

China Datang Corporation Ltd.

WENE S

# 2018 Social Responsibility Report





# ACT WITH FIRST CLASS STANDARD, BE THE WORLD CLASS ENERGY GROUP

Inner Mongolia Tuoketuo Power Plant has the installed capacity of 6.72 GW. It is a key project in China Western Development Program and West-East Electricity Transmission Project, with the volume of power generation accounting for approximately 30% of the total power consumption in Beijing.

-----

-0

atossic for the solution

nexexpense and the intervention

唐 中国大唐



Datang Longtan Hydropower Station, located along the Hongshui River in Guangxi, is a large hydropower station with the installed capacity of 4.9 GW. The station has played an irreplaceable role in the process of water regulation, reducing salt water and supplying fresh water in the Pearl River Basin.

and i

-0



Datang Saihanba Wind Farm, located in Inner Mongolia, has the Installed capacity of 1.52 GW. Since it was put into operation, a total of 23.7 TWh of clean electricity was accumulatively supplied, which equals to saving 7.37 million tons of standard coal or reducing 20.43 million tons of carbon dioxide.

-0



With 109 years of history, Datang Nanjing Power Plant is the first state-owned power plant in China. At present, it has two 660 MW ultra-supercritical coal-fired units. And it is the first ultra-low emission ecological renovation project of China Datang Corporation and one of the first batch in Jiangsu Province.

ill in m

-

N 14

-0

图 中国大唐



Message from the Chairman	02
About CDT	04
Corporate Governance	08
CSR Management	10
Annual Feature	16

Outlook 6	8 4
Third-party Evaluation 7	0 INNOVATION DEVELOP
Content Index	71
Feedback Sheet 7	<sup>4</sup> 5
Report Information 77	5 INTERNAT

# **CONTENTS**

1	Earning Profit	30
VALUE	Reducing Costs and Expenditure	33
CREATION	Market Development	34
2	Responsibility Fulfillment	38
PRODUCTION	Comprehensive Supervision	39
SAFETY	Safety Education	41
7	Structural Optimization	44
<b>3</b> GREEN	Energy Conservation and	44
DEVELOPMENT	Eco-friendly Development	46
4	Innovation System	50
NNOVATION-DRIVEN	Technological Achievements	50
DEVELOPMENT	Technology Demonstration	51
_	Overseas Projects	56
5	Technical Services	58
INTERNATIONAL COOPERATION	International Exchanges	59
COUPERATION	Fostering Development	60
		0.1
6	Employee Development	64
	Employee Happiness	65
COMMON DEVELOPMENT	Social Welfare	66
	Cultural Development	66

# MESSAGE FROM THE CHAIRMAN

Strive to open up a new road for high-quality development in a new era Write a new chapter in building a world-class energy group



In the past year, we responded to the complex situation in a scientific way and maintained steady development in production and operation. No major personal injury and equipment accidents occurred. 14 units won the national electric power reliability competition, ranking 1st among the central SOEs in power generation industry. We successfully completed major tasks of guaranteeing power supply for summer and winter peaks of power consumption, flood and typhon prevention, as well as for significant events such as the Shanghai Cooperation Organisation (SCO) Summit, the Forum on China-Africa Cooperation Forum, the Davos World Economic Forum and China International Import Expo (CIIE). We generated a total of 554.1 TWh, with an increase of 7.22% year on year; the total operating revenue reached RMB 189.5 billion, with an increase of 11.07% year on year; the total profits increased to RMB 9.598 billion from RMB 3.13 billion in 2017.

In the past year, we implemented the requirements of the supply-side structural reform and consolidated the foundation for high-quality development. We took the initiative to shut down 2.035 GW of backward production capacity in coalfired power sector. We approved power supply projects of 4.3032 GW, with clean energy accounting for 94.91%. The newly installed capacity reached 3.1892 GW, among which clean energy accounted for 84%. We actively responded to the Belt and Road Initiative and achieved much progress in overseas projects such as the Pak Beng Hydropower Station in Laos.

In the past year, we fulfilled the responsibility as a central SOE and had a good beginning in the "three tough battles" of preventing financial risks, reducing poverty and tackling pollution. Major risks were effectively controlled; the asset-liability ratio fell to 76.43%, with a decrease of 3.53% compared with that at the end of 2017. Our work related to law-based corporate governance won the A level rating in the inspection and evaluation of the SASAC. We strengthened internal audit and promoted revenue increase and expense reduction by RMB 397 million. In order to further promote poverty alleviation, we formulated a three-year action plan, signed the letters of responsibility with secondary subsidiaries, and intensified on-site investigation and supervision, with RMB 395 million for poverty alleviation funds and 129 officials assigned for poverty alleviation work. Our work on pollution prevention



and control was strongly effective. The capacity of ultra-low emission units reached nearly 95%, ranking the leading level in the industry. We actively propelled wastewater and waste treatment; various pollutants discharged reached the emission standard. We reduced coal consumption for power supply by 3.44 g/kWh to 301.85 g/kWh. 47 units won prizes in the national energy efficiency benchmarking competition for coal-fired units.

In the past year, we continued to deepen reform and accelerate the innovation-driven development. We promoted the marketing system reform and approved the establishment of 26 power sales companies in 23 provinces/ autonomous regions in China. We continuously deepened the reform in materials and fuels management system and further enhanced the service guarantee capability. At the same time, the investment in science and technology and innovation-driven outputs were steadily improved. The S&T investment reached RMB 3.3 billion, up 20.8% year on year; the number of new patents reached 1,212, we undertook 34 industrial standards or above in 2018 and won 100 industrial awards or above, including one second prize of the National Science and Technology Progress Award. For the first time, we won the gold prize of the International Convention on Quality Control Circles (ICQCC), the first prize of the quality control competition for central SOEs, and the China Technology Market Golden Bridge Award, the highest national award for S&T achievement transformation.

MESSAGE FROM THE CHAIRMAN

In 2018, thanks to the collective efforts of ten thousand officials and employees. we solidly promoted work in all aspects and completed various tasks. While providing clean energy for society, we integrated environmental protection, employee care and social service into the operation and development of the Corporation, striving to realize the harmonious development between CDT, society and nature.

The socialism with Chinese characteristics has entered a new era. CDT has stood at a new starting point for reform and development. We will continue the guide of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and fully implement the guiding principles of the 19th CPC National Congress; we will stick to the goal of building a world-class energy group and implement the overall requirements of "act with first class standard, be the world-class energy group". With these efforts, we endeavor to open up a new road for high-quality development in a new era and write a new chapter in building a world-class energy group.

アな 10 /空

Chairman, China Datang Corporation

# **ABOUT CDT**

# **Company Profile**

China Datang Corporation Ltd. (CDT) is a super large state-owned power generation group corporation directly under the central government, an investment institution authorized by the State Council, and a pilot statecontrolled company. The Corporation has a registered capital of RMB 37 billion. Since 2010, CDT has consecutively been listed in Fortune Global 500 companies for nine consecutive years.

By the end of 2018, CDT has had in-service assets and assets under construction in 31 provinces, autonomous regions and municipalities across the country as well as 16 countries along the Belt and Road, with total assets of RMB 745.8 billion. The Corporation has about 100,000 employees and an installed power generation capacity of 139 GW, with clean energy units accounting for 35.57%.





