

2018 Social Responsibility Report

(Environmental, Social and Governance Report)





The origins of our logo come from our name in ancient Chinese calligraphy. Appearing like a bell and standing as stable as a mountain, the logo embodies the pragmatic and steady approach of our company. The circle and square representfairness, justice, unity, and harmony, while the protruding point at the top of the logo indicates our rising development and unlimited potential. The color red is typical of China and is characteristic of our strong national features and ambitious prospects.



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Our greetings

The 2018 CSR Report of Datang International Power Generation CO., LTD. is released, and this is our 11th social responsibility report. We are glad to share with you about our practices and performances in social responsibility fulfillment in the past year.

Time flies. The year 2018 marks the 40th anniversary of China's reform and opening up. It is a crucial year for securing a decisive victory in building a moderately prosperous society in all respects and for implementating13th Five-Year Plan, and also a crucial period for achieving high-quality economic and social development. In 2018, by adhering to our new development concepts and promoting high-quality development, we have kept pressing ahead regardless of challenges and difficulties.

We adhere to the "quality" criteria of Datang. Lawful and compliant corporate governance is the policy and foundation for corporate governance and development. We strengthen the awareness of safety production, improve the level of compliance management, in order to guarantee the high-quality development of the Company.

We promote the "efficiency" transformation of Datang. We adhere to scientific development, strive to improve energy utilization and power supply levels, proactively respond to power market reforms, innovate the management mechanism, and explore the power market, to achieve continuous improvement in the efficiency of production and operation of enterprises.

We inspire the source of the "vigor" of Datang. Taking innovation as the driving force, we improve our innovation systems, build innovation teams, cultivate technology talents, and create a stage for employees to release their infinite ingenuity.

We pursue the "beautiful" vision of Datang. We bear in mind that blue sky, white clouds and green mountains and clear water are important prerequisites for sustainable development, and we integrate the philosophy of responsibility into ultra-low emission renovation of power generating units, take clean energy supply and environmental protection as our unshrinkable responsibilities, with an aim to share a green future with the general public.

We cohere the energy of the "happiness" of Datang. We actively play our roles in meeting the "ever-growing need for a better life" of all parties. We improve the wellbeing of the people and promote community development, and also provide opportunities for employees to help and care for people in need, through which they will in return gain social recognition. Our achievements cannot be made without understanding, trust and support from all walks of the community. It is the sincere communication and cooperation with all stakeholders and the firm belief and hard work of all employees that enable Datang Power to overcome obstacles and challenges, make new breakthroughs, and seek reform and development based on its own situation, thus laying the foundation for long-term and sustainable development.

We never stop to rest through the long difficult trek, and it is the best time to build up our strength. Embarking on the new journey of 2019, we will continue to take actions and shoulder the social responsibility as a state-owned enterprise. We will avoid the distractions of unsubstantial ideas and superficial fame, take one step at a time, and approach our work with a firm footing, so as to make the best contribution to the economic and social development of China.





Company History



Datang International Power Generation Co., Ltd. (hereinafter referred to as "Datang Power", the "Company", "We", "Our" or "Us") was founded in December 1994. The Company is a power generation enterprise and its headquarters are in Beijing. In 1997 Datang Power was listed on the Hong Kong (SEHK) and London (LSE) stock exchanges. In 2006 the Company was listed on the Shanghai Stock Exchange. Over the past 25 years, Datang Power has grown from four thermal power plants with an installed capacity of 2,850 MW into one of the largest comprehensive energy companies in China. Headquartered in northern China, we are rooted in western China, and expanding towards China's coasts. We have subsidiaries and ongoing projects in 20 provinces. With power generation

Keeping up with the pace of reform to paint the picture of the Company's growth

811

a thermal power generation company to an integrated energy enterprise with operations in different sectors and industries. In 2018, the Company stepped up efforts in structural adjustment with a focus on improving development quality and business performance, contributing to the high-quality development of China's economy.

2014

Datang Power was

Global Energy

for the eighth

consecutive year;

installed capacity

included in "Top 250

Companies" by Platts

exceeded 40,000 MW.

1994

Datang Power founded: installed capacity 2,850 MW. Datang Power was the first Chinese power company listed on the Hong Kong Stock Exchange (SEHK), and the first Chinese company listed on London

1997

Stock Exchange

(LSE).

2006

Datang Power was listed on the Shanghai Stock Exchange (SSE), making it the first power company to be listed on the SEHK, LSE, and SSE; installed capacity exceeded 20,000 MW.

2009

Datang Power was included on the Fortune Global 500 and received the "Gold Award for Company" from Asset Magazine; installed capacity exceeded 30,000 MW.

2013

Datang Power was recognized as "the Most Socially Responsible Listed Company" and "China's Top 10 Listed Company in Corporate Governance"; installed capacity reached 39,187 MW.

2016

Datang Power accelerated its implementation of the 13th Five-Year Plan and executed structural reforms. The Company was among the "Top 250 Global Energy Companies" by Platts for the tenth straight year and received a "Top 100 Listed Companies in China" prize; installed capacity 44,338 MW.

as the major business, we cover various sectors and industries including coal, transportation, circular economy and electricity sales. We have transformed from

THE BE

2017

With an installed capacity of 48,031 MW, in 2017, the Company was listed in the "Top 250 Global Energy Companies" by Platts for 11 consecutive years and awarded "Top 100 Listed Companies in China". It also broke several records including the highest single-day power generation, highest single-month power generation, and highest cumulative power generation.

2018

With an installed capacity of 62,853 MW, the Company generated a total of 269.704 TWh of electricity; the Company was listed in the "Top 250 Global Energy Companies" by Platts for 12 consecutive years; the first digital intelligent gas power plant featuring low carbon emission. eco-friendliness and leading technology was built.

Business Layout





Strategic Development

We are implementing the 13th Five-Year Development Plan of Datang Power, striving to build Datang Power into a leader in the industry, a provider of clean energy, a creator of company value, and a defender of public interest.

Our focus during the 13th Five-Year Plan period: We will develop non-hydro renewable energy and clean coal power in an orderly way, taking the initiative to developing large and mediumsize hydropower facilities, prioritizing the development of combustion engines, and transforming and upgrading the power generation industry. We will further incorporate the sale of heat to our operations, steadily promoting our coal operations in conjunction with our core power generation business while accelerating our internationalization. We will also explore new areas of development by entering the sale and allocation of electricity and facilitating a carbon trading market. We will continue to transform our Company from a unitary power generation enterprise into a comprehensive energy service provider.

Corporate Governance

Keeping our mission in mind, we actively practice the concept of social responsibility by aligning our own development with social prosperity and ecological preservation, seeking to build a quality-centered, efficiency-oriented, innovation-driven, eco-friendly, CSR-minded Datang Power and forge a responsible and reliable comprehensive energy company.

We have steadily improved our corporate governance system, fulfilled our duties and responsibilities in accordance with the Company's articles of association and the authorization by the Board of Directors. By constantly innovating and exploring new ways to improve our operations, we have steadily improved our corporate governance system, our institutional framework, our management and our approach to technology. Based on the three-tiered management system composed of the shareholder meeting, Board of Directors, Board of Supervisors and Management, we combined strengthening Party leadership with improving corporate governance, emphasized the status of Party organizations in corporate governance structure, and defined duties, powers and procedures of departments including Party organization according to the requirements of the Organization Department of the Central Committee of the CPC and Party Committee of the SASAC that the overall requirements of Party building in state-owned enterprises should be written into the articles of association.



Risk management

We attach great importance to the development of a comprehensive risk management and internal control system. We have been constantly forging our risk management culture, and have set up an audit committee within the Board of Directors to be responsible for the communication, supervision and verification of internal and external audits of the Company. We also set up a risk management office in the Department of Corporate Management and Legal Affairs to take charge of the risk management and internal control system of the Company.





CSR management

We actively disclose business operation information by releasing social responsibility reports, establish and improve the closed-loop CSR management process, and gradually promote the integration of social responsibility into daily business. We also set up media channels and Open Day for the general public, to make stakeholders better understand our Company, thus improving their recognition of the culture

and values of Datang Power.

Based on the ESG Reporting Guide published by Hong Kong Exchanges and Clearing Limited, the GRI Sustainability Reporting Standards and other initiatives, we benchmark against the best CSR reports prepared by our peers at home and abroad, and take into account the status quo of the electricity industry and the Company's development to identify key issues that is significant to stakeholders and the Company's sustainable development.

1	Risk N
2	Low-c
3	Clean
4	Reliat
5	Power
6	Ultra-I
7	Resou
8	Protec Enviro
9	Safe F

lanagement	10	Compliant Operation
arbon Thermal Power	11	Rigorous management over
Energy		the Party
le Supply	12	Technological Innovation
Market Development	13	Employee Rights
ow Emission	14	Occupational Health
Irce Conservation	15	Employee Development
ting the Ecological	16	Community Development
onment	17	Voluntary Service
Production	18	Poverty Alleviation
		1

Substantive issues

Stakeholder management

We continue to strengthen the communication and exchanges with stakeholders such as the government, shareholders, employees, clients and the community, establish diversified communication mechanisms and channels to listen to the voices of stakeholders, respond to their demands in a timely manner, to secure their support.

