-time monitoring;
- Construct fully enclosed coal storage facilities as supprot and dust suppression and removal facilities for coal transfer, coal crushing, coaling, coke pushing, coke quenching, coke screening, sulfur and ammonium drying. Among these facilities, coke pushing in coke ovens established dust removal facilities for ground stations, further reducing particulates emissions.

Wastewater management

- Construct wastewater processing and recycling facilities such as sewage treatment station, advanced treatment station for phenolic and cyanic wastewater, reclaimed water treatment station etc., and operate in stable condition and up-to-standard;
- Construct a multi-directional pipeline network of integrated wastewater recycling, optimize "water resource" control through methods such as cascade reuse and hierarchical use, achieving "zero" discharge of domestic and industrial wastewater.

Solid waste management

- Adopt new technique, new technology to reduce waste generation, for instance improving the production technique to have the modification process of coal asphalt no longer produced flash oil;
- Recycle all solid wastes generated in the coking process. For instance, use wastes such as tar residue, recycled asphalt residue, bituminous coal dust, sludge derived from sewage treatment etc. in coal blending and coking, achieving treatment with no harm; conduct advanced processing of hazardous wastes such as coal tar generated by coal gas purification, further enhancing the utilization value;
- A sound solid waste management ledger for regulation-compliant storage and disposal of waste has been set up: perform ground hardening at locations where solid wastes are generated, and set up barrier protection measures to prevent land contamination; the Group collectively collects and transports domestic wastes to refuse handling areas; construction wastes generated by new, rebuilding or expansion projects are used for site formation.

• Emission reduction results and emissions performance

The Group adheres to the principle of "control increment and reduce inventory". Through implementing and improving emissions management, the Group not only achieves "zero" discharge of wastewater and hazardous wastes, but at the same time also fulfils the allowable pollution loads set by environmental protection departments, i.e., 210 tons per year for $SO_{2^{\prime}}$ 1,700 tons per year for nitrogen oxides, 237 tons per year for particulates, fully achieving up-to-standard discharge.

During the Reporting Period, the Group was not involved in any material events in relation to litigation or corresponding penalties arising from violation of environmental regulations.

Type of Emissions	Unit	2018	2017
Total emissions volume of SO ₂	Ton	105.85	175.9
Intensity of SO ₂ emissions	Kg/RMB 10,000	1.4×10 ⁻²	3.4×10 ⁻³
Total emission volume of nitrogen oxides	Ton	949.98	1,249.8
Intensity of nitrogen oxides emissions	Kg/RMB 10,000	1.3×10 ⁻¹	2.4x10 ⁻²
Total emission volume of particulates	Ton	94.36	186.1
Intensity of particulate emissions	Kg/RMB 10,000	1.3×10 ⁻²	3.6x10 ⁻³
Total emission volume of greenhouse gases	tCO ₂ e	657,558.18	604,164.1
Intensity of greenhouse gases emissions	tCo ₂ e/RMB 10,000	88.24	1.176
Total discharge volume of sewage	Ton	—	
Intensity of sewage discharge	Ton/RMB 10,000	—	
Production volume of hazardous wastes	Ton	96,072.50	107,924.4
Intensity of hazardous waste production	Ton/RMB 10,000	13	21
Hazardous waste handling rate	%	100%	100%
Disposal volume of hazardous wastes	Ton	—	—
Production volume of non-hazardous wastes	Ton	148.9	176.2
Intensity of non-hazardous waste production	Ton/RMB 10,000	2.0×10 ⁻²	3.4x10 ⁻³
Non-hazardous waste handling rate	%	100	100
Disposal volume of non-hazardous wastes	Ton	—	

Emission data of emissions for 2017-2018

Note: Intensity = Total emission/discharge/production volume \div total revenue (in RMB)

Case: Sewage recycling, and achieve "zero" discharge

The Group attached great importance to the utilization efficiency of water resources for achieving sewage reduction and recycling. Over the years, the Group has improved significantly sewage treatment index and capacity through investing large funds, constructing sewage treatment system with advanced facilities and fully-equipped ancillaries to realize sewage recycling and "zero" discharge.

- Apply A²/O biological nitrogen removal process to upgrade treatment station for phenolic and cyanic wastewater with treatment capacity of 120 tons/hour (1,050,000 tons/year), the water quality after processing has met National Grade One Discharging Standard, which are used entirely in coke quenching water and advanced treatment of coke dry quenching;
- Invest RMB36,000,000 to build advanced treatment unit for phenolic and cyanic wastewater, and treat water with A²/O technology for the advanced treatment of raw water, which are used in dry quenching cogeneration boiler and cooling tower, with treatment capacity of 160 tons/hour (1,400,000 tons/year);
- Collect domestic wastewater, initial rainwater and part recycled water and sewerage in production area and transport to reclaimed water reuse unit. The wastewater treatment rate can reach 250 tons/hour, saving 2 million tons of water per year;
- Invest over RMB6 million to upgrade the treatment unit for phenolic and cyanic wastewater, and is capable of treating coking wastewater to meet National Grade One Discharging Standard without using freshwater.

Case: Harmless disposal of hazardous wastes, and achieve "zero" discharge

• Mix coal with hazardous wastes for coking: the Group recovers all hazardous solid wastes such as tar residue generated from production process, coal coke powder recycled from ground dedusting station and sludge derived from sewage treatment etc., and use them in coal blending in certain proportion, which reaching harmless disposal, reducing environmental pollution and reducing raw materials consumption, relevant data shows that the Group could recycle 2,470 tons of coal coke powder, 1,860 tons of tar residue and 4,925 tons of convertible standard coal per year.

