



DONGGUANG CHEMICAL LIMITED
東光化工有限公司

(Incorporated in the Cayman Islands with limited liability)
Stock Code: 1702



2017

ENVIRONMENTAL,
SOCIAL AND
GOVERNANCE REPORT

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1 COMPANY PROFILE

1.1 About us

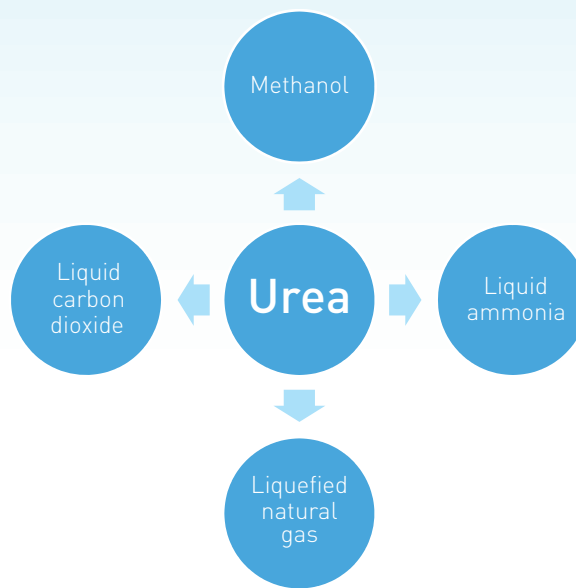
1.1.1 Brief Introduction

Hebei Dongguang Chemical Co.,Ltd ("**Dongguang Chemical**"), the indirect wholly owned subsidiary of Dongguang Chemical Limited (the "**Company**" and together with its subsidiaries, the "**Group**"), was originally established in 1970. Its predecessor, Hebei Dongguang Huafei Factory ("**Dongguang Huafei**"), was a local state-owned enterprise and was later privatized and reorganized in July 1998. On 11 July 2017, the Group was listed on the Main Board of the Stock Exchange of Hong Kong Limited (the "**Stock Exchange**"), (Stock code "**1702**").

We have an operating history of over 40 years in Hebei Province, and we have been operating in the urea industry since 2001. The early start in the urea industry had allowed us to develop into an experienced player in the region and maintain long-term and established relationships with customers in the industry. We have developed our production know-how and management which in turn enhances our production efficiency by increasing the quantity and improving the quality of our products while minimizing costs. Our management team has extensive experience and an in-depth understanding of the history and the future trends of the urea industry in PRC which is instrumental to our continued success.

We are a chemical company with urea production as our main business. As at 31 December 2017, the Group has 1,298 employees and total assets of approximately RMB2.0 billion, while Dongguang Chemical occupies a total area of approximately 700,000 square meters. We have been in a leading position among China's coal-based urea producers in recent years. In terms of revenue from the sale of industrial and agricultural urea, the financial performance of our company has been robust in recent years, ranking among the top urea production companies in China. Since our geographical locations are close to major national highways, railways and major ports of North China, we are able to react swiftly to the demands of different customers across different regions of the PRC. We have established a reputable brand in Hebei Province and nearby regions where our products are sold.

For the year ended 31 December 2017, the company recorded revenue of approximately RMB1,859.0 million and a net profit of approximately RMB46.9 million. As of 31 December 2017, the company reached total assets of approximately RMB2.0 billion and net assets of approximately RMB910.8 million.



The Group is one of the major coal-based urea producers in the PRC, with headquarter located in Hebei Province. The Group mainly produces and sells urea. It also produces and sells by-products of urea, including methanol, liquid carbon dioxide and liquefied natural gas. Urea is a white crystalline solid organic compound, which is widely used in agriculture as an effective neutral nitrogen fertilizer and in industry to produce various products such as adhesives, coatings, plastics and cosmetics. For the year ended 31 December 2017, the revenue from sales of urea accounted for over 86% of the total revenue. The urea products are sold to the end-users in the agricultural and manufacturing industries, and trading customers. These trading customers then sell urea to (i) farmers using urea as fertilizer; (ii) fertilizer trading companies that sell urea directly to farmers; (iii) compound fertilizer companies that use urea for the production of compound fertilizers; and (iv) chemical companies that use urea in the production of melamine and cyan uric acid.

Anthracite and bituminous coal is the major raw material required for the production of our major product, urea. Anthracite is used as a raw material in the production of urea while methanol, and bituminous coal is used to generate power for the production process and steam for the gasification process.

- Urea

Urea is a white crystalline solid organic compound with the chemical formula $\text{CO}(\text{NH}_2)_2$ and is also known by the International Non-proprietary Name (which is established by the World Health Organization) as “carbamide”. It is odorless, water-soluble, and non-toxic. Urea is an effective neutral nitrogen fertiliser for agricultural use with approximately 46% of nitrogen content. Therefore, it has the lowest transportation costs per unit of nitrogen nutrient. As the use of urea does not result in soil hazards, urea is one of the most popular nitrogen nutrients for farmers.

- Liquid carbon dioxide

The liquid carbon dioxide is produced by the degassing process of the air release body after purification, compression, purification, distillation and cooling. As a by-product of the production of urea, liquid carbon dioxide can be used in various industries such as catering, health and environmental protection, etc. It is most commonly used to extinguish small fires caused by flammable liquids, etc.; refrigerants for air conditioning in cars; and also the oil production process. It is also one of the important main raw materials.

- Methanol

Methanol is an important organic chemical raw material. It is also an important organic solvent. It is a colorless, volatile liquid with an alcoholic odor. It is also highly toxic, but it can be used as an artificial protein due to its high protein conversion rate, non-toxic and very economically. Methanol is widely used in pharmaceutical, chemical, energy and other industries. After processing, it can be used as fuel and mixed with gasoline combustion. Of course, the main application area of methanol is the production of formaldehyde, which can be used to produce adhesives. It is mainly used in the wood processing industry and it is also an indispensable raw material for the production of various synthetic resins.

The methanol production methods include gas-to-methanol, coal-to-methanol, and cooking gas to methanol. Because of the lack of natural gas resources, the company mainly uses coal to produce methanol, and is equipped with innovative equipment and utilizes technologies developed by China to facilitate the Competitors are in an advantage state.

- Liquefied natural gas

The main component of Liquefied natural gas is methane, which is recognized as the cleanest energy source on Earth. It is colorless, odorless, non-toxic, and non-corrosive. It is a relatively advanced energy source. As urea-by-products, it is also widely used in residential, industrial, and commercial industries; the most important industrial application is power generation. The advantages of Liquefied natural gas in ceramics, glass and other industries are even more obvious, which can greatly improve product quality or reduce costs. In addition, as a sustainable development of clean energy, it also has obvious environmental and social benefits, and is a premium alternative fuel for automobiles. With the improvement of the living standards of residents, the adoption of Liquefied natural gas for the residents of small and medium-sized cities and towns is gradually increasing.

- Liquid ammonia

As an important chemical raw material, ammonia is convenient for transportation and storage. Usually, gaseous ammonia is pressurized or cooled to obtain liquid ammonia. Liquid ammonia is a colorless liquid and is widely used in industry. However, because it is corrosive and volatile, the probability of a chemical accident is relatively high. Liquid ammonia is mainly used for the production of nitric acid, urea, and other chemical fertilizers. It can also be used as a raw material for medicines and pesticides. At the same time liquid ammonia has a certain bactericidal effect, so in the poultry farming industry, it is used for sterilization and cooling.