Stakeholders	Concerns	Communication Methods	Performance Indicators	Practical cases in 2018
Government	National policies and energy security Power and heat supply Legal compliance Tax Structural optimization Increasing employment Management and technical innovation	Laws, regulations and policies Relevant meetings Report works Statistical statements Information ubmission High-level meetings	Power generation capacity Total profit and tax Jobs provided Innovation results	 The Company undertook two projects of National and Provincial Key Technology R&D Program, and organized or participated in the compilation of two industrial and higher level standards. Hebei Xiahuayuan Power Plant and the Xiahuayuan District People's Government of Zhangjiakou signed the Cooperation Framework Agreement for Datang Power Hebei Xiahuayuan Grid Network Source Integration Project
Shareholder	Profit level Standardized operations	General meetings Company announcements Periodic reports Contracts and agreements	Shareholder dividends Shareholder rights and interests Sales income Company profit	 The 2018 Interim Results Presentation was held in Shanghai and Hong Kong Seven wholly-owned or controlled electric power sales enterprises were put into substantive operation and achieved annual electricity sales of 7 TWh, representing an increase of 143% over the previous year; a total profit of RMB 39 million was realized.
Staff	Democratic rights Health and safety Salary and wellbeing Personal development Education and training	Staff representative's meeting Reasonable suggestions interview Collective contracts Labor contracts Openness of company affairs	Work environment Accident rate Labor union membership rate Collective contract coverage ratio Salary levels Investment in staff training Staff turnover rate	 Hebei Tangshan Thermal Power Company invited medical experts to give a lecture on the prevention and health care of cardiovascular and cerebrovascular diseases which are prone to sudden outbreak in high temperature periods of summer. Inner Mongolia Branch of Datang Power held the 4th "Zhengchuang Cup" Staff Badminton Competition.
Community	Harmonious community Public welfare cause Safety and environmental protection	Collaborative construction Public welfare activities Safety and environmental protection publicity	Investments in community building Public welfare investment Number of pollution complaints	 Hebei Douhe Power Plant launched the "spreading love and warmth" campaign, purchasing rice, flour, cooking oil and other daily necessities for poor households, and showing our care for poor households. Beijing Gaojing Thermal Power Plant held the "Third Capital State-owned Enterprise Open Day" campaign, which organically integrated the open day of state-owned enterprises, family visits for employee safety.



Performance Indicators	Practical cases in 2018
Client satisfaction level	 Zhejiang Datang Shaoxing Jiangbin Thermal Power Company regularly visits clients, provides invoice delivery services, and regularly holds coordination meetings on winter heating by working with local governments, continuously improving the service quality. Liaoning Jinzhou Thermal Power Company completed a total of 1.627 TWh of electricity trading in various markets.
Honesty level Contract completion rate Period of cooperation Responsible purchasing Profit	 The Company strictly controlled negotiable purchases, and strictly managed urgent purchases to eliminate sweetheart deal of coal, and better control the market coal price and transparent purchasing. Inner Mongolia Tuoketuo Power Generation Company and Shenyang Institute of Engineering signed a strategic cooperation agreement.
Installed capacity Ultra-low emission transformation of units Proportion of clean and renewable energy Energy conservation indicators Emission reduction indicators	 Clean energy and renewable energy accounted for 26.55% and 5.28% of the total installed capacity of the Company respectively. Clean energy and renewable energy accounted for 26.55% and 5.28% of the total installed capacity of the Company respectively.
Frequency and depth of participation in activities Membership fee amount	 Yunnan Binchuan New Energy Company organized Women's Federation of Binchuan County, government units and media to participate in the "Enterprise Open Day" activity. Heilongjiang Suihua Thermal Power Company organized volunteers to visi Suihua Children's Welfare Home and carried out the "Joining Hand in Hand to Show Our Love" volunteer service activity.



Quality-centered

Pursuing high-quality development is the core essence of the development in the new era and the inevitable requirement for realizing the Chinese dream of the great rejuvenation of the Chinese nation. Datang Power adheres to law-based corporate governance and exercises strict governance over the Party, and holds fast to the safety production bottom line, improves the level of compliance management, to ensure the high

Work safety

Work safety is the bottom line for the operation and development of a company. Upholding the principle of "life matters most and safety comes first", we improve our safety management system, urge all employees to fulfill their safety responsibility and raise their safety awareness, and improve the healthy operation level of equipment, so as to ensure stable management of work safety through multiple ways.

Improving the safety management system

We have strengthened inspections on relevant system development and improved the implementation efficiency. Focusing on our subsidiaries' revision and amendment based on the 55 work safety management systems at group company level, we have checked the accuracy, effectiveness and practicability of their systems, which strongly promoted the systematic and standardized work safety practices. In 2018, Zhejiang Wushashan Power Generation Company was included in the "Red List" of the Ministry of Emergency Management of the People's Republic of China.

We have innovated in work safety management mode to improve both the management quality and efficiency. We carry out the requirements on the Group companies to "appoint the owner as team leader" and "identify workers by helmets" in outsourcing projects, and conduct full-coverage supervision on key maintenance, technological upgrading and other outsourced projects to prevent major risks.

We also carry out safety inspections to investigate and deal with hidden hazards. We insist on "preventing big risks and eliminating small risks" according to the work safety management idea of macro-safety. Key leaders are required to deliver safety briefings in Group companies and the Company keeps a tough stance on work safety supervision and further improves work safety accountability, through which we urge the rectification of problems and gradually promote the standard safety management. We also strengthen the inspection and supervision on hidden hazards and risk management by issuing work safety supervision documents.

We develop the emergency management system to improve our emergency response capability. We conduct comprehensive emergency drills and build a solid emergency rescue system. In light of actual situations, Qinglin Wind Farm of Fujian New Energy Company has made 40 emergency response cards for natural disasters, personal injuries, equipment failure, fire, and power network and information system security incidents, which can be taken as reference in case of such accidents.



Subsidiaries

Beijing-Tianjin Hebei Branch

Heilongjiang Branch

Anhui Branch

Hebei Branch

Jiangxi Branch

Zhejiang Branch

Issuance of work safety documents by subsidiaries

Documents	Number
List of Major Accidents Listed and under Investigation Supervision	10
Notice on Work Safety Supervision	57
Opinions on Work Safety Supervision	33
Notice of Public Supervision on Major Problems in Work Safety	4
Opinions on Work Safety Supervision	4
Report on Work Safety On-Site Inspection and Supervision	36
Notice of Work Safety Rectification with Deadline	13
Notice on Listing and Supervising the Investigation of Major Accidents	2
Notification on Supervision and Inspections	19
Notice on Listing and Supervising the Investigation of Accidents	6
Notification on Work Safety Supervision with the Principle of "Going to Grassroots Enterprise and the Site Directly with No Notification, No Preparation, No Reporting and No Reception"	36
Opinions on Safety Supervision	30



Scan the QR code to watch the

publicity video on work safety

of Heilongjiang Shuangyashan

Thermal Power Company

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We launch the "Work Safety Month" campaign to improve all employees' work safety responsibility performance. During the campaign, we organize lectures, work safety inspections, education activities, Work Safety Day consultation, safety trainings, safety pledge, safety publicity comic creation, etc., which has enhanced employees' sense of responsibility and laid a solid foundation for better safety management.

We develop new approaches of standardized team building to enhance safety awareness of the teams. Guangdong Branch of Datang Power has formulated and issued *the Implementing Rules for Standardized Team Building*, urging grassroots enterprises to make improvement plans, and rolling out the team leader post allowance and team performance appraisal program. Zhejiang Branch of Datang Power has compiled the Manual on On-Site Safety Risk Identification and developed an APP thereof for searching relevant information. In 2018, the APP was used to generate 476 "On-site Security Inspection Record" and "Notice on Safety Supervision and Rectification".



Improving sound operation of equipment

We have promoted the repair and maintenance system reform to improve production efficiency. We coordinate internal maintenance resources to foster integration of regional resources and carry out independent maintenance, so as to reduce maintenance costs and continuously improve maintenance quality. Both the Beijing-Tianjin-Hebei Branch and Hebei Branch of Datang Power have completed major maintenance and repair tasks independently. Beijing Gaojing Thermal Power Plant has studied and solved several technical problems such as the vibration problem of the No. 6 bearing bush of Generating Unit 3.

We have conducted research on comprehensive equipment management to improve equipment reliability. Besides summarizing the experience from the typical unplanned outage incidents caused by leakage in the "four cubes" (water wall tube, super-heater tube, re-heater tube and economizer tube), improper operation, and protective circuit problems, we also carried out special research and developed over 30 key professional requirements. We apply our research findings to improve the equipment reliability. In 2018, the Company had 34 unit-times of unplanned outages in total, with an average of 0.49 outage per equipment, ranking first among the Group companies.