Productization of salt extraction from desulfurized waste liquid:

Desulfurized waste liquid is the hazardous wastes generated after wet desulphurization of coke oven gas during the production process of coke. It is listed in the National Catalogue of Hazardous Wastes because of its high salt and toxicity. However, the double salt such as ammonium sulfate in desulfurized waste liquid is the important chemical materials, the Group conducts resource utilization through salt extraction technology, which not only eliminating environmental impacts but also creating important economic values.

Case: Upgrading coking furnace gas control measures to achieve ultra-low emission

In 2018, the Group invested RMB55 million in improving the denitration technology of four existing coking furnaces in phases one and two and upgrading coking furnace gas control measures with a view to meeting stringent pollutant emission standards. The technology improvement project adopts the SCR+cloth bag dust removal technology which is mature and stable in the industry. In October, this project smoothly passed the acceptance check conducted by the environmental protection authority. Since the commencement of operation of this project, pollutant emission concentration had been lowered significantly, among which oxides of nitrogen concentration reduced from 450mg/Nm³ to below 100mg/Nm³ and soot concentration reduced from 25-30mg/Nm³ to below 10mg/Nm³. This project eventually achieved the ultra-low national emission standard, ensured compliant emission of coking furnace gas.



Resource utilization

Shouldering the responsibility of "advancing industry-wide technical improvement, establishing

an environmental-friendly and energy-saving enterprise and fulfilling corporate social responsibilities", the Group determined improving comprehensive energy utilization level as one of the strategic missions for realizing sustainable development and improved the resource utilization level through management improvement and technical progress, thereby providing solid and powerful support for the sustainable development of the Group.

Management policies for resource utilization efficiency

With the aim of "saving energy and reducing emission, protecting the environment and realizing sustainable development" for its resource management, the Group treated low carbon development as an important driver for enhancing economic quality and efficiency under the new norm. In 2018, the Company deeply explored the potential of energy-saving during the process, which achieving energy cascade use by transformation of energy-saving and leveraging the energy management center to allocate smartly for achieving effective flow of energy, in order to further enhance energy management standard and reduce emission of greenhouse gas.

- o Establish sound energy management rules: Energy Management Rules, Energy Measurement Management Rules, Energy Utilization and Energy-saving Management Rules and Management Rules for Energy Assessment, Award and Punishment;
- o Establish energy management bodies: form an energy leading team, which is responsible for energy management of the Group, and further optimize resources consumption indicators in 2018, such as comprehensive energy consumption per ton of coke, fresh water consumption and electricity consumption;
- Promote clean production: conduct proper technological process research, improve technical equipment and extend the industrial chain to reduce energy consumption of technological processes and equipment. Technologies that the Group has taken part in their research and development, including automatic heating of coke ovens to save energy, have won the Scientific and Technological Achievement Award of Henan Province. The Group led the industry in different areas such as water and electricity saving, use of waste heat, integrated unit cost control etc.;
- o Advocate green office: establish an OA paperless office system and reduce paper usage;
- o Set gas mileage limit standards for vehicles, improve the utilization efficiency of shuttles and company vehicles and encourage employees to travel environmentally-friendly.

The Group consistently attached equal weightings to saving resources and improving the efficiency of resource utilization. By implementing and improving resource management, the Group effectively lowered energy and water consumption per unit output value and reduced greenhouse gas emission.

• Performance in use of resources

Performance in use of resources data in 2017-2018

Type of resources	Unit	2018	2017
Coal	Ton	2,640,726	2,893,037.3
Diesel	Ton	685.5	601
Gasoline	Ton	81.2	70.3
Net purchase of electricity	1,000 kWh	162.0	144.1
Net purchase of thermal power	GJ	267,106.4	25,644.9
Total volume of standard coal in integrated energy consumption	Ton of standard coal	2,709,362.3	410,736.5
Intensity of integrated energy consumption	Kg of standard coal /RMB 10,000	363.59	79.9
Total volume of freshwater consumption	Million Ton	2.2	4.1
Intensity of freshwater consumption	Kg/RMB 1,000	295.23	800.2
Recycling rate of water for industrial use	%	98	98.9
Packaging	Ton	N/A	N/A

Note: 1. Intensity = Total volume of energy or water consumption \div total revenue (in RMB); 2. In 2017, integrated energy consumption mainly composed the process energy consumption of coal chemical sector, 2018 is the full-caliber of integrated energy consumption; 3. In 2017, the water consumption of civil work of the new project of the Company was high, thus, water consumption in 2018 dropped in a larger extent as compared to 2017.

Innovation in science and technology

The Group has all along been insisting on being science and technology-oriented and innovation-driven by putting greater efforts in an innovative model combining with "production, education, research and practice" to introduce and absorb domestic and foreign advanced technologies and actively innovating in technologies, optimizing process and improving equipment. To stimulate the creativity of employees, the Company formulated the QC Group Activity Steps and Administrative Measures (《QC小組活動步驟及管理辦法》) for deployment of human resources flexibly as well as solving key issues such as process, technologies and quality with the principle of "small, practical, flexible, new". The Company stabilizes quality of process, improves quality of products, reduces materials consumption and improves production environment, as well as grant awards with different amounts to company-level, municipality-level and provincial-level technology achievements. University-enterprise jointly to establish a R&D platform to promote production, education, research and practice, which is the important internal driving force of our industry upgrade. The Company leverages coal-based ecology refined chemical laboratory so as to continue to enhance industrial application of new products, new technologies and new materials. In 2018, the Group had 85 research and development staffs.

Case: Boost "Informatization and Industrialization Integration" and Build "Smart Jinma"

In response to national policies for industrial informatization to allocate production resources efficiently and improve production automation, the Group decided to construct and implement the "Jinma Smart Management System Project" from November 2016 to June 2018 in light of the current informationization development. In August 2017, the Group was recognized as a national pilot enterprise on implementation of the integration of informatization and industrialization. The smart factory production control (emergency) management center, which was commissioned in October 2017, enable the Company to unitedly control the production resources (such as water, electricity, gas, steam, wind and sewage) of Jinyuan, Bohai, Jinning and Jinrui and be more balanced in energy mix to reduce resources consumption. The utilization rate of coke gas per ton increased from 95% to 100%; the annual increase in gas revenue is approximately RMB10 million, which improves the overall utilization rate of energy and increases its economic benefits.