1.1.3 Corporate social responsibility

Entrepreneurial spirit	<ul style="list-style-type: none">• Open spirit• Unity spirit• Fighting spirit• Perseverance and enterprising spirit• Wholehearted dedication spirit
Business philosophy	<ul style="list-style-type: none">• The user is supreme• Sincere hospitality• Careful service
Management concept	<ul style="list-style-type: none">• Simultaneous development of reform and transformation• Equal emphasis on safety and benefits• Synchronization of environmental protection and development• Coexistence of quality and business
Social responsibility and values	<ul style="list-style-type: none">• Loyal to the company• Diligence and career• Dedicate to the society

1.2 Honors and Achievements

1.2.1 Overview

Since the establishment of the Group, we have won many honors with our good brand image, down-to-earth spirit, well-developed corporate governance structure, sound information disclosure system, and environmentally safe production awareness and concepts. We have been selected as China's top 20 urea production and profit of nitrogen fertilizer companies in 2017, China's top 50 nitrogen fertilizer industry in 2010, China's top 50 nitrogen fertilizer industry in 2011, top 20 urea production of nitrogen fertilizer companies in 2016, top 20 profit of nitrogen fertilizer companies in China in 2015, advanced technology enterprises in 2011 and 2012, advanced energy saving enterprise in 2015, advanced unit of energy saving and emission reduction in nitrogen fertilizer and methanol industry during the "Twelfth Five-Year Plan" period, Hebei Province High-integrity Enterprise, etc.

The following is an overview of the honors we received in the near years:



China's top 50 nitrogen fertilizer industry in 2010, China's top 50 nitrogen fertilizer industry in 2011, top 20 urea production of nitrogen fertilizer companies in 2016, top 20 urea production, profit of nitrogen fertilizer companies in 2017.

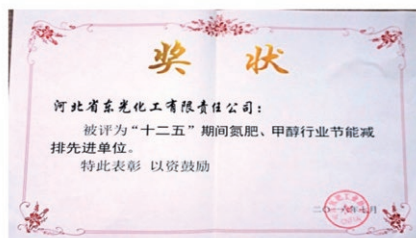
Top 20 profit of nitrogen fertilizer companies in China in 2015



Advanced technology enterprises in 2011–2012



Advanced energy saving enterprise in 2015



Advanced unit of energy saving and emission reduction in nitrogen fertilizer and methanol industry during the "Twelfth Five-Year Plan" period



Hebei Province High-integrity Enterprise, valid for two years.



Safety Production Standardization Second-Class Enterprise; Good standardizing practice certificate



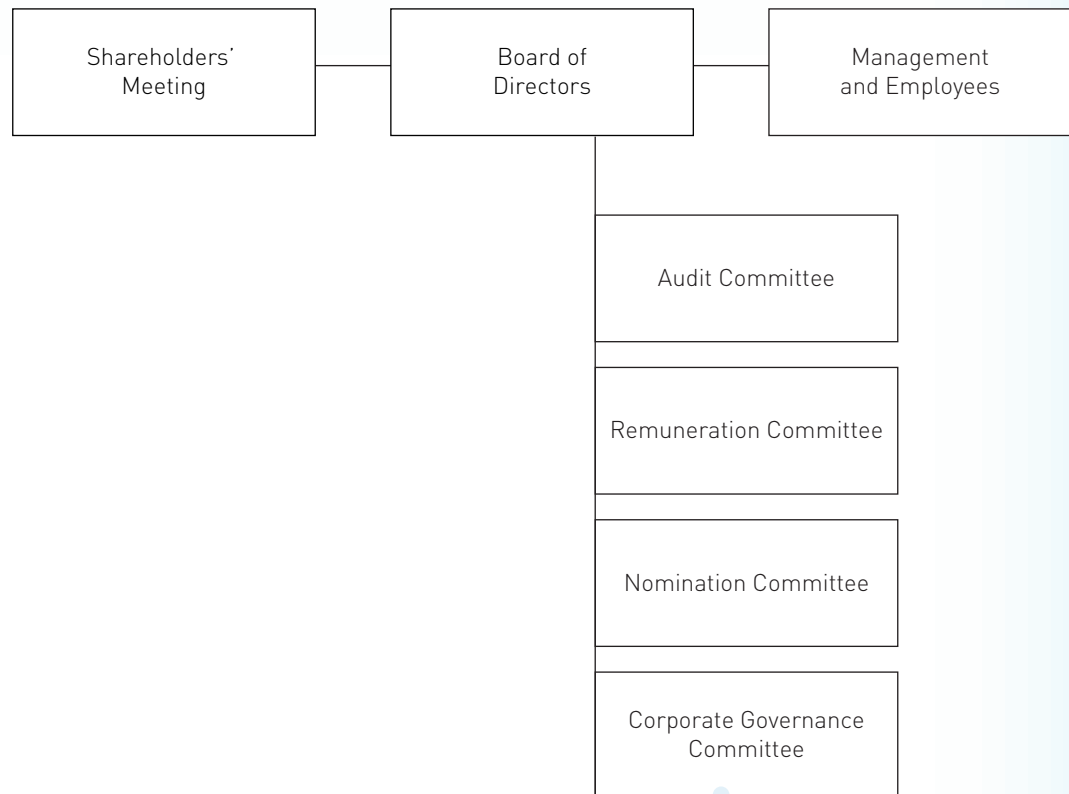
AAA Class Hebei Harmonious Labor Relations Enterprise in 2009

1.3 Corporate governance

1.3.1 Corporate governance framework

In accordance with related national laws and regulations, resolutions of shareholder general meetings and the Group's articles of association, the Group has defined the organizational hierarchy of the board of directors, management, and the Group's internal organizational structure, staffing, responsibilities and authorities, work procedures and related requirements. Management structure of the Group is shown in the following table:

Management structure of the Group



With reference to the above corporate governance system, the main conditions of corporate governance are as follows:

- (1) **Shareholders and Shareholders' Meetings:** The Group convenes general meetings of shareholders according to the "Articles of Association". During the reporting period, when the general meeting of shareholders of the Group reviewed relevant proposals and the Group's major business decisions, the topics of the meeting were considered through voting and the authorities were exercised according to law. During the meeting, the general meeting of shareholders reviewed and approved the reports of the board of directors, and approved the Group's annual financial statements.

- (2) The relationship between the controlling shareholder and the listed company: The resolution of the general meeting must be passed by more than half of the voting rights held by the shareholders attending the meeting. The controlling shareholders strictly abide by the relevant laws and regulations of the securities market, regulate their own corporate governance and information disclosure procedures, and perform their duties with due diligence to promote the standardized operation of listed companies and improve the quality of listed companies. The controlling shareholder shall safeguard the assets of the listed company and shall not infringe upon the possession, use, income, and disposal of the legal person's property by the listed company. The controlling shareholder fulfills its obligation of information disclosure strictly in accordance with the relevant regulations, and guarantees that the disclosed information is timely, true, and complete, and there are no false records, misleading statements or major omissions.
- (3) Directors and Board of Directors: All directors of the Group strictly exercise their powers and obligations in accordance with the "Articles of Association" and relevant laws and regulations, attach importance to the performance of duties and safeguard the interests of the Group. Directors of the Group need to include independent directors who are natural persons and not holding shares in the Group. The independent directors shall adopt a prudent, serious and diligent attitude and make objective and fair judgments on the proposals reviewed by the board of directors in accordance with their professional knowledge and abilities. Independent directors need to ensure that they have sufficient time and energy to perform their duties independently and effectively, to safeguard the Group's overall interests, and to always pay attention to the legitimate rights and interests of small and medium shareholders. Make correct judgments based on the Group's "related party transaction management system" to ensure that related party transactions are fair and reasonable.
- (4) Executives: The Group appoints and changes its executives strictly in accordance with the Group's "Articles of Association". The executives can perform their duties in accordance with laws and regulations, and they are responsible for the Group's operational management and performance. Besides, they need to comply with laws, administrative regulations and the Group's articles of incorporation, and to be loyal and diligent to the Group. Moreover, they need to try their best to realize the best interests of the Group.