We have improved the mechanism for maintenance and repair as well as technological upgrading, and provided end-to-end maintenance management. Equipment operation has been comprehensively enhanced when the maintenance and technological upgrading projects are well planned ahead, the maintenance process is well control and the post-maintenance warranty and evaluation is well practiced. In 2018, 10 generating units were recognized as Class A generating units in terms of reliability, accounting for 71% of the Group's total 14 units.

Clas

Jiangxi Fuzhou Inner Mongolia

Zhejiang Wush

Jiangsu Lvsiga

Hebei Wangtar

Fujian Ningde

Tianjin Pansha

Hebei Zhangjia

Hebei Zhangjia

Liaoning Jinzho

s A Reliable Generating Units of China in 2018		
u Power Generation Company	Generating Unit 1	
a Tuoketuo Power Generation Company	Generating Unit 1	
hashan Power Generation Company	Generating Unit 1	
ang Power Generation Company	Generating Unit 3	
n Power Generation Company	Generating Unit 1	
Power Generation Company	Generating Unit 2	
an Power Generation Company	Generating Unit 4	
akou Power Plant	Generating Unit 2	
akou Power Plant	Generating Unit 3	
nou Thermal Power Company	Generating Unit 1	

Legal compliance

Legal compliance is the basis and guarantee for the sound development of an enterprise. Adhering to law-based corporate governance and rigorous governance over the Party, we set a good example by building the legal compliance and risk control systems and recognizing responsibilities of top leaders of the Party and government as the principal persons liable for implementing the rule of law. We regulate our supplier management, build a responsible supply chain, and improve our risk control ability and operation management level, helping the Company to achieve sound and sustainable development.

Building legal compliance and risk control systems

By formulating the Administrative Measures for Internal Control Management of Datang Power, Administrative Measures for Internal Control and Assessment of Datang Power and Administrative Measures for Comprehensive Risk Management of Datang Power, we aim to promote the legality and compliance of our operation and management, ensure asset security and the truthfulness and completeness of information in financial reports, and enhance operation efficiency. We also improve the comprehensive risk management system for better risk prevention and control.

Implement the requirements on principal persons liable for rule of law

According to the Implementing Measures for Recognizing the Responsibilities of the Leaders of Datang Power Group Companies as Principal Persons to Promote the Rule of Law, we advocate the leaders to set a good example and take the lead in respecting, learning about, observing and applying the laws. We require major Party and government leaders to participate in the planning for important tasks, investigation of major problems and coordination in key steps. They should earnestly take their responsibility to organize, promote and implement the rule of law, thus further promoting law-based governance within the Company.

Regulating supplier management to build a responsible supply chain

We select best suppliers and products according to the principle of "maximizing benefits throughout the life cycle" and strictly select suppliers by fully considering their impact on the environment and society, and requiring them to provide quality, environment and occupational health and safety system management certifications as part of the evaluation. Meanwhile, we strengthen the evaluation of suppliers' contract performance and the administrative measures against misconduct. As for suppliers who make adverse social impacts, such as protests due to default in payment of migrant workers' salaries, we will circulate a notice of criticism or terminate the cooperation based on the severity of each case, so as to create a responsible supply chain.



Strengthening party discipline

As an important party governance principle of the Communist Party of China, strengthening Party discipline serves as the basic policy and requirement for Party building in the context of China's reform and opening up as well as socialist modernization construction. Following Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the guiding principle of the 19th CPC National Congress, Datang Power strengthens daily supervision over Party cadres to develop an alerting atmosphere of anti-corruption, and organizes various cultural activities to unite Party members. With these efforts, we incorporate strict governance over the Party into daily operation and management of the Company.

Shanxi Linfen Thermal Power Company organizes all Party members to participate

in the education campaign themed "Staying True to Our Founding Mission" in the

municipal party member education base in

Shiqiaobao Village, Yangtan Town, Quwo

County, Linfen City.

Following Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the guiding principle of the 19th CPC National Congress

The Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era is our guide for practice. We organize cadres to study *the Thirty Lectures of Xi Jinping Thought on Socialism with Chinese Characteristics, Disciplinary Regulations of Communist Party of China*, and *Xi Jinping: the Governance of China*, making sure that they truly learn about, understand, believe in and apply these materials. Following the guiding principles of the second plenary session of the 19th CPC Central Commission for Discipline Inspection (CCDI) and central SOE meetings on work of improving Party conduct, upholding integrity and fighting corruption, we have scheduled meetings on relevant themes for the Group companies.

Strengthening daily supervision on Party cadres to develop an alerting atmosphere of anti-corruption

According to the Regulations on Disciplinary Actions of the Communist Party of China, Several Guidelines on Political Life within the Party under the New Situation and Regulations on Inner-Party Supervision of the Communist Party of China, we have always maintained the high pressure of punishing corruption and strengthened anti-bribery and anti-fraud management to strengthen the integrity of party members and cadres in politics. We have formulated an annual discipline inspection and supervision work plan to make overall arrangements for the year with a focus on key areas, and improve the reporting system for major issues. We also improve the clean governance archives for Party cadres, giving more play to such archives in strengthening daily supervision. We enhance the collection of information in relation to clean governance to present true and complete representations, and make full use of such information in the selection, evaluation, and appointment of cadres.

We continuously maintain open whistleblowing channels for more clues, thus improving our ability to detect and investigate problems. By strictly implementing *the Rules for Discipline Supervision and Enforcement (Trial)*, we constantly standardize discipline enforcement procedures, focusing on key persons and events and imposing severe punishments on violations of laws and discipline. To protect the legitimate rights of whistle-blowers, we strictly implement *the Several Decisions on Regulating Discipline Inspection, Supervision and Enforcement by the Chinese Communist Party Discipline Inspection Authorities*. In accordance with relevant laws, regulations and disciplines, we conduct centralized management and classification as well as regular clean-up of reporting information received, keeping the private information of the real-name whistle-blowers in strict confidentiality. It is strictly prohibited to discriminate, harass, suppress or retaliate against the whistle-blowers. Apart from the above, we also comply with the laws and regulations relating to provention of extortion, fraud and money laundering.

Organizing various cultural activities to unite Party members

In order to further enhance the ideas of Party nature among all Party members, review the history of the Party and Red China, and carry forward the revolutionary spirits, we have launched various cultural activities to unite Party members.



Efficiency-oriented

The improvement of production and operation efficiency is the key to enhancing the competitiveness of enterprises. As a central SOE focusing on power generation, Datang Power adheres to scientific development, strives to improve energy efficiency and power supply levels, continues to innovate the business models in power market, continuously improving its

Developing Low-carbon Thermal Power

In response to the call of the state for low-carbon and eco-friendly development, we have minimized the impact on environment by continuously optimizing the structure of thermal power units, prioritizing the development of eco-friendly units, cogeneration and gas-fired units with high energy efficiency. As of the end of 2018, the capacity of thermal power coal machine reached 46,164 MW, the capacity of thermal power gas turbine reached 4,163.6 MW, the capacity of biomass power generation reached 30 MW.

Heilongjiang Suihua Thermal Power Company's 2×350MW ultra-supercritical coal-fired heating unit has achieved clean production through wet desulfurization, urea hydrolysis denitrification, bagtype dust remover, two-layer plasma ignition, and utilizing low-nitrogen combustion and wastewater treatment device. It has replaced 197 coal-fired furnaces to provide clean energy for Suihua city. In 2018, through research and tests on the air preheater and soot blower steam source transformation and boiler start-up technology, Heilongjiang Suihua Thermal Power Company realized operation of the unit without using the starter furnace (i.e. without auxiliary steam), and completed 100% desulfurization and denitrification of coal combustion within the plant, greatly reducing the impact on the environment.



Liaoning Shendong Thermal Power Company's 2×350MW ultrasupercritical coal-fired heating and power generation unit construction project is a key infrastructure project in Liaoning Province. In 2018, two units were connected to the grid and put into operation, creating a record of lowest power consumption during the 168-hour trial operation compared with other units of the same type in Liaoning Province, promoting the power structure adjustment of Liaoning Province and making contributions to the "Blue Sky Project" of Shenyang City.



As the world's largest thermal power plant with a total installed capacity of 6,720 MW, Inner Mongolia Tuoketuo Power Generation Company keeps adhering to the commitment of "bringing clean energy to Beijing while protecting the environment in Inner Mongolia" and promotes the transformation to green development. In 2018, the Phase I coal storage yard was successfully closed, which not only effectively cut dust pollution and improved the air quality in surrounding areas, but also reduced coal loss.