In September 2018, the Group obtained the assessment certificate of the integration of informatization and industrialization system for the resource sharing and collaborative operation, management and control capabilities of the coal chemical industry chain enterprise, and successfully passed the assessment of the smart factory in Henan Province in October.



Case: Seek the new idea of "Resource Conservation" and release the new advantages of "Scientific and Technological Upgrade" The Group promoted cost reduction and efficiency enhancement through energy-saving technological upgrade, and drove the transformation and upgrading of enterprises with clean energy projects. In the recent years, the Company has been promoted the energy-saving management to transform towards a refined direction through a range of water-saving, energy-saving upgrade measures:

- To upgrade water treatment facilities: the Company achieved separate utilization and recycling of water resources through a series of upgrading measures, such as biochemical treatment, membrane treatment and salt extraction, and realized the use of water resources and recycling with its recycling rate of water for industrial use standing at 98.9% and its water consumption of coke gas per ton falling to 1.0m³, or 60% below the entry water consumption for coking industry.
- To upgrade production process: coke dry quenching process implemented in the new process significantly reduces consumption of fresh water and emission of dust;
- To improve resources utilization value: further increase the calorific value of coke oven gas, reduce utilization of energy and decrease carbon emission by implementation of the coke oven gas hydrogen production project;
- To implement energy-saving technical improvements: in 2018, the Company further improve the utilization efficiency of thermal energy by a series of energy-saving technical improvements measures such as replacement of heat insulation materials of heat recovery steam generator.

Protection of Environment and Natural Resources

The Group has fully considered and adopted measures to control the environmental impact during project construction and operation, protecting the natural environment with responsible attitude and behavior. In 2018, the Company carried out reconstruction work of turning coal storage yards into a fully-enclosed coal storage yards. The environmental impact of fugitive dust was fully considered during the construction process.

- Strictly implement "Three Simultaneity" rules and environmental impact assessment rules. All new, rebuilding or expansion projects have to prepare environmental impact assessment reports as required, and obtain the approval of competent departments;
- To avoid the adverse impact of noise and exhaust gas emission generated during project construction and operation on surrounding residential areas, the Group sets air protection distance in strict accordance with the requirements of the environmental impact assessment approvals, operates environmental protection facilities and devices in safe and stable condition to ensure up-to-standard discharge and reduce impact on natural environment. Meanwhile, the site selection and land used for new, rebuilding or expansion projects should avoid occupying agricultural and forest land, and soil control measures should be strictly implemented to prevent soil environmental pollution;
- Ensure that the environmental protection measures are in place during project construction and operation, reducing impact on natural environment;
- Invest to construct and expand reservoirs, and collect surface water such as rainwater for production use, so as to reduce groundwater usage during project operation;
- Hold activities like voluntary tree planting etc., and greening at the Group's factory areas and surrounding wastelands, and carry out public welfare activities such as donations for environmental protection purposes.

Case: New construction of fully-enclosed coal storage yards, the last kilometre to solve dust pollution

In 2018, the Group implemented full enclosure renovation of the existing coal storage yards to solve the dust pollution of coal storage yards from the source, and reduce the impact of rain erosion and strong winds on the external environment effectively. During the construction period, the bare materials should be well covered, the coal unloading and reclaiming processes should be arranged reasonably, the sprinkling and dust reduction of coal transportation roads should be strengthened, and the vehicle wash station equipment is installed so as to minimize the dust pollution.





Case: Reconstruction and expansion of the Zenan Reservoir to optimize the use of water resources

Since its establishment and commencement of operations, the Group has, from a perspective of ecological and economic benefits, purchased and modified the Zenan Reservoir using self-raised funding to serve as a source of self-supplied industrial water, fully recycling rainwater. In 2008, the Group reinvested RMB15 million to expand the phase 2 of the Zenan Reservoir, which can collect 0.2 million tons of rainwater per year. The construction of the reservoir not only reduces groundwater extraction, but also replenishes some groundwater, easing the strains on the natural water cycle, and plays an important role in water and land conservation and ecological enhancement.

Social Responsibilities

Employment

The Group stringently complies with relevant employment laws and regulations, including the Labour Law of the PRC (《中華人民共和國 勞動法》), the Labour Contract Law of the PRC (《中華人民共和國勞動合同法》). By adhering to the principle of equality, conforming to employment standards, showing care towards employees, employees' sense of belongingness is enhanced, and harmonious relations between the Group and employees are promoted.

During the Reporting Period, the Group did not violate any relevant employment laws and regulations.

Number of employees

As at the end of the Reporting Period, the Group has 1,508 employees (2017: 1,361 employees). The staff turnover rate in 2018 was 5.96%. (2017: 0.2%)





Case: Recruiting high-level talents and strengthening the construction of talent echelon

The Group has always adhered to the philosophy of talents being important assets. We invest about RMB2 million per year to broaden recruitment channels, recruit high-level talents, and strengthen cooperation with colleges including Tsinghua University, Xiamen University, Zhejiang University, Zhengzhou University, Anhui University of Technology to further enhance management level and business capability of existing middle and senior management personnel and technical personnel.

Rights and interests and development of employees

Employees are the foundation of enterprise and closely tied to the enterprise development. The Group earnestly protects the legitimate rights and interests of employees through constantly establishing, improving and implementing relevant recruitment and remuneration rules and systems.

