

eijing Jingneng Clean Energy Co., Limited Environmental Social & Governance Report



Environmental Social & Governance Report Beijing Jingneng Clean Energy Co., Limited Dedicate to Clean Energy Share Green Tomorrow

A

Address: No.6, Xibahe Road, Chaoyang District, Beijing Telephone:010-64469988 Email:dongban@jncec.com

BJ

Beijing Jingneng Clean Energy Co., Limited 北京京能清潔能源電力股份有限公司

E



There are multiple energy enterprises However, we are born to be different Clean energy is our inherent responsibility Greening and environmental protection are our consistent mission For the sky overhead For the future without pollution We are always striving



About the Report

Welcome to read the first "Environmental, Social and Governance Report" released by Beijing Jingneng Clean Energy Co., Ltd. The report comprehensively describes the responsible practices and performance of Beijing Jingneng Clean Energy Co., Ltd. in the aspects of economy, society and environment for the convenience of readers to fully know the company's latest dynamic development and responsibility conditions.

• Organizational Scope

The report covers Beijing Jingneng Clean Energy Co., Ltd. and its controlling and participating enterprises. Beijing Jingneng Clean Energy Co., Ltd. and its controlling and participating enterprisesis called "Jingneng Clean Energy", "Company", "we", etc. for short.

• Time Range

This is an annual report ranged from January 1 to December 31, 2016 with partial data involving previous years.

Source of Information

The data and cases of the report are mainly from the company's statistical report and related documents. The company promises that there are no any misrepresentation and misleading statement in the report and the company is responsible for the authenticity, precision and integrity of the contents.

Reference Standards

The report is prepared upon the industry background highlighting the enterprise features and striving for meeting the standards related to sustainable development information disclosure in the industry. Key standards for reference for the report preparation are as follows:

- Guiding Opinions on Fulfillment of Social Responsibility by Central Enterprises released by State-owned Assets Supervision and Administration Commission of the State Council;
- Sustainability Reporting Guidelines (G4) released by Global Reporting Initiative;
- Guidance on Environmental, Social and Governance Reports issued by The Stock Exchange of Hong Kong Limited;
- "Ten Principles" of the United Nations Global Compact;
- Guideline on Social Responsibility (ISO 26000) issued by International Organization for Standardization;
- Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 3.0) issued by Chinese Academy of Social Sciences.

• Acquisition Way of Report

You can download electronic report in the official website of Beijing Jingneng Clean Energy Co., Ltd. http://www.jncec.com/. If requiring the paper report or for any suggestions and opinions on this report, please contact us by the following means: Tel.: 010-64469988

E-mail: dongban@jncec.com





"

"Development of new technologies and green energy resources are necessary measures for energy conservation and emission reduction and air pollution control. We shall increase the investment and settle the confronting problems with willpower and patience."

- Speech made by President Xi Jinping during the investigation in Jingqiao Thermal Power

"

Chairman's Statement

China's economy has stepped into the "New Normal". Facing such severe challenges as domestic economic slowdown, complicated external operating environment and faltering growth in power demand, Jingneng Clean Energy has united wholeheartedly and overcame the difficulties with the business indicators risen from opposite trend. In 2016, the company carried out 5 development concepts, namely "innovation, coordination, greening, openness and sharing", deeply tapped the internal potentials, externally expanded the market, completed the total installed capacity of 7,791 MW, realized the operation revenue of RMB 14.636 billion and the operating profit of RMB 3.354 billion, and achieved excellent opening of the 13th Five-year Plan upon the completion of annual profit target better.

As the municipal clean energy supplier of Beijing, the company aims at improving the environmental quality and insists on "gas power expansion, wind power strengthening, photovoltaic power optimization, water and electricity integration and break-through of waste power generation". In 2016, the company developed the central power generation by natural gas, and facilitated the energy integration in "Beijing, Tianjin and Hebei"; obtained the approval for Guanting Phase IV emerging based on the wind power base in Beijing; and invested and constructed the waste power generation projects with a view to realizing the circular economy and developed the superior photovoltaic power and hydroelectric projects for further transportation of green energy to the whole country. In 2016, the company further enlarged the installed capacity and continuously improved the high-quality project development capability.

While insisting on "operating Jingneng" and "seeking optimization", the company will seek the overseas development opportunities with overall arrangement in overseas markets led by "One Belt ,One Road". In 2016, the company completed the first overseas solar energy project merger and acquisition, becoming the first large-scale co-located wind electricity and photovoltaic field in Australia and further solidifying the construction of overseas platform; and continued to follow the overseas fuel gas and wind electricity projects speeding up the "walking out".

Establish the fundamental and aim at absolute perfection. As the clean energy supplier, the company has stayed true to the mission and actively fulfilled the social responsibility, such as with multiple resident enterprises co-starting the Mingxi Public Welfare Fund and assisting in Hong Kong's adolescent group; carrying out the safety production and realizing the safe and stable operation; innovating the training management and strengthening the talent team construction; and practicing the responsibility of energy conservation and emission reduction and achieving the sustainable development. In 2016, Jingneng Clean Energy transmitted the green power of 26,220,574 MWh in the whole year with the safety production investment of RMB 49,687,100, totally 387 trainings for employees and total external donations of RMB 3,184,600 and realized the further enhancement in corporate image and reputation.

The year of 2017 is a key for implementing the "13th Five-year Plan" and boosting the reform of supply side profoundly. Jingneng Clean Energy will unflinchingly fulfill the responsibility of capital enterprise, continue the development direction of "strengthening, optimization and expansion" with constant exploration, innovation and efforts and realize the great-leap-forward development of Jingneng Clean Energy company.



Beijing Jingneng Clean Energy Co., Ltd. Chairman

5

Topic: We are born to be different for greening

Beijing Jingneng Clean Energy Co., Ltd.

- Diversified clean energy business combination
- The largest gas power generation and heat supplier in Beijing
- Ranking 42nd in "Top 500 2016 Global New Energy Enterprises" and 12th in China's new energy enterprise

0 Historical trace: born for mission

In July 2014

stepping out the overseas business development; and as the regional energy demonstration project in Beijing and throughout the country, Future City was formally put into operation

6

5

In December 2011

the company was

successfully listed

on the main board

of HKEX

the company acquired Australia Glen

wind electricity project, thus firstly

In August 2010

the stock reform was completed and the company was officially renamed to "Beijing Jingneng Clean Energy Co., Ltd."

In November 2006

Beijing Jingneng Energy Technology Investment Co., Ltd. was established



In December 2009

the company performed the clean energy asset integration, thus preliminarily having three business segments, namely gas power generation, wind

In April 2010

4

In August 2008 Beijing Taiyanggong Gas-Fired Thermal Power Co., Ltd. and Lumingshan Guanting wind farm were put into operation succeeding in the supporting task of 2008 Olympic Green Electricity

the company was changed to a foreign-invested enterprise, by introducing the strategic investor

In September 2016

the first large-scale colocated wind electricity and photovoltaic field was constructed in Australia

9

8

In December 2014

four thermoelectricity centers in Beijing were all put into operation, and the company become the largest gas power generation and heat supplier in Beijing

Escorting "Green Olympic"

The Combined Cooling and Power Project of Beijing Taiyanggong Gas-Fired Thermal Power Co., Ltd. and Beijing Guanting Wind Farm Project (Phase I) was 2008 Olympic action planning project in Beijing, and provide supporting facilities of Olympic venues and is important infrastructure to realize the "green Olympic".

O Beijing Taiyanggong Gas-Fired Thermal Power Co., Ltd.

Goal: provide green power and clean energy for Olympic venues

Equipment: fuel gas - steam combined cycle power and heat generation unit with the installed capacity of 780 MW generating the electricity of approximately 3,500,000,000 KWH and the heating capacity of 465 MW each year with the heat supply area of almost 10,000,000 square meter each year

Features: high energy utilization rate and excellent environmental protection performance with obvious achievements in such aspects of noise control, greening and environmental protection, energy conservation and emission reduction together with ecological civilization, only in 2008, equivalent to reduce carbon dioxide emissions by 1.52 million tons and 343.9t sulfur dioxide discharge each year

Awards: "The Luban Prize for Construction Project" awarded in 2009 and appraised as the "most quiet, cleanest and greening" thermal power plant in the city center

Beijing Guanting Wind Farm Project (Phase I)

Goal: provide green power for Olympic venues

Equipment: the installed capacity is 49.5 MW generating the electricity of approximately 100,000,000 KWH each year and solving the domestic electricity demands of the family above 100,000 households

Features: greening and environmental protection only in 2008, equivalent to reducing 50,000t coal, 100,000t carbon dioxide discharge and 782t sulfur dioxide discharge

Significance: it has realized the scale utilization on wind energy resources in Beijing for the first time and improved the single situation of overdependence on thermal power generation in Beijing at that time



In 2016, the strategic cooperation agreement, "Zhangjiakou - Yanging Heat Supply Demonstration Project" was signed with the municipal people's government of Zhangjiakou using partial new energy for power and heat generation, realizing the combined power and heating supply of clean energy and continuing to provide cleaner and more efficient energy guarantee for 2022 Olympic Winter Games following 2008 Beijing Olympic Games.

The heat supply area of almost 10,000,000

In 2008, reducing carbon dioxide emissions by

1.52 million tons

The installed capacity is



In 2008, reducing carbon dioxide emissions by



Self-role of "returning a blue sky to the capital"

Background:

In 2010, Opinions on Speeding Up the Construction of Safe, Efficient and Low-carbon Urban Heating System was issued by Beijing Municipal Commission of Development and Reform putting forward the full utilization of precious resources of existing central network and building the centralized heating supply pattern of "1+4+N". "4" refers to the construction of four gas thermal power centers.

In August 2013, Scheme on Speeding up Pressure-reduced Fire Coal and Clean Energy Construction in Beijing from 2013 to 2017 was released by Beijing Municipal Government putting forward "the construction of four gas thermal power centers and full shutdown of coal-fired power plant."

As the leading gas power generation and heat supply enterprise in Beijing, Jingneng Clean Energy has joined the construction and operation for 3 of 4 gas thermal power centers in Beijing contributing to returning a blue sky to the capital".







Southwest Heat and Electricity Center - Jinggiao Project (Phase II)

- Installed capacity: 838MW
- 2 sets of 9F-level gas-steam combined circulator unit are newly established with the annual power generation of approximately 3,500,000,000KWH and new heating supply area of almost 12,000,000 square meters
- It was put into operation at the end of 2012

• Northwest Heat and Electricity Center - Jingxi Project

- Installed capacity: 1,308MW
- ◎ 3 sets of 9F-level gas-steam combined circulator unit with the annual power generation of approximately 5,300,000,000KWH and heating supply area of almost 18,000,000 square meters
- It was put into operation on October 28, 2014

Eastwest Heat and Electricity Center – Gao'antun Project

- ◎ Installed capacity: 845MW
- ◎ 2 sets of 9F-level gas-steam combined circulator unit with the annual power generation of approximately 3,800,000,000KWH and new heating supply area of almost 12,000,000 square meters
- It was put into operation on December 10, 2014

About Us

Company Profile

Beijing Jingneng Clean Energy Co., Ltd. was established in August 2010 and controlled by Beijing Energy Holding Co., Ltd "BEH". The company operates its business a number of provinces and autonomous regions, such as Beijing, Inner Mongolia, Ningxia and Sichuan, and involves gas-fired power, wind power, photovoltaic power, small to medium hydropower and other clean energy generation business. It is the largest gas-fired power supplier in Beijing and the leading wind power operator in China, and was listed on the main board of HKEX on December 22, 2011 (stock code: HK.0579).