# Organizational Structure

						(	China	Data	ng Co	rpora	ation Lto	l. (hea	adqua	arters	5)							
Office of the Board of Directors	Office of Party Leadership Group	General Office	Department for Organization Work of Party Leadership Group (Department of Human Resources)	Department for Publicity Work of Party Leadership Group (Department for Work of the Party and the Masses/Directly under Party Committee Office)	Office of Labor Union Council	Office for Party Leadership Group Inspection	Office for Deepening Reform in All Areas	Planning and Development Department	Investment Cooperation Department	Finance Management Department	Capital Operation and Property Management Department	Safety and Ecological Protection Inspection Department	Production and Operation Department	Marketing Department	Engineering Management Department	S&T Innovation Department	Fuels Management Department	Materials Management Department (Bidding and Tendering Center)	International Cooperation Department	Corporate Governance and Legal Affairs Department	Audit Department	Discipline Inspection and Supervision Group

#### **Regional Subsidiaries**

Datang International Power Generation Co., Ltd.

Datang Huayin Electric Power Co., Ltd. (Hunan Branch)

Guangxi Guiguan Electric Power Co., Ltd. (Guangxi Branch, Datang Longtan Hydropower Development Co., Ltd.)

China Datang Corporation Renewable Power Co., Ltd. Datang Environment Industry Group Co., Ltd.

#### Regional Branches

Listed Companies

Northern China Power Operation Branch
Tianjin Branch
Shanxi Branch
Inner Mongolia Branch
Liaoning Branch
Shanghai Branch
Zhejiang Branch
Fujian Branch
Guangdong Branch
Jiangxi Branch
Chongqing Branch
Tibet Branch
Ningxia Branch
Chifeng Branch

#### Specialized Companies

**Research Institute** China Datang Corporation Renewable Energy Science and Technology Research Institute China Datang Finance Co., Ltd. China Datang Capital Holdings Co., Ltd. China Datang Overseas Investment Co., Ltd. China Datang Technical Service Co., Ltd. China Datang European Company Preparatory Office of China Datang African Company China Datang Hong Kong Co., Ltd. China Datang Zhongxin Nenghua Science and Technology Co., Ltd. China Datang Coal Industry Co., Ltd. China Datang Nuclear Power Co., Ltd. China Datang Corporation Ocean Energy Industry Co., Ltd. China Datang Solar Energy Industry Co., Ltd. Datang Power Fuel Co., Ltd. Materials & Equipment Group Co., Ltd. Research Institute Datang Culture Media Co., Ltd.

# **Secondary Subsidiaries**

Rogional oubolaiditoo
Datang Beijing-Tianjin-Hebei Energy Development Co., Ltd.
Hebei Power Generation Co., Ltd.
Jilin Power Generation Co., Ltd.
Heilongjiang Power Generation Co., Ltd.
Shandong Power Generation Co., Ltd.
Jiangsu Power Generation Co., Ltd.
Anhui Power Generation Co., Ltd.
Henan Power Generation Co., Ltd.
Hubei Energy Development Co., Ltd.
Hainan Energy Development Co., Ltd
Sichuan Power Generation Co., Ltd.
Guizhou Power Generation Co., Ltd.
Yunnan Power Generation Co., Ltd.
Shannxi Power Generation Co., Ltd.
Gansu Power Generation Co., Ltd.
Xinjiang Power Generation Co., Ltd.
Qinghai Energy Development Co., Ltd.
Xiong'an Energy Development Co., Ltd.

China Datang Corporation Science and Technology

China National Water Resources & Electric Power

China Datang Corporation Science and Technology

(CDT Party School, CDT Education and Training Center)

#### Agencies

South China Office
Beijing-Tianjin-Hebei Planning and Development Cente
Shandong Planning and Development Center
Jiangsu Planning and Development Center
Zhejiang Planning and Development Center
Fujian Planning and Development Center
Guangdong Planning and Development Center
Guangxi Planning and Development Center
Jilin Planning and Development Center
Heilongjiang Planning and Development Center
Inner Mongolia Planning and Development Center
Gansu Planning and Development Center
Ningxia Planning and Development Center
Qinghai Planning and Development Center
Xinjiang Planning and Development Center
Sichuan-Tibet Planning and Development Center
Laos Office
Myanmar Office
Thailand Office
Cambodia Office
Indonesia Office
Vietnam Office
Malaysia Office
Philippine Office

#### **Directly-administrated Organizations**

Technical and Economic Center
Information Center
New energy Business Division

**Coal Business Division** 

Coal Chemical Business Division

As of June 2019

# Structure of Power Generation Assets

Region	Total Installed Capacity	Thermal Power	Hydropower	Wind Power	PV
The Whole Country	138,918.30	94,452.60	27,037.40	16,316.70	1,111.6
Beijing	1,385.10	1,380.00	0.00	0.00	5.1
Tianjin	1,200.00	1,200.00	0.00	0.00	0.0
Hebei	10,279.90	9,480.00	38.50	736.50	24.9
Shanxi	8,339.00	7,205.00	0.00	1,084.00	50.0
Inner Mongolia	10,296.30	6,720.00	90.00	3,386.30	100.0
Liaoning	1,650.30	600.00	0.00	1,006.30	44.0
Jilin	4,708.10	4,060.00	0.00	648.10	0.0
Heilongjiang	5,083.00	4,450.00	33.00	600.00	0.0
Shanghai	236.20	0.00	0.00	204.20	32.0
Jiangsu	6,462.10	6,362.80	0.00	50.00	49.3
Zhejiang	3,611.00	3,544.00	0.00	28.00	39.0
Anhui	6,261.5	5,980.00	184.00	97.50	0.0
Fujian	2,793.10	2,520.00	0.00	273.10	0.0
Jiangxi	2,807.50	2,440.00	0.00	367.50	0.0
Shandong	5,372.80	3,625.00	0.00	1,692.00	55.8
Henan	9,148.30	8,310.00	0.00	838.30	0.0
Hubei	206.50	0.00	100.00	106.50	0.0
Hunan	5,639.90	5,240.00	175.90	224.00	0.0
Guangdong	4,430.30	4,380.80	0.00	49.50	0.0
Guangxi	10,609.40	1,330.00	9,180.40	99.00	0.0
Hainan	12.00	0.00	0.00	0.00	12.0
Chongqing	3,641.40	700.00	2,844.60	96.80	0.0
Sichuan	6,841.00	0.00	6,607.00	184.00	50.0
Guizhou	3,000.10	2,400.00	310.00	290.10	0.0
Yunnan	6,839.30	600.00	5,403.60	735.80	100.0
Tibet	11.50	0.00	11.50	0.00	0.0
Shaanxi	8,257.00	7,070.00	675.00	492.00	20.0
Gansu	6,035.3	4,255.00	739.00	1,040.80	0.5
Qinghai	540.00	0.00	190.00	50.00	300.0
Ningxia	842.50	0.00	0.00	743.50	99.0
Xinjiang	2,018.00	600.00	95.00	1,193.00	130.0
Overseas	360.00	0.00	360.00	0.00	0.0

# **Corporate Mission**

The implementer of national strategies, the pioneer of industrial development, the supplier of clean energy, the creator of corporate values, and the protector of public interest

# **Overall Goal**

Building a world-class energy group

# **Overall Requirement**

Act with first class standard, be the world-class energy group

# **Corporate Characteristics**

Safe, green, smart, value sharing, sustainable growth

### Connotations of a New CDT in a New Era



As of December 2018

# **CORPORATE GOVERNANCE**

We vigorously improve the Corporation' level of conglomeration, marketization, specialization, internationalization, law-based governance and informatization so as to foster the first-class modern governance capability and governance system in CDT.