Fair and standard recruitment and dismissal system

- The Company formulates and implements the Regulations on Management of Recruitment of Employees and the Regulations on Management of Resignation of Employees, which clearly define recruitment and dismissal conditions to form fair and standard employment conditions. In 2018, the signing rate of employee labour contract was 100% and the staff turnover rate was 5.96%;
- Focusing on recruiting highly-educated, high-caliber and highly-skilled talents and staff for special posts.

Open and transparent assessment and promotion mechanism

• The Company formulates open and transparent employee assessment and promotion mechanism, to ensure that each employee is fairly assessed and reasonably promoted during his/her tenure.

Clear and concise rules on attendance and vacation

• The Company formulates clear and concise rules on attendance and vacation, to fully protect the employees' rights to have rest and vacation.

Equal opportunity, diversity and anti-discrimination

• The Company emphasizes on building a diversified team, providing equal opportunity for employees to demonstrate their capabilities, strictly preventing discrimination against gender and other aspects.

Scientific and reasonable remuneration system

• The Company establishes a scientific and reasonable remuneration system which offers competitive remuneration to employees. It also pays basic social insurance premium according to law for employees, such as pensions, medical treatments, unemployment, work-related injuries, and birth etc., and establishes employee welfare systems such as housing provident funds.

Democratic communication

- Supporting the trade union to carry out work independently and elect the trade union chairman democratically in accordance with the relevant provisions under the Trade Union Law of the PRC (《中華人民共和國工會法》) and the Constitution of Trade Unions in China (《中國工會章程》);
- Implementing the system of employee representatives meeting to consider major decisions of the Group and significant issues relevant to the personal interests of employees, such as bonus, allocation plans of income and welfare distribution, and to evaluate work reports presented by leaders of the Group at the annual employee representatives meeting;
- Strongly promoting the transparency of factory affairs through various media and in various forms, such as organizing quarterly experience symposium for employee representatives, monthly meeting on factory affairs and weekly meeting on production scheduling, while at the same time updating information on factory affairs in the open column for factory affairs and in internal monthly bulletins, widening the channels for democratic decisions, democratic management and democratic supervision by employees, and listening to opinions and suggestions from employees;
- Protecting the rights of information, participation and supervision for employees and enhancing the coordination and communication between the enterprise and employees.

• Other benefits and welfare

We attach great importance to the work and life of our employees, actively organise activities to show employees with care, helping employees to improve work and life qualities and enhance their well-being through various methods, so as to create a harmonious corporate environment.

- o Establishing employee mutual funds to provide relief fund for poor families;
- o Paying attention to the physical health of female employees and providing special physical examination and subsidies for women, with the completion rate of health examination amounting to 100%;
- o Improving the work status of employees and providing holiday welfare for them;
- o Implementing family welfare activities for employees, including granting a subsidy of RMB100 and RMB200 respectively to each of our employees' parents over 70 years old on his/her birthday and the Double Ninth Festival, and granting a subsidy of RMB3,000 to each children admitted to the university per year.

Case: Establishing a mutual fund to provide relief fund for poor employees

In order to set up more sustainable employee relief mechanism and solve practical problems for employees who have encountered difficulties, and to build a harmonious enterprise, the Group established the "Jinma Jiaohua Mutual Fund (金馬焦化互助基金)" in July 2010.

The fund raising adopts the principle of voluntariness and fully promotes the spirit of "one person has difficulty, 10,000 people support" and receives positive response from the employees of the Group. Since the establishment of the mutual fund, the Group has been insisting on carrying out the annual assistance activities for poor employees.

In 2018, the Group provided assistance to 41 poor employee families, and amount of the subsidies granted reached RMB43,500.

Case: Enriching cultural and sports life

The Group attaches great importance to maintaining the balance between employees' work and life, and advocates the concept of "loving sports, enjoying work and life", and creates Humanistic Jinma (人文金馬) through various cultural and sports activities. On 19 September 2018, the 19th Games of Jiyuan City (濟源市第十九屆運動會) was opened and more than 80 contestants from the Group participated in the competition. They finally achieved excellent results in the group tug-of-war and skipping rope competitions and track and field events, and the Group was awarded the title of Excellent Organizer by the Jiyuan City General Labour Union.



Occupational Health and Safety

• Relevant laws and regulations

The Group has always adhered to the work policy of safety first, prevention-oriented and comprehensive management (安全第一、 預防為主、綜合治理), strengthened foundation and overcome the obstacles and difficulties; abided by criteria set by relevant safety laws and regulations, including the Work Safety Law of the PRC (《中華人民共和國安全生產法》) and the Law of the PRC on the Prevention and Control of Occupational Diseases (《中華人民共和國職業病防治法》), fully implemented safe production responsibility system at all levels, continuously strengthened the safety awareness among all staff and steadily promotes the construction of a safety standardization system. During the Reporting Period, the safety production situation has been generally stable.

During the Reporting Period, no deaths or major injury accidents had occurred.

Structure of Production Safety Management System



Organizational Mechanism

The Group establishes a Safe Production Committee headed by the General Manager and consisting of top management, forming a safe production management organizational body covering the Safe Production Committee, Safety Department/subsidiaries, workstations, work sections and teams, thus guaranteeing effective implementation of various management rules and standards of the Group.

Rules and standards

The Group has revised and improved the Safety Standardization Management Manual of Henan Jinma Energy Company Limited, which includes 58 management rules and 17 occupational health management rules such as the Collection on Safe Production Responsibility Rules, Safe Operation Management Rules and Regulations on Safe Management of Special Equipment, becoming the document and conduct rules guiding safe working.

Assessment and supervision

The Group follows up, supervises and assesses production operations, focusing on integrated assessment of various areas such as the establishment status of safety management and post responsibilities, the implementation status of education and safety inspection rules, the control status of safety accidents, the management status of accidents and risks, inspection and treatment status of potential hazards etc., to constantly enhance safety management performance.