Following the development strategy of "Expand gas power, strengthe wind power, optimize photovoltaic power, integrate hydropower and make a breakthrough garbage power, insisting on the concept of "operating Jingneng seeking optimization, doing precisely, being practical and becoming stronger", focuses on economic benefit and effectively improves the power generation capacity. In 2016, the company was successfully listed in "Top 500 2016 Global New Energy Enterprises", realizing the total holding installed capacity of 7,791 MW, the operation revenue of RMB 14.636 billion and the earnings per share of RMB 0.2846.

Performance of the Company from 2014 to 2016					
Business	Unit	2014	2015	2016	
Gas-fired power	MW	4,436	4,436	4,436	
Wind power	MW	1,815	1,915	2,263	
Photovoltaic power	MW	270	440	643	
Small to medium hydropower	MW	413	449	449	
Operating income	RMB million	8,729	14,346	14,636	
Earnings per share	RMB (cents)	18.39	27.81	28.46	



Organizational structure



Governance Structure

The company has established sund goveronance structure , formulated Rule of Procedure for Board of Shareholders, Rule of Procedure for Board of Directors and Rule of Procedure for supervising comittee, and standardized the company governance.

It has formulated the Diversified Policies for Members of Board of Directors devoting itself to create the diversified structure of the Board of Directors and further ensuring the reasonable and reliable decisions. The Audit Committee, Remuneration and Nomination Committee as well as Strategy Committee are subordinate to the Board of Directors studying special matters and putting forward suggestions and opinions to the Board of Directors for decision-making and reference.

In 2016, the company intotal held 5 board meetings, 2 shareholders' meetings, 2 supervisor meetings and 2 committee meetings.

_0 Case

General Manager Chen Ruijun was awarded the prize of "Best CEO in Listed Companies" of 2016 Golden **Bauhinia Awards**



Further reading:

Golden Bauhinia Awards is jointly held by institutions as The Listed Companies Association of Beijing, The Hong Kong Chinese Enterprises Association and Hong Kong Takung Wenwei Media Group, and is the listed company election for the listed companies and senior executives of both Hong Kong and mainland China in larger scale and with highest level and credibility since over 20-year's development of China's capital market. Since being held for 6 times, it is highly praised in the industry, and the "Best CEO in Listed Companies" is an extremely important prize in this election.

Investor relations management

We have valued the investor relations management, established effective communication channel, improve the company's transparence through active communication with related parties by daily reception, investor forum and road shows, and built excellent market image. In 2016, the Corporation organized and received the investors for over 30 times, organized 2 performance road shows and 2 non-transaction road shows, and participated in the clean energy forums held by various investment banks for over 10 times.

We have obeyed the information disclosure rules of the listed companies, completed the information disclosure system and formulated and followed the Administrative Measures for Disclosure of Information and Administrative Measures for Investor Relationship. In 2016, the Corporation totally finished 35 periodic disclosure reports, monthly reports of securities, announcement for working of Board of Shareholders, Board of Directors and Supervisory Committee, performance announcement and other temporary announcement.

Law-abiding and compliance

Risk management: the company has established complete internal control management system, formed such rules and regulations as Administrative Manual for Internal Control, Evaluation Manual for Internal Control and Authorization Manual for Internal Control, and guaranteed the company's stable operation; built the comprehensive risk management system, and strengthened the supervision and control of funds and risk management regarding overseas projects; deployed the system construction of general legal counsel, carried out the normalized and standardized legal contract approval, and effectively avoided the legal risks in the contract management. In 2016, the legal approval rate for the company's contracts signed externally was 100%.

Anti-corruption: Jingneng Clean Energy strictly abides by the relevant PRC laws and regulations. It has established the internal control system to prevent illegal behaviors such as corruption, bribery, extortion, fraud and money-laundering while formulated the "Code of Conduct and Ethical Requirements of Employees" to uphold operation honesty and integrity. During the reporting period, the company has not involved in any cases of non-compliance and proceedings in relation to corruption of the Group or employees.

In 2016, Chen Ruijun, General Manager of the company, was awarded the prize of "Best CEO in Listed Companies" of 2016 Golden Bauhinia Awards, which is another Golden Bauhinia laurel obtained by the management of Jingneng Clean Energy following Kangjian, Secretary to the Board and Deputy General Manager, won the "Best Secretary of the Board in Listed Companies" of the prize in 2015.





Corruption combating and integrity upholding

The company strengthened the construction of honest administration, prepared Negotiation Rules of Party Committee, Rules for the Management of Party Committees and Rules for the Management of the Construction of Honest Administration to norm the behaviors of CPC members and concluded Letters of Responsibility for the Construction of Honest Administration level by level to comprehensively implement the entity responsibility and liability of supervision of running the Party strictly.

The company promoted special education activities of "Two Studies One Action" so as to further to strengthen construction of the Party style. The company's leadership intensively learned for 13 times in 2016, and Party branch intensively learned for 49 times; Party committee and branch found out 14 items while 150 items were found out on 49 CPC members; various branches organized great discussions on two specifications and formed 74 specifications of party branch construction and 41 CPC members regulations.



Management of Social Responsibilities

Responsibility Governance

As a municipal level clean energy supplier of Beijing, the company is always committed to comprehensively optimizing the influences on environment and society from the company to realize the sustainability of corporate and social development.



The company is dedicated to "Contribute clean energy and share green future". It sets the goal of improving environmental quality and realize sustainable development, contributes to the investment and contributions of a series renewable energy sources projects such as gas power generation and heat supply, wind power generation, photovoltaic power generation, hydro power generation, etc. The company aims to promote the adjustment of energy structure of the whole society and accelerate energy conservation and emission reduction, and provide green power, clean energy and renewable energy through these projects for Beijing and the whole country.

Interested parties Expectations on the Company Ensure the maintenance and appreciat state-owned assets value Shareholders and Prevention of operational risk investors Well-structured information disclosur • Develop the demands and open up the • Implement macropolicy • Promote industry development Government and Law-abiding and compliance, fair com regulators Pay taxes according to law and stabiliz employment Safe and stable power supply and heat supply Users Unhindered communication channel • Impeccable customer service • To observe business ethics • Openly, fairly and justly purchase Partners Insist the concept of mutual benefit and result and joint development Keep in close touch and information sh NGO • Developing cooperation • Guarantee basic interests Accelerate the skill upgrading an Staff development • Care the staffs • Pay attention to people's livelihood • Contribute to public welfare Community • Service to community development • Comply with laws and regulations of mental protection • Reasonably utilize resources Environment Implement energy conservation and reduction

Responsibility Communications

74 specifications of party branch construction

41 CPC members regulations

Formed

We attach importance to communication with interested parties and take the benefits and features of the Parties into full consideration during preparing our own development strategy. In addition, we pay close attention to the demands of interested parties and we will bear the responsibilities together with interested parties as well as sharing the results.

	Channels to response and communicate
ation of re e market	 Investors conference Statement and visit Periodically Report of working progress
npetition ize	 Take part in the preparation/discussion about industrial standards Supervision and assessment Pay taxes actively
at power	 Critical quality control Panel discussion and interview Customer satisfaction survey Deal with customer complaint
nd win-win	 Prepare just and fair purchasing policy Audit and certify strictly Strengthen communication Drive the responsibility
sharing	 Attending industry exchange meeting Conduct communications, conversations and benign interactions with NGO
nd career	 Provide reasonable salary & welfare system Staff training and feedback Occupational health and safety management Information communications as congress of workers and staff Care for and assistance to employees
	 Pron employment Drive the development of relevant industries Social commonweal activities
of environ-	 Supply of green power The discharge of pollutants shall meet the discharging standard Energy conservation and emission reduction, develop circular economy Green office and environmental public welfare

Issues Identification

In order to realize the further improvement of pertinence and responsiveness of reports, Jingneng Clean Energy analyzed and compared the impacts on relevant parties from different issues of social responsibility and their importance on company development based on the substantive analysis model of issues of social responsibility in 2016, as well as identified the substantive issues with higher attention-degree.

Step 1: Identification Phase

Jingneng Clean Energy established an issue pool of social responsibility based on a series of surveys such as domestic and overseas social responsibility standards, government policy requirements, benchmarking of standard enterprises and interested parties, combined with self-development planning; the issue pool has 33 issues, including 4 responsibility management issues, 10 economic issues, 10 social issues, and 6 environmental Issues.

Classifications of issues	Social responsibility issues
	1. Responsibility strategy
Responsibility	2. Responsibility governance
management	3. Training on social responsibility
	4. Communications of interested parties
	1. Maintenance and appreciation of 6. Tax payment according to laws
	state-owned assets value 7. Fair competition
Economic issues	2. Impeccable governance structure 8. Responsible procurement
Economic issues	3. Investor relations management 9. Scientific and technological Innovation
	4. Periodical information disclosure 10. Strategic cooperation
	5. Risk management
	 Provision of stable clean energy Public welfare and charity
	2. Protection of employees benefit 8. Volunteer service
	3. Staff training 9. Supply chain management
Social issues	4. Assistance to difficult employees 10. Overseas responsibilities
	5. Safe production
	6. Community support
	1. Environmental management 4. Circular economy
Environmental issues	system 5. Conservation of ecosystem 2. Clean production 6. Promotion of environmental
	3. Emission & consumption protection reduction

Step 2: Issue analysis

Conduct specific surveys on interested parties for the 30 sustainable development issues and invite the relevant parties of different classifications to response the degrees of importance of different issues through online guestionnaires. Identify the substantive social responsibility issues of Jingneng Clean Energy through the establishment of two-dimensional matrixes as "attention-degrees of interested parties" and "importance on the sustainable development of Jingneng Clean Energy".





High

anagement	21	Periodical information disclosure
rding to laws 🛛 😕		Supply chain management
	23	Communications of interested parties
management	24	Promotion of environmental protectio
urement	25	Overseas responsibilities
nological innovation	26	Assistance to difficult employees
ategy	27	Training on social responsibility
ernance	28	Public welfare and charity
	29	Community support
tion	30	Volunteer service



Innovation · Upgrading Development

66

"Insist on innovative development, and the innovation must be regarded as the key of national development, and we shall accelerate theoretical innovation, institutional innovation, technical innovation, cultural innovation and other innovations to ensure that innovation will be applied to various works of the Party and country and the innovative thinking can be included in all aspects of the society."

-Speech made by President Xi Jinping during the Fifth Plenary Session of the 18th Central Committee of the CPC

"

Management Innovation

By accelerating the innovation on manage mode in 2016, Jingneng Clean Energy established an integrated management system, which is guided by benchmarking management, working through internal controls and based on the enterprise standardization, and the system is expected to promote the fusion of standards and management.

Strengthen benchmarking management

2016 is "the year of improving standardized management" of Jingneng Clean Energy; the company realized the improvement on conducting the benchmarking work in an innovative manner and obtained remarkable achievements. Firstly, the "benchmarking" measures were applied to daily management, by adopting the details of benchmarking evaluation to the work throughout the year, incorporating the details into management standards and methods and implementing them to daily work behavior. The company completed various works related to benchmarking comprehensively to promote the improvement of standardized management. Secondly, the innovation concepts were applied to the comprehensive benchmarking on the basis of summarizing experiences persistently, so as to form the working mode and specifications conformed to own features and accelerate the improvement of management. In 2016, comprehensive benchmarking work of the company acquired the first place of listed companies from BEH





Effectiveness of Benchmarking- Establish a New Benchmark of International Project Management

In 2016, Jingneng Clean Energy actively learned management experience from Shenhua Guohua Energy Investment Co., Ltd. and other companies with overseas investment experience, and benchmarked the self-managed experience on wind farm.

Through the learning and analyzing of benchmark, the company comprehensively took over the asset management of Australia Glenn Wind Power Project, realized the employment of foreign employees overseas, saved nearly 50% of asset management fee and strengthened the control efforts of national assets, and initiated a new mode of self-management on foreign assets, all of which made Jingneng Clean Energy as a benchmarking enterprise in terms of foreign and domestic management.