# **Corporate Governance Structure**

CDT is the first enterprise among central SOEs in power generation industry to build a standardized board of directors. During recent years, we have continuously strengthened the development of a standardized, efficient and harmonious board of directors and steadily improved the scientific and precise decision-making level. In 2018, after the elections, the 4th board of directors was officially established. At present, the board of directors has a total of eight directors, including three internal directors (the chairman, a director, an employee director) and five external directors, one of whom is a full-time external director. The external directors are appointed by the SASAC while the employee directors are from employee representatives and elected by the workers representative congress, staff meeting or in other forms of democracy.

CDT strengthens the building of corporate governance structure, gives full play to the role of the "three meetings" and endeavors to solve problems such as lack of system, system conflict, and system ineffectiveness, continuously enhancing CDT's governance and capability.



On December 25, the first meeting of the 4th board of directors was held.

Focusing on issues such as the Corporation's development strategy and power system reform, external directors visited the companies and units of CDT to carry out targeted research on site. The scope of investigation covered six major industries including power, coal, finance, overseas business, coal chemical, and energy services.



External directors carry out field research in primary-level enterprises.

# **Overall Standardized Operation**

In 2018, we formulated and improved the Detailed Rules for the Implementation of the Decision-making System of Four Major Issues (the decision-making system of major issues, major officials appointment, major project arrangements, and use of large-volume capital), the Deliberation Rules of the Board of Directors and the deliberation rules of relevant committees. We set up the leading group for the special development work of the decision-making operation system for the Four Major Issues and uploaded the key decision-making information and data of the Corporation since the 19th CPC National Congress to the key decision-making operation system of the SASAC.

In 2018, the Board of Directors of CDT held nine meetings, reviewed 40 issues of the key decision-making system, and listened to four reports. The level of scientific decision-making, democratic decision-making and legal decision-making was significantly improved.

# **CSR MANAGEMENT**

# **CDT Missions**

The implementer of national strategies	In the overall cause of the Party and the country, we actively implement the five-sphere integrated plan and the four-pronged comprehensive strategy and make an improved top design for building a world-class energy enterprise, with a view of building CDT into a stronger, better and larger enterprise and serving as the backbone to safeguard national energy safety.
The pioneer of industrial development	With world-class modern governance capability and system, first-class human resources, equipment technology and innovation capability, we foster the strength of scientific and technological innovation and deepen cooperation with industry stakeholders to serve as the pioneer and leader of industrial development.
The supplier of clean energy	We develop clean, low-carbon, safe and efficient energy, improve the strategic positioning and installed capacity of clean energy, reduce foss energy consumption, and build a clean, low-carbon, inclusive, intelligent, interconnected, safe and efficient energy supply service system. We make contribution to the "the blue sky and green water" with CDT Power by strictly controlling the discharge of pollutants.
The creator of corporate values	We strive for high quality development and enhance value creation with first-class standards. We also strengthen the overall concept, particular to the development goals of each subsidiary, as well as the overall strategic goals of the Corporation, and raise strategic thinking. More attention will be paid to the annual production and operation indicators and the Corporation's long-term strategic objectives.
The protector of public interest	We resolutely safeguard the public interest, adhere to the law-based management with integrity and maintain market economic order. We firml support the fight against poverty and actively participate in social welfare activities such as disaster relief and assistance, facilitating a well-of society in an all-round way. We adhere to the sharing of development results with employees so that they have a stronger sense of fulfillment happiness, and security.



CDT has established a CSR work leading group, with an aim to always integrate CSR into all aspects of business management, and include social responsibility practices in terms of corporate governance, value creation, production safety, green development, innovation-driven development, international cooperation, and common development with employees and the community into the overall strategic deployment of the Corporation so as to ensure the fulfillment of political, economic and social responsibilities in an all-round way. The Corporation has developed a management system for the hierarchical management of the headquarters, second-tier subsidiaries and third-tier subsidiaries.

# **CSR Fulfillment**

Strategic Leading-In accordance with the strategic guidance of building a world-class enterprise with global competitiveness, we will build a quality-centered, efficiency-oriented innovation-driven, eco-friendly and CSR-minded CDT, and create a new CDT in the new era. Always upholding the responsibility to the Party and the nation, CDT is also responsible for the economic growth, social progress, environmental protection, the development of the Corporation as well as the growth of employees. **Capacity Improvement**-In order to cultivate the awareness of the Corporation's management personnel and employees to practice social responsibility and improve their work capability, CDT conducts social responsibility management and information business training according to industry characteristics. We actively participate in social responsibility seminars, and listen carefully to external experts' opinions on CSR management, so as to continuously improve our CSR management, and optimize CSR practices.

# **CSR** Communication

Adhering to the principle of openness and transparency, CDT attaches great importance to CSR communication, focuses on establishing a comprehensive, multi-channel and routine communication system, and opens communication platforms such as official website, WeChat and Weibo, to achieve timely and effective communication with all stakeholders. Comprehensive CSR communication promotes the effective improvement of the Corportation's ability to perform in all aspects.





WeChat Official Account

of CDT

Official Website of CDT

CDT Weibo

10

Performance Assessment-In the annual performance assessment implemented by the Corporation, important social responsibility indicators are introduced as basic indicators and classification indicators by CDT for rigorous assessment, aiming to comprehensively improve our performance by assessment.

#### Further Reading

To facilitate the public know more about energy companies at zero distance, CDT has held Open Day campaign for 12 consecutive years (xinhuanet.com)



# CSR Case: "CDT Open Day" campaign

On October 12, 2018, the Seventh SOE Open Day Observation Promotion Conference and the Twelfth CDT Open Day jointly sponsored by the SASAC, the State Council and CDT was held in Xi'an Baqiao Thermal Power Plant in Shaanxi Province. On the same day, 52 primary-level subsidiaries held the campaign in 25 provinces and cities nationwide.

As of 2018, we have held CDT open day campaign for 12 consecutive years. The number of subsidiaries for open visit has reached 315 (times). More than 70,000 people from all walks of life came to CDT to learn about the reform and development of energy enterprises and feel the elegance of central SOEs. The CDT Open Day campaign has become an activity in the central SOEs with strong brand communication demonstration effects.



The CDT Open Day of Datang Bagiao Thermal Power Plant

# . F萨变电站

On the CDT Open day, Datang-Cambodia Hydropower Company and Cambodia State Grid Corporation are open to local people.

#### - Stakeholder Feedback

"The CDT Open Day campaign has played a positive role in strengthening communication with the public. CDT has organized the event for 12 consecutive years. With the focus of top design, the Corporation has invested much time to enriching the forms and contents of the campaign, which vividly displays the image of CDT as a state-owned enterprise.

-- The Publicity Bureau of the SASAC

### **CSR** Achievements

2017 Social Responsibility Report of China Datang Corporation was rated Five Star by Chinese Academy of Social Sciences.

CDT won the first prize of the quality control (QC) competition for central SOEs.