1.3.2 Overview of Dongguang Chemical Limited's Board of Directors

As at 31 December 2017, the board of directors of the Company (the “**Board**”) was served by seven directors, including four executive directors and three independent non-executive directors as follows:

Name	Age	Position	Date of appointment	Date of joining the Group	Responsibility
Wang Zhihe	60	Executive director Chairman of the Board	2014.06.12	1998.07	Responsible for the Group's overall strategic development and lead the Group's business development
Sun Yi	63	Executive director Vice Chairman of the Board	2014.06.12	1998.07	Responsible for the Group's overall financial management and internal control
Sun Zushan	65	Executive director Chief Operating Officer	2014.06.12	1998.07	Responsible for the overall operational management of the Group
Xu Xijiang	56	Executive director Chief Technology Officer	2014.06.12	1998.07	Responsible for the overall technology and production management of the Group
Lin Xiuxiang	55	Independent non-executive director	2017.06.20	2017.06.20	Supervise the board and make independent judgments
Liu Jincheng	53	Independent non-executive director	2017.06.20	2017.06.20	Supervise the board and make independent judgments
Ng Sai Leung	45	Independent non-executive director	2017.06.20	2017.06.20	Supervise the board and make independent judgments

1.3.3 Overview of stakeholders and the communication with them

Stakeholders of the Group and the Group are interdependent to each other. Stakeholders achieve personal goals through the Group while the Group's development cannot be separated from the input or participation of various stakeholders. It is closely related to the Group's survival and development. Stakeholders are also crucial to corporate governance. Whether there is good communication with stakeholders directly affects the development of the Group, the Group should always maintain contact with stakeholders to facilitate understanding of the objectives and concerns of the stakeholders, and their opinions should be taken into account when making decisions. Some stakeholders share the Group's operating risks, some monitor and control the Group. Different stakeholders play different roles in the Group. Detailed information are as followed.

Stakeholders	Main objectives and focus	Communication channel	Measures
Shareholders and investors	Steady operations, revenue payback, protection of shareholders' rights; true, accurate, and timely disclosure of information.	Interim Report, Annual Report, Shareholders' Meeting, Stock Exchange Information Disclosure	According to the Listing Rules, regularly discloses interim reports, annual reports and announcements, and holds shareholders' meetings.
Customers	Product quality and quantity guarantee, long-term and stable cooperation.	Visit regularly and maintain daily communication.	Establish a quality inspection center and a customer service center. Strictly monitor product quality and provides customers with satisfactory products. While focus on protecting the interests of customers, facilitating customers and serving customers and ensuring the smooth delivery of goods.
Government	Operating legally, paying taxes according to law, producing safe and environmentally friendly, fulfilling social responsibilities	On-site inspections, work conference discussions, approval of work reports.	Legal operation, compliance management, and tax payment in accordance with the law. Strengthen company safety and environmental protection management; receive supervision and inspection by the government, and actively undertake social responsibilities.
Staff	Guarantee of fundamental rights and interests, welfare and remuneration, working environment, development space, occupational health and safety, self-value realization.	Trade unions, employees and management communication channels, set up a WeChat platform for employees to facilitate timely feedback on job suggestions, employee activities, training and learning.	Establish a corporate trade union organization to provide employees with a communication platform; pay compensation and benefits in full and on time, pay social insurance in accordance with the law; provide a healthy and safe working environment; establish a fair promotion mechanism; care for employees, help employees in difficulties, and organize employee activities.
Suppliers	Fair bidding, long-term stable cooperation and timely payment.	Bidding meetings, fairs, daily communication.	Fair bidding, selection of merit, performance of contracts as per contract, strengthening of daily communications, long-term cooperation with high-quality suppliers.

Stakeholders	Main objectives and focus	Communication channel	Measures
Bank	Repayment on schedule, operating conditions, business risks, honesty and credit.	Work conference, on-site inspection, post-loan tracking, and daily communication.	Repayment of loans and interest on time, cooperation with loan review and supervision.
Competitors	Fair competition, cooperative development, sharing of technology and experience, industry development.	Seminars, exchange visits, negotiations, industry conferences.	Practiced fair competition, achieved win-win cooperation, shared experiences, participated in industry seminars and research exchange activities for more than ten times, and promoted the sustainable development of the industry.
Market supervisor	Compliance with regulatory requirements, compliance management, disclosure of information and filing information.	Consulting, information disclosure, reporting, filing information.	Strictly abide by regulatory requirements, and disclose information and filing materials in a timely, accurate, and truthful manner according to law.

- Investor Relationship Management

Investor relationship is an important factor to enhance the Group's value. Strengthening the management of investor relations is beneficial to the Group's establishment of a good capital market, improvement of investor's recognition and loyalty to the Group, and then maximizes the relative value of the Group. The Group communicates with investors, regularly by disclose mid-year reports, annual reports and announcements in accordance with the Listing Rules and hold shareholders' meetings.

- Customer Relationship Management

Dongguang Chemical has fully developed its production technology and management since joining the industry, continuously improving the quantity and quality of its products and enabling the company to establish long-term and stable relationships with customers in the industry. We usually visit new customers before signing contracts with them, and discuss the quality of products and services required by them as well as their future purchases. We can basically satisfy the supply of urea products in North China and Northeast China.

In order to ensure the quality of products and the timely completion of orders by customers, the company adopted quality management and a set of quality control systems implemented in the production process. The main focuses are on product testing and inspection; and the quality control during the procedure of packaging and storage.

- Environmental Protection Agency Relationship Management

Cangzhou Environmental Protection Bureau Dongguang County Branch strictly follows the national environmental protection laws and regulations on Dongguang Chemical's environmental supervision and environmental monitoring. The environmental protection work of our company can meet the requirements of the Ministry of Environmental Protection.

2 ENVIRONMENTAL PERFORMANCE ANALYSIS

2.1 Overview of Relevant Environmental Protection Policies in Major Business Areas

Dongguang Chemical has been in strict compliance with laws and regulations of the PRC that are related to environmental protection. The respective regulations and policies that have a significant impact on us are detailed as follows.

Laws and Regulations	Authority and announcement date	Content
Hebei Province Air Pollution Control Regulations (Amended in 2016)	2016.1.13; NPC Standing Committee	To protect and improve the environment, prevent and control atmospheric pollution, safeguard public health, promote the construction of ecological civilization, and promote sustainable economic and social development.
《Law of the PRC on the prevention and control of atmospheric pollution》 (Amended in 2015)	2015.8.29; NPC Standing Committee	To protect and improve the environment, prevent pollution and other public hazards, safeguard public health, recommend ecological civilization construction, and promote sustainable economic and social development.
《Law of the PRC on environmental protection》 (Amended in 2014)	2014.4.24; NPC Standing Committee	To protect the environment, prevent and control pollution, and promote the development of pollution control technologies for the production of synthetic ammonia