Carry out standardized construction

The company comprehensively carried out the standardized construction of enterprise, regulated the enterprise operation to realize tertiary management network "standardization committee--various special committees--various functional departments", and ensured the effective development and implementation of corporate standardization. The accuracy and scientificity of company standards were improved by standard comprehensive revision in 2016, which laid the foundation for comprehensively improving the integrated management and core competitiveness of the company.

Comprehensive revision

company conducted standard comprehensive revision in 2016 according to the requirements of Standardized Management Methods, which increased and revised 88 standards (including 46 management standards and 42 working standards), and organized 3 joint hearings by standardize special committee office meeting, 4 reviews by standardize special committees and 4 approvals by standardization committee; there are 87 standards have been issued and implemented up to now.

• Promotion and implementation of standards

Efforts of propaganda and implementation of standards and learning were strengthened in 2016, standards revision in 2016 were propagandized and implemented by batches. and company standards were comprehensively learned through the combination of propaganda and implementation and standardization examination.

Standard Examination

In 2016, the company established standard inspection group to conduct standard applicability inspection and standard centralized comprehensive inspection, and 11 standards were found problematic; the company prepared rectification plan for the problem items and required relevant departments to rectify and reform according to the requirements.

Standardize self-evaluation

According to the requirements of Standardized Management Methods, the company shall organize standardize system self-evaluation to promote the improvements of rationality, effective operation, timely rectification and improvement continuity.

Scientific and Technological Innovation

The company insisted on the working concept of "enterprise development through science and technology", implemented innovation-driven development strategy energetically, laid emphasis on the construction of innovation system, strengthened scientific and technological innovation and improved capability of independent innovation. The company won 14 National and Provincial Scientific and Technological Achievement Awards, 14 QC Achievement Prizes, 10 Utility Model Patent Certificates during "12th Five-Year Plan" period, and the company's innovation studio obtained "Outstanding Innovation Studio" award of Beijing in 2014.





During "12th Five-Year Plan" period,the company won

14 National and Provincial Scientific and Technological Achievement Awards

14 QC Achievement Prizes

Utility Model Patent Certificates

Sci-tech innovation management

Jingneng Clean Energy established and completed the sci-tech management system, prepared a series of institutions such as Awarding Measures of Technology Progresses, Management Method of Science and Technology Key Project and Management Method of Tech Capital, conducted the revision on the standards of science and technology to accelerate the standardization of scientific and technological innovation. In June 30, 2016, "Research and Demonstration Applications on PV Grid and Unified Power Control Equipment and DC Micronetwork Technology" passed the acceptance of Municipal Science and Technology Commission, and there were 9 papers were published and 4 patents were acquired in total.



"Development and Application of Direct Injection Ammonia Denitration Technology" of Jingfeng Company Project Won the Golden Bridge Prize

Jingfeng company is the first gas-fired power generation enterprise to successfully conduct ammonia denitration technical transformation on Level F combined circulating unit, its "development and application of direct injection ammonia denitration technology" project won the golden bridge prize, and the prize is the supreme authority of national technical market.

From 2013, Jingfeng company overcame the actual difficulties for non-reserving for denitration unit and successfully completed the denitration transformation on Level F gas turbine and initiated the "direct injection of ammonia selective catalytic reduction (SCR) denitration technology", which enables the emission concentration of NOx in the unit was reduced to 15 mg/m³ or less, and the value was a half of " the strictest" local environmental protection standard in Beijing, which enabled the company to be listed in the top of the industry. It is obtained national patent certification.

Successful application of "direct injection of ammonia selective catalytic reduction (SCR) denitration technology" was conducive to the atmospheric environment treatment of Beijing and contributed to the commitment of "Green Beijing".

Scientific manpower cultivation

The company strongly supported the personnel training, increased staff training in science and technology, created the internal platform for scientific and technological innovation exchange; and the company encouraged employees to participate in scientific and technological innovation and exchange to expand the vision of the industry and enhance scientific and technological innovation.



Enables the emission concentration of NOx in the unit was reduced to



Case

Management of "Talent Pool"

Sichuan Hydropower implemented the management of "talent pool" for the science and technology talents. As of 2016, there were 25 talents in the "talent pool", including 1 middle & special talent, 1 senior talent, accounting for 5.5% of the total number of employees. There are regular selecting and commending activities of the company for O Diversified training the talents, which is conducted to create a stable scientific research team by the measures like deeds propaganda, multiple training, and improving treatment.



Highly Skilled Talent—Leng Liuxi

Leng Liuxi is the deputy head of Maintenance Department of Beijing Jingfeng Gas Fired Power Co., Ltd. He has always rooted in the forefront of production for 20 years. His roles have varied from the most basic maintenance worker to the technical core personnel. With the courage to think and act, Leng Liuxi has organized and implemented a number of technical innovations, overcoming technical problems

In 2015, with excellent skills and outstanding performance, Leng Liuxi was awarded as the highly skilled talent who enjoys the special allowance of the municipal government and has great contributions to Beijing. In 2016, with deeds of the dedication and commitment to work, Leng Liuxi was awarded the nominee of "Models in Beijing of 2016" held by the publicit Department of CPC Beijing Municipal Committee, Capital Civilization Office.







Coordination · Linkage Development

"

"Coordination is both a means of development and a development goal, as well as the standard and scale for the assessment of the development, and it is also the unity of the doctrine that everything has two aspects and key theory, the unity of balance and unbalance of development, and the unity of defect and potential of development."

-Speech made by President Xi Jinping during the Fifth Plenary Session of the 18th Central Committee of the CPC

"

Protection of Thermoelectric Supply

Jingneng Clean Energy actively promoted the development strategy that "gas power expansion, wind power strengthening, photovoltaic power optimization, water and electricity integration and break-through of waste power generation", and took its resource advantages of capital stateowned enterprises and the brand advantages of Hong Kong listed company to vigorously develop gas-fired power of the capital, actively improve wind power and photovoltaic power generation, and steadily promote the business of oversea renewable energy sources. As of December 31, 2016, the total installed capacity of company holding was 7,791MW, the power generation was 26,220,574MWh.

The power generation was

26,220,574 MWh

Types of power generation	Total power generation of 2014 (MWh)	Total power generation of 2015 (MWh)	Total power generation of 2016 (MWh)
Gas power generation and heating	10,895,277	19,722,392	19,430,756
Wind power	3,448,426	3,689,824	4,156,625
Photovoltaic power	451,243	630,044	810,127
Hydropower	1,555,983	1,862,841	1,823,066
Total	16,350,929	25,905,101	26,220,574

The power generation situations of each business sector of the Company from 2014 to 2016

Gas power expansion

Jingneng Clean Energy is the biggest suppliers of fuel gas thermal power in Beijing, owing 6 gas-fired power co-generation plants, i.e. Beijing Taiyanggong Gas-Fired Thermal Power Co., Ltd., Jingfeng Gas-Fired Power Co., Ltd., Jinggiao Gas-Fired Power Co., Ltd., Jingxi Gas-Fired Power Co., Ltd., Gao'antun Gas-Fired Power Co., Ltd. and Weilai Gas-Fired Power Co., Ltd. The company is established in first-tier cities like Beijing, Shanghai, Guangzhou, Shenzhen, and seizes the chance of integration of "Beijing-Tianjin-Hebei", properly develops the central power generation by natural gas, and develops the regional energy project for the combination of distributed gas and energy internet according to circumstances.

As of December 31, 2016, gas power generation and installed capacity of heating holding was 4,436MW, accounting for more than 50% of gas power generation of Beijing, and heating capacity was more than 60%. As the Beijing / Zhangjiakou won the right to host Winter Olympics of 2022, the company also plans to construct the heating and other projects for Zhangjiakou, Yanging and Huailai, to provide guarantee for the "Low-carbon Olympics".

The performance of gas power of 2016



Wind power strengthening

According to the Action Plan of Energy Development Strategy (2014-2020), the installed wind power capacity is planned to reach 200 million kW in 2020. Jingneng Clean Energy follows the trends, vigorously develops wind power business to strengthen the development of wind power of the capital. As of 2016, there were projects of the company distributed in the area with abundant wind power resources, achieving the total installed capacity of 2,263MW, and accounting for 29.0% of the total installed capacity.



Achieving the total installed capacity of





•36 MW 348 MW Installed capacity: 150MW

- The concentrated area of wind power projects of the company
- □ The current operating project
- The project in construction/approved
- Storage projects

The performance of wind power generation of 2016



Case

Development of Wind Power Achieved the Zero Breakthrough——Guanting Wind Power Project

The Guanting wind power project of the company was the green energy project serving the Beijing Olympic Games of 2008. It generates electricity marked that development and utilization of wind power in Beijing achieved a zero breakthrough, and realized the first large-scale utilization of wind power resources in Beijing.

- In 2008, the Guangting wind farm phase I started, the installed capacity was 49.5MW, and it could generate approximately 100 million KWH each year, which can solve approximately 100,000 household demands, and the gridconnected generation was achieved before Beijing Olympic Games, which can transport green power to Beijing.
- In January 2010, the extension part of Guangting wind farm phase II was put into operation in succession, with a total capacity of 150MW, and transported approximately 300 million KWh green power to Beijing each year.
- In September 2015, the generator set of the extension part of Guangting wind farm phase III was grid-connected and put into production, and the total capacity was 36MW.
- In December 2015, the Guanting wind farm phase IV was officially reviewed and approved by Beijing Municipal Development and Reform Commission. The project was listed in the key project plans of 2016 in Beijing.



Photovoltaic optimization

The company actively expanded the business of photovoltaic power generation, and explored new models of photovoltaic power generation development, and the project was designated as one of the seven pacemakers, indicating the leadership of the company in the industry of photovoltaic power generation. In the past five years, the photovoltaic power generation of the company has grown rapidly, and the total installed capacity has increased from 10MW of 2012 to 643MW of 2016, which was increased by more than 60 times.

The total installed capacity has increased from 10MW of 2012 to



which was increased by more than



The performance of photovoltaic power generation of 2016



Water and electricity integration

The company actively develops high-guality hydropower projects, the small to medium-sized hydropower projects are mainly distributed in the southwest of China with the abundant water resources; there are Dachuan company, Zhongneng and Heishui Three-linkage and other power companies in Sichuan province, and there are several power stations built in Dujiangyan, Xuyan River, Aba Prefecture and other areas: as of December 31, 2016, the installed capacity of hydropower generation holdings of small and medium-sized hydropower was 449MW, accounting for 5.8% of the total installed capacity of the company, the average utilization hours of hydropower of the year was 4,058 hours, the power generation was 1.832 billion kWh.

The performance of hydropower of 2016

- Shuanghe Hydropower Station, Dafei Hydropower Station, and Xinsheng Hydropower Station were obtained central financial incentive fund, and the efficiency expansion transformation was implemented
- The Heishui company successfully strove for approximately 74.24 million kWh of direct power supply, delivery cross the district, substitution of water and fire, reward and compensation, accurate support, and obtained 128.45 million kWh of annual electricity index in total

Break-through of waste power generation

In 2016, the company actively sought for the high-quality waste power generation projects from the whole country. At present, the Beijing Asuwei Circular Economic Park project has been invested RMB 700 million, the construction of main structure of the incineration power plant has been completed 80%, and the equipment installation has been completed 20%. It is expected to be completed and put into operation by the end of 2017, with the capacity to combust and to dispose of 3,000 tons of waste per day.