ISO 50045: 2019 - Technical Guide for Energy Saving Assessment of Thermal Power *Plants,* the first ISO standard led by the Corporation, was officially released.

CDT signed the *Memorandum* of Understanding on Renewable Energy Projects with Korea Electric Power Corporation.

# **Key Performance**

Performance I	Indicator	Unit	2014	2015	2016	2017	2018
	Installed Capacity	MW	120,470	127,170	130,900	137,780	138,910
Economy	Power Generation Volume	TWh	496.8	478.8	470.0	516.9	554.
	Total Assets	RMB billion	720.4	729.5	706.3	720.8	745.8
	Total Operating Revenue	RMB billion	186.1	166.2	158.6	171.0	189.
	Total Profits	RMB billion	12.058	17.316	10.713	6.468	9.598
	Asset-Liability Ratio	%	83.34	81.83	81.51	79.96	76.4
	Economic Contract Performance Rate	%	100	100	100	100	10
Environment	Proportion of Clean Energy and Renewable Energy	%	25.3	27.88	29.27	33.9	35.5
	Coal Consumption for Power Supply	g standard coal/kWh	312.86	309.62	306.94	305.28	301.8
	NOx Emission Rate	g/kWh	1.73	1.18	0.74	0.26	0.2
	SO <sub>2</sub> Emission Rate	g/kWh	0.97	0.69	0.36	0.21	0.1
	Smoke Emission Rate	g/kWh	0.23	0.15	0.09	0.06	0.0
	Wastewater Discharge Rate	g/kWh	155	115	95	80	6
	Major Personal Accident and Above	Time	0	0	1	0	
	Major Equipment Accident and Above	Time	0	0	0	0	
	General Personal Accident	Time	2	3	2	1	
	General Equipment Accident	Time	0	0	0	0	
Society	On-the-job Employees	Person	104,248	97,904	96,777	98,756	96,09
SUCIELY	Trade Union Membership Rate	%	100	100	100	100	10
	Collective Contract Coverage Rate	%	100	100	100	100	10
	Staff Satisfaction Rate	%	94.6	96.2	99.2	99.5	99.
	Number of Female Employees	Person	26,063	24,120	23,895	23,385	21,96
	Proportion of Female Management	%	2.5	3.2	3.4	3.4	4
	Number of Minority Employees	Person	5,570	5,563	5,730	5,847	5,80

As of December 2018

# Stakeholders

Stakeholders	Communication Approaches	Stakeholders' Concern	Performance Indicators
The Government	<ul> <li>Formulating regulations and policies</li> <li>Attending relevant meetings</li> <li>Work reports</li> <li>Statistics reports</li> <li>Information delivery</li> <li>Top-level meetings</li> </ul>	<ul> <li>National policies and energy safety</li> <li>Electricity and heat supply</li> <li>Complying with laws and regulations</li> <li>Taxation</li> <li>Optimizing structure</li> <li>Energy conservation and emission reduction</li> <li>Expanding employment</li> <li>Management and S&amp;T innovation</li> </ul>	<ul> <li>Installed capacity</li> <li>Power generation volume</li> <li>Total tax</li> <li>Providing jobs</li> <li>Energy conservation indicator</li> <li>Emission reduction indicator</li> <li>Proportion of clean energy and renewable energy</li> <li>Average capacity of a condensing steam turbine generator</li> <li>Innovation achievements</li> </ul>
The SASAC	<ul> <li>Formulating rules and regulations</li> <li>Proposing work objectives</li> <li>Formulating assessment criteria</li> <li>Work reports</li> <li>Statistics report</li> </ul>	<ul> <li>Maintenance and appreciation of state-owned assets</li> <li>Legal and compliant operation</li> <li>Prevention of operating risks</li> </ul>	<ul> <li>Total profits</li> <li>Economic added-value</li> <li>Ratio of total expenses to operating revenue</li> <li>Asset-liability ratio</li> <li>Maintenance and appreciation rate of state-owned assets</li> <li>Average growth rate of major businesses</li> <li>Coal consumption for power supply</li> <li>Overall labor productivity</li> </ul>
hareholders and Other Partners	<ul> <li>Shareholders' Meeting</li> <li>Announcements of the Corporation</li> <li>Regular reports</li> </ul>	<ul> <li>Integrity and Compliance</li> <li>Profitability</li> <li>Standard operation</li> </ul>	<ul> <li>Sales revenue</li> <li>Market share</li> <li>Corporate profits</li> <li>Investment income</li> </ul>
Employees	<ul> <li>Contracts and agreements</li> <li>Workers Representative Congress</li> <li>Rationalized suggestions</li> <li>Letters and visits</li> <li>Collective contracts</li> <li>Labor contracts</li> <li>Disclosure of corporate affairs</li> </ul>	<ul> <li>Democratic rights</li> <li>Health and safety</li> <li>Remuneration and benefits</li> <li>Personal development</li> <li>Education and training</li> </ul>	<ul> <li>Labor and operation environment</li> <li>Accident rate</li> <li>Trade Union membership rate</li> <li>Collective contract coverage rate</li> <li>Level of salary</li> <li>Investment in staff training</li> <li>Employee turnover</li> </ul>



Stakeholders' Concern	Performance Indicators
<ul> <li>Community construction</li> <li>Public welfare cause</li> <li>Public security</li> <li>Ecological protection</li> </ul>	<ul> <li>Investment in community construction</li> <li>Investment in public welfare</li> <li>Public security complaints</li> <li>Pollution complaints</li> </ul>
<ul> <li>Safe and stable supply of electricity and heat</li> <li>Quality of coal products and other products</li> <li>Technical service quality</li> <li>Price</li> </ul>	Customer satisfaction
<ul> <li>Compliant operation</li> <li>Long-term cooperation</li> <li>Market fairness</li> <li>Integrity management</li> </ul>	<ul> <li>Social responsibility performance</li> <li>Integrity</li> <li>Number and subject matter of contracts</li> <li>Duration of cooperation</li> <li>Management of dishonest suppliers</li> <li>Profits</li> </ul>
<ul><li> Efforts on promoting integrity</li><li> Safe construction</li></ul>	<ul> <li>Integrity</li> <li>Production safety management requirements, safety training and education</li> </ul>
<ul> <li>Contributions to institutes and associations</li> <li>Impacts on sustainability</li> </ul>	<ul> <li>Frequency and profoundness of activity engagement</li> <li>Membership fees</li> <li>Emission reduction indicators</li> <li>Pollution complaints</li> </ul>



# **ANNUAL FEATURE I: HIGH QUALITY DEVELOPMENT**

In 2018, we implemented the requirements of supply-side structural reform and continuously consolidated the foundation for high quality development. The installed capacity reached 139 GW, among which the installed capacity of clean energy accounted for 35.57%. CDT has made significant progess on energy mix by comprehensively developing hydropower, windpower, solarpower, gas turbine generation and so on.



Datang Pengshui Hydropower Company won 60 state-level new utility patents, and was awarded the First-class Enterprise and Advanced Unit of CDT in 2018



Datang Qinghai Golmud Photovoltaic Power Station, the first PV power project of CDT



Datang Chifeng Hanshan Wind Power Company, the best wind power project of CDT in terms of costs and profits



Datang Taizhou Thermal Power Co Ltd, the best gas turbine project of CDT in terms of costs and the first smart power plant in China

# Progress in structural adjustment

We seize the strategic opportunities of the coordinated development of Beijing-Tianjin-Hebei Region, the integration of the Yangtze River Delta, the development of the Guangdong-Hong Kong-Macau Greater Bay Area, and the implementation of the Belt and Road Initiative, and leveraged national policies on the coordinated development of eastern region, midwestern region and northeast region to accelerate structural adjustment, cultivate new growth points, growth poles and growth zones, and speed up fostering new development momentum.