The first phase of Zhejiang Shaoxing Jiangbin Thermal Power Company was equipped with two 452 MW Mitsubishi 9F single-shaft gas turbine generating units. It was one of the 14 top natural gas cogeneration projects in Zhejiang Province and was put into operation for regional heat supply in 2018. The project won the honors of "China Construction Engineering Luban Prize" and "National Demonstration Enterprise on Safety Culture Construction". It remains at advanced level as compared with other units of the same type and maintains a leading position in benchmarking with other gas turbines in Zhejiang Province. It has played an important role in optimizing the power supply structure in Zhejiang and meeting regional heat demand.

Ensuring reliable power supply

The safe, stable and adequate supply of electricity is an important guarantee for the comprehensive, coordinated and sustainable development of the national economy. Datang Power has kept ensuring electricity supply and meeting customer power demands as the focus of all work, strictly abided by the Electric Power Law of the People's Republic of China and the Work Safety Law of the People's Republic of China in power generation and supply, and successfully maintained electricity supply during natural disasters as well as important events, including the "Two Sessions" (namely the National People's Congress (NPC) and the Chinese People's Political Consultative Conference (CPPCC)), "the Beijing Summit of the Forum on China-Africa Cooperation" and "the Summer Davos in Tianjin".

2018, the Company generated a total of

after the restatement of the same period last year, the power generation increased by

531.





Twelve power generation companies make every effort to ensure power supply during the "Two Sessions"

Tianiin Panshan Power Generation Company successfully maintained power supply for all political events in 2018. As a veteran company in various power supply guarantee tasks. Tianiin Panshan Power Generation Company was delegated with power supply guarantee tasks for five months in 2018. During these periods, by strictly implementing the "team leader accountability policy" and establishing a comprehensive power supply arrangement featuring comprehensive content, wide scope, practical measures, detailed inspection, quick response and strict assessment, the company completed all the tasks. In 2018, Tianiin Panshan Power Generation Company supplied power for major events including the "Two Sessions", "the Beijing Summit of the Forum on China-Africa Cooperation", "the Summer Davos", and the "Celebration of the 40th Anniversary of Reform and Opening-up", etc.

Guangdong Branch of Datang Power ensured power supply in face of Typhoon

Mangkhut. On September 16, Typhoon Mangkhut made landfall in Guangdong Province. Guangdong Branch made the level I emergency response promptly, and organized subsidiaries to initiate risk pre-control and take preventive measures against floods and the typhoon. All grassroots enterprises adopted the 24-hour duty system, strengthened on-duty shift management, and made detailed plans for emergency plan improvement, flood control inspection, dredging, material reserve, rescue drill and reporting, etc. With these efforts, the company managed to ensure the power supply under the Typhoon Mangkhut attack.

Expanding electricity market

The government continues to promote the in-depth reform of the electricity power system, and works on establishing a sound market-oriented pricing system to enhance the marketization level of the electricity power industry. We have actively participated in national and regional electricity market system development, conducted research and participated in the formulation of the development plans and rules of national and local electricity market, and promoted fair market trading, providing multiple types of energy for the market and enhancing our competitiveness through continuously developing clean energy such as wind power, hydropower and solar power.

By the end of 2018, we have established 9 electricity marketing companies wholly-owned or controlled by Datang Power in eight provinces and regions including Guangdong, Zhejiang, Fujian, Beijing-Tianjin-Hebei region, Liaoning, Anhui, Heilongjiang, and Hebei. We have established 5 electricity marketing companies in five provinces including Chongging, Yunnan, Jiangsu, Shanxi, Sichuan through equity participation. Among these companies, 7 electricity marketing companies wholly-owned or controlled by Datang Power have started business operation, selling 7 TWh electricity in 2018 with a year-on-year increase of 143%, realizing a total profit of RMB 39 million.

Accurately studying and evaluating the electricity market to achieve reasonable

layout of annual power generation structure. By holding fast to our values and the benefit-oriented principle and practicing intense self-discipline as required in the industry, Liaoning Jinzhou Thermal Power Company raised awareness of innovation, studied and made accurate evaluation of the electricity power market, provided targeted services for major customers with large electricity consumption and electricity marketing companies and realized a reasonable layout of annual power generation structure. The company ranked first respectively in terms of base power generation, the proportion of market-traded electricity in excess of capacity, and all-in tariff in the same type units from the five major power generation groups in Liaoning Province. In 2018, Liaoning Jinzhou Thermal Power Company's transaction volume of electricity reached 1.627 TWh in total.

Timely improving relevant systems and adapting to the changing market rules. In view of the electricity power system reform, Zhejiang Wushashan Power Generation Company revised the Measures for the Management of Electricity Marketing. As a result, the company put forward the establishment of the bidding system and authorization mechanism, assigned employees to participate in and track the spot market development in Zhejiang Province, so as to keep abreast of the progress and take the lead in the electricity market reform. In 2018, Zhejiang Wushashan Power Generation Company won the bid for direct on-grid power contracts of 5.446 TWh for large electricity customers in Zhejiang Province, ranking first among the five major power groups in the region.

Building a new service system and innovating the production and operation

management mechanism. Guangdong Branch of Datang Power has been actively adapting to the new challenges from electricity market reform by promoting the substantive operation of electricity marketing companies, building a "three-inone" marketing service system, and taking electricity market, fuel procurement, maintenance, and equipment operation into full consideration to establish a coordinated production and operation management mechanism that is electricity market-oriented and centers on improving benefits, thus strongly supporting our expansion in the electricity market. In 2018, Guangdong Branch's transaction volume reached 9.942 TWh, which was 1.69% over the average level by installed capacity; the company's annual power generation was 18.541 TWh, reaching a record high in the past six years, and its utilization hours of generating units ranked first in the benchmarking of this region.

In 2018, the Company's transaction volume of electricity

After the restatement of the same period last year, the market electricity increased by

4577



Guandong Branch of Datang Power carries out trainings on marketing service



Innovation-driven

Innovation is the source of a company's long-lasting vitality. With the goal of building an innovative enterprise, Datang Power improves the innovation mechanism, cultivates innovation teams and enlarges the S&T talent team, propels key science and technology research projects and enhances commercial application of innovative achievements, thus fostering its development driven by S&T progress.



Building innovative enterprises

We constantly improve the three-tiered (namely headquarters - specialized companies and regional companies - grassroots enterprises) technology management system, and revise *the Administrative Measures for Science and Technology Rewards of Datang Power*, and *Administrative Measures for Science and Technology Projects of Datang Power*, so as to give full play to the role of technological advancement and innovation and improve our independent research and development ability. In 2018, the Company invested over RMB 78.68 million in research and development, up by 3.9% as compared with last year, undertook 2 projects of the National and Provincial Key Technology R&D Program, and organized or participated in the compilation of 2 industrial and higher level standards.

The gas-fired CCHP (Combined Cooling, Heating and Power) project of Guangdong Foshan Thermal Power Company has introduced the new business development approach of "Internet +" smart energy, and has built itself into the first digital gas-fired power plant featuring low-carbon and eco-friendliness and advanced technology within the Company.

Cultivating innovation teams

We attach great importance to the cultivation of an innovative team of talent. We accelerate the innovation system development, and formulate the talent training plan, encouraging employees to make innovations and improve efficiency in their own positions. We develop the diverse innovation platforms such as science associations, innovation workshops and quality control circles (QCCs) to stimulate employees' potential and cultivate competitive and innovative teams. In 2018, a total of 30 staff innovation workshops were named by Datang Power.

Zhejiang Wushashan Power Generation Company actively promotes the reform of the labor, personnel and income distribution systems, builds up a "green channel" for talents and mobilizes human resources for safeguarding the stable operation of the company. We formulate detailed preparation plans for annual competition and exams, guide and supervise the trainings to strengthen skill improvement, and organize maintenance skill operation competitions as well as contests of professional knowledge and skills. In 2018, one employee of Zhejiang Wushashan Power Generation Company was awarded the "Excellent Skilled Employee" of Group companies.

Inner Mongolia Tuoketuo Power Generation Company's "research and application of key technologies of simultaneous Hg and removal from flue gas in coal-fired units" wins the first prize of China Electric Power Science and Technology Award in 2018.

Applying innovative achievements

We vigorously promote the research and application of new technologies, new processes, new procedure, new materials and new equipment, boosts key science and technology research projects, and foster the commercial application of technological achievements.

Inner Mongolia Tuoketuo Power Generation Company's "research and application of key technologies of simultaneous Hg and removal from flue gas in coal-fired units" won the first prize of China Electric Power Science and Technology Award in 2018. This technology, for the first time, realize the simultaneous removal of Hg and from the source with one single set of equipment. While reducing pollutant emissions, the technology also solves a series of problems caused by higher concentration such as blockage in the air preheater and equipment corrosion. The technology has been successfully applied in Generating Unit 1 (600 MW) of Inner Mongolia Tuoketuo Power Generation Company. It provides complete theories, technical and application approaches for simultaneous multi-pollutants removal for coal-fired power units, which has a bright prospect for wider application.