V Further reading:

According to relevant statistics, there are more than 600 large-scale or medium-scale cities in China which have an annual output of 120 million tons of waste, accounting for over 25% of the world's annual output of waste. Most of the waste are piled up in the suburbs, with the weight of more than 8 billion tons. The waste occupies more than 1 billion acres of land, and annually causes direct economic loss of more than RMB 8 billion. Most developed countries have promoted and popularized waste power generation. Some experts predict that in the 21th century, waste power generation will become a new pollution-free energy source, just like the solar power generation and wind power generation.



The average utilization hours of photovoltaic of the year was 1.555h The reserve installed The power capacity was generation was **800**MV 810 million kWh

The installed capacity of hydropower generation holdings of small and medium-sized hydropower was



The power generation was

1.832 hillion kWh

The Heishui Company strove for approximately

74.24 million kWh of direct power supply

Obtained





Realize the Value Sharing

Strategic Cooperation

01

03

The company focuses on creating good external environment, strengthening cooperation with the government, customers and suppliers and establishing a harmonious relationship with them to achieve reciprocity, mutual benefit and joint development.

(02)

Strengthening cooperation with companies

Lanzhou Dacheng Technology Inc

Agreement with AVIC INTL

with Tianjin Electric Power Construction Co., Ltd

Signed the Project Cooperation Framework Agreement

Signed the Agreement on Cooperation of Linear Finel Thermal Power Generation Demonstration Project with

Signed the Overseas Project Cooperation Framework

Signed the Photo-thermal Project Cooperation

Strengthening cooperation with local governments

Signed the Strategic Cooperation Framework Agreement on Agricultural Photovoltaic Power Generation Projects with Yintun Village, Xian County, Hebei Province Signed the Letter of Intent on Project Investment with the

People's Government of Cangnan County of Zhejiang Province

Strengthening cooperation with suppliers

Jingyang Thermo Power has established the supply chain partner Framework Agreement with Zhejiang SUPCON relationship with General Electric Power to provide personalized and reliable products of high quality for the company

Beijing Jingneng New Energy has signed strategic cooperation agreement with 4 wind machine operators and key parts manufacturers to establish the efficient, economic, safe and stable relationship

Responsible Supply Chain

Supplier management

The company will strictly select suppliers and establish standards in accordance with Supplier Management and Contractor Management to manage suppliers in four aspects of market access, process control, performance evaluation and bidding application, forming a closed PDCA loop; we will also improve the supplier evaluation management, establish the objective and fair evaluation system, strengthen the supplier assessment and cultivate high-quality suppliers.

Jingneng Clean Energy has strict access system, and 90% of the suppliers have passed the ISO9000 quality certification system, the ISO14000 environmental certification system and the OHSAS18000 occupational health and safety management system.

Jingneng Clean Energy will rate and assess suppliers in accordance with the Supplier Management Practices. We also combine quarterly evaluation and annual evaluation to achieve unified management, dynamic assessment of suppliers to choose the best and eliminate the worst. According to the Company's annual comprehensive evaluation results, we will sort the suppliers into three types, that is, excellent suppliers, qualified suppliers and suppliers to be eliminated. The suppliers would be eliminated will lose the transaction qualification within the scope of our business.



Jinggiao Thermal Power implements supplier elimination system

In order to optimize the supplier resources, the company established a comprehensive supplier evaluation system and kept paying close attention to supplier development to achieve eliminating the poor-quality suppliers in time and building a high-quality supplier team.

By using ERP System's (group edition) online supplier evaluation module, the company will guarterly assess the goods quality, delivery and services of suppliers. Those who achieve 90-100 points are excellent suppliers, who get 60-90 points are qualified suppliers, and those who fail to achieve 60 points will be eliminated.

The company will evaluate the contracted contractors annually, and update the list of gualified contractors dynamically according to the evaluation results. Those who achieve 90-100 points are excellent ones, who get 70-89 points are qualified ones, and who fail to achieve 70 points are unqualified ones. For excellent contractors, both sides can choose to deepen cooperation; for qualified contractors, they shall make up for the deficiency and cover the shortage according to the evaluation results. For ungualified contractors, they will be eliminated from the list and be added to contractor enterprise blacklist.

Improve the performance of supply chain

The company takes supply chain management as a part of the social responsibility. We make requirements for suppliers in aspects of law compliance, environmental protection, labor rights and integrity management, quide suppliers to implement the responsibility management system, promote the value chain partners continue to fulfill their social responsibilities and build a responsible and sustainable supply chain. In 2016, there were no major negative news of the company's supply chain.

Enhance suppliers' responsibility consciousness: We will establish the social responsibility training mechanism for suppliers, set up training courses of environment, health and safety, and enhance suppliers' social responsibility consciousness. The Safety Supervision Department of Jinggiao Thermal Power gives EHS training to our cooperative suppliers and organizes the suppliers to assess its employees' social responsibility, promoting the performance of suppliers.

C Case

Beijing Jingneng New Energy Company's Consensus on Supply Chain Responsibility

Beijing Jingneng New Energy Company adheres to the people-oriented value, believes in the value of the team and advocates the supplier management concept of sustainable development. The company also reaches consensus on values and actions with suppliers, requires enterprises in the supply chain to consciously abide by relevant laws and regulations and continue to provide "green products".

- The liability subject changes from a single enterprise to the supply chain system
- It is necessary for supply chain competition and social expectations
- It is necessary for supply chain members to cooperate and coordinate
- It is also necessary for the sustainable development of the supply chain system

Responsible procurement

The company integrates the idea of social responsibility into procurement management, and insists on transparent purchasing and green purchasing policy. The company also abides by the bidding laws and regulations, optimizes procurement management to improve the degree of intensification. To comprehensively prevent corruption and commercial bribery in the process of procurement, the company makes full use of ERP platform and implements SRM system for public inquiry and centralized procurement.



Jingxi Company's Way to Take Procurement Responsibility

Jingxi Company takes green procurement as one of the procurement standards, and promotes to use products that are advanced in technology, energy saving, environmental friendly and reusable. To further reduce the impact on environment, Jingxi Company will classify and store recyclable wrapping object, and then urge suppliers to recycle and reuse their wrapper in due time.



- Protecting the rights and interests of workers in the supply chain
- Encouraging green-producing and green-operating
- Eradicating corruption

• Law and discipline (respect the confidentiality)

• Technology-leading, green-purchasing

Green Friendly Development



Environmental Protection Training Green Office

Emission Reduction and Reducing Pollutants

Technical Transformation Emissions Management

Waste-heat Utilization

Carbon Assets Development

Ecological Protection

Protect Lindwessily

Environmental protection public wellare

Green · Friendly Development

"

"To adhere to green development, we must uphold the fundamental national policy of conserving resources and protecting the environment; pursue a civilized path of development that consists of developed industry, affluent standards of living, and fine natural environments; and accelerate the establishment of a resource-conserving, environmentally friendly society, with a view to building a beautiful China and contributing further to the protection of global environmental security."

-Speech made by President Xi Jinping during the Fifth Plenary Session of the 18th Central Committee of the CPC

"

Environmental Management

Environmental protection is the innate mission and responsibility of Jingneng Clean Energy. With the mission of developing clean energy as life-long commitment, with "industry-leading, world-class, international well-known supplier of clean energy "as a strategic goal, the company has established improved environmental management system, and interual Regulations such as Regulations of Environmental Protection, and Supervision and Regulations of Environmental Protection Technology to strengthen environmental risk prevention and control and actively implement the "three simultaneities for environmental protection" requirement for early stage, under construction and infrastructure projects.

In 2016, total investment for environmental protection was RMB 545,724,200¹, the annual consumption of standard coal for power generation and heat supply amounted to 4.6587 million tons, the consumption of standard gas for power generation and heat supply was 394,948.05m³, the consumption of water for power generation (and heat supply) reached 18.5736 million tons, the environmental assessment pass rate for new project reached 100%; and the total annual power generation was 26,220,574 MWh, equivalent to reducing 7.9664 million tons of carbon dioxide emissions, 940.2 tons of sulfur dioxide, 1,325.84 tons of nitrogen oxide and 115.1 tons of ashes.

In 2016, total investment for environmental protection was RMB **545,724,200**

The total annual power generation was

26,220,574 MWh



General Secretary Xi is visiting Jingqiao Thermal Power and highly affirms the company's achievements in energy conservation and emissio reduction, green environmental protection and other aspects

[®]The company is primarily engaged in clean energy business and all its investment represents environmental protection investment.

Environmental Protection Training

The company will implement the green conception into the green action, carry our energy conservation and environmental protection publicization, organized energy conservation and environmental protection activities, and advocate a green and low-carbon work and life style.



Jingfeng Company has Carried out Environmental Protection Publicity Week Activity

During June 6 to 12 of 2016, Jingfeng company organized an environmental protection publicity week activity in the whole company with the theme of "Save every drop of water, and protect the green ecology". During the activity, the company made full use of publicity board to carry out publicity, organized activities In relation to water conservation and integrated utilization of water resources, and received a total of 41 articles, which effectively raised the awareness of environmental protection among employees.



Case

Sichuan Hydropower Organized Environmental Protection Theme Training with its local conditions

Since part of the company's power station are next to drinking water protection zone, in order to carry out further water protection and regularize employees' environmental protection behaviors, the company performed some special trainings such as treatment and recycle of waste oil, wastewater discharge and solid waste treatment, etc. in 2016, for a total of 412 trainees from 7 power plants.

After the training, the employees of each power plant developed a better understanding of their own environmental protection work. It effectively improved the awareness of environmental protection and further standardized the employees' behaviors.





Green Office

The company adheres to the concepts of low carbon and environmental protection green office, and initiates the employees to save water, electricity and paper starting from themselves and starting from the little things around to build a low-carbon environmental protection office environment.



Jingfeng Company Pursues the Green Office

Jingfeng Company widely promotes the energy-saving knowledge, advocates green office concept and low-carbon lifestyle, and constantly improves its energy-saving management level.

• To post green office campaign slogan in the company's bulletin board



- To initiate "automatic duplex printing" for documents with the latest technology to automatically realize duplex printing for documents
- To encourage the employees to switch off equipment when not needed
- To make full use of natural light so as to reduce energy consumption of lighting equipment
- To turn off the computer when leaving for a long time; to turn the machine into sleep state when leaving for relativelly long time;
- The air conditioner can only be turner on for cooling when temperature reaches 30 °C or higher in Summer and the set temperature shall be no lower than 25 °C
- To put an end to drop and leakage to save water
- To speed up advance e-government and promote on-line office, so as to reduce the consumption of office supplies

Emission Reduction and Reducing Pollutants

The company fully implements clean production and carries out check work for clean production; relying on scientific and technological progress and system innovation to improve resource utilization efficiency, reduce pollutant emissions and promote resource-saving and environment-friendly society construction.

Technical Transformation

The company actively advances the upgrading and transformation of environmental protection, promotes energy conservation and emission reduction technology transformation for the units, strengthens equipment maintenance and control, continuously improves the unit efficiency and clean production level, so as to realize continuous optimization of energy consumption level. In 2016, the volume of NOx emission of each gas power plants was in the range of 10-15 mg/m³, which was far below the national emission standard of 50mg/m³ and Beijing standard of 30mg/m³, thanks to which the company could enjoy the preferential policy of reduction of sewage charges by half.

Jingxi Thermal Power: the transformation of denitration system further reduces NOx production; introduction of circulating water sewerage treatment system to systematically treat the industrial wastewater and discharge as landscape water to realize recycle. In 2016, the company achieved the environmental protection goals of operation rate of denitration system over 99%, while the operation rate of sewage treatment system reached 100%, and standard reaching rate of sewage discharge index reached 100%.

Jingfeng company: In 2013, the company finished the SCR denitration transformation work for #1 gas turbine heat recovery boiler and the real control of gas NOx content to was below 15mg/m3; in 2016, the company has enjoyed the Beijing preferential policy of reduction of sewage charges by half and realized half reduction of the annual NOx sewage charge.