Inspection and rectification

- Inspection and rectification of potential hazards have been stepped up continuously to discover and eliminate potential hazards in a timely manner, the entire process of inspection, registration, rectification, supervision and elimination is standardized without leaving any blank area to ensure that the potential hazards are treated;
- On-site safety supervision has been seriously implemented. In 2018, the safe management staff of the Company strictly implemented the "three comments three actions" mechanism on hot work operation, restricted space operation, blocking of blind plates, high place operation, hoisting and installation operation, temporary power use and ground-breaking operation, the safety of employees is effectively protected.



Emergency drills

• The Group formulates annual work plans for emergency drills, and actively carries out various emergency drills by workshop, by profession and by area to enhance the response capability and skills of emergency teams and relevant departments in handling emergencies, thus laying the foundation for better emergency rescue works.

Occupational health

• Dynamic monitoring and evaluation of occupational hazardous factors in work place continue to strengthen. Labour protective gears are distributed to staff according to the requirements of the job position. Medical examinations for occupational health are organized before employment, during employment and upon departure. Re-examinations are organized for staff with abnormality in annual medical examination. Redeployment is arranged immediately for staff with occupational contraindications.

Case: Implement security inspection and keep the security line

The Group continued to strengthen on-site safety management to ensure the smooth and safe implementation of maintenance work. In 2018, the safety management staff of the Group supervised a total of 505 level 1 hot work operations, 97 restricted space operations, 23 blind plate pumping operations, 298 high-place operation, 18 hoisting operations, 181 temporary power operations and 6 earth-moving operations, and no safety violations occurred, effectively protecting the safety of its employees.



Case: Conduct emergency drills and build security defense-line

The Group always bears in mind in safety first and taking precautions, formulates relevant emergency drill work plans, and actively carries out emergency drills.

In 2018, the Group carried out drills on the emergency response plan for power outages, heatstroke, fire prevention, water stoppage, anti-leakage and explosion. Through such drills, its employees further enhanced their safety awareness, clearly understand emergency response and rescue procedures and relevant rescue methods, enhanced the safety awareness of all employees, strengthened its employees' awareness of emergency response and fire accident prevention and their capabilities of accident rescue and disposal, which secured the effects of "responding rapidly, coordinating orderly, responding properly and minimizing losses" in the event of an accident.



• Safety education and training

The Group continually carries out safety publicity and education for employees. Through implementing multi-level, multi-channel and targeted safety trainings and safety publicity materials consisting of vivid images and detailed texts, employees' safety concepts, safety awareness and technical skills are effectively improved. In 2018, The Group has over 2,000 employees and conducts over 190 safety trainings.

Case: Training is crucial to safe production

It is an import process in implementing safety management, publicity and education of safe production for the Group to carry out various safety training activities, enhance employees' awareness on safety and rectify their danger behavior during their daily work.

On 21 May 2018, to further enhance the Group's safety management and ensure safe production, the Group invited Professor Shen Xia from School of Emergency Management of Henan Polytechnic University to give training in respect of dual-prevention mechanism featuring hierarchical control of safety risks and identification and elimination of hidden dangers to the Group's 120 safe production management employees.

Development and Training

The Group pays attention to training talents and spares no efforts in creating various learning and development opportunities in multiple fields to train talents at all levels with high comprehensive quality, excellent expertise and strong management capability.

Relevant policies

Enhance the establishment of management system for nurturing talents

Enhance the nurturing mechanism for excellent talents, formulating Proposal of Selecting, Nurturing and Managing Excellent

Talents, build up a nurture system for professional knowledge and skills in terms of management, law, internal control, technology, quality and environmental protection etc..

Establish a scientific and effective assessment and evaluation mechanism

• Formulate a scientific and feasible talent assessment method to select excellent talents.

Enhance talent exchange, expand development channel

 Increase the nurture and exchange intensity of talents, persist in improving rotation mechanism for talents so as to nurture experiences through plans and different posts, promote excellent talents in exceptional cases, ensure that the outstanding talents are retained and provided with relevant development.



Focus on nurturing young reserve cadre talents

 Focus on selecting young reserve cadre talents with high mindset quality, advanced professional skills, strong work capabilities, conduct systematic and comprehensive nurturing, and including nurturing plans for such young cadres into the "Thirteenth Five-Year Plan" development strategy of the Company.

Training performance

Name of indicator	Unit	2018	2017
Total number of training	Times	12	12
Total number of participants	Persons	2800	2500
Expenditure on training	RMB ten thousand	28	30

The percentage/average training time is classified as follows according to gender and employment type for the employees trained in 2017&2018:

Туре	2018	2017	2018	2017
	Number (%)		Average time (hours)	
Gender				
Male	(81.0%)	1,100 (88.0%)	48,000	4,400
Female	(19.0%)	150 (12.0%)	11,200	6,000
Employment type				
Ordinary employees	(96.8%)	1,210 (96.8%)	58,400	48,400
Middle management	(2.5%)	30 (2.4%)	1,520	1,200
Senior management	(0.6%)	10 (0.8%)	400	400

Labour Standards

Relevant laws and regulations

The Group stringently complies with relevant laws and regulations, including the Labour Law of the PRC (《中華人民共和國勞動法》), the Labour Contract Law of the PRC (《中華人民共和國勞動合同法》), the Provisions on the Prohibition of Using Child Labour (《禁止使用童工規定》), forbids behaviour of employing child labour and enforcing forced labour in all forms. The Group also actively conducts democratic communications, encourages employees to participate in the Group's decision-making, and collaborate to promote and witness the enterprise's development.

• Prohibition of employing child labour and forced labour

The Group strictly prohibits employing child labour and forced labour, and strictly reviews and verifies the information of job applicants during the employee recruitment process every year, to prevent employment of child labour at source. In addition, the Group increase management of the employees' working time by sticking to the statutory working time of 8 hours per day or 40 hours per week, and hence prevents forced labour from happening.