In 2018, the Company was granted 287 patents 707 patents more than that of last year.

Award-winning projects of Datang Power in 2018

Award	Achievement	Prize	
China Electric Power Science	Research and application of key technologies of simultaneous Hg and SO3 removal from flue gas in coal-fired units	First prize	
and Technology Award	The first research and engineering application of key technologies for high-efficiency subcritical coal-fired power generating units	Third prize	
	Development and application of intelligent combustion optimization and control technology for large coal-fired generating units		
	Promoting professional selection of models with "Datang spirit" by building the "craftsmanship" evaluation system in power generation industry	First prize	
China Electric Power Innovation Award	Research and practice in monitoring and diagnosis of combustion engines based on new information technology		
Innovation Award	Research on and application of intelligent and multi-level heat supply management based on the Internet of Things		
	Research on optimizing the operation of turbine-generator units of varied roof height tailrace tunnel hydropower station	Second priz	
	Research and practice of safety culture development in power generation companies	Second priz	
	The first research and engineering application of key technologies for high-efficiency subcritical coal-fired power generating units	First prize	
Energy Innovation Award	Development and application of the first quad-sector type air preheater with a super-large diameter in China		
	Research and application of ultra-supercritical air-cooled generating units based on single auxiliary engine	Second priz	
Power Construction Science and Technology Award	Research on key technologies of 300m level high earth dam with thick overburden layer	First prize	
Dam Science and Technology Award	Research and application of key technologies for building the world's highest earth-rockfill dam with thick overburden layer	First prize	
	Research and application of automatic boosting and cooling device for sealing water in new steam pumps		
-	Optimization of the cooling fan power supply circuit in the excitation system		
-	Research and application of simulation training management on maintenance and repair	r Second prize	
	Methods to strengthen and repair concrete defects inside the wind turbine foundation		
Power Generation	Research on technologies of bolt torque detection and on-line metal defect detection for wind power generating units		
Employee Award -	Research and application of precise multi-coal combustion technology		
	Application of aerodynamics in dust control of coal belt conveyors Research and application of the domestic modification of the conveyer belt of ash pipe conveyors by Inner Mongolia Tuoketuo Power Generation Company		
			-
-	A special "floating" device for dredging the coal containing wastewater pool		

Major science and technology projects undertaken by Datang Power in 2018

Project Name	Sub-project of national project	Group company level project	Datang Power level project	
Number	2	21	15	



Promoting in-depth emission reduction

In strict compliance with the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, as well as Measures for Environmental Protection and Management of Datang Power, we actively implements the operational requirements set forth in the Upgrading and Transformation Plan for Energy Saving and Emission Reduction in Coal-Fired Power Generation by preventing and controlling air pollution, and tightening emission standards. We strive to reduce the emissions of sulfur dioxide, greenhouse gases as well as "three waste" discharge, so as to win the battle of pollution prevention and control.

In 2018, the total CO₂ emissions (including emissions from desulfurization and purchased electricity) amounted to 377.67 million tons with direct emissions of 377.6 million tons and indirect emissions of 70,000 tons. CO₂ emission ratio reached 774g/KWh The total SO₂, NO_x, and dust emissions amounted to 42,100 tons, 64.000 tons and 6.400 tons. respectively. The total discharge of wastewater was 1.69 million tons.

> Inner Mongolia Tuoketuo Power Generation Company has completed the ultra-low emission transformation on No.11 and No.12 300MW generating units, and achieved ultra-low emission control of all its 12 installed units. Its SO₂ emissions were 3,654 tons, marking a year-on-year decrease of 23.9%. NO_x emissions were 4,243 tons, down 21.7% year on year. The soot emissions were 410 tons, down by 38.6%. And the wastewater discharge was 1.12 million tons, down 50% year on vear.

The denitrification transformation on 30 units was completed, meeting the emission standards of dust, sulfur dioxide and nitrogen oxides ahead of time.

2015	

The ultra-low emission transformation of 31 units was completed.



The ultra-low emission transformation on 28 units was completed with a completion rate of 78.4%, which ensured the Company's leading position among its peers.



The ultra-low emission transformation on 7 units was completed. Among all thermal power generating units in operation, 66 generating units with a total capacity of 30.38 GW had undertaken ultra-low emission transformation, achieving a completion rate of 95.1%. All the 66 units meet the ultra-low emission standard.



68 thermal power generating units in operation with a total capacity of 30.98 GW completed ultra-low emission transformation, achieving a completion rate of 97%. All the 68 units meet the ultra-low emission standard.



Hebei Zhangjiakou Thermal Power Company carries out transformation of in-depth emission reduction on generating units 1 and 2.

De-dusting system: We overhauled the ash disposal systems and the ash were flushed with water to remove the dust on the polar plates and polar lines reliability of the equipment, keeping the dust emission concentration lower than 5 mg/standard m3.

Denitrification system: We overhauled equipment in the ammonia area, optimized silo systems according to relevant the ammonia injection system, and spent arrangements. Electrostatic precipitators RMB 7 million replacing the denitrification catalysts of generating units 1 and 2, to ensure that denitrification efficiency reaches to ensure de-dusting efficiency and the designed value and the emissions meet the in-depth emission reduction criteria of less than 30 mg/ standard m3.

In 2018, Hebei Zhangjiakou Thermal Power Company's average emission concentration of SO₂, NO_x and dust amounted to 15.31 mg/standard m3, 31.04 mg/standard m3 and 3.79 mg/standard m3 respectively, far below national ultra-low emission standards.



As the first gas turbine power plant in operation of the Group, Guangdong Baochang Gas Power Generation Company in active response to the "Shenzhen Blue" Sustainable Action Plan, completed the ultra-clean emission transformation of two gas-steam combined cycle units in operation, which made it one of the first enterprises with NO_x emissions lower than 15 mg/standard m3 in the world. The company therefore received the "Subsidy for Shenzhen Air Quality Improvement 2018" of RMB 38.16 million.

Desulfurization system: We maintained and repaired the pulping system, absorption tower and prewash tower to make sure the equipment is reliable and meets the emission requirement of 25 mg/standard m3.

In 2018, the installed capacity of clean energy and renewable energy accounted for



Developing clean energy

As China continues to scale up clean energy, efforts have been stepped up to establish a clean, low-carbon, safe and efficient energy system. It is our bounded duty to provide clean energy for social and economic development. We have gradually increased the proportion of power generation from non-hydro renewable resources, and vigorously invested in the development of renewable energy like wind power and solar power. We have invested RMB 11.895 billion in large and medium-sized infrastructure construction, including RMB 7.283 billion in thermal power facilities, RMB 2.909 billion in wind power facilities, RMB 632 million in hydropower facilities, RMB 295 million in other facilities. We have approved power projects of 2,308 MW in total, of which installed capacity of clean energy accounted for 90.51%, thus further optimizing our power supply structure.

In 2018, the Mangya Wind Power Plant project of Qinghai New Energy Company, with a total installed capacity of 50 MW, was connected to the grid. It is the Company's first wind power project in Qinghai Province. The project has fully implemented the philosophy of eco-friendly development throughout the whole process of site selection, demonstration, construction, operation and maintenance, aiming to build a benchmark wind power plant with features of Datang Power and in perfect harmony with natural environment of Qinghai. Mangya Wind Power Plant is designed to have annual on-grid power of 115.43 GWh. Compared with advanced coal-fired units, it can reduce 91,200 tons of CO2, 663.03 tons of SO2, 994.65 tons of NOX, 82.88 tons of soot and 13,800 tons of ash.



Jiangsu Lvsigang Power Generation Company has been actively promoting the development of clean energy. In 2017, construction index was obtained for phase I of its photovoltaic power generation project. In 2018, the project was completed and put into operation, taking the region from zero to breakthrough in the field of PV project in Jiangsu Lvsigang Power.



Yunnan Datang International Power Generation Company has an installed capacity of 2,653 MW. It has hydropower projects in operation with an installed capacity of 1,953 MW, accounting for 5.3% of the five major power generation groups' installed hydropower capacity in Yunnan, and photovoltaics (PV) projects in operation with an installed capacity of 100 MW, accounting for 20.55% of the installed PV capacity of the five major groups. The first batch of PV projects were put into operation in 2014, which filled the gap of Dangtang Power's PV business in Yunan Province, and facilitated our power supply structure optimization and the construction of a regional green power base.

Total Installed Capacity (MW)



Installed Wind Power Capacity (MW)



Installed Hydropower Capacity (MW)





In 2018, the Company consumed



64.86 million tons of standard coa

300

of electricity

Datang Power had

25

generating units recognized for their outstanding efficiency.

Exploring the potential of energy conservation

In compliance with relevant regulations and rules such as the Guideline on Available Technologies of Pollution Prevention and Control for Thermal Power Plants, Regulations on Energy Conservation of Datang Power and the Management Practices for Energy Conservation and Emission Reduction of Datang Power, we formulate a three-year action plan for energy conservation to continuously improve energy efficiency of units and devote our efforts to building a resource-saving enterprise.