In 2016, the volume of NOx emission of each gas power plants was in the range of



Jingxi Thermal Power operation rate of sewage treatment system reached



Jingfeng company the real control of gas NOx content reached



Jingfeng Company: The company performed four energy conservation transformation items, such as double-speed transformation for circulating water pump motor, air compressor technical transformation for firefighting apparatus, pressure adjustment for heating season high pressure feedwater control valve, and LED transformation of straight pipe fluorescent lamps in the whole plant, and realized carbon dioxide emission reduction of 1,359.42 tons/year.

Emissions Management

The Company is strengthening the construction of environmental monitoring capability, strictly monitoring the total emissions volume during the production, and reducing the emission level to realize environmental influence minimization. The business of the Company is to supply clean energy, and the emissions basically are harmless; according to the requirements of regulations in *Regulations on the Control over Safety of Dangerous Chemicals* and *Standard for Pollution Control on Hazardous Waste Storage (GB 18597-2001)* and so on, the small amount of all dangerous substances generated in the production procedure, including waste oil, waste resin, waste chemicals, waste batteries and waste modulator tube, shall be collected by category, stored separately and managed by specially-assigned person, and totally transferred to the third-party unit with legal qualifications for harmless treatment shall not be discharged to the surrounding environment.

Types of emissions	Unit	2014	2015	2016
Waste water emission load	0,000 tons	369.91	319.73	326.74
Reduction of waste water	0,000 tons	0	47.44	49.50
Carbon dioxide emissions	0,000 tons	448.14	752.47	753.22
Reduction of carbon dioxide	Tons	579.59	716.44	796.64
Industrial soot emissions	Tons	57.06	74.30	72.10
Dust emission reduction	Tons	93.6	115.8	115.1
Sulphur Dioxide Emission	Tons	71.16	56.02	49.98
Reduction of sulfur dioxide	Tons	845.54	975.16	940.20
N0x-Emissions	Tons	845.54	1,598.75	1,370.96
Reduction of nitrogen oxide	Tons	590.54	1,157.37	1,325.84

Energy conservation realized carbon dioxide emission reduction of



Waste-heat Utilization

According to the principle of "reduction, reusing and recycling", the company constantly explores and develops circular economy, improves the comprehensive utilization rate of resources, and assists in the low-carbon development. In 2016, each thermal power plant closely conducted deployment and made new achievements in the aspect of waste-heat utilization recycling.

Gas power plant	Before transforming waste heat	After transforming waste heat	Progress
Jingyang Fuel Gas Thermal Power	A set of "Two pull one"fuel-steam combined recycling cogeneration power unit in 350MW-9F level, and the unit's maximum heating capacity is 464MW	Plan to recycle 92MW of the waste heat from power plant recycling water, and the adding newly add heat supply area is aboutof 1.8 million square meters, and the annual recycling waste heat volume is about 609,600 GJ	Complete the preliminary work such as project establishment in National Development and Reform Commission and request energy-saving subsidies, the pioject construction was started in April 2016
Jingxi Fuel Gas Thermal Power	A set of "Two pull one" and a set of "one pull one" gas-steam combined recycling heat and power unit in 350MW-9F level, and the unit's maximum heating capacity is 883MW	The waste heat from power plant recycling water planned to be recycled is 107MW; the newly-add- ed heat supply area is about 2.1 million square meters; and the annual recycling waste heat volume is about 830,000 GJ	In the stage of scheme demonstration
Jingqiao Thermal Power	A set of "two pull one" gas-steam combined recycling cogenera- tion power unit in 350MW-9F level, and the unit's maximum heating capacity is 612MW	The waste heat from power plant recycling water planned to be recycled is 66MW; the newly-add- ed heat supply area is about 1.3 million square meters; and the annual recycling waste heat volume is about 520,000 GJ	In the stage of scheme demonstration
Jingfeng Fuel Gas Thermal Power	A set of gas-steam combined recycling cogeneration power unit in 9F level, and the unit's maximum heating capacity is 140MW	The waste heat from power plant recycling water planned to be recycled is 30MW; the newly-added heat supply area is about 600,000 square meters; and the annual recycling waste heat volume is about 230,000 GJ	In the stage of scheme demonstration
Gao'antun Fuel Gas Thermal Power	A set of "two pull one" gas-steam combined recycling cogeneration power unit in 845MW-9F level, and the unit's maximum heating capacity is 596MW	The waste heat of power plant exhausting smoke planned to be recycled is about 100MW; the heat supply area is about 2 million square meters; and the annual recycling waste heat volume is about 770,000 GJ	Complete the work of project establishment for facilities, and plan to commence construction work in the fourth quarter
The Future Fuel Gas Thermal Power	A set of gas-steam combined recycling cogeneration power unit in 200MW-9E level, and the unit's maximum heating capac- ity is 208MW	The waste heat from power plant exhausting smoke planned to be recycled is 48MW; the adding newly-added heat supply area is about 1 million square meters; and the annual recycling waste heat volume is about 390,000 GJ	The waste heat of construction scale in Phase I is 24MW, which has been set up and put into operation in February, 2014

Carbon Assets Development

The signing of Kyoto Protocol and implement of CDM mechanism, and the initiating of following Chinese Certified Emission Reduction (CCER) market, enhance the application for carbon assets in setting and operating renewable energy sources project and the understanding for operation, and have the positive significance for improving the economic evaluation of green energy project and strengthening risk resistance capacity of green energy project. Jingneng Clean Energy considers the situation, sizes the opportunity to selecte appropriate projects for CDM development, monitors the carbon emission reductions data regularly, calculates the emission reductions intensity, summarizes, concludes and evaluates the carbon assets conditions and implements the carbon assets management. By the end of 2016, the number of CDM projects belonged to the company was 43, while the number of CCER projects was 20, and the company realized the emission reductions revenues of hundreds of millions RMB through carbon market.

Further reading:

CDM: Clean Development Mechanism is one of the flexible enforcing mechanisms introduced by the Kyoto Protocol. Its core content is to allow developed countries to conduct the transferring and acquisition for reduction offsets in the project level, and carry out greenhouse gas reduction project in developing countries.

Carbon quotas: Carbon quotas is the greenhouse gas reduction index which must be completed according to governmental stipulations.

CCER: Chinese Certified Emission Reduction, refers to the reduction that the enterprises voluntarily participate in, register and record in the register of national voluntary reduction trade, and the recorded reduction is called "Chinese Certified Emission Reduction (CCER)", and CCER can conduct carbon assets trade.

Carbon transaction: It takes carbon emission permit as a commodity to conduct market trade, in which party pays to obtains the greenhouse gas reduction quota of another party, so as to realize its goal of exceeding the original carbon reduction quota.

Case

Leading CDM Development Capabilities

Jingneng Clean Energy Company, Jingqiao Company and Gao antun Company officially Initiated the research and development of "natural gas thermal power combined methodology" in September, 2011 under the effective organization of Jingneng Clean Energy.

Facing the "tight-time, high-risk" difficulties, the company fought bravely in torrent, braved the difficulties, got the approval from CDM Executive Council within one year, realized the work standard of "short-time research and development, high-efficiency research and development, and high-quality manuscript", and broke the traditional rule of long-time CDM methodology development and low efficiency, and promoted the Chinese CDM methodology development to a new level.

The successful development of the methodology has filled the gaps in domestic and foreign CDM methodology development, and has provided important guidance to quantification and measurement of similar projects' carbon assets in northern Chinese cities and even in other countries.



By the end of 2016, the number of CDM projects belonged to the company was

By the end of 2016, the number of CCER projects was



Case

Jinggiao Thermal Power —— the First Domestic Enterprise of "Non-risk Carbon Trade and Replacement"

To realize the goal of comprehensive sustainable development, Jinggiao Thermal Power has put forward advanced energy and carbon management system, constantly reduced the company's energy consumption and improved energy utilization rate, and successfully received the Energy Management System (GB/T23331) Certificate.

In 2015, the company's carbon guota was 1,513,531.32 tons, while its carbon emission was 1.483.463.13 tons, resulting in a surplus of carbon guota of 30.068.19 tons. The Company took the lead to propose and adopt the new model of emission guota nonrisk replacement, and realized the non-risk replacement between CCER and BEA (Beijing Carbon Emission Quotas), and with revenue of over RMB 355,000, which expanded the new profit model of non-risk carbon assets management, and was able to constantly achieve revenue over RMB 2.15 million.

The company has become the first enterprise which enforced voluntarily carbon quota replacement of Chinese Certified Emission Reduction (CCER) in Beijing, and ranked the first in carbon quota replacement in the carbon quota replacement trading volume among the enterprises in Beijing, and was the first enterprise to innovate and adopt the "non-risk carbon trade and replacement" in China.

Ecological Protection

Protect biodiversity

Jingneng Clean Energy protected the biodiversity and biological habitat during the process of development, construction and operation, and was careful on environmental inspection, and on the protection and recovery of land, vegetation and ecology, tried to reduce the effects of the enterprise operation activities on ecological environment, and built the healthy and harmonious ecological homestead.

The Australian Power Plant: To protect the large owls, the GR Project Company annually shuts down four wind turbines for the transition of the large owls from November in Year 0 to March in Year 1, which resulted in lost of profit by the Project Company of approximately A\$300,000 annually, the company's resolution of bird protection has received highly recognition from the local government.

Yingjing Hydro Power: To reduce the destruction of Nabang Hydro Power Station to Provincial Natural Reserve, the company, from the view of prior environmental protection, adopted the TBM (The Tunnel Boring Machine) method to construct the water transfer tunnel to avoid the fragmentation of protection area to the maximum extent, Nabang Hydro Power Station, in the current range throughout the country, is the first project to adopt TBM method for environmental protection.



Beijing Jingneng New Energy —— the First "Voluntary Reduction Trade" Enterprise

Beijing Jingneng New Energy Company, as the enterprise which conduct investment and operation on wind and photo voltaic projects, has always paid close attention to the development of renewable energy sources and insisted to be ahead of ahead of the curve of reduction.

After signing the Kyoto Protocol, the Beijing Jingneng New Energy Company noticed the meaning of CDM mechanism to renewable energy sources, with the development of CCER, the company seized the opportunity to develop CCER actively, and became the first " voluntary reduction trade" enterprise in China, among them, the 300 MW wind power project of Wu Lan Yi Li Geng in Bayannur, Inner Mongolia, has created many domestic firsts.



- The first domestic CCER recording project
- The first domestic CCER trading project

Carbon assets management revenue

in carbon quota replacement in the

carbon quota replacement trading

volume among the enterprises in

over RMB

Beijing

2.15 million

Ranked the first

The first domestic CCER issuing project

Environmental protection public welfare

The company proposes the volunteer spirit of green environmental protection, encourages that the staffs actively participate in the environmental public welfare activities like waste battery recycling, waste cleaning, respond to the energy saving actions like "Earth Hour", and contribute their own effort to environmental protection in personal practice;



Jingyang Thermal Power —— "Environmental Protection of Baihe Wetlands Guardians"

On June 7, 2014, Jingyang Thermal Power jointly organized and conducted the theme activity of the "Environmental Protection of Baihe Wetlands Guardians" with Xiushi Foundation.

The staff volunteers were divided into four groups to carry out wetland ecological investigation in Wetland Park, and carried out environmental protection activities along the road, contributed small effort of their own to protect the beautiful mountains and rivers, the green grass and shadows of the trees, put the environmental protection oath of "hand in hand with environmental protection and lowcarbon, to co-build clear water and blue sky' into practice by practical action.





Beijing Jingneng New Energy —— Activities of the Great Wall Protection

Adhering the cultural spirit of "people first, team priceless", the company actively participates in welfare, to realize the harmonious development of enterprises and society. On March 18, 2016, the company established the volunteer group to participate in activities of the Great Wall Protection.