2.2 Emissions Correlation Analysis

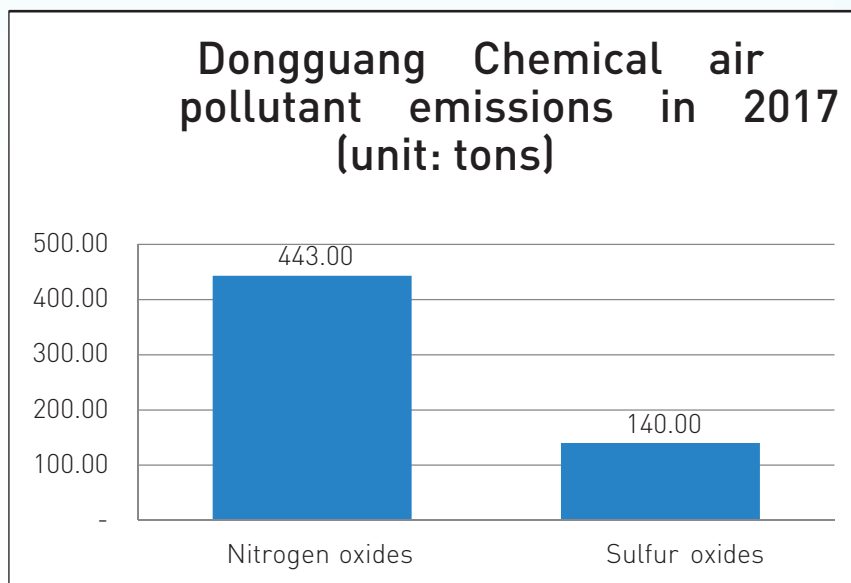
2.2.1 Analysis of Emission-related Indicators

Dongguang Chemical's air pollutants emitted due to fuel combustion mainly include nitrogen oxides (NOx), sulfur oxides (SOx) and particulate matter. Most of the exhaust gas comes from the burning of coal fuel, and a small part comes from the consumption of cars.

The company's main fuel combustion source is coal, and the fuel are mainly consumed by small and light vehicles, which mainly come from the driving of small cars. There is no consumption by passenger cars, trucks and other types of vehicles.

2.2.1.1 Exhaust emission data calculation

In the process of combustion, air pollutants such as nitrogen oxides, sulfur oxides, and particulates are emitted. Excessive discharge of pollutants can lead to air pollution. Therefore, the appropriate amount of pollutants is an important prerequisite and a priority for the chemical industry. The emission of each emission is calculated based on the data obtained and collected of Dongguang Chemical's gas fuel consumption and vehicle emissions and is shown in the following figure:



According to the standards set by the local environmental protection bureau for waste emissions, the annual limit of nitrogen oxides are 549.25 tons, and the annual limit of sulfur oxides are 327.1 tons. As shown in the above figures, the NO_x and SO_x emissions of the Group in 2017 were 443 tons and 140 tons respectively. Therefore the total emissions of the two major air pollutants have not exceeded the standard indicator.

2.2.1.2 GHG emissions data calculation

Greenhouse gases will be emitted through both direct and indirect methods. When fuels are burned via fixed and mobile sources, a certain amount of greenhouse gases such as carbon dioxide, methane, and nitrous oxide are directly emitted, which is Scope 1; The electricity provided will indirectly emit greenhouse gases which is Scope 2; Our company can basically recover carbon dioxide generated during the production process of fixed source combustion. The carbon dioxide recovered from this part is then produced into liquid carbon dioxide as by-product and then into the sales channel. The mobile source (small and light vehicle emissions) fuel consumption and emissions of carbon dioxide, methane and Nitrous Oxide amounted 205 tons of carbon dioxide equivalent. We calculate the carbon dioxide emissions of 642,600 tons of carbon dioxide equivalent via Dongguang chemical monthly electricity bills.

2.3 Waste classification and emissions

2.3.1 Waste classification and processing

Dongguang Chemical waste sorting and discharging in 2017 (Unit: Ton)

Category		Name	Collection	Treatment	Weight
General waste	Non-recyclable waste	Peel, residual food and other domestic waste;	Placed in company trash	Collection	6
		Slag and sludge	Place it in the designated depository	Burned by three-waste furnace	46,000
	Recyclable waste	Waste paper: waste newspapers, office waste paper, etc.	Place it in the designated depository	Dealt by waste recyclers	1.5

2.3.2 Solid waste emissions

Dongguang Chemical solid waste generation in 2017 (Unit: Ton)

Harmless waste	sludge 528
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The sludge produced by the Group has no emission index and is not discharged. Instead, it is directly sent to the three waste furnaces for combustion after being generated.

2.4 Resource Usage Analysis

2.4.1 Main energy consumption structure of enterprises

In 2017, Dongguang Chemical consumed 22 tons of gasoline, 43 tons of diesel, 0.35 million tons of raw coal, and 0.88 million tons of anthracite. At the same time, the power consumption related to the urea production is 1.02 billion kwh, the total water consumption of groundwater is about 510,000 tons, and the water density is 1.0×10³ Kg/m³. Among them, Dongguang Chemical applies water sources according to the relevant national environmental protection policies and regulations, and has always been adhering to the good habit of water conservation.

In 2017, the total energy consumption of Dongguang Chemical amounted to 1.20 million ton standard coal, of which 68.84% came from anthracite and the other 20.75% mainly came from raw coal.

Different types of energy consumption of Dongguang Chemical in 2017

(unit: ton standard coal)

Electricity	125,358.00
Anthracite	829,664.00
Raw coal	250,005.00
Gasoline	32.37
Diesel	62.66
total	1,205,122.03

2.4.2 Other energy consumption statistics

Since coal is the main source of the company's energy consumption, it is a difficult task for the company to develop the urea industrial chain through the system's maximum use of the gas emitted from urea production, while reducing energy consumption, emissions, and environmental pollution. As of the end of December 2017, the number and types of company office equipment have been calculated. There are 60 computers, 25 printers, 3 fax machines, and 1 copy machine. Overall, the number of equipment is small. In addition to work equipment, there are a total of 1,000 bulbs, all energy-saving lamps and 115 air conditioners which are all split-type.

Dongguang Chemical's sewage disposal capacity of 2017 is 30 cubic meters per hour. All sewage discharges are properly handled in accordance with relevant national environmental protection policies and regulations.

In addition, for the urea industry, the amount and treatment of fertilizer packaging also has important implications for the protection of human and animal security and the ecological environment. In 2017, the company used 1,340 tons of packaging bags, which accounted for 0.11% of each production unit. In order to strengthen the quality management of urea bags, the company has established a bag inspection and management system, strictly implements sampling inspections and issues inspection reports. Discarded packaging bags are standardized for recycling and unified scientific treatment to maximize the protection of the ecological environment.

2.4.3 Energy saving and emission reduction

Energy-saving and emission reduction is an important measure to implement the scientific concept of development, promote economic restructuring, change the mode of economic development, and increase the potential for sustainable development. Dongguang Chemical formulated related plans on energy-saving and emission reduction, and committed to implementing and achieving certain results. The company has completed several technical upgrades of the production line to further improve the energy-saving function in the production line process, including reducing the consumption of electricity. In 2016, Dongguang Chemical was awarded as the advanced unit for energy conservation and nitrogen reduction in the nitrogen fertilizer and methanol industries during the "Twelfth Five-Year Plan" period.

2.4.3.1 Freeze blocking and waste avoiding

In order to minimize waste, the company has done lots of job on preventing freezing. It is stipulated that the on-duty dispatcher should always pay close attention to the temperature change when the temperature reaches zero degree centigrade, and immediately notify the various positions to check the discharge status of each dredge to avoid the occurrence of frozen plugging events..

2.4.3.2 The use of heater

In order to reasonably control the on and off of heaters, the company stipulated that when the temperature is higher than 15 degrees centigrade, heating measures such as office buildings and workshops should be turned off, and heating should be performed at less than 15 degrees celsius according to the needs of the employees, so as to avoid waste of resources due to long-term heating.