Realizing that thermal power generation heavily relies on water resources and that water shortage would bring great risks, we regard water conservation as one of our sustainable development goals and conduct research on water shortage. We actively implement the requirement to "vigorously take forward ecological conservation and improve water environment", and "get water properly, use water efficiently, and discharge wastewater legally". We launch campaigns for water-conservation, comprehensive utilization of water resources and water pollution prevention in thermal power generation companies, bring the recycle rate of recirculating cooling water to 99%.

Improving systems

Chongqing Wulong Hydropower Company formulated four regulations and rules on energy conservation such as the Administrative Measures for Non-Production Energy Use, and established ledgers for non-production electricity and water use, constantly improving non-production energy management.

Reduction in fuel consumption

Hebei Wangtan Power Generation Company strengthened coal blending management and plasma system maintenance, and formulated a complete set of measures to guarantee zero oil consumption through single-layer plasma ignition. The company achieved "zero oil consumption" for 103 consecutive months, outpacing domestic industry peers. Furthermore, the fuel systems of two boilers of the company have been removed, being the first of its kind among all the single-layer plasma coal-fired generating units in China.



Water conservation measures of thermal power business

Strengthening water management by implementing equipment management, technological transformation and other measures;

Controlling water withdrawal by encouraging the use of recycled water and strictly preventing over-exploitation of groundwater;

Improving the concentration ratio of circulating water and making good use of discharged water;

Improving the comprehensive utilization of wastewater to reduce discharge of terminal wastewater, and meet relevant discharge standards or achieve zero discharge.

Water Conservation

By adding a water return bypass to the industrial firepool, Guangdong Baochang Gas-fired Power Company has avoided the overflow loss caused by the flow back of cooling water to the recycling pool that may be triggered by a sudden shutdown due to inaccurate manual control. In 2018, the company won the honor of "Water-Conservation Enterprise" in Shenzhen, and received a special subsidy of RMB 668,800 as awards for water conservation.

Reduction in Power Consumption

Beijing Gaojing Thermal Power Plant formulated a plan for cutting the power consumption rate to analyze the balance of the auxiliary power system, optimize the operation of auxiliary power system and reduce the no-load loss of the transformers. The company also replaced the operable pump motors with permanent magnet motors. As a result, 9 of the 11 auxiliary equipment's power consumption rates show a year-on-year decrease, including the circulating pump, condensate pump and air compressor. The company was rated as one of the top 10 leading enterprises in energy efficiency by the Beijing Municipal Commission of Development and Reform.

Reduction in Coal Consumption

Guangdong Chaozhou Power Generation Company has completed the transformation of flue gas cooling and waste heat recovery system for 4 generating units, which can save 9,000 tons of standard coal per year. The company has also improved the efficiency of the steam turbine and upgraded the turbine body to be more energy saving, which reduces the single machine coal consumption for power supply by 5.09 g/kWh on average, and saves 27,000 tons of standard coal each year.

Award-winning units on energy efficiency in National Large Thermal Power Generating Unit Benchmarking Competition

Category	Award-winning units	Award
1000 MW ultra superarities	Generating unit 3, Guangdong Chaozhou Power Generation Company	Second Prize
1000 MW ultra-supercritical -	Generating unit 1, Jiangxi Fuzhou Power Generation Company	Second Prize
	Generating Unit 3, Jiangsu Lvsigang Power Generation Company	Third Prize
600 MW ultra-supercritical	Generating Unit 2, Fujian Ningde Power Generation Company	Third Prize
-	Generating Unit 1, Jiangsu Lvsigang Power Generation Company	Third Prize
	Generating Unit 1, Zhejiang Wushashan Power Generation Company	First Prize
- 600 MW supercritical water cooled	Generating Unit 2, Zhejiang Wushashan Power Generation Company	Second Prize
-	Generating Unit 1, Anhui Huaibei Power Plant	Third Prize
	Generating Unit 4, Heilongjiang Qitaihe Power Generation Company	First Prize
-	Generating Unit 3, Inner Mongolia Tuoketuo Power Generation Company	Second Prize
- 600 MW subcritical water cooled	Generating Unit 4, Inner Mongolia Tuoketuo Power Generation Company	Second Prize
-	Generating Unit 1, Hebei Wangtan Power Generation Company	Third Prize
-	Generating Unit 4, Tianjin Panshan Power Generation Company	Third Prize
600 MW subcritical air cooled	Generating Unit 5, Inner Mongolia Tuoketuo Power Generation Company	Third Prize
300 MW subcritical water	Generating Unit 8, Hebei Zhangjiakou Power Plant	Second Prize
cooled condenser	Generating Unit 5, Anhui Huainan Tianjia'an Power Generation Company	Third Prize
	Generating Unit 6, Hebei Zhangjiakou Power Plant	Third Prize
-	Generating Unit 1, Heilongjiang Harbin No.1 Thermal Power Plant	First Prize
- 300 MW subcritical	Generating Unit 1, Liaoning Jinzhou Thermal Power Company	Second Prize
heating and water cooled	Generating Unit 3, Hebei Zhangjiakou Power Plant	Second Prize
-	Generating Unit 1, Hebei Fengrun Thermal Power Company	Third Prize
-	Generating Unit 2, Hebei Zhangjiakou Power Plant	Third Prize
-	Generating Unit 2, Heilongjiang Harbin No.1 Thermal Power Plant	Third Prize
300 MW subcritical heating and air cooled	Generating Unit 4, Shanxi Yungang Thermal Power Company	Second Prize
350 MW imported subcritical heating and water cooled	Generating Unit 1, Heilongjiang Qitaihe Power Generation Company	First Prize

Water Consumption for Power Generation(kg/KWh)



Oil Consumption for Power Generation (ton/hundred million KWh)







Comprehensive Power Consumption Rate (%)

Coal Consumption for Power Generation (g of standard coal/KWh)



Note: In 2018, Datang Power purchased power generation assets in Hebei, Anhui and Heilongjiang provinces, which caused increase in certain statistics of energy consumption.

Protecting the eco-environment

Sound ecological environment is the basis for achieving harmony between humankind, nature and the society. Blue sky, lucid water and lush mountains are important preconditions for sustainable development. Following the new policies and requirements for environmental and ecological protection, we have set up the Environmental Protection Office to manage the environmental performance and urge our subsidiaries to improve environment management system, strictly implement the Administrative Measures for Environmental Accident Investigation and Handling, and observe the clause on administrative punishment or fines for extremely severe, severe, large and general environmental accidents.



We continue to carry out environmental risk monitoring, being aware of the pollution of water and soil by hazardous and non-hazardous waste, and we aim to reduce the discharge of waste year by year. All our subsidiaries have signed contracts with gualified enterprises for treatment of the waste in conformity with local government's requirements for environmental protection. For thermal power companies, fly ash, slag and gypsum shall first be treated for sale, and the unmarketable portions shall be stored in the ash yard.

In 2018, the Company has gone through over 133 environmental protection inspections conducted by governments at the prefecture-level or higher, and no environmental accident has occurred during the year.

Investigation on environmental hazards



The Beijing-Tianjin-Hebei Branch of Datang Power carried out 19 special investigations on ecological and environmental protection issues, and conducted monthly monitoring of the rectification progress to ensure all environmental risks were under control.

Heilongjiang Branch formulated the Investigation and Treatment Plan on Pollution Sources and Potential Risks to Ecological Environment, and identified 39 environmental hazards, among which 29 had been rectified.

Rigorous waste treatment



Hebei New Energy Company has built standard warehouses for hazardous waste in wind farms, and formulated the Management Measures on Hazardous Waste to strictly regulate the disposal of hazardous waste through measures such as establishing ledgers and unifying hazardous waste signs, ensuring hazardous waste is managed in accordance with laws and regulations.

Hebei Zhangjiakou Thermal Power Company attaches great importance to the discharge management and comprehensive utilization of waste. In 2018, the company achieved a comprehensive utilization rate of 81.7% on a total of 447,200 tons of fly ash, and a comprehensive utilization rate of 12.38% on 87,476 tons of slag.



Disclosing environmental information

Hebei Fengrun Thermal Power Company strictly abide by the pollutant discharge permit system, and fulfills its monitoring and information disclosure responsibility. The company has installed an automatic and continuous flue gas monitoring system, and placed a QR code at the door of the CEMS (Continuous Emission Monitoring System) booth. People can find emission statistics by scanning the QR code. The company has also engaged professional companies to monitor its exhaust gas emissions, waste water discharge and noise at boundary, and receives public supervision by revealing the monitoring plans and statistics on the national monitoring information disclosure platform for key enterprises and the national platform for pollution source monitoring information management and sharing.