The staff volunteers were greatly passionate and they were split up into two groups, one of the group cleaned the waste such as beverage bottles and broken wine bottles and maintained the cleanliness of the Great Wall, while the other cleaned the twig and weed on the wall, to prevent the roots from generally disintegrating the wall year by year, after two-hour hards' work, the Great wall looked cleaner. Although all people got tired from the hard work, they all achieved much fun experience and sense of accomplishment.









Open Excellent Development



Australian GR Project

The first landscape co-located power plant in large scale

Overseas Responsibilitie

Wind farm open day

Turn to residents' voices

Support community development

Local environmental protection

Implement overseas public welfare activities







Open · Excellent Development

"

" Insisting the open development must comply with the trend of integration of China seconomly deeply into the world's economy, implement the mutual-benefit, win-win and open strategy, develop the open economy at a higher level, actively participate in the global economic governance and public product supply, raise our institutional discourse power in the global economic governance, and build extensive interests community."

-Speech made by President Xi Jinping during the Fifth Plenary Session of the 18th Central Committee of the CPC

"

Overseas Layout

Sticking to the base of "operating Jingneng" "seeking optimization", the company excavates the intenal potential while expandingexternal market, seeks for overseas development opportunities, and expanded oversea market space.

Australian GR Project

On July 10, 2014, the company completed project delivery with GOLDWIND, and acquired the Australian project smoothly. The total installed capacity of Australian GR Wind and Power Project was 165.5MW. The company held 75% of the shareholding and assets of the project, and also occupied the 6% of the installed capacity in the wind power market in Australian . The project is the first overseas one and also the first overseas project of BEH ;and it has the actively exemplary role.

The total installed capacity of Australian GR Wind and Power Project was





The first landscape co-located power plant in large scale

In 2016, based on the advantage of overseas base of Australia's GR project, the company successfully completed the first overseas solar project merger and acquisition (M&A)- Australian Glen 10MW photovoltaic power generation projects, constructed the first large-scale landscape wind farm in Australia, which was an Australian local benchmark for demonstration projects extended with its own capital on the basis of Glen project, thus gaining a A\$10 million government subsidy from Australia clean energy agency. The amount of subsidy has been over 40%, making internal rate of return is over 13%. The successful promotion of the project has been and has reinforced the construction of offshore platforms while diversifying the business.



Overseas Responsibilities

On the basis of accelerating overseas development and striving to expand our business, Jingneng Clean Energy tries to assimilate into the local community actively, strengthens transparent and honest communication with interested parties, services the local society, builds a good community relationship and promotes the harmonious development of economy, society and environment in the area of the project.

Wind farm open day

Australian companies regularly host a variety of Open Day activities with open and enthusiastic attitude, to show the interested parties the true electric field operation through electric farm visits and face-to-face communication and popularize the knowledge of renewable energy sources, increasing the interested parties' understanding of wind farm and new energy. In 2016, the company received nearly 200 visitors on wind farm open day.







A\$ **7 0** million government subsidy

The company received nearly





Widely acclaimed wind farm Open Day

On October 16, 2016, the new Glen Wind Farm held a special "second wind farm open day activities", in which the local

The project company especially set up renewable energy sources display area, cultural exchange area, children experience area and rest area in the Glen Wind Farm, to educate visitors about renewable energy sources and enhance the relationship

The atmosphere was warm and orderly on the event day, and all the residents reflected that it was the best community event of the year. The open day of the wind farm was warmly received in Australia, and the event was reported by popular media like



Turn to residents' voices

Home visits: To collect opinions and suggestions on the development of wind farm of community residents, the Glen Wind Farm sent five representatives to visit local residents, to introduce information about wind farms to them and answer their questions.

Consultation and complaint management: The Glen wind farm sets up free phone calls, E-mail addresses and postal addresses, with which anyone can easily consult and complain. In 2016, the wind farm improved consultation and complaint systems, to respond more quickly to various inquiries and complaints, and post important information to the official website and receive public supervision.

Support community development



Clean Energy support schemes: The Glen wind farm provides a clean energy support program to residents within five kilometers of the wind farm each year, which helps local residents use renewable energy sources. In December 2016, the Company approved the application of the first resident to "install roof photovoltaic panels and solar water heaters", and installed in the first quarter of 2017, while more applications will be reviewed and grouted.

Addressing local jobs: The Glen wind farm has currently employed two local residents to oversee the office management of wind farms and the offices of Bannister hall; the Glen solar power plant project will provide 60 jobs for local communities, effectively relieving local employment problems.

Community Advisory Board: Glen Wind Farm is a member of the local community advisory board, which actively join the local communities to discuss better management measures, safety guarantee and environmental hazards reduction of wind farms, helping wind farms make up the shortfall and better integrate into local society.

Local environmental protection

Greenspace management: According to Australia's environmental regulations, Australian project company has carried out a large scale of greening around wind farm, built protective enclosures and remove weeds, as well as made detailed layout of tree planting, to reduce the visual impact of wind farm on the surrounding inhabitants. In order to improve the management and maintenance of greening, the company cooperated with local enterprises in greening management, completed the planting and maintenance of 7, 500 trees in a year, achieving a good ecological benefit.

Biodiversity Conversation: Our Australian project companies focused on the living environment of birds around wind farms, actively communicated with the local government and hired a third party professional environment agency to review and analyze the surrounding of the wind farm, and reported to local government regularly. In 2016, the Glen wind farm was ahead of the nine surrounding wind farms in bird protection.

Implement overseas public welfare activities

The company actively conducted overseas public welfare activities, and made responsible enterprise image. In 2016, the Australian project company donated RMB 700,000 for public welfare.

Community Foundation: The Glen wind farm provided approximately A\$70,000 a year in social funds, which were managed by local communities, for which community groups within ten kilometers of wind farms could apply.

Community Organizations: In terms of rewarding society and strengthening community relations, the Glen wind farm provided targeted support for local communities, including A\$7,500 sponsorship fee for the local football club, sponsorship for Crookwell festival and potato festival, supported for local community life ,which greatly promoted community relations.

Public speech: In 2016, the Glen wind farm held two campus speech contests on wind power knowledge, encouraging students to prepare and participate the competition, and offered an A\$50 bonus for outstanding students.



Offered an A\$ power knowledge



welfare



sponsorship fee for the local football club

students who participated the wind



Share Harmonious Development



Community support

Precise poverty alleviation

Charity in Hong Kong

Safety management

Salety contingency

Investigation and Prevention of Hiddon Hazards

Safety training

Basic rights Staff development Occupational health: Happy life



Share · Harmonious Development

"

"We shall uphold the principle of shared development and insist on development for the people, by the people and the fruit of development shared among the people. More effective system and arrangements will be put in place to establish a stronger sense of ownership for everyone in the course of co-development, which adds impetus to further development, unites the people and steadily pushes forward the goal of shared prosperity."

-- General Secretary Xi Jinping at the Fifth Plenary Session of the 18th CPC Central Committee

"

Community Engagement

Community support

The company takes initiatives to fulfil corporate social responsibility and participates in public welfare and charity. For example, it extensively grants bursary, supports people in poverty and organizing employee volunteer activities to give back to society and promote harmonious development with love and action. In 2016, the company donated a total of RMB3.1846 million.

In 2016, the company donated a total of RMB





Jingyang Thermal-Warm the "Sunny Village"

In active response to the call of the Party Committee of BEH to participate in "Learn from Lei Feng Month", Jingyang Thermal Company organized employee volunteers to visit "Sunny Village", the training base of children of prisoners in Beijing on 31 March 2016, which kick-started the "Jingyang Charity" community and enterprise cooperation volunteer program.

The viewing of the documentary short film titled "The Story of Sunny Village", which followed the donation ceremony, allowed employee volunteers to know more about the fight for the rights of prisoners' children in the past. The film motivated the volunteers to fulfil their social responsibility with dedication and further promoted harmonious joint development of society and enterprises. In 2016, the "Learn from Lei Feng" volunteer team of "Jingyang Charity" Communist Youth League received the "Excellent Learn from Lei Feng Volunteer Team Award" from BEH.



5 Case

Beijing Jingneng New Energy-Spread Love through Voluntary Service

In undertaking initiatives of environmental protection, poverty relief and education sponsorship, Beijing Jingneng New Energy advocates the service concept of "learning from Lei Feng, contributing to the lives of others, improving yourself" to show care to the local community.





"

Thank you letter

"Love is everywhere, every gesture shows you care". The poverty relief fund of RMB80,000 from Sichuan Power warms the hearts of 1,730 villages living on the 95 sq. km. land of Happy Village. As the flowers of love blossom into the fruits of joy in this little village of happiness, we sincerely thank Sichuan Dachuan Power Co., Ltd. and the caring benefactors for their support.

——Thank you letter from the Village Committee of Happy Village, Dachuan Town to Sichuan Dachuan Power Co., Ltd.

Precise poverty alleviation

Leveraging its own strengthens, the company places great emphasis on developing new poverty relief approaches, integration and optimization of local and natural resources and adopting precise assistance to local industries with the view of promoting sustainable economic and social development.



"

Case

Beijing Jingneng New Energy- photovoltaics for "Hollow Village"

"

Background knowledge:

The Shixia Village at Yanging is a mountain village located at the south-western corner of Badaling Town, Yanging District, Surrounded by the Great Wall, the village only has a population of less than 200. Given the severe shortage of farmland, most of the young adults work outside the village, resulting in the scarcity of labor. The village therefore become a "hollow village" and "elderly village" with annual income per capita ranging as low as from RMB8,000 to RMB15,000, and most of the villagers live on the salary as forest fire prevention workers, part-time workers at village cooperatives or rely on government subsidy.

"

In November 2015, Beijing Jingneng New Energy responded to the call for precise poverty alleviation and adopted the model to provide assistance through empowerment and "industry and tourism" development at Shixia Village.

Poverty alleviation through distributed photovoltaic industry: the poverty relief team of Beijing Jingneng New Energy stationed at the village capitalized on the unique and bountiful solar resources of Shixia Village to develop the distributed photovoltaic industry. The rooftop of the Shixia village committee was selected for the trial operation of rooftop distributed photovoltaic power generation with an installed capacity of 5.4KWp. With the on-grid connection of the project started on 27 December 2016, it is expected that the arrays of photovoltaic panels will help the village get rid of poverty. After villagers achieve self-reliance, they can sell the surplus power generation to the government in exchange of stable income. Based on the average price of distributed photovoltaic facilities in the industry and the tariff policy for distributed photovoltaic power generation in Beijing, it is estimated that the annual power generation capacity of approximately 90,000KWh will bring around RMB100,000 per annum to the village in average during the useful life of 25 years.

More support to tourism development: To promote industrial development in different ways, the company integrated local tourism resources with folklore characteristics, renovated and converted historic courtyards, carried out improvement to roads, transportation system and other infrastructure, constructed axillary facilities, improved the landscape and invited "Glamourous Village" to advertise Shixia Castle Inn and promote it to the "outside world". According to statistics, following the broadcast of the show, visitors to the village increased by over 20%, which greatly boosted the tourism industry of Shixia.



Distributed photovoltaic power generation with an installed capacity of

5 4 KWp

The annual power generation capacity of approximately



Charity in Hong Kong

Beijing Jingneng Clean Energy is committed to youth education and helping disadvantaged groups. It is devoted to promote charity through the Mingxi Charity Foundation as a platform.

- middle schools of Beijing as well as summer exchange students from the Silk Road countries were invited to the event.
- To support the national strategy of "Mass Entrepreneurship and Innovation", the company joined hands with The Hong Kong students and encourage innovation and entrepreneurship.
- promote activities that better cater the needs of the youth.