During the Reporting Period, the Group was not involved in any litigation relating to employment of child labour, forced labour and material breach in labour laws.

Paying attention to communication between the employers and employees

The Group strictly adheres to the principle of employee-run enterprise, and supports trade union to carry out work independently and democratically elect the trade union chairman, in accordance with the relevant stipulations under the Trade Union Law of the PRC (《中 華人民共和國工會法》) and the Constitution of Trade Unions of China (《中國工會章程》). At the same time, the Group implements the employee representatives meeting and factory affairs publicity systems to propel the democratic management systems being more sound and improved, and the Group greatly supports publicizing of factory affairs, expand channels of democratic decision-making, democratic management and democratic supervising, to allow employees to learn about the Group's important decisions, important issues in production, operation and management, hence guaranteeing the employees' rights to participate in democratic management. The Group establishes a sound multi-level organization network, through methods such as employee representatives meeting, equal negotiation and collective contract system, and publicize through various media and in various forms etc., guarantees smooth communication across various multi-channels both laterally and horizontally. Through publicizing factory affairs, corporate democratic decisions are effectively promoted, corporate scientific management level is enhanced, and has gained recognition both internally and externally.

- o Employee representatives meeting: strict implementation of the employee representatives meeting rules, important corporate decisions and other material events relevant to the personal interests of employees, for instance award and punishment of employees, proposals on allocation of income, welfare distribution etc., are subject to consideration and approval of the employee representatives meeting, the Group's leaders' reports and evaluations are also presented during annual employee representatives meeting;
- o Equal negotiation and collective contract system: items which involve employee's fundamental rights and interests are subject to equal negotiation, and confirmed in the form of signing collective contracts. The collective contracts negotiation group is responsible for supervising the implementation, and reports to the employee representatives meeting every year; and
- o Publicize through various media and in various forms: one method is to publicize during meetings, for instance quarterly operation symposiums for employee representatives, monthly meeting between factory affairs committee and chairmen of different trade union branches, weekly meeting on production control; second method is to publicize through publication columns, for instance quarterly factory affairs publication column, monthly internal magazines, and public information column of factory affairs which is updated from time to time. In addition, the Group also encourages each department to actively explore effective methods of publication based on their own pragmatic viewpoints, for instance making public to employees the completion status of targets, results of team bonuses distribution etc. through publication columns.

Supply Chain Management

The Group adheres to our business concept of "Creating a win-win situation with integrity and cooperation", formulates supply chain management rules in accordance with a combination of relevant national laws and regulations and actual conditions of the Group's supply chain, enhances verification, management and evaluation of suppliers, urges suppliers to fulfil their environmental and social responsibilities to enhance their ability to perform, thus ensuring the stability and efficiency of the Group's supply chain.

The Group formulates and implements rules such as Supplier Evaluation Management Rules, Credit Evaluation of Qualified Suppliers Rules, Raw Material Coal Procurement Management Rules etc., and selects qualified suppliers through comparison of various areas such as

supplier's corporate scale, transportation capability, product quality, after-sale service, fulfilment of environmental and social responsibilities etc.. Based on the importance of the suppliers' products to the Group's production, the raw materials and auxiliary materials provided by the suppliers are classified and evaluated:

- o Type A Key materials: evaluation of qualified supplier is conducted every half a year;
- o Type B Important materials: evaluation of qualified supplier is conducted once every year, so as to ensure that materials procured from different types of suppliers meet the Group's requirements, and guarantees the Group's stable production; and
- o Type C General materials: evaluation of qualified supplier is conducted once every year, so as to ensure that materials procured from different types of suppliers meet the Group's requirements, and guarantees the Group's stable production.

• Number of suppliers

As coking coal is the Group's principal raw material, its quality and stable supply directly affect the product quality and quantity. Therefore, the Group adopts the strategy of mainly relying on various mining bureaus, and taking local large private enterprises and local market providers as the supplementary supply resources, actively seeks out new suppliers to reduce reliance on a single region, continues to stabilize and optimize the coal supply structure, reduces rate of supplies loss associated with deliveries and shipment processes, controls procurement costs, fulfils supplies of low-sulfur main coking coal, fat coal, lean coking coal, high-sulfur main coking coal etc. with adequate quality and quantity.





Caption: The Company continues to enhance industrial chain communication, broadens the scope of cooperation, facilitates healthy and positive developments in upstream and downstream to create a win-win situation.

Product Responsibility

Relevant laws and regulations

The Group stringently complies with relevant laws and regulations, including the Product Quality Law of the PRC (《中華人民共和 國產品質量法》), optimises product layout, and keep a firm hold on product quality, so as to provide customers with qualified and satisfactory products. The Company has gradually improved the product quality control system and relevant rules, and constantly optimizes processes such as coal blending, coking, chemical production, processing of coal tar and benzene, so as to control production process in an all-rounded way, improving product quality and customer satisfaction.

During the Reporting Period, the Company adopted various management measures to promote quality and efficiency, and there was no material incident in relation to violation of laws and regulations related to products and services.

Product Layout

In accordance with the overall idea of "Achieving green and low-carbon recycling development, and promoting transformation and upgrading to enhance quality and efficiency", the Group continuously adjust and optimize the product structure, extend the industrial chain, enhance the added value of products, expand for further development, cultivate new economic growth points, to enhance the overall competitiveness of enterprises. In 2018, the Group was ranked the 32nd of Henan Top 100 Private Enterprises in the Manufacturing Industry (《河南民營企業製造業100強》) and the 48th of Henan Top 100 Private Enterprises (《河南民營企業100 强》).