A number of innovation-driven development projects in Yuncheng and Dongying, Shandong province, and Wanning, Hainan, etc., have made substantial breakthroughs in preliminary work and infrastructure construction. The commissioning plan and the emergency backup power function of projects in Yan'an, Shaanxi province, Weixian, Hebei province, Xilin Hot, Inner Mongolia, Shendong, Liaoning province, Gongyi, Henan province, etc., are confirmed. The construction plans of projects in Leizhou, Guangdong and Pingluo, Ningxia and other places are approved and promoted in an orderly manner.







#### Further Reading

Saihanba Wind Farm: Making another "green miracle" (xinhuanet.com)



## CSR Case: Datang Jiangsu Binhai Offshore Wind Power Project launched

On July 30, 2018, the Datang Binhai 300MW Offshore Wind Power Project, the first offshore wind power project independently developed and constructed by the Corporation, was officially launched.

With total investment of about RMB 5 billion, the project is installed with 50 sets of 3MW generating units and 46 sets of 3.3MW generating units.

On October 24, 2018, the power supply of the onshore control center and the offshore booster station of the Binhai Wind Power Project had a complete success, which provided favorable conditions for subsequent integration of offshore wind turbines. On December 3, with the accurate positioning of the No. 92 turbine hub, the turbines on the first-circuit of the project were installed. On December 29, the installation of the first-circuit turbines and the laying of the 35kV undersea cable were successfully completed.

After the project is put into operation, it can annually supply about 790GWh of electricity to the grid, which has a very significant environmental effect.





Wind Turbine maintenance training

Datang Jiangsu Binhai Offshore Wind Power Project

# Further Improving Quality and Efficiency

We have overfulfilled the three-year task of "streamlining" assigned by the SASAC one year ahead of schedule, reducing 198 business entities cumulatively. It is estimated that RMB 278 million of losses and RMB 36 million of management costs will be reduced.

We strengthen process management & control and priority supervision, timely adjust and optimize the plan for eliminating zombie enterprises and dealing with enterprises in predicament, and have completed the foregoing task.

In 2018, we promoted separation and transfer of social functions of enterprises; the official transfer rate of "water/power/heat supply and property management" of CDT reached 99.36%, keeping the leading level among central SOEs. We successfully completed capital operation of Datang International and realized historic shareholding, completed the integration of the assets of Guangxi Guiguan Electric Power Co., Ltd. and transferred the equity of Yuneng (Group) Co., Ltd.

We completed the issuance of RMB 9 billion of renewable corporate bonds, raised funds to fully repay debts, and reduced the asset-liability ratio by 1.2 percentage . contributing to the completion of the deleveraging task assigned by the SASAC. The Corporation was awarded the Outstanding Quality Issuer in 2018 by Shanghai Stock Exchange.

# CSR Case: Datang Huayin Zhuzhou Power Plant implements the relocation project to move out of downtown and settle in suburb

On September 28, 2018, local government of Zhuzhou City and Datang Huayin Electric Power Co.,Ltd. signed the framework agreement on the relocation and development of Datang Huavin Zhuzhou Power Plant.

According to the framework agreement, with the principle of establishing the new plant first and shutting down the old one later, the Plant will be relocated to Zhuzhou County; two 1GW coal-fired power generating units will be installed at the new site. The project is a demonstration project of Datang Huayin Electric Power Co., Ltd. to relocate to suburb and move out of downtown and implement transformation, upgrading and green development. After completion, it will become a first-class power plant in China with advanced indicators, ecofriendliness and outstanding benefits. The project is of great strategic significance to Zhuzhou City to build a clean, low-carbon, safe and highly efficient energy system, accelerate local economic development and employment growth, and realize integration of ecological construction and



# Promoting the Building of a World-class Energy Group

We have organized 13 research groups to carry out special research on "what is first-class level, who is first-class, and how to become first-class".

energy security.

We held four symposia on reform and development in 2018. The Corporation leaders and the major responsible persons of subsidiaries discussed face to face on future development and reform, which helps unifying thinking, reaching consensus, laying the foundation for promoting high quality development and accelerating the building of a world-class energy group.





The Corporation holds a symposium on reform and development in Beijing.

# Realizing Continuous Development in Reform and Opening up

The year 2018 marks the 40th anniversary of China's reform and opening up. In the past, CDT was born because of reform! Today, CDT is thriving because of reform! In 2002, the State Council issued the Power System Reform Plan (No. 5 Official Document), and then CDT was established. Over the past 16 years since the inception of the Corporation, under the strong leadership of the CPC Central Committee, with the unremitting efforts of all employees, we have made great achievements in reform and development. All sectors of CDT have achieved sound development, with fruitful results in production, management, reform and development, Party building, workforce building, safety and environmental protection. Our efforts made in the past 16 years have laid a solid foundation for future development of the Corporation.



Inner Mongolia Tuoketuo Power Plant, the largest in-service thermal power plant in the world with a total installed capacity of 6.72 GW, was selected in the large-scale exhibition "Great Change – Celebrating the 40th Anniversary of China's Reform and Opening Up".











Ratio of clean energy to total installed capacity (2002-2018) (unit: %) ΔN 35.57 35 30 25 20 15 2002 2006 2010 2014 2018



# **Annual Feature II: Targeted Poverty Alleviation**

In 2018, CDT thoroughly implemented the central government's decisions and deployment for poverty alleviation and the important speeches of General Secretary Xi Jinping on poverty alleviation and development. We held special promotion meetings, formulated a threeyear action plan, signed letters of responsibility with subsidiaries, and strengthened on-site investigation and supervision, with a view to solidly promoting poverty alleviation work. We directly invested RMB 395 million in poverty-stricken areas, and assigned 129 full-time officials to poverty-stricken areas, and overfulfilled the tasks specified in the Letter of Responsibility of Central SOEs' for Fixed-point Poverty Alleviation.

# Guaranteeing the Institutional Implementation

We have established a leading group on poverty alleviation work to comprehensively promote and guarantee the Corporation and our subsidiaries to engage in poverty alleviation in an orderly and efficient manner. We adhere to the work mechanism in which the Corporation, branches and subsidiaries, and primary-level enterprises have clear division of responsibilities and supervise responsibility fulfillment in a hierarchical order and sign the letters of responsibility so as to divide the responsibilities and also gather collective efforts for fighting against poverty.



CDT focuses on improving the quality and capability of poverty alleviation officials. In April 2018, the first session of targeted poverty alleviation training was organized, with a total of 97 trainees.

# Conducting In-depth Field Research on Poverty Alleviation

The Corporation leaders went to the poverty-stricken areas in Shaanxi, Guangxi, Xinjiang, Ningxia, Hebei, Shandong, Sichuan, Guangdong, Hunan, Jiangxi, Qinghai, Yunnan, etc., to conduct field research on poverty alleviation work and solidly promote poverty alleviation.