2.4.3.3 Electricity-saving management

In accordance with the principle of maximizing electricity savings, the company stipulates the timely turn-off of office computers, the air-conditioner on-off control in the production workshop, and the prohibition of permanent lights in the factory area. The employees are required to turn off the lights and the fans when they leave the workshop. Drinking fountains need to be turned off after work.

2.4.3.4 The use of air-conditioning

The use of air-conditioning is based on the principles of safety management, energy saving and consumption reduction, so the company makes relevant regulations on the use of air-conditioning according to changes in seasonal temperatures. Doors and windows should be closed during use, air conditioners must not be arbitrarily changed the direction of the fan blades, and air conditioners and other energy-saving regulations should be promptly closed when off duty.

2.4.3.5 Water conservation

Water conservation is also an important measure for effective energy conservation and emission reduction. The company insists on eliminating the phenomenon of wasting water, and punishes it according to the assessment criteria such as long running water and other assessments. The situation of adding faucets needs to be declared to the production department, etc., and it can be implemented only after approval.

2.4.3.6 Energy saving

The company's production department formulates total energy-saving and consumption-reduction measures for gas production, purification, compression, and urea according to the actual conditions every month. The straight-through furnace is reformed to increase the gas production, and the effluent is added to the synthetic circulating water to reduce the chlorine content of the circulating water. The old stainless steel pipe was used to reform the leak detection of the urea synthesis tower. All parts of the production need to be improved to improve the device, choose a better process to optimize, from the perspective of environmental protection and energy conservation on the recovery of the emission of steam, to achieve more energy conservation and reduce the possibility of consumption.

2.5 Environmental protection

2.5.1 *Report on the air, water and noise situation of the plant*

Each year, the EPA entrusts or the company commissions a testing technology service company to inspect the company's operating conditions and environmental protection facilities. The monitoring of the locations and items corresponding to exhaust gas, waste water, and noise is performed according to the implementation of the standard values. The monitoring equipment is used to check whether the monitoring limits of the equipment exceed the standard values. Based on the inspection results, the test results are obtained and a monitoring report is issued. The company uses the monitoring report to obtain the discharge permit.

The monitoring report data of 2016 and 2017 shows that the monitoring values of exhaust gas, waste water and noise meet the local or national emission standard values.

2.5.2 *Pollution reduction measures*

2.5.2.1 Resource recycling

In the actual production process, the company strictly controls the heat of air-conditioning to use and recycle the urea system's steam condensate. Related workshops do not use steam heating, so white coal can be saved. Circulating cooling water (replacement water cooling and recycling, discharge part of it externally, and recycle part of it). In addition, the company's uses the residual heat generated by fuel combustion to generate electricity, which in turn saves some of the raw materials consumed by direct coal-fired power generation.

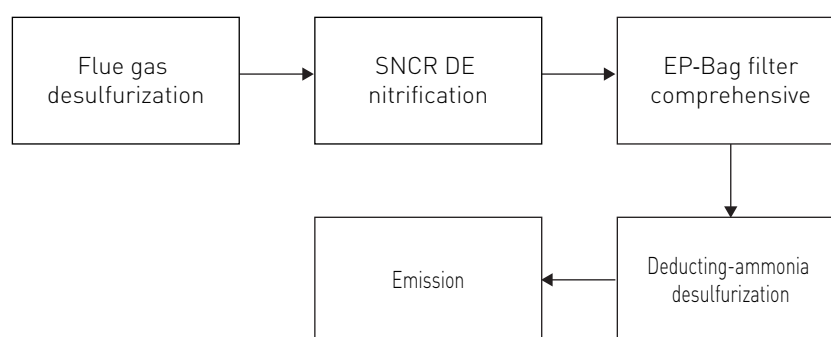
2.5.2.2 Waste treatment

Waste produced during the production of the chemical industry. Improper handling can cause severe pollution in the surrounding environment. Therefore, Dongguang Chemical can discharge the waste after it has passed treatment facilities. The technology adopted by the company in dealing with the exhaust gas generated during the boiler combustion process is SNCR DE nitrification- EP-Bag filter comprehensive -deducting-ammonia desulfurization, and finally reaches the national standard for discharge; the method for treating the gas-making coal slag is directly sent to the three-waste furnaces. The treatment of waste water is directly discharged into the sewage treatment tank and discharged after filtration.

2.5.3 Environmental system treatment process (handling harmful substances)

2.5.3.1 Waste gas/water/residue treatment flow chart

Waste gas treatment flow chart



The production process produces exhaust gas. The company has used the program to recycle the exhaust gas from the furnace fuel production process and also installed a wet scrubber to remove dust. The exhaust gas generated by the boiler is purified by electrostatic precipitators, DE nitrification and desulfurization equipment.