Based on the industry cluster development structure featuring upstream and downstream linked in one cycle of "coal-coke-advanced processing of coal tar - fine chemicals - power generation", the Group establishes new industrial development mode with circular economy at the core, and has become a "coke producer and coking by-products processor" focusing on four main segments of coking, chemical industry, energy, and logistics and trading, and integrates coal chemical industry, fine chemical industry and logistics and trading, achieving the shift from a base for commodity coke to a base for energy services. The Group proposes the concept of integrated development between coal chemical industry and petrochemical industry, and through acquiring companies that process downstream products, constructs and operates clean energy projects such as LNG, coke granule coal gas, electric power generation with coke oven coal gas etc., enriches the product structure and expands the business scope, forming a cyclic industrial economic circle within the coal chemical industry.



Diagram: Transformation into an "efficient clean energy and chemical industrial enterprise"

Diagram: Platform operation and resource integration



Relevant Rules

• Further enhance the details of management rules, such as Control Standard and Reward and Punishment Rules for imported cleaned coal, Regulations on Quality Management, Regulations on the management of non-qualified products, stringently implementing and fully satisfying relevant industrial standards such as Coke for Metallurgy (GB/T1996-2003) and Coal Tar (YB/T5075-2010) for products such as coke and coal tar.

Relevant Management System

• The Group has commenced establishing quality control system since 2006, and have successfully obtained certification of ISO9000 Series of Quality Standards.

Relevant Measures

- The Company strictly monitors the quality of imported raw materials and auxiliary materials such as cleaned coal;
- Strictly implement product quality management rules, improve quality control capabilities for coking and advanced processing processes;
- Convene monthly meeting to analyse product quality, and resolve relevant issues. Invite experts to participate in exchanges on product quality;
- Provide good after-sale services and follow-up visits with customers, regularly surveying the level of customer satisfaction, so as to improve product quality in a timely manner. In 2018, the Company's average customer satisfaction amounted to 97.59%;
- Formulate and implement learning and training programs for employees, enhance job skills of employees, improve the overall quality of employees and ensure the stable production and consistent product quality.
- To satisfy the requirements of high quality on products from customers, the Group's subsidiary, Bohigh Chemical, implemented technological reform on the production process of modified coal asphalt. After the project has commenced operation, not only product quality and quantity have improvements, power consumption is also lower, customer requirements are satisfied, and we have received recognition and commendation from customers.
- The Company continuously improves the quality of coke and successfully developed a high quality coke or the customized coke at last to meet the customized demands from client through a series of technical upgrading measures and repeated experiments.

Anti-corruption

The Group stringently complies with relevant laws and regulations, including the Criminal Law of the PRC (《中華人民共和國刑法》), the Company Law of the PRC (《中華人民共和國公司法》) and the Interim Provisions on Banning Commercial Bribery (《關於禁止商業賄賂 行為的暫定規定》) issued by the State Administration for Industry & Commerce of the PRC, formulates several management rules such as Regulations on Management of Anti-corruption and Reporting Mechanism, Regulations on Protecting and Rewarding Informers, Regulations on Project Audit Management etc., and sets up Disciplinary and Investigation Committee as the routine institution of the Group's anti-corruption works, providing strong rules and organizational support for the Group's anti-corruption works.

The Group strictly controls sensitive links such as bid invitation and procurement etc., and constantly enhances the processes for open bid invitations, internal and external audits and examinations, staff supervision and management, and adds anti-corruption relevant clauses to all contracts to effectively avoid corruption from happening. In addition, the Group improves employees' anti-corruption awareness through methods such as continually carrying out activities such as having leaders and cadres sign the letter of commitment of constructing a clean and honest administration, and anti-corruption publicity and education etc..

During the Reporting Period, the Group did not incur any litigations or corresponding penalties arising from corruption or bribery.

Case: Anti-corruption training and publicity education

In order to cultivate employees' anti-corruption awareness and establish anti-corruption concepts, the Group regularly or irregularly uses distance education platforms to widely organize employees to watch educational films regarding the typical advanced deeds of anti-corruption models and anti-corruption



warnings, aiming to combine demonstration education with warning education and improve the effectiveness of publicity and education.

Community Investment

The Group always takes "fulfilling social responsibility" as the corporate mission, and remembers to practice the cultural concept of "stressing loyalty inside, stressing honesty outside, and stressing responsibility to the society". While achieving leapfrog development, the Group actively fulfils its social responsibilities, provides stakeholders with returns, cares for society and general public, pays attention to disadvantaged communities, pays attention to social education, actively contributes to building of socialist harmonious society, demonstrates sense of responsibility and style of an excellent enterprise.

The donation totaled RMB15.86 million since the establishment of the Group, and the donation totaled RMB3.0 million in 2018.

Harmony between village and enterprise

As a local large-scale private enterprise in Jiyuan City, we deeply recognises that the development of the Company is inseparable from the strong support of the surrounding communities. The Group has for many years continuously supported the surrounding communities and shared the results of corporate development, through various forms such as carrying out respect the elderly activities, assisting villagers of surrounding areas to find jobs etc., thus achieving harmonious relations between village and enterprise.

Case: Development with joint efforts under the paring poverty alleviation programme to achieve a win-win situation between village and enterprise

In recent years, while expanding its scale and accelerating its development, the enterprise have given priority to protecting the interests of the masses. All levels of the Group unanimously believe that we must not seek the development of enterprise at the expense of the interests of the surrounding people. At the same time of enterprise development, we must promote local economic development and bring tangible benefits to the local people, so as to achieve a win-win situation for both sides and promote harmonious development.