Scientific fry release

Chongqing Pengshui Hydropower Company organized fry releasing activities, and has released a total of 480.000 fish frv in the upstream and downstream reservoir areas of Pengshui Hydropower Station and the Yanhe reservoir areas of Guizhou province, including 60,000 Myxocyprinus asiaticus, 60,000 Procypris rabaudis, 60,000 Sinilabeo rendahli, 150,000 Spinibarbus sinensis and 150,000 Onychostoma simum. By the end of 2018, the company has been releasing fry cultivated in fish breeding and releasing stations for nine consecutive years, and released a total of 4.16 million fish fry of the species mentioned above, effectively protecting the diversity of fish species in the Wujiang River Basin.

Sichuan Ganzi Hydropower Company organized the annual breeding and releasing of rare fish in reservoir areas of Changheba Hydropower Station and Huangjinping Hydropower Station, and has released a total of 322,000 Schizothorax prenanti and Schizothorax davidi. Since the fish breeding and releasing station was put into operation five years ago, Sichuan Ganzi Hydropower Company has released 1.6 million fish fry in Changheba and Huangjinping basins along the main stream of Daduhe River, playing an active role in protecting the aquatic biodiversity of Daduhe River and fostering a virtuous cycle in the ecosystem.

Raising awareness of environmental protection



Jiangxi Xinyu Power Generation Company organized a learning activity themed ecological protection, and invited local administrative and law enforcement officers to give lectures, aiming to improve its employees' ability to fulfill environmental responsibilities.

Shaoxing Jiangbin Thermal Power Company launched the "World Environment Day" and the "Energy Conservation Week" campaigns to publicize the environmental protection concepts through the LED display screens, portal websites, and WeChat groups. The company also held lectures on environmental protection, launched the initiative themed "Drive Less, Better Environment", and promoted a paperless office, thus raising the employees' awareness of



Staff development

We believe employees are vital to our achievements. Advocating and following the value of "people-oriented" development, we unite and help employees to grow and make achievements, and provide a safe and healthy workplace where they can enjoy a promising career and gain a sense of belonging.





- Technical secondary school or lower
- Professional training college
- Bachelor's degree
- Master's degree or higher

Protecting the rights and interests of employees

In strict compliance with the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China and Regulations on Standardized Employment of Datang Power, the Company recruits employees in an open manner on the principle of equality, with child labor and forced labor strictly prohibited. We ensure 100 % coverage of labor contracts in accordance with the law. We constantly improve the compensation and benefit system, insist on "equal pay for equal work", strictly implement the working hours prescribed by the Labor Law and the relevant provisions of the national statutory holidays; pay premiums from housing funds and social insurance on time and in full, and has set up enterprise annuity and supplementary medical insurance as supplements to the basic pension and medical insurance benefit in accordance with national regulations and policies. By the end of 2018, we had 33,483 employees, with 6,653 female employees and 1,473 ethnic minority employees.

We have taken steps to improve the democratic management system and have improved our workers' congress system and trade union system, raising the union membership rate to 100%. We have also built staff communication platforms and taken steps to ensure their right of participation and supervision.

Ensuring occupational health and safety

Following the Labor Law of the People's Republic of China, the Work Safety Law of the People's Republic of China and other laws and regulations, we strive to control safety risks throughout the power generation process, regularly detect occupational hazards and provide labor protection equipment. We continue to improve employees' health management system, regularly organize physical examination and set up health records for employees. Physical examination is provided to all employees, and experts are hired to provide mental counseling.



Hebei Zhangjiakou Power Plant organized employees to carry out emergency rescue training activities to help employees improve their emergency rescue capabilities.

Supporting staff development

We continuously improve the talent training system for all employees and conduct professional trainings on skills and enterprise management, so as to comprehensively improve employees' quality, which will provide a talent pool for the Company's sustainable development. With the three-tiered (Group companies - regional companies - grassroots enterprises) training system, we adhere to the principle of "taking targeted measures for different situations" and give full play to the subsidiaries' roles as training organizers. We provide various trainings with a focus on the major tasks, aiming to improve the comprehensive quality of employees. In 2018, we invested RMB 38.1556 million in training, organized and delivered 9,072 professional training programs, providing systematical trainings for 358,962 participants, which includes 121,882 participants in enterprise management and knowhow training, 251,637 participants in production skills training and 7,764 in other fields.

Innovating in training management.

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We launched online learning and examination programs to improve the effectiveness of training. In 2018, Datang Power organized 47 professional trainings and 8 professional examinations, involving a total of 256 participants.

Exploring internal training resources.

We have revised the Administrative Measures for Internal Trainers of the Company, and built the qualifications and test system to encourage employees to keep learning.

Optimizing resources of training bases.

We have established a standard and efficient vocational education and training system. Inner Mongolia Tuoketuo Power Generation Company won the honors of "Outstanding Enterprise in Skilled Talent Cultivation for Power Industry" and "Advanced Enterprise in Skilled Talent Cultivation" in 2018.



highly skilled employee was nominated for the 2018 special allowance provided by the State Council

highly skilled employee was awarded the title of "National Technical Experts" in the 14th selection run by the Ministry of Human Resources and Social Security of the People's Republic of China

employees

were awarded the title of "Technical Experts in Power Industry"

employees were awarded the title of "Outstanding Technical Expert of China Datang"

outstanding technical talents were listed as experts at the Group Company level

Hebei Xiahuayuan Power Plant compiled the "2018 Emergency Action Plan and Drills Arrangement of Xiahuayuan Power Plant", covering the emergency disposal of power outage accidents, the disposal of liquid ammonia leakage accidents, and the handling of fire accidents to enhance employees' ability to cope with critical work and life incidents.

Caring for the life of employees

We emphasize the balance between work and hobbies as well as work and the family, and organize various cultural and sports activities to enrich employees' life. We proactively learn about employees' demands and difficulties faced by employees and provide assistance for those with serious diseases or in difficulties, caring for employees with concrete actions.

Organizing cultural and sports activities. In order to build a harmonious corporate culture, we have organized various cultural activities to create a comforting atmosphere, promote communication and understanding among employees, and organizing various cultural activities which eases their pressure.

Helping employees in need. To assist employees in need, we care for the life of our employees and help them to solve real problems by sending support in various forms.

Zhejiang Shaoxing Jiangbin Thermal Power Company organizes the cycling activity





Inner Mongolia New Energy Company organizes the "Love in the Grassland and Love for Datang" summer activity in the Huitengxile Grassland to help employees relax and promote their friendship.

Anhui Huainan Tianjia'an Power Generation Company in Huainan, Anhui Province, offers bursaries of RMB 500 to each children of 24 employees before they register for the new semester, and provides special subsidiaries of RMB 3,000 to the children of two employees in difficulty to help them finish school.

Mutually beneficial cooperation

We have been seeking better ways to reward the society. We step up efforts in targeted poverty alleviation and public welfare activities by taking into account the local situation and drawing on our advantages, promoting the harmonious development of communities, and transmitting the happy energy of Datang.

Promoting poverty alleviation

We comprehensively carry out poverty alleviation tasks put forward by the CPC Central Committee and the State Council. With the attitude of "Doing real work to achieve real poverty alleviation" and practising the work style of "Doing solid work with sincerity", we have made investments and donations and assigned cadres to work on poverty relief programmes in villages. Focusing on poverty aleviation through industrial development, we promote the sales of local products and services and support the stable development of industrial projects in areas of extreme poverty such as Changheba and Huangjinping in Sichuan Province.

Donations for poverty alleviation from companies at all levels of Datang Power in 2018

Company	Recipient			
Qinghai Company	Xinghai county, Qinghai Province			
Hebei Branch	Qiansuobao Village and Xibeikou Village, Huai'ar Baijiagong Village, Quyang County and Nanxang Baoding City; 15 villages in Zanhuang County an			
Fujian Branch	Cheyang Village, Bailin Town and Wenyang Vi (county-level city), Ningde City, Fujian Province			
Guangdong Branch	Xinlou Village, Jiexi County, Jieyang City, Gua			
Beijing-Tianjin-Hebei Branch	Caowopu Village, Chengde City; Shanfangbao Shangmingyu Village , Zhuolu County, and Hujia Zhangjiakou City, Heibei Province; Xiyunzhuan			
Anhui Company	Caozhuang Village and Bazhuang Village, Xiao C			
Inner Mongolia Branch	Shijiangyao Village, Dalad Banner, Ordos City			
Sichuan Company	Kangding City, Ganzi Tibetan Autonomous Pre			
Jiangxi Branch	Fuzu Village , Chayuan Town, Xingguo City, G			



Fujian Ningde Power Generation Company donates RMB 320,000 to Wenyang Village to promote poverty alleviation through industrial development. The company continues to help local poor people by buying tea, donating computers, strengthening cooperation between Party branches and visiting local people in festivals.

an County, Zhangjiakou City; ngbei Village, Shunping County, nd Xingtang County, Hebei Province

/illage, Guanling Town, Fuding ce

angdong Province

) Village , Wanquan District; jia Village, Xuanhua District, ng Village, Jizhou District,Tianjin

County, Suzhou City, Anhui Province

, Inner Mongolia

refecture, Sichuan Province

Ganzhou City, Jiangxi Province

In 2018, the Company carried out

36 poverty alleviation projects

donated more than

RMB 7,500 million and lifted

registered low-income people out of poverty.