Chairman Chen Feihu conducts field research on poverty alleviation work in Anlan Village, Dahua, Guangxi.



Chairman Chen Feihu conducts field research on poverty alleviation work in Chengcheng County, Shaanxi.

# **Enhancing Fixed-point Poverty Alleviation**

We earnestly implement the task of poverty alleviation, carefully select and assign the "First Secretary" to poverty alleviation areas, and focus on improving people's livelihood. Through actively raising funds, we have built a number of rural and agricultural infrastructure for fixed-point poverty alleviation areas, effectively improving agricultural production and farmers' living conditions, and stimulating local economy, which promote the stable progress of poverty alleviation.

### A total of 14,000 poor people in Chengcheng County, Shaanxi lifted out of poverty

In 2018, CDT donated RMB 5 million as poverty alleviation funds to Chengcheng County for the three poverty alleviation projects, i.e., the (poverty alleviation) relocation community for residents from Leijiawa community, Zhuangtou Town, Chengcheng County, and the sweet potato industry demonstration base in Siqian Town and Jialou Village. With efforts in industrial and educational support, we helped Chengcheng County win the battle against poverty. Through the measure of "donation instead of procurement", the sales volume of agricultural and sideline products such as vegetables and fruits in Chengcheng County reached RMB 877,000; we helped sell RMB 87,800 of agricultural products, solving the difficult problem of sales for farmers.

In May 2019, the People's government of Shaanxi Province issued a notice announcing that Chengcheng County is eliminated from the list of national povertystricken counties. After the county-level inspection and evaluation, municipal-level verification, and provincial-level evaluation and inspection, Chengcheng County was lifted out of poverty.

### CSR Case: The aspiration of the "Tomato County Head" for poverty alleviation

At the beginning of 2018, Chengcheng County suffered heavy snowfall which was unprecedented in 60 years. In Jialou Village, one of the fixed-point poverty alleviation villages of CDT, more than 50,000 kg of tomatoes produced from 14 greenhouses were unsalable. 2018 was the first year for the poverty-stricken households in the village to develop greenhouse industries. If the products were not sold, it would seriously undermine the confidence of local residents in poverty alleviation.

Understanding the pressing needs of the poor households, Wang Bing, who was assigned as Deputy Head of Chengcheng County, one of the fixed-point poverty alleviation counties of CDT, proposed the initiative of charitable consumption. Datang Shaanxi Power Generation Company mobilized more than 4,000 officials and ordinary employees to buy more than 20,000 kg of tomatoes, solving the big problem of the villagers. Local people kindly called Wang Bing the "Tomato County Head".

Wang Bing, Deputy Head of Chengcheng County for Poverty Alleviation (mid)

# A total of 15,000 poor people and 18 poor villages in Dahua County, Guangxi lifted out of poverty

In Dahua County, Guangxi, CDT focuses on the projects of poverty alleviation through industrial development, infrastructure construction, relocation, etc., and proactively raise funds for poverty alleviation. With these efforts, we have achieved milestones for poverty alleviation.

We give full play to the advantages of the assistance model for the "five-tier full coverage" of poverty alleviation officials and the "four-dimensional lean management" of poverty alleviation projects, and effectively promote poverty alleviation work. By the end of 2018, Banlan Village, assisted by China Data Corporation in fixed-point poverty alleviation projects, had lifted 548 villagers from 54 households out of poverty, reducing the poverty incidence to 63.77%. In Anlan Village, 548 villagers from 38 households were out of poverty; the poverty rate fell to 35.77%.



The poverty alleviation officials of CDT, officials of targeted villages, and local villagers examine the construction and operation of drinking water projects in Anlan Village.

# Poverty Alleviation Integrated with Aspiration and Competency Cultivation

CDT earnestly implements the guiding principles of the important speeches of General Secretary Xi Jinping, adheres to helping people increase confidence in their own ability to lift themselves out of poverty and see that they can access the education they need to do so, and takes targeted measures to combine external assistance with local industrial development, so as to create a favorable development environment for poverty-stricken areas.

CDT launches the cultural activities of "Datang Star Class", and organizes lectures on electric science popularization for children at schools in targeted poverty alleviation villages across the nation. Through integrating entertainment and teaching, we hope to broaden their horizons, stimulate wisdom, bring them closer to the outside world, and enhance their confidence in creating a better future.



The "Ten Hundred Thousand" Hope Educational Support Project launched by Datang Henan Power Generation Company

#### Further Reading

CDT: Caring for the public to protect the blue sky (xinhuanet.com)







The "Datang Star Class" organized by Datang Xinjiang Power Generation Company in Daifu Taier Village Primary School

On November 1, 2018, the Yan'an Heat Network Project, which was built by Datang Yan'an Thermal Power Plant, was successfully completed, achieving the goal of providing heat to new and old districts in Yan'an. Datang Yan'an Thermal Power Project undertakes the heating task for 19 sub-zones with total 13 million square meters in Yan'an City. After the project is completed and put into production, three small heating units of 12MW and 236 small heating boilers will be gradually dismantled in Yan'an City. The heat supply problem will be solved fundamentally, and the air quality in old districts will be completely improved.

#### Stakeholder Feedback

"The development of CDT in Yan'an is carried with a good will, with a view to doing goods for the people living in the old district..."

-- Liu Xiaojun, Vice Mayor of Yan'an City

cities,

including two national poverty alleviation counties, 12 counties of "Three Regions and Three Prefectures" ( Tibet, the Tibetan-inhabited regions in Qinghai, Sichuan, Yunnan and Gansu provinces, the four regions in southern Xinjiang, Liangshan Yi Autonomous Prefecture in Sichuan Province, Nujiang Lisu Autonomous Prefecture in Yunnan Province, and Linxia Prefecture in Gansu Province), two counties/cities in which poverty alleviation is promoted through supporting key industries, and 64 counties/cities in which other means of poverty alleviation are adopted.

The fixed-point poverty alleviation projects of CDT cover 80 counties and CDT provides paired help for 334 villages with poverty alleviation,

including three villages located in State Designated Poor Counties(SDPC), 164 villages located in "Three Regions and Three Prefectures", and 167 poverty alleviation villages located in other areas.

> Assigned as Deputy County Head while retaining position in CDT

First Secretary of the Village

team

Head of the poverty alleviation

Assigned to related business

original position in CDT

department while retaining

Other poverty alleviation officials



129

officials

In 2018, CDT invested RMB 395 million in various poverty alleviation funds

RMB 395 million

Within the system of CDT, a total of 30 secondary subsidiaries have actually carried out poverty alleviation work based on local conditions; the coverage rate of poverty alleviation work reached 68.18%.

68.18%

# 23,000 households 85,000 people

In 2018, the poverty alleviation work conducted by CDT made positive contributions to lifting more than nearly 85,000 people from 23,000 households out of poverty.



In Qinggenhe Village, Ziketan Town, Xinghai County, Qinghai Province, technicians of CDT are installing household power for users that had no access to electricity.



Datang "Visits, Benefits and Gatherings" Work Group works with Xinjiang Medical University to conduct a free clinic for local villagers.



The poverty alleviation official of CDT visits local residents to know their problems.

# Widely Recognized

# The State Council Leading Group Office of Poverty Alleviation and Development promotes the practice of CDT in poverty alleviation

On December 28, 2018, the State Council Leading Group Office of Poverty Alleviation and Development published China Datang Corporation "1234" Measures Promotes Poverty alleviation in the 108th issue of Poverty Alleviation Information, the special issue on collaboration of western and eastern china to combat poverty by promoting the practice and experience of CDT in poverty alleviation.