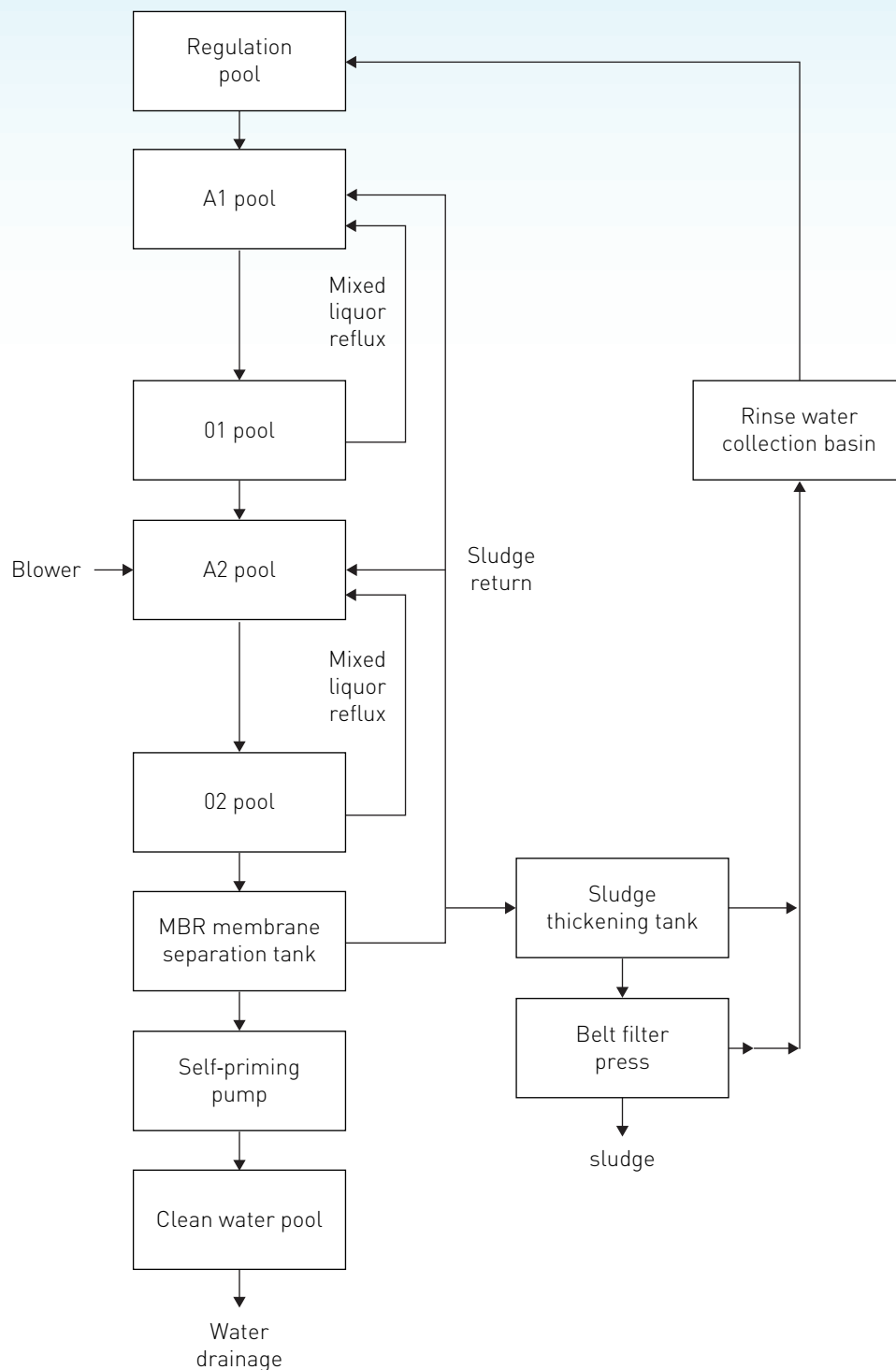
Waste slag processing flow chart



Unlike urea producers who use natural gas as their raw material, the production process and boilers of Dongguang Chemical generate a large amount of cinder. The company's cinder will be sent to the three-waste furnaces for combustion. After combustion, part of the slag will be recycled as boiler fuel and the company will sell other waste (such as dust collected by the dust collector) for construction purposes.

The three-waste furnace is a facility mainly used for the treatment of waste gas, waste residue, and coal waste. There are three stacks, including 90 tons of three-waste furnaces, 120 tons of three-waste furnaces, and 150 tons of boilers. The above three equipment have different discharge outlets, and they are all connected to the City Council, so that the information can be transparent enough and discharging according to indicators at all times. According to statistics, the actual operating number of the three chimneys is 24 hours/day in order to keep the production facilities uninterrupted. So far, the three waste furnace chimneys have operated for 349 days in January-December 2017, totaling 8,376 hours; in 2016, they have operated for 285 days; the total number is 6,840 hours. Due to the state's requirement for ultra-low emissions, January-March 2016 was the trial run phase. The chimney of the boiler was only officially used since March, and 191 days in 2016, a total of 4,584 hours; January-December in 2017, 305 days for a total of 7,320 hours.

Wastewater treatment flow chart



The company's production and operations need to comply with various PRC laws and regulations of environmental protection, occupational health and safety, government policies and industry standards applicable to the discharge of waste water, solid wastes and gases. The company has installed wastewater treatment facilities at No. 1 plant and No. 2 plant to handle all the wastewater generated by the company's products during the production process. The respective wastewater treatment capacity of the facilities is 1,920 tons and 600 tons per day. The treated waste water is recovered and used in the production process of the product.

2.5.3.2 Photos on emissions treatment

Waste water treatment facilities



Waste gas treatment facilities



3 CSR ANALYSIS

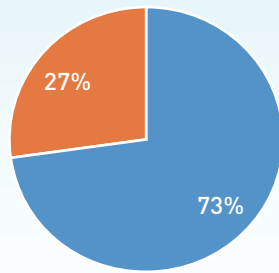
3.1 Employment and labor status analysis

3.1.1 Overview of staff employment and labor standards

Dongguang Chemical Co., Ltd. formulates a comprehensive staff employment rules and regulations in accordance with national and local policies regarding the employment of staff and labor conditions. From the employee handbook, it is seen that employees work eight hours a day and implement a three-shift system for factory workers. The office is closed for five days a month, and the production department is closed for eight or nine days a month. At the same time, employees legally enjoy any prescribed benefits, wages, and holidays. Staff recruitment employs employees in strict accordance with the company's established recruitment process and plans, and resolutely resists the recruitment of underage children as regular employees of the company. The company upholds the principle of "justice, openness and fairness" to motivate and restrain every employee.

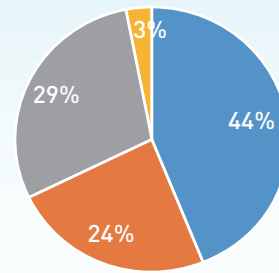
For the joint development of the company and its employees, every employee of Dongguang Chemical Company has the right and opportunity for promotion. In accordance with the company's performance evaluation implementation measures, the self-recommended employees are assessed and evaluated, and the qualified employees are promoted.

Dongguang Chemical's major indicators of employees in 2017



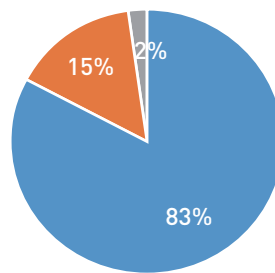
■ Male ■ Female

Gender



■ Below 30 ■ 31-40 ■ 41-50 ■ Above 50

Age



■ Technical secondary school and below
■ College
■ Undergraduate

Educational background

Dongguang Chemical's number of employees and turnover rate in 2017

Responsibilities	Number at y.e	Percentage at y.e	Number of staff left	Turnover rate
Functional management	179	13.79%	0	0.00%
Urea production	1,034	79.66%	17	1.31%
Other	85	6.55%	1	0.08%
Total	1,298	100.00%	18	1.39%

As of 31 December 2017, the total number of employees in Dongguang Chemical Co., Ltd. was 1,298, of which males accounted for a relatively larger proportion. In addition, a majority of the employees were involved in urea production. Overall, the company's annual turnover rate was small, and there was little change in personnel, so the overall situation is stable. Dongguang Chemical Co., Ltd. conducts health for all its employees each year and invites hospitals to provide "home service" to provide convenience for employees. In addition, employees in the production line also have physical examinations in hospitals that qualify for occupational health (safety) examinations. What's more, female employees are given special protection, additional examination items on women's health are added during the annual voluntary medical examinations. The company usually pays attention to the employees' entertainment activities, not only to carry out daily discussions and competitions, but also to provide employees with time to go out to play, so that employees can relax in the busy work and mind.

3.1.2 Overview of employee Health and Safety

In order to ensure the health of employees, prevent pollution, implement sustainable development strategies and gradually realize clean production, Dongguang Chemical Company issued the "Management Measures for Percentage Assessment of Production Systems" and "Eastern Environmental Protection Management Rules and Regulations" and other documents to establish a relatively perfect protection system. The company conducts a 100-point assessment on the bonuses of managers and all employees of each unit, based on the assessed result of staff's performance on safety and environmental protection, equipment and process management, the employee's labor discipline and the management of various specifications. And the employees' bonuses will be calculated based on the assessment results. The company will try its best to eliminate potential dangers of major accidents and deal with the hidden dangers discovered in time so as to ensure that employees have a good working environment.



In addition, the company organizes management personnel and all employees in batches to carry out safety warning education conferences to raise awareness of safety responsibilities of all employees to prevent accidents. The main speaker of the meeting is the company's manager who takes charge of safety production. The average length of the meeting is 2 hours and about 140 administrative officers attended the meeting. All the employees from the workshop are required to participate in educational meetings. The number of people participating in educational meetings in each batch was about 100. The meetings were held in the conference room of the production plant. The way to proceed is to select real safety cases for the company's employees to teach. The conferences are conducted in the form of slides. The frequency of similar meetings throughout the year is relatively high, with an average of up to once a month.



Photos of fire drill

The company conducts fire drills on a regular basis to prevent the fire from happening. In April 2017, the company organized a fire drill, where professionally trained production operators and firefighters conducted fire drills on equipment in the equipment area. A 2-3 hour fire drill enhances the ability of production operators to respond to fires or unexpected fire accidents, master the emergency fire response, and can truly and proficiently master the essentials of using fire extinguishers. Enhance the awareness of fire safety, institutionalize the company's fire safety activities, and lay a solid foundation for the company's fire prevention work.