- Since 2009, the Group has invested more than RMB90 million successively to build the relocation and resettlement community for Wanghu Village to realize the overall relocation of Wanghu Village, which has fundamentally improved the living environment of Wanghu Village;
- In 2010, the Group invested RMB15 million to expand the Zenan Reservoir shared by village and enterprise, so that the Zenan Reservoir can better meet the irrigation and flood control of the surrounding villages and production water consumption of the enterprise;
- Starting from 2009, the Group donated more than RMB1 million for three consecutive years under the paring poverty alleviation programme to help Haoshan Village in Potou Town, increasing the per capita net income of residents every year;
- Since the establishment of its factory, the Group has arranged a total of 150 land occupation workers in the surrounding villages, accounting for 15% of the total number of employees in the Group; and arranged for more than 200 people to work on construction, loading and unloading of goods in the plant area for a long time.

Case: Caring for the elderly, warming the sunset

Before the Spring Festival in February and during the Chung Yeung Festival in September 2018, the main leaders of the Group cordially expressed their sincere sympathy to the elderly over 70 years old in the surrounding villages, and extended holiday's blessings and cordial greetings to them. They brought them money, rice, edible oil and other gifts. In the course of the conversation, they asked in detail about the life of the elderly and told them to take care of their bodies, maintain an optimistic and healthy mentality and wish them longevity and health.

Since its establishment, the Group has always attached great importance to the assistance and condolence work of the people in straitened circumstances in the surrounding villages, and implemented the concept of social responsibility, which has been fully affirmed and highly appraised by the residents of the surrounding villages.





Targeted poverty alleviation

The Group actively responded to the national call to implement the national targeted poverty alleviation policy by giving full play to the Group's own advantages and combining the actual situation of the targets under the poverty alleviation program, so as to vigorously develop industrial poverty alleviation, help the targeted regions to form a sustainable economic source and share economic development results.

In December 2018, the Henan Provincial Federation of Trade Unions and the Henan Provincial Office of Poverty Alleviation and Development awarded the Group "Tenfaced Red-banner Unit (十面紅旗單位)".



Case: Golden Farming makes another splendid achievement in respect of poverty alleviation and Jinma helps warm the hearts of the people

The Group cooperated with Wangwu Town to carry out "Golden Farming" poverty alleviation projects, the objects include chicken farmers, wheet farmers, fruit farmers and pig farmers. The "Construction of Sites + Provision of Seedling + Technical Guidance + Epidemic Prevention + Sales" model of breeding, production and marketing was adopted to ensure that the poor households have stable investment and stable income and steadily shake off poverty.

Chicken farmers poverty alleviation has been implemented. The first batch of hencoops and baby chicks have been distributed, and the Group will send antiepidemic prevention personnel to each household to do 4 antiepidemics every month, and provide feed-to-door service. Feed is also at the lowest price. Each farmer can produce about 700 kilograms of eggs a year, and the Group repurchases those eggs at RMB8 per catty. The poor households can increase their income by about RMB4,000 per year.

The remaining Projects will be fully implemented from 2019 onwards. In this way, poor households

can stay at home and increase their income to achieve poverty alleviation. The implementation of the "Golden Farming Project" is expected to increase the actual income of each household by RMB3,000-5,000 per year.





Case: Photovoltaic poverty alleviation

In response to the nation's efforts to win the fight against poverty and achieve the grand goal to take the lead in building a moderately prosperous society, according to the unified arrangement of the Jiyuan Municipal Party Committee and the Municipal Government, the Group have provided counterpart support for Guquan Village of Kejing Town in Jiyuan City, and signed the Industrial Poverty Alleviation Agreement with it, under which a 228 kW rooftop distributed photovoltaic power station project will be constructed in Guquan Village, aiming to realize the complete poverty alleviation of Guquan Village with industrial support. The total investment of photovoltaic power stations is approximately RMB3 million. Through this project, the villagers can realize "self-electricity consumption with excess electricity delivered on-grid", that is, the villagers can use the electric energy, and the excess electricity will be delivered on-grid to obtain a sustained and stable income.

The Group has invested RMB990,000 in start-up funds and transferred it to the Kejing Town People's Government through the Jiyuan City Charity Federation according to the progress of the project. After the project is put into operation, the property rights will be collectively owned by Guquan Village, and the village committee of Guquan Village is responsible for operation and management. The Municipal People's Congress Standing Committee and the town government will conduct the follow-up supervision to ensure that the industrial poverty alleviation is implemented, so as to realize the steady improvement of village collective economic income, the fundamental enhancement of public infrastructure construction of the village and the goal of finally achieving poverty alleviation.

• Support education

We attach great importance to education, and actively donate to various schools, so as to help improve education and teaching facilities and office conditions, strengthen teaching staff, and help students with difficulties complete their studies. Through the support education activities, it not only helped the development of the regional education industry, but also attracted some assisted students to join the Group after they finished their studies, which has strengthened the talent team of the Group.

Case: Seven years of good farming generated deserved rewards

The Group launched the Ten-year Plan for Charity Education in 2012. It plans to help 500 college students complete their studies. The list of sponsored students will be reported to each town's civil affairs office by the villages, and then summarized by the Municipal Charity Federation. The scholarships are uniformly issued by the Group.

This year is the 7th year of the implementation of the "Ten-years Plan for Charity Education". The Group has invested RMB5.695 million successively to support 350 students with difficulties, helping college students to complete their studies and encouraging them to make good use of precious time and be diligent and eager to learn on college campus so as to become a struggler of the new era.





Case: Fraternity living in hearts and scattering on campus

We remain true to our original aspiration and always take social responsibility. When celebrating the Teachers' Day, on 8 September 2018, the Group donated RMB200,000 to the "Bonus Fund for Excellent Teachers of No. 1 Middle School of Jiyuan" to support the rapid development of education in Jiyuan, which was the sixth donation successively after 2013. At the donation ceremony, the Education Bureau of Jiyuan City and No.1 Middle School of Jiyuan sang high praise for the Group's contribution to the education development in Jiyuan for the past years.