# The Party Committee and the People's Government of Yunnan Province affirm the work of CDT in poverty alleviation

Chen Hao, Secretary of the Party Committee of Yunnan Province, expressed that "the efforts of CDT to help the province fight against poverty is greatly appreciated. We hope that the Provincial Poverty Alleviation Office will actively cooperate and accurately implement the project measures so that the assistance work can be carried out in a solid and orderly manner."

Ruan Chengfa, Governor of Yunnan Province, pointed out that "CDT attaches great importance to poverty alleviation and works hard to help lift the poor of the Yi People in the province out of poverty. I would like to express great gratitude to the Corporation! As always, we will work together until we win the fight against poverty".



Comparison of new homes and old ones in Wagu Sanchahe Village, Liugu Town, Lushui County, Yunnan Province, China



The roads in Rongyu Village, which were built with the funds raised by the work team of CDT, have provided convenience for villagers to travel.

扶贫	信息
BPRATORNO.	346.4 (2.5.26.6
中国大清聖國"12	- 100 N K K K H

# VALUE CREATION

Adhering to the general requirements of "act with first class standard, be the world-class energy group", the Corporation has formulated and implemented plans to deleverage and reduce assets-liability ratio with multiple measures. In 2018, the Corporation eared profits of RMB 9.598 billion, and has been rated as Class A in the business performance assessment of the central SOEs for six consecutive years.

O Power generation 554.1 TWh Heat supply 262.74 million GJ **\overline{basic}** Total profit RMB 9.598 billion • Net profit attributable to shareholders of the parent company RMB 2.136 billion Asset-liability ratio 76.43 %



# **Earning Profit**

CDT has earnestly implemented the decisions and arrangements of the central government for maintaining sustainable and healthy economic development. Taking opportunities such as rapid growth of the total electricity consumption and accelerated development of clean energy, the Corporation has taken the initiative to reduce costs and increase efficiency, and thus steadily improved business performance.

(unit: %)

electricity

coal

fuel

finance

materials

others

science and technology 2.6%

Asset composition of each segment

amona which

79.8%

2.8%

0.9%

10.4%

1.3%

2.2%

50.0%

28.5%

20.0%

thermal nower

photovoltaic power 1.5%

hydropowei

wind power



Total profits from 2012 to 2018

(unit: RMB billion)





In 2018, with an installed thermal power capacity of 94.4526 GW, we generated 422.191 TWh of electricity.

We have actively promoted the application of proven technologies, and carried out comprehensive upgrading and transformation to improve the effectiveness of energy conservation and emission reduction. In 2018, the coal consumption was 301.85 g/kWh, representing a year-on-year decrease of 3.44 g/kWh, which helped save a total of 4.0577 million tons of standard coal.

# CSR Case: Wangtan Power Generation Company explores its potential and makes significant achievements

The company carried out comprehensive upgrading of Unit 2, and increased the rated power from 600 MW to 630 MW, which could reduce the coal consumption by 10 g/kWh and save nearly 30,000 tons of standard coal per year. It installed a seawater desalination system to provide water for production and reduce fresh water consumption. It also explored the cold startup of the units without steam and fuel. Since May 2010, the company completed startup with no fuel for 103 consecutive months, the longest period of non-fuel operation with single-layer plasma ignition in coal-fired power plants in China.

# Wind power: Profitability increased continuously

In 2018, with an installed wind power capacity of 16.3167 GW, we generated 32.303 TWh of electricity, making a profit of RMB 3.3 billion.

On July 4, 2018, the first wind power generator of Datan Wind Farm of Hebei New Energy Company was installed, marking that the 200MW single wind power project of CDT in northern China entered a critical stage. Compared with the thermal power units that can generate the same amount of electricity, the Datan project can save 169,000 tons of standard coal per year.



The first top-quality wind power project of CDT - Datang Qiubei Wind Farm



Seawater Desalination System of Wangtan Power Generation Company under CDT

# Hydropower: Stable income increase

In 2018, with an installed hydropower capacity of 27.0374 GW, we generated 98.044 TWh of electricity, bringing in a profit of RMB 4.9 billion.



The Grade 1 hydropower project for power production safety standardization - Datang Guanyinyan Hydropower Station

Datang Pengshui Hydropower Station has been in operation for 15 years, and delivered a total of 56.97 TWh of clean electricity, which made it the "Wujiang River Pearl" for people in Chongqing. Pengshui Hydropower Station built a navigation system combining vertical ship lifts and ship locks, which connected all the waterways with a total length of 144 kilometers in Wujiang River within Chongqing city.

#### Stakeholder Feedback

"The power station is completed, and the transportation infrastructure has been improved. With 16 roads and bridges, Wanzu Town can reach in all directions and the days when people could only walk out of the town was gone. CDT also settled more than 20,000 resettled villagers from the reservoir area and provided jobs for nearly 10,000 people...Without CDT, there won't be such great changes in this mountainous town!"

> -- Qian Nengwen, Party Secretary of Xiaohe Village, Pengshui County in Chongqing



Pengshui hydroelectric dam and the main part of the navigation system

# **Reducing Costs and Expenditure**

### Fuel cost control

We have promoted the establishment of a fuel supply and price control system and aim to build a fuel logistics chain focusing on the " Shanxi, Shaanxi and western Inner Mongolia", and coastal areas. In the power generation industry, we took the lead in achieving "daily management and weekly analysis" of fuel procurement at the corporation level. By optimizing the allocation of fuel resource, we reduced the standard unit price of fuel about RMB 2.19 /ton (including tax) in 2018.

The coal segment actively ensured coal supply within the system and realized a profit of RMB 87.27 million in 2018.

# **Capital cost control**

We have further controlled "receivables and inventory", improved net profit attributable to shareholders of the parent company, and guided the governance of enterprises running at a loss. As a result, our asset-liability ratio had fallen steadily, and the asset quality also continued to improve.

We also carry out bond financing in an orderly manner. The Capital Operation and Property Management Department keeps a close eye on the bond market, thus contributing to the introduction of low-cost funds and lowering financial expenses.

#### The asset-liability ratio in 2018 was

76.43%, down by 3.53% as compared with the 79.96% in 2017

### In 2018, the unit price of standard coal as fired was

RMB 682.34 /ton, up by 4.66% as compared with the RMB 651.93 /ton in 2017

# Net profit in 2018 was RMB 6.161 billion, up by 22.22% as compared with the RMB 5.041 hillion in 2017 In 2018, the thermal power units were used for 4,545 hours, representing an increase of 230 hours, as compared with 4,315 hours in 2017.



Further Reading

world" (Xinhuanet)

"Business trade connects the

### Expanding the trade logistics business

We have actively developed energy services, and vigorously expanded domestic and international markets, striving to turn our development strength into market benefits. In 2018, the operation revenue of trade logistics reached RMB 9 billion and the profit reached RMB 556 million, representing a year-on-year increase of RMB 1.8 billion and 15.83% respectively.

We also participated in the supply chain innovation and application activity organized by eight ministries and commissions such as the Ministry of Commerce, and was selected to be the only pilot central SOE in the power generation industry. Following the Belt and Road Initiative, we fully participated in the construction of the free trade zone in Hainan, and built CDT international trade platform.