As a chemical industry, the safety of production is the top priority for the company. In order to ensure safe production, the company formulates and implements rules and regulations such as Work Environment and Safety Management Measures, and Assessment Measures for Site Safety Management. Management measures according to the percentage production system to assess the daily production safety issues. The person in charge of each department is the first person responsible for civilized production. The Environmental Protection Department is responsible for the supervision and inspection of the company's civilized production management work, the implementation of routine inspections, periodic joint inspections, the notification of daily inspections and deadlines for the violations of the standards of civilized production assessment, as well as the daily inspection and rectification inspection records. The ledgers are drawn from the equipment maintenance ledgers for 2016 and 2017, as shown in the figure below. At the same time, the Department of Safety organizes a quarterly inspection of production, equipment, technology, electrical and instrumentation, and conducts comprehensive inspections. The safety responsibility system and the safety production management system are implemented as the inspection priorities to ensure the safe operation of equipment. In order to ensure that the safety facilities are complete, intact and in normal use, one-year repairs are performed on large substations, and small production facilities are also regularly maintained and maintained.

The company will also conduct seasonal and professional investigations on hidden dangers, and then compile inspection records. The safety department will create hidden accident files, clarify the hidden danger level, and follow the “Five Ding” principle, supervise the implementation of various measures for the management of hidden dangers, and manage the hidden troubles. Conduct monitoring to ensure that the management of hidden dangers is completed on schedule. It is necessary to rectify the hidden safety problems in a timely manner, and to take appropriate measures in time for those who are incapable of rectification. And fire equipment is in place to prevent accidents and other emergencies. Around the 15th of each month, labor and defense materials will be issued to ensure that employees’ supplies are adequate and complete on time.

In the initiative of the company’s employees and the frequent self-reviews of the workshop groups, there were no safety incidents in 2017.

Safety-production indicators	Times
Environmental pollution accident	0
Fire accident	0
Light-hurt accident	0
Severe accident	0
Death accident	0

Dongguang Chemical actively organizes workshop staff to receive education and training in 2017 in order to strengthen employees’ safety awareness and enhance employees’ safety knowledge. Major training programs include safe operation skills, emergency rescue training, protective equipment and emergency supplies training, and drill of possible endangerment or accidents that may happened in workshops. Besides, employees’ awareness of self-safety protection is also emphatically explained to ensure that not only product quality is satisfied, but also the working environment meets the safety-standard. In addition, the company organizes all employees to participate in a health examination every year with additional gynecological examinations provided to women. Last but not least, all employees must undergo pre-job training to master the necessary professional skills before starting work. Some employees may also need to acquire certificates to prevent unnecessary damage caused by the lack of skills.

3.1.3 Overview of staff development and training

In order to provide employees with a better working environment and development prospects, the company arranges various forms of on-the-job training, job skills competitions, daily discussion and study, touring trips, donations and other sorts of activities from time to time. The internal training of the company consists of on-the-job training and daily training which is usually followed by assessments. The content is mainly composed of two parts: process and safety. In 2017, there are 202 trainings, totaling 556 hours, and the cumulative number of participants throughout the year is 2,115.

Training Name/type	Content	Internal/ external	Acc. Hours (unit hours)	Acc. Times (unit times)	Acc. Participants (unit people)	Percent (acc. Part./ total staff)	Result
On-the-job training	process	internal	144	6	29	100%	Y
	safety	internal	216	72	29	100%	Y
Daily training	process	internal	50	50	985	76%	Y
	safety	internal	50	50	985	76%	Y
		internal	96	24	87	7%	Y
Total			556	202	2,115		

- Nitrogen fertilizer industry development training:

In order to keep an eye on and understand the industry standard and the competitive environment, the company leaders in charge of technological innovation organized all management personnel to conduct knowledge training on the theme of "Nitrogen fertilizer industry development status and future development direction" in May 2017. According to the company's current development status and performance, the management undertook more in-depth study of the market environment and strategic objectives. During the training, the scientific development and overall development goals of the nitrogen fertilizer industry were taken as the guidance, which would yield the optimization of Dongguang Chemical's product structure and the improvement of its economic benefits. Energy conservation and emission reduction were also the focus of training. After major measures in energy conservation achieved certain results, safety and environmental protection pressures have continued to increase. Therefore, strict control of energy conservation and environmental protection has been a core goal of the company's sustainable development and a long-term direction. Such training on the development of the industry is organized from time to time which on average amounts to once to twice a year.

- Job skills competitions:

The accurate mastery of skills and continuous improvement are very important for the development of employees' career. In respect of the staff skills competition held in Cangzhou, the company actively organized employees to participate in the competition in order to comprehensively improve the overall quality and skill level of front-line employees. Through the competitions, the company's employees are provided with opportunities for technical exchanges, mutual learning, and skill demonstration. At the same time, they also stimulate the spirit of their caring and respect for work, enthusiasm for technological innovation, and the spirit of helping one another. Not only has the staff's technical level and business skills been strengthened, but the overall quality of the team has also been improved.

- Daily discussion and learning:

Maintaining a continuous learning state and continuously improving their ideological awareness of mutual action and mutual assistance are important processes for self-management and promotion of employees. Dongguang Chemical provides the employees with a platform for daily communication, so that they are able to find deficiencies in their work and gaps between each other. Every day, the leaders in charge of production and workshop directors in production workshops need to take their time to participate in the group discussions held in the conference room of the production department. The daily production operation and the technological upgrading of the production process can both be the main contents of the discussion. The managers can leverage the opportunities to further understand the progress of the work. Employees can benefit from the discussion to impart work experience and address issues raised. Through discussion and study, employees have further enhanced their understanding of the work, clearly defined the direction of progress, enriched their work skills and spirit of innovation. As a result, they will achieve better performance in the future.

- Travel organized by Party Committee:

In order to relive the firm convictions when entering the party and the oath-enforcing party oath, to improve the ideological and political quality and to inherit the glorious tradition of the Communist Party of China, in July 2017, Dongguang Chemical's party committee organized party members and activists into three batches to travel to Xibaipo, one of the revolutionary holy places in China. Party members had a three-day red tourism activity and received revolutionary traditional education. About 100 of the company's total number of party members and activists participated in the event, visited the former site of the Central Committee of the Communist Party of China, exhibition halls and monuments, etc., and experienced the great rivers and mountains of the motherland, which further enhanced the pride of the nation. Although the time of education activities was short, it encouraged everyone's enthusiasm and relived the oath of joining the party, keeping in mind the original intention of joining the party, doing its own job, and making more contributions to the company with practical actions.



- Donations to economically difficult employees:

The Company pays attention to the lives of its employees and has been actively encouraging trade unions to strive to meet employees' demands. On 16 June 2017, the company's trade union committee submitted an application to the Dongguang County Federation of Trade Unions. Due to the high cost of surgery and treatment for the younger child of an employee, the family is in financial difficulty. Therefore, the application was made to the superior to help the employees to overcome difficulties. Effectively helping the grassroots to solve practical problems and the teamwork spirit of helping each other ensure the steady development of the business.

3.1.4 Guidelines and measures to prevent child labor or forced labor

The company strictly abides by state laws and regulations in labor and employment and strictly prohibits the employment of child labors. From the recruitment, registration, labor contracts and other aspects of strict control, to avoid child labor due to work errors. In the employment of the company and suppliers in 2017, neither the use of child labor nor the use of adolescent workers for high manual labor was found.