V Read more: Mingxi Charity Foundation

Established on 24 August 2016, Mingxi Charity Foundation is a non-profit charitable origination registered as society in Hong Kong. Dedicated to youth affairs in Hong Kong, its objectives are to nurture young talents and support innovation and entrepreneurship of young people. Meanwhile, Mingxi Charity Foundation contributes to social development in Hong Kong by helping the disadvantaged groups and actively participating in charity and community events. With the intensive support from the Beijing government and municipal enterprises, this foundation serves as a charitable platform for Beijing enterprises based in Hong Kong to undertake social responsibility and support the growth of the younger generation.

Production Safety

The company strictly adheres to the "safety first, prevention-focused and integrated control" approach. It strives to optimize the standards, regulations and system of the production safety structure and develop safety awareness with unremitting efforts. While enhancing contingency planning and prevention on safety incidents, it also includes safety management in its daily operation. In 2016, company achieved stable operation of generating units and there was no personal injury and equipment accidents.

Indicator	Unit	2014	2015	2016
Investment on production safety	RMB'0,000	5,140.82	5,058.12	4,968.71
Emergency drill	Times	238	275	239
Participants of safety training	People	18,420	13,952	13,629
Number of deaths and causalities	People	0	0	0
Major equipment accident	Times	0	0	0
General equipment accident	Times	0	0	0
Equivalent availability factor of unit	%	95.81	93.28	95.44
Unscheduled stoppage	Times	9	10	6

• The company sponsored the representatives of the "University Alliance of The Silk Road"- The Hong Kong Polytechnic University organized the Forum of University Presidents under the theme "The Belt and Road" along with the international forum in celebration of PolyU's 80th anniversary. Officers of the Beijing Municipal Education Commission, the head of high schools and

Chinese Innovation and Entrepreneurship Association, education institutions and organizations to provide assistance to young

 The company developed a long-term education subsidy system to support and reward local Hong Kong students with family financial problems and young talents who have achieved outstanding academic results or exceptional performance in other areas.

• The company formed the volunteer team and provided resources and support for the young members and it to organize and

Safety management

In order to optimize the production safety management system, the company implements the "Administrative Measures on Production Safety Accountability System", "Administrative Measures on Fire Safety", "Regulation on Flammable and Combustible Materials Management", "Regulation on Safety Training Management", "Regulation on Accident Investigation Management", "Regulation on Investigation and Prevention of Accidents and Hidden Hazards" and other production safety system, so as to ensure all rules, systems and measures are put into proper practice. Moreover, in order to meet the safety target, the company has strengthened precautionary measures for safety management and further established the comprehensive production management procedures for equipment inspection, repair and maintenance, operation and safety monitoring. In 2016, the company achieved overall safe and stable production and met the annual target of "10 Zero Accidents".

"10 Zero Accidents"



 Zero deaths or serious injuries of more than three people
 Zero major fire

- (3) Zero major equipment accidents
- (4) Zero major mis-operation accidents
- (5) Zero blackouts and serious threat to grid safety
- 6 Zero water dam break and ash dam break or major collapse accident
 7 Zero suspension of heat supply to a large area
- 8 Zero accidents of health damage and food
- poisoning outbreaks at work
 Q Zero major traffic accidents in which the company bears more than half of the responsibility
- No accidents directly causing economic loss of more than RMB5 million

Safety contingency

The company has effectively performed the safety and emergency management function of the power industry and optimized and formulated the emergency plan and onsite response plan. With reference to the production safety practices, enterprises carried out targeted emergency drills and revised the emergency plan based on the results of the drill. In order to strengthen emergency management, the company has proposed improvement measures to address problems identified during the drill.



Jingfeng Company

Investigation and Prevention of Hidden Hazards

The company conducted ongoing and in-depth safety inspection and prevention of hidden hazards. Given that the Company owns a large number of gas-fired power generation enterprises, it has implemented special inspection and control focusing on the storage of hazardous chemicals and dangerous zone management. Meanwhile, it has enhanced the safety control of key areas such as natural gas pressure-regulating stations and worksites, established operating standards, strengthened risk prevention and control, and scrutinized recurring non-compliance.

In 2016, the company carried out quarterly inspection, safety month inspection and inspection on specific items to three projects that had commenced operation, namely Guanting Wind Farm Project, Yanqing Photovoltaic Project and Qianxi Photovoltaic Project, and identified a total of 78 problems. It also performed five safety inspection on projects under development and identified 21 problems. The company promptly prepared notice in relation to the problems identified and required the directly managed companies to take improvement actions. It has also followed up the rectification progress to achieve closed-loop safety and hidden hazard management.



Investigation and prevention of hidden safety hazard at Gaoantur

Safety training

The company places great emphasis on employees' safety education and training. Special trainings for safety management personnel were organized for safety officers. The Group also launched training activities such as "Production Safety Month" and "I Have a Say in Safety", as well as 13 safety education programs which were attended by 327 participants. To promote safe production and workplace knowledge on labor protection, enterprises held production safety competition to enhance employees' professional expertise and capability.





Comic titled "Bear Production Safety in Mind" by Guo Pengying from the thermal equipment department of Gaoantun, which was awarded the



Jingxi Thermal Power-Production Safety Promotion Day

On 16 June 2016, which was the National Production Safety Consultation Day, the company invited the Shijingshan Administration of Work Safety to jointly organize the Production Safety Promotion and Consultation Day campaign at the site of gas production. Under the theme of "Enhancing Safe Development Awareness and Improving Safety Standards of Every Citizen", the company held a series of safety activities and received over 170 participants to greatly heighten their safety awareness.

- Signing ceremony
- Promotion of production safety laws and regulations and distribution of advertising materials
- Explanation of usage, classification and method of use of fire extinguishers
- Lecture on CPR and first aid knowledge
- Comic showcase on "Finding Hidden Safety Hazards"
- Display panels on safety knowledge, promotion leaflet
- Quizzes on road safety



safety education programs which were attended by







Responsibility to Employees

Basic rights

Jingneng Clean Energy adheres to the "people-oriented" development philosophy. It maintains strict compliance with the "Labor Law of the People's Republic of China" and consistently implements the "Measures of Recruitment, Employment and Dismissal Management", "Measures of Employee Appraisal Management", "Measures of Attendance Management", "Measures of Employee Training Management", "Measures of Performance Appraisal Management for Mid-level Management Personnel", "Measures of Labor Management", "Code of Conduct and Ethical Requirements of Employees" and other system in recruitment, evaluation, training and management of employees. The company adopts an equal and non-discriminative employment policy, prohibits the use of child labor and stands against forced labor. It has a reasonable remuneration and benefit system in place and a working smooth democratic management channel. To promote employees' wellbeing, the company strictly follows the national requirements by distributing labor protection equipment and granting high temperature allowance. Moreover, it has built effective career path for employees so as to facilitate the rapid development of the staff and the company.

Indicator	Unit	2014	2015	2016
Total number of employees	People	2,273	2,353	2,661
Signing rate of employee contract	%	100	100	100
Coverage of social insurance	%	100	100	100
Percentage of employees joining labor union	%	100	100	100
Average paid annual leave	Days	8	8	9
Mid-level and above the proportion of female managers	%	15.43	15.22	15.04
Number of female management personnel at mid-level or above	People	48	49	51
Number of management personnel at mid-level or above	People	311	322	339
Number of physically challenged employees	People	7	11	12
Employees with bachelor degree or above	People	1,189	1,290	1,420
Employees with post-secondary education	People	1,084	1,063	1,241
Employees with high school education or below	People	628	650	617



"Jingxi Beauty" Makeup Course

To create a festive atmosphere and help female employees look stunning for the Spring Festival, the Party Committee of Jingxi Company joined hands with the trade union to organize the "Jingxi Beauty" makeup and skincare course in February 2016. More than 30 female workers attended the course.

"Jingxi is beautiful because of me, I am beautiful because of Jingxi" is the shared vision of female employees of Jingxi. The beauty course not only represents the company's efforts in paying attention to and taking care of the female employees, but also demonstrates its dedication and commitment to becoming a "harmonious enterprise".



Staff development

The company attaches great importance to talent nurture and growth. Therefore, it has established comprehensive career path and facilitated talent development with promotion opportunities, which motivates employees to aim high, learn by themselves and achieve progress, thereby providing momentum for the business. Apart from that, the company has formulated the *"Measures of Employee Training Management"*, which stipulated the *"Company level-Department and Office level-Frontline production"* three-tier training system. By incorporating training indicators in performance appraisal, the company also raised employees' awareness of skill enhancement. In 2016, the company organized 387 training programs. With an average training hours of 139.69 hours per person and full coverage of employees, the programs effectively enhanced the overall capability of staff.

Indicator	Unit	2014	2015	2016
Investment on staff training	RMB'0,000	519.14	566.23	701.34
Training participants	People	51,898	68,400	75,896
Coverage of staff training	%	100	100	100
Total training hours	Hours	129,995.16	154,937.44	398,089.79
Average training hour per employee	Hours	57.19	65.85	149.60



Gaoantun Thermal-New Training Management Model

Gaoantun Thermal adopted an innovative training model and collaborated with the School of Continuing Education of North China Electric Power University to hold university-enterprise joint training with the view of further promoting training efficiency.

In 2016, the company organized three sessions of training courses for mid to high level management personnel and young students of the party schools. It also invited professors of North China Electric Power University to give lessons on "Interpretation on No. 9 Documents of Reform of the Electric Power System and the Supporting Documents", "Development History and Model of Smart Power Grid-Smart Energy-Internet of Energy" and other knowledge. As of now, more than 140 participants have received trainings.



Mid to high level management personnel and young students of the party schools more than

140 participants have received trainings

Ō	Case

Jingxi Thermal Power-Training Lecture

The company organized the Jingxi Thermal Company 2016 Training Lecture in collaboration with the Investment Association of China, for the purpose of enhancing the knowledge and skill sets of staff, as well as efficiency and competitiveness of the company.

The Training Lecture was divided into two parts. For the first part, the company invited Deloitte Touche Tohmatsu's China experts to educate employees on "Interpretation and Practices on Taxation Management and Business Tax to Value-Added Tax Policy for Energy Enterprises". Through the lecture, employees not only acquired knowledge on tax risks control strategy, but also gained deeper understanding on the Business Tax to Value-Added Tax Policy. For the second part of the training, the company invited Zhu Baoliang, the Chief Analyst of the State Information Center, to give lecture on "Macro-economic Situation and Supply-Side Structural Reform". Starting from the supply-side structural reform, the speaker dissected the current development trend from the macro perspective and provided a solid theoretical basis for the continuous development of the company.

A total of 180 participants attended the trainings, through which, employees realized that the company should strive for further development and higher efficiency by capitalizing on the country's macro-economic policy while taking into account the actual circumstances.



"

"The flat management structure of the Company allows us to give full play of our strengths and provides young employees ample training opportunities. Through intensive business practices and learning of professional skills, employees' capabilities are quickly boosted."

----Staff of the human resources department

participants attended the

A total of

"

"

"Graduated from university in July 2011, I started as an ordinary worker and worked my way up to assistant chief of the power generation department. Looking back to the past five years as the company and I grew together, I have to say that the company's training system built for employees was the driving force for my success. I thank the company for providing the training support and development platform that pushes me forward."

----Liu Changlong, the assistant chief of the power generation and operation department of Gaoantun Thermal

"

"

in a safe and harmonious manner."

----Liu Hongyu, thermal control engineer of the equipment management department of Gaoantun Thermal "

Occupational health

The company has strictly implemented the "Measures for Occupational Health Management" in the prevention and control of occupation diseases. It has also enhanced protection to employees at special positions and timely distributed labor protection equipment to further strengthen occupational health management. The company pays attention to employees' mental health and actively organizes mental health professional trainings and stress relief activities. In 2016, the company achieved full coverage rate of physical examination and health record.