Ningxia Daba Power Generation Company carries out the activity of "helping people in need", collecting donations by employees of over RMB 17,000 for poor families. The company also makes regular donations to help 15 poor students in Hongsibao District.

Promoting communication and cooperation

We attach much importance to the communication and cooperation with the government, suppliers, academic and research institutes. By attending to their concerns and expectations on us, we explore opportunities to make a difference, promote the sound development of the industrial chain and drive common development for all parties.



Following the principle of equality and mutual benefit as well as common development, Hebei Xiahuayuan Power plant signed the Cooperation Framework Agreement on Heat Supply Network- Heat Source Integration Project with the government of Xihuayuan District in Zhangjiakou City, dedicated to building the first heat supply network-heat source integration project and ensuring the heat supply in this area.

Inner Mongolia Tuoketuo Power Generation Company signed a strategic cooperation agreement with Shenyang Institute of Engineering and sought new opportunities in technological innovation, problem solving and talent cultivation by fostering cooperation between school and enterprise, sharing resources and complementing each other with their respective strengths.



Organizing volunteer activities

We caring about the development of communities and support education of local communities through volunteer activities, which will help them to gain recognition, when they lend a helping hand.





Zhejiang Shaoxing Jiangbin Thermal Power Company organized young volunteers to support Shaoxing International Marathon, which was recognized and praised by the race organizer.

Our 2019

In 2019, we will continue to focus on quality and efficiency improvement and accelerate our implementation of the 13th Five-Year Plan. Adhering to the implementation of the overall requirement of "do the best thing to the best", we will promote reform and innovation, forge ahead together, and continuously enhance our safety controls, competitive advantages, asset quality, governance capacity and staff quality. We will spare no efforts in fostering the high quality development of the Company to build it into a world-class energy company.

Quality-centered

- Continuously consolidate the foundation of work safety, comprehensively clarify safety responsibility and keep a tough stance on work safety to ensure stable and safe production.
- Further improve the law-based corporate governance system of " policy-based management , regulation-based practice and procedure-based implementation ", strengthen our disciplinary requirements, discipline enforcement efforts, risk control and system.

Efficiency-oriented

- Develop energy saving and eco-friendly generating units
- Increase the proportion of clean energy and renewable energy to the total installed capacity
- Improve the market competitiveness of enterprises





Innovation-driven

- Foster technological innovation and management system innovation
- Make full use of the innovation workshops to inspire innovations among employees
- Drive on the development of key science and technology projects and accelerate the application of our technological

Eco-friendly

- Improve the performance in energy conservation and emission reduction
- Increase comprehensive utilization of resources
- Strengthen management of hazardous emissions and waste

CSR-minded

- Step up efforts in talent cultivation
- Establish the recruitment principle of "four valuing and eight emphases"
- Continue to promote poverty alleviation

"Four valuing and eight emphases":

Valuing on morality with emphasis on ideal and sense of responsibility; valuing on performance with emphasis on achievements and potential; valuing on grassroots talents with emphasis on experience and ability; valuing on public opinions with emphasis on comments and reputation.

2015

2016

2017

201

Key Performance Indicators





Union membership rate of employees %



HKEX ESG Reporting Guide Index

	"Comply or explain" Provisions	Recommended Disclosures	Disclosure	Report position (Page)	Notes (Explanation on partial disclosure and no disclosure)		
A. Environmental							
	General Disclosure		\checkmark	32-33、40			
	A1.1		\checkmark	32-33			
	A1.2		\checkmark	32、52-53			
Aspect A1: Emissions	A1.3		\checkmark	32、40、52-53			
	A1.4		\checkmark	32、40、52-53			
	A1.5		\checkmark	32-33			
	A1.6		\checkmark	40-41			
	General Disclosure		\checkmark	36-37			
	A2.1		\checkmark	39			
Aspect A2:	A2.2		\checkmark	36、39			
Use of Resources	A2.3		\checkmark	34、36-37			
	A2.4		V	36-37	In 2018, Datang Power did not encounter problems with sourcing water that is fit for daily business operations.		
	A2.5				Power products do not need to consider packaging materials		
Aspect A3: The Environmental	General Disclosure		\checkmark	32-37、40-41			
and Natural Resource	es A3.1		\checkmark	34-37、40-41			
B. Social							
	General Disclosure		\checkmark	44			
Aspect B1: Employment		B1.1	\checkmark	44			
		B1.2	\checkmark	44			
	General Disclosure		\checkmark	16、44			
Aspect B2:		B2.1	\checkmark	16			
Health and Safety		B2.2					
		B2.3	\checkmark	16、44			

	"Comply or explain" Provisions	Recommended Disclosures	Disclosure	Report position (Page)	Notes (Explanation on par disclosure and no disclos
Aspect B3: Development And	General Disclosure		\checkmark	16、45	
		B3.1		45	
Training		B3.2			
	General Disclosure		\checkmark	44	
Aspect B4: Labor Standard		B4.1	\checkmark	44	
		B4.2	No violation		
Aspect B5:	General Disclosure		\checkmark	18	
Supply Chain Management		B5.1			
		B5.2	\checkmark	18	
	General Disclosure		V	24	Advertising, labeling, pri issues and remedies do apply to our company in accordance with Chines
Aspect B6:		B6.1			Power generation compa mainly guarantee the sa reliable supply of electric
Product Responsibility		B6.2	No related situations		
Responsibility		B6.3			
		B6.4			Power generation compared on the product verifies and recall procedure
		B6.5			
	General Disclosure		\checkmark	19	
Aspect B7: Anti-corruption		B7.1			
		B7.2	\checkmark	19	
Aspect B8:	General Disclosure		\checkmark	47-49	
Community		B8.1	\checkmark	47-49	
ootmont		B8.2	\checkmark	47	

Feedback

Dear Readers

1 What is your overall impression of the Penert2

Thank you for taking time to read Datang Power's 2018 Social Responsibility Report (Environmental, Social and Governance Report). To improve our performance and our next report, we hope you can give us some feedback on the following aspects:

1. What is your overall impression of the Report?								
□ Good		or	□ Fair					
2. To what extent are y	our topics	of interest addr	essed in the Report?					
🗆 Good		or	Fair					
3. How far has the Rep	oort reveale	ed Datang Powe	er's economic, environ	mental and social impac	t ?			
□ Good		or	Fair					
4. How about the read	lability of th	ne Report, espe	cially in relation to cor	nveniently finding your top	pics of interest?			
□ Good		or	Fair					
5. How is the layout of	the Report	t?						
🗆 Good		or	Fair					
6. What kind of additio	nal informa	ation do you exp	pect to see in the Repo	ort?				
7. Is there any suggest	ion on our	CSR performa	nce and future Reports	5?				
Which type of stakeho	lder are yo	u?						
Government/regu	lator	□ Investor	Community	□resident	Customer			
Financial institution	on	Governme	ent/regulator Technica	I college Supplier	□ Media			
□ Social organizatio	on	□ Others						
		——— C	contact information ——–	_				
Addr	ess: No.9 G	uangningbo Stree	et, Xicheng District, Beijin	Postcode: 100033				
		F	ax: 010-88008672					

About This Report

Dear readers, this is Datang Power's 11th CSR Report. The Report discloses our philosophy, strategies, actions progress and our 2019 in respect of our economic, social and environmental responsibilities. We hope that by publishing the CSR Report we could enhance communication and cooperation with you and strengthen our synergy for sustainable development.

Basis of Compilation

Reporting Period

dating back to previous years.

Reporting Cycle

This is the 11th CSR Report published by Datang Power.

Scope of the Report

this report.

Data Sources

documents and statistics.

References to Datang Power

This Report is complied in compliance with a) the Guidelines of SASAC on CSR Performance of Central Stat-owned Enterprises; b) the Environmental, Social and Governance Reporting Guide of HKEX; c) the Circular on Strengthening CSR of Listed Companies and the Guidelines on Disclosure of Environmental Information by Listed Companies of SSE; d) the GRI Sustainability Reporting Standards (GRI Standards) issued by the GRI Global Sustainability Standards Board (GSSB).

The Report covers the period from 1 January 2018 to 31 December 2018, with some

The Report covers all relevant information of the Company, please refer to P8-P9 of

All financial data in the Report is taken from Datang Power's official internal

In the Report, "Datang International Power Generation Co., Ltd." is also referred to as "We" "the Company", and "Datang Power".

Access to the Report

The report is available in both Chinese and English. For a hard copy, please contact:

Tel: 010-88008614

Email: zhangshaopeng@dtpower.com