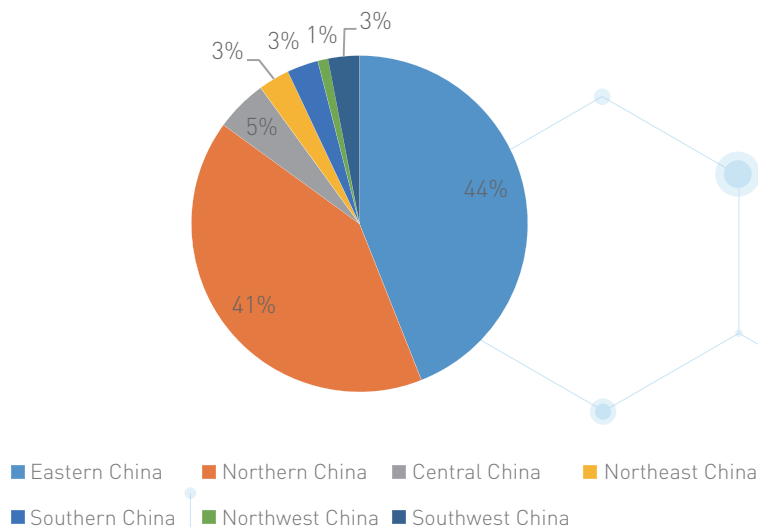
3.2 Analysis of Operation Management Status

3.2.1 Supply chain management overview

To effectively evaluate and select qualified suppliers, optimize the company's supply structure, and improve the company's supply system to ensure that suppliers' supply quality and production delivery capabilities are in line with the company's requirements, the company has formulated corresponding regulations for supplier selection and evaluation management. The system, based on the company's "supplier selection and evaluation management system", set up a responsibilities assessment team to assess the supplier's qualifications, in accordance with the norms of supplier evaluation, from which to select quality suppliers, in order to ensure the company's normal production needs.

The company has established a list of suppliers and updates them as circumstances change. For suppliers that have long-term cooperation, the Supply Department shall establish a file to obtain a copy of a valid business license and various related licenses. The Supply Department organizes related departments and personnel to conduct annual comprehensive evaluations of large suppliers and long-term suppliers at the end of each year, determine the business volume for the following year based on the evaluation situation, and record the evaluation results in written documents. The methods of selecting suppliers include bidding and price comparison. In 2017, Dongguang Chemical had a total of 334 suppliers and distributed in various regions in East China, North China, and China. Most of the suppliers were selected through the method of price-inquiry and price-comparison.

Suppliers regional distribution



3.2.2 Analysis of anti-corruption measures of enterprise

According to the requirement of relevant national laws and policies, the Group has formulated anti-corruption company policies. If there are signs of fraud that harms the company's legitimate economic interests, or if there is a lack of professional ethics among the employees, the hotline can be called or an e-mail can be sent to the management. The Group will take appropriate measures against the offender. The improper economic benefits obtained as a result of fraud are ordered to be retired; if the Group suffers economic losses, it shall be liable for economic compensation in accordance with relevant state regulations. In 2017, there were no major corruption litigation cases in the Group. All the goods and materials that the Group needs to purchase are centrally purchased by the supply department. The Supply Department should do its job for the purpose of reducing the purchase price, maintaining the quality and quantity, being loyal to its duties, and maintaining the integrity and self-discipline of the Group.

3.3 Product liability

The Group has been in strict compliance with laws and regulations including the Law of the People's Republic of China on Product Quality, the Law of the People's Republic of China on the Protection of Consumer Rights and Interests; and pays full attention to product quality and sales management. We ask for the high quality for each step from the production to delivery. It is required to continuously innovated breakthroughs in the areas of product enhancement and improvement in order to ensure the quality of products and to provide safer and more environmentally friendly products. The Group produces products in its own production facilities, so it has been constantly looking for solutions to improve the production processes, identifying new production facility models, optimizing equipment and upgrading production facilities to improve the quality and efficiency of production processes, and ensure that products are more efficient.

In addition, the Group has formulated and strictly implemented internal system procedures such as "Product Quality and Safety Management System", "General Principles of Intellectual Property Management", and "Sales Management System" to strive to enhance customer satisfaction and strengthen after-sales services to win customers' trust and support, to fulfill the responsibility of the Group for consumers and the society.

The Group's main product is urea, which has no smell, is soluble in water, and non-toxic. It is a highly efficient neutral nitrogen fertilizer for agriculture. As a neutral fertilizer, urea is suitable for all kinds of soils and plants. Using urea will not leave harmful substances in the soil, and it can ensure that the products produced are green, environmentally friendly, and synergistic.

3.4 Community investment

The Group takes action for contributing to the society through charitable events. The Group has also been exploring different opportunities in serving the communities in which it operates and encourages employees to participate in various charitable donation activities.

The Group has provided a number of employment opportunities for the local residents.

In June 2017, the company participated in the "one-day employee donation" organization organized by the Dongguang County Federation of Trade Unions. A total of 1,165 Group employees participated and made donations. According to statistics, the average person donated RMB30.

4 FUTURE PLANNING

4.1 The external risks and future plans

The external factors such as the constant change of supply and demand in the product market, fierce competition in the market, seasonal fluctuations in the product, and severe weather conditions all have a certain impact on the company. Dongguang Chemical Co., Ltd. is located in an area where coal-based urea production is relatively intensive, and industry competition pressure is high. At present, 80% to 90% of corporate profits are mainly from urea products. So the company's product structure is relatively simple, if the market supply and demand of products change largely, it will bring magnificent risks to the company in maintaining profitability.

With the ever-changing external environment such as market supply and demand and industry competition, we have always faced enormous challenges either at this moment or in the future. Therefore, it is also an important task for us to actively introduce new processes and technologies for energy saving and consumption reduction, and to tap existing production potentials. We will strive to achieve further breakthroughs in energy conservation and emission reduction, and ensure the quality and quantity of our products while minimizing energy consumption. We will develop downstream products related to major products, continuously expand the industrial chain and product chain, strengthen the relationship with existing major customers, actively expand sales channels, consolidate market position, and actively respond to future challenges.

4.2 The internal risks and Future Plans

There are many internal risks that the company faces, such as operational safety, employee health, environmental protection and other safety and environmental protection factors; organizational structure, management methods, asset management, business processes and other management factors as well as research and development, technology investment, and information technology applications. Indigenous innovation and artificial factors of professional competence of employees. Whether the company can correctly identify these factors is also one of the risks.

As one of China's major coal-based urea producers in Hebei Province, we intend to adopt certain strategies to continue to consolidate and develop the existing market and industry status, and actively respond to the inherent risks faced by companies. For example, in the fierce market competition, to further optimizes product quality, and strives to improve service quality, with high-quality services to win customers and markets, create a good brand image and corporate reputation. We will continue to give play to the advantages of enterprise management, strengthen internal management, reduce production and operation costs through high-level management, and increase the profitability of enterprises. At the same time, it actively introduces high-level talents that can help the development of the company, and enhances the overall management level and professional level of the company.

4.3 Future development strategy and business plan

The Group will continue to consolidate and develop its existing market and industry position and do its best to increase shareholder value. And the company need to promote its growth strategies, including increasing production capacity, improving production quality and efficiency, expanding the value chain to urea-related products, strengthening relationships with major customers, and expanding customer base, while seeking to establish strategic relationships and identify acquisition opportunities. The Group always pay attention to any issues associated to social environmental protection, and develops the company mission as "developing enterprises, creating values, benefiting employees and contributing to the society", to contribute more benefits to the economy and society.