δ Case

Jingfeng Natural Gas-fired Power-Occupational Health Training Becomes Normal

Jingfeng Natural Gas-fired Power consistently implemented the "Standards of Employee Occupational Health Management" and regularly organized "Promotion Week on Occupational Disease Prevention" in order to raise employees' health awareness.

In 2016, the company invited the experts of Fengtai District Disease Control Centre to provide occupational health training. It also encouraged staff of the power generation department and maintenance department to participate in the "Healthy China Starts from Occupational Health" campaign held by the Fengtai District Disease Control Centre, which aimed at further enhancing employees' self-protection awareness and preventing occupational diseases.

Case

Gaoantun Thermal-"Let the Sun In"

To foster positive attitude and joyful atmosphere at workplace, Gaoantun Thermal launched the "Let the Sun In" campaign in December 2016.

During the event, experts were invited to share on the "Building of Efficient Team and Improvement of Execution", "Workplace Stress and Emotion Management" and other topics, which discussed in-depth the common mental health issues at workplace, the ways to handle stress, live a happy life, stay positive and enhance professional quality. The event provided solutions for employees to identify, recognize, adapt to psychological stress and maintain mental health.

Through this event, employees became better at managing stress, which was conducive to building a new culture of "happy working and healthy living".

"Gaoantun Thermal has a stable structure and a comprehensive training system within the organization. New employees will receive various work-related trainings within couple years after they join the company, which aim at helping them adapt to the rapid change of role while enhancing their capabilities. As a result, both the company and employees are able to achieve growth



Case

Jingyang Thermal-Good Ways to Deal with Stress

To help staff relieve stress and safeguard their mental health, Jingyang Thermal set up a stress relief room where it placed roly-poly sandbags and boxing gloves for employees to vent their feelings. It also provided mental health books which employees could rent for free, with the aim of enriching their minds. Apart from that, in order to create a laid back atmosphere at workplace, it offered yoga, floral arrangement and drawing classes for staff to join at leisure, so that they could relax and release stress.



In 2016, the company has allocated

R 7 employees out of poverty

RMB**159.400**

to pull

Happy life

Poverty relief

The company cares about the employees and is dedicated to foster a happy corporate culture. It has researched on the formulation of the "Support System for Employees in Need", constructed archives of staff with difficulties, paid regular visits to those employees and gained more in-depth knowledge of their hardship. In 2016, the company has allocated RMB159,400 to pull 87 employees out of poverty.



Colorful life

To enrich employees' lives after work and help them achieve work-life balance, the company organized a wide range of activities for them, with the view of enhancing their cohesion and happiness.



Gaoantun Thermal-Walk with Passion, Walk with Health

On 12 May 2016, Gaoantun Thermal held the "Walk with Passion, Walk with Health" campaign which was participated by over 60 enthusiastic management members and employees at different levels. The event not only helped staff to relieve fatigue and improve physical strengths, but also played an important part in promoting team cohesion and their loyalty towards the company.



Case

Jingxi-"Bookish Jingxi" Reading Campaign

In response to the spirit of the "Notice of "Bookish Jingneng" In Jingxi" Reading Campaign.

- Established reading group and "Reading Corner of Branch Office"
- Organized book exchange to boost recycle of resources and foster closer communication between employees
- Held the "Learn through Reading at Homey Book House" activity
- Launched the "Read and Appreciation Good Book" event
- ·····

While raising employees' enthusiasm and initiative on reading, the "Bookish Jingxi" reading campaign also created a sound reading culture that provided intellectual and knowledge-based support to sustainable, scientific and healthy corporate development.



In response to the spirit of the "Notice of "Bookish Jingneng" International Reading Day", the company launched the "Bookish

ice" oster



Prospects



The year 2017 is critical to the implementation of the "13th Five Year Plan". It is also a year to promote and deepen the supply-side reform and a crucial year to strengthen party discipline. In the new year, we will continue to "expand gas-fired power, strengthen wind power, enhance photovoltaic power, integrate hydropower and achieve breakthrough in waste-to-energy" as our development strategy, with the view of achieving progress amid stability and making great strides.

Innovation for development.

The Group will insist on optimizing the integrated management system which adopts benchmarking as the guide, standardized business practices as the basis and internal control as the means, so as to promote the effective combination of standards and management. It will also actively explore the application of Internet of Energy technology and seek for new development approach. Meanwhile, it will strengthen technology innovation by enhancing talent nurture for technological innovation and boosting in-house innovation capability, so as to drive business growth with technology.

Coordinated development.

Leveraging the advantages as a diversified clean energy business, the company will coordinate the development of the gas-fired, wind power, photovoltaic and hydropower business segments, with the view of steadily increasing the market share. To match production and sales capacity, the company grasped the opportunity to establish the power sales company that incorporated power generation, distribution and sales, thereby expanding the space for operation. In pursuit of sharing of resources, responsibility and profit, the company will also strengthen the synergy effect with supply chain partners.

Green Development.

The company will always treat environmental protection as one of its missions and stay committed to clean energy. It will actively push forward innovation on green technology and boost recycling rate. Moreover, it will devote more efforts to reduce emission and pollution, recycle and reuse residual heat and enhance carbon assets management, thereby developing into a resources-saving and eco-friendly enterprise.

Open development.

The company will actively explore overseas project to expand the international market. For projects in the developed economies, it will carry out in-depth study of local national policies, regional capacity, grid balancing and other conditions while developing key layout and carrying out project development properly. Apart from that, it will positively keep an eye on the key project opportunities in areas along the "Belt and Road Initiative", such as Australia, North America, Eastern Europe and Southeast Asia, and strive to develop into an international energy management enterprise.

Shared development.

The company will take up corporate social responsibility and create shared value. It will continue to offer education subsidy, participate in poverty relief and organize employee voluntary service for harmonious community development. The company will optimize the safety management system and enhance safety management training, for the purpose of effectively implementing safe production and promoting safe and orderly community development. Furthermore, the company will optimize the career development channel to support employees and build a sharing and communication platform so our staff can grow with us.

Key Performance Indicators

Economic Responsibility

Indicator	Unit	2014	2015	2016
Operating income	RMB million	8,729	14,346	14,636
Earnings per share	RMB cent	18.39	27.81	28.46
Total consolidated installed capacity	MW	6,934	7,240	7,791
Installed capacity of gas-fired thermal power	MW	4,436	4,436	4,436
Installed capacity of wind power	MW	1,815	1,915	2,263
Installed capacity of hydropower	MW	413	449	449
Installed capacity of photovoltaic power	MW	270	440	643
Power generation volume	MWh	16,350,929	25,905,101	26,220,574
Gas-fired power generation and heat supply	MWh	10,895,277	19,722,392	19,430,756
Wind power generation	MWh	3,448,426	3,689,824	4,156,625
Hydropower generation	MWh	1,555,983	1,862,841	1,823,066
Photovoltaic power generation	MWh	451,243	630,044	810,127

Social Responsibility

Indicator	Unit	2014	2015	2016
Total number of employees	People	2,273	2,353	2,661
Employees with bachelor degree or above	People	1,189	1,290	1,420
Employees with post-secondary education	People	1,084	1,063	1,241
Employees with high school education or below	People	628	650	617
Mid-level and above the proportion of female managers	%	15.43	15.22	15.04
Signing rate of employee contract	%	100	100	100
Coverage rate of social insurance	%	100	100	100
Percentage of employees joining labor union	%	100	100	100
Average paid annual leave	Days	8	8	9
Coverage rate of employee training	%	100	100	100
Total training hours	Hours	129,995.16	154,937.44	398,089.79
Average training hour per employee	Hours	57.19	65.85	149.60
Number of female managers at mid-level or above	People	48	49	51

Social Responsibility

Indicator	Unit	2014	2015	2016
Number of management personnel at mid-level or above	People	311	322	339
Number of physically challenged employees	People	7	11	12
Number of trainees (total number of trainees)	People	51,898	68,400	75,896
Investment on staff training	RMB'0,000	519.14	566.23	701.34
Investment on production safety	RMB'0,000	5,140.82	5,058.12	4,968.71
Number of emergency drills	Times	238	275	239
Participants of production safety training	People	18,420	13,952	13,629
Number of major equipment accident	Times	0	0	0
Number of general equipment accident	Times	0	0	0
Number of casualties and fatalities of employees	%	0	0	0
Number of unscheduled stoppage	Times	9	10	6
Equivalent availability factor of unit	%	95.81	93.28	95.44

Environmental Responsibility

Indicator	Unit	2014	2015	2016
Water consumption reduced	0,000 tons	25.33	507.14	421.77
Sewage discharge	0,000 tons	369.91	319.73	326.74
Sewage discharge reduced	0,000 tons	0	47.44	49.50
Emission of carbon dioxide	0,000 tons	448.14	752.47	753.22
Emission of carbon dioxide reduced	0,000 tons	579.59	716.44	796.64
Emission of smoke and dust	Tons	57.06	74.30	72.10
Emission of smoke and dust reduced	Tons	93.6	115.8	115.1
Emission of sulphur dioxide	Tons	71.16	56.02	49.98
Emission of sulphur dioxide reduced	Tons	845.54	975.16	940.20
Emission of nitrogen oxides	Tons	845.54	1,598.75	1,370.96
Emission of nitrogen oxides reduced	Tons	590.54	1,157.37	1,325.84
The consumption of standard gas for power generation and heat supply	Thousands of cubic meters	21.74	39.24	39.49
The consumption of water for power generation (and heat supply)	0,000 tons	1,209.77	1,975.40	1,857.36

Appendix to the Report

Index of Indicators

		ESG requirements	Page
	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	P32
	A1.1	The types of emissions and respective emissions data	P35
A1	A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P35
Emissions	A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P35
	A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P35
	A1.5	Description of measures to mitigate emissions and results achieved	P34
	A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved	P35
	General disclosure	Policies on the efficient use of resources, including energy, water and other raw materials Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P37
	A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility)	P62
A2 Use of Resources	A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	P62
	A2.3	Description of energy use efficiency initiatives and results achieved	P36
	A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved	P33/P34/P62
	A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	Not applicable to this industry
A3 The Environment and Natural Resources	General disclosure	Policies on minimising the issuer's significant impact on the environment and natural resources Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P38

		ESG requirements	Page
	A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	P38-39
B1 Employment	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare	P54
B2 Health and Safety	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards	P52/P57
B3 Development and Training	General disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities. Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P55
B4 Labour Standards	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labor	P54
B5 Supply Chain Management	General disclosure	Policies on managing environmental and social risks of the supply chain Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P28
B6 Product Responsibility	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress	P24-27
B7 Anti- corruption	General disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	P12
B8 Community Investment	General disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	P48-51

Feedback

This report is the first "Environmental, Social and Governance Report" publicly released by Jingneng Clean Energy. For improving the work related to corporate social responsibility and promote the ability and standard to fulfill social responsibilities, we value your opinions and recommendation. We appreciate your response to the questions in the opinion form and your feedback via the following methods.

	nation
Name:	
Company	/:
Positon:	
Tel:	
E-mail:	
Feedback	
O Exceli	s your overall assessment of this "Environmental, S lent \bigcirc Good \bigcirc Average it extent do you think this report reflects the signif
O Highes	ST O HIGH O AVERAGE O LOW O LOWEST
	s your view on the report in terms of the clarity, ac .ent O Good O Average O Poor O Not su
4. Which	PART OF THIS REPORT DO YOU ENJOY THE MOST?

yang District, Beijing

ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACT OF THE COMPANY?

Y AND COMPLETENESS OF INFORMATION, DATA AND INDICATORS?

66 Jingneng Clean Energy