中国大唐集团有限公司与EEW集团签约仪式 China Datang Corporation and EEW GROUP Signing Ceremony

At the first China International Import Expo, CDT signed a strategic agreement with Sumitomo, EEW and other companies to obtain exclusive rights of super 304 stainless steel in China.

# Upgrading procurement management mode

We have completed the upgrade and transformation of the e-commerce platform 2.0 to provide various sales modes such as direct sales and middleman sales based on the "open, fair and just" principle. We have realized the full coverage of procurement business, the whole online procurement process and permanent traceable procurement data. We also increased the procurement through bidding. In 2018, we purchased wind power turbines by purchasing framework, and further selected the brands. We took the lead in transforming equipment procurement to plan selection in the industry, laying a foundation for maximizing the life cycle benefits of the wind farm.

# Market Development

Actively participating in the market reform of the power industry, we have established a sound and market-based pricing mechanism, and promoted market-oriented development. We actively carry out research and participate in the formulation of plans and rules for national and local power market development, strengthen our electricity marketing, and further promote the integration, specialization and standardization of marketing management.

# Organization structure for marketing

We have established 26 electricity marketing companies (including 2 companies through equity participation) in 23 provinces. 18 of them have participated in market transactions with sales of 47.6 TWh of electricity, and the distribution of electricity has quadrupled year on year.

# **Optimizing internal power** structure

Following the principle of "corporation as a board of chess", we aim at maximizing the benefits by coordinating power distributions in all the regions. In 2018, we completed internal and external power transfer of 28.366 TWh. While actively fulfilling social responsibility to promote energy conservation and consumption reduction, we also effectively improved the benefits of every kilowatthour of electricity.

# CSR Case

Guangdong Branch of CDT has actively promoted the physical operation of electricity marketing companies, built and optimized the marketing service system, and organically combined the power market, fuel procurement, unit maintenance, equipment operation and other factors. The company established a marketoriented and benefits-centered production and operation control mechanism, so as to provide a strong support for expanding the market. In 2018, Guangdong Branch's transaction volume reached 9.942 TWh, and completed 18.541 TWh of annual power generation, reaching a record high in the past six years, and its unit utilization hours ranked first in regional benchmarking.



Guangdong Datang International Datang Chaozou Power Generation Company

# **Every KWh of electricity** matters for increasing power generation

Firmly giving priority to power generation, we pay attention to both the power generation and electricity price, stress both planned and marketbased development, and strengthen the whole process management mechanism consisting of daily monitoring, weekly scheduling, monthly analysis, and quarterly summary. The thermal power utilization hours ranked first as compared with peer companies in 2018.

# **PRODUCTION SAFETY**

CDT has continuously improved the production safety management system. We pay close attention to the implementation of the production safety responsibility system, strengthen production safety accountability, improve production safety management capability, and continue to improve the management mode of "macro-safety". In 2018, we successfully completed the tasks to ensure power supply for the New Year's Day, Chinese New Year, the Two Sessions", the 19th Shanghai Cooperation Organization (SCO) Summit, and the Beijing Summit of the Forum on China-Africa Cooperation, etc.





# **Responsibility Fulfillment**

### **Responsibility system**

Adhering to people-oriented and safe development, we insist on "preventing big risks and eliminating small risks". With the aim to build an intrinsically safe enterprise, we have continuously improved the "macro-safety" management mode, and refined the production safety accountability system for all employees by clarifying the responsibility, procedure and assessment standards. We enhance the implementation of the system with due accountability, and have formed a responsibility system of "the same safety responsibility for the Party and government, one post with two responsibilities, and negligence liability ".

We have formulated and released the Measures for the Inspection on Production Safety of Secondary Subsidiaries and Administrative Measures for Public Supervision on Major Problems in Production Safety, and carried out a series of activities including production safety reporting, inspections, appointments, and comprehensive evaluation of production safety performance and assigning leaders of secondary subsidiaries to visit grassroots enterprises.

In 2018, we carried out 166 safety inspections of all kinds, detected more than 4,200 problems, and effectively controlled the risks. Seven secondary subsidiaries in production, infrastructure, coal and coal chemical industry, and seven major incidents were listed and supervised for safety problems.

### Accountability

We exercise "one-vote veto" for production safety issues, and have revised the production Safety Reward and Punishment Measures to step up production safety accountability, and strictly implement the "double investigation" system. When personal injury or major equipment failure occurs, we would investigate both the cause of the accident and the leader's negligence of duty. The responsibility of both the company and the parent company also would be investigated to maintain a tough stance.

In 2018, we organized leaders from 9 subsidiaries to deliver safety briefings, and conducted four full-coverage safety inspections and comprehensive evaluation of safety performance in 29 subsidiaries.

#### Further Reading

CDT: Sparing no efforts to ensure power supply for citizens in summer (Xinhuanet)



# CSR Case: Successfully completing the task to ensure power supply

The Corporation continuously improves the organizational system and the reliable power supply system for political events, and also strengthens the building of a top-down emergency response system. With these efforts, the mechanism and working procedure for ensuring power supply has been improved. In 2018, we successfully completed major tasks of guaranteeing power supply for summer and winter peaks of power consumption, flood and typhon prevention, as well as for significant events such as the SCO Summit, the Forum on China-Africa Cooperation Forum, the Davos World Economic Forum, the Celebration of the 40th Anniversary of China's Reform and Opening-up, etc., maintaining safe and stable production.



Beijing Gaojing Thermal Power Plant ensures safe and stable operation of the generating units during the "Two Sessions"

# **Comprehensive Supervision**

### **On-site safety**

We strengthen safety risk control, and conduct full-coverage inspection on ultra-low emission transformation sites. The key elements in grade-A maintenance of thermal power generating units are checked and four-tiered and five- tiered inspection and acceptance respectively in subsidiaries and the Corporation are implemented to improve maintenance quality.

We also innovate in safety management. A mechanism of "appointing the owner as team leader" and "identifying workers by helmets" in outsourcing projects is established to prevent and control the risks of on-site operation. A supervision and registration system is set up for major problems to prevent and control safety risks level by level.

We strengthen the management of operations. Our subsidiaries take special actions to deal with violation of regulations, and videotape the whole process of "three lectures and one implementation" to raise the safety awareness of operating personnel.

### **Equipment management**

CDT continues to strengthen the building and evaluation of Class A units, and enhance daily tracking and guidance on the operation of generating units. We step up efforts to "reduce faults and unscheduled downtime", regulate and enhance wind power and hydropower management, and keep carrying out the "special action to improve professional management of thermal equipment". In 2018, 14 generating units won awards in the national electric power reliability competition, accounting for 31.1% of all the winning units, thus ranking first among the central SOEs in power generation industry.



The 1000MW unit of Jiangxi Fuzhou Power Generation Company was awarded Class A unit and the second prize in the competition of thermal power units, making a new breakthrough in winning the Class A award as a new 1000MW unit.



The outsourced construction team scans the QR code to read the "Three Measures and Two Cases".

### **Emergency management**

We have continuously improved our emergency response ability, formulated the Action Plan for Emergency Response Ability Improvement (2018-2020), and established a comprehensive, fast and efficient emergency management system. We carry out emergency drills without notice to improve the on-site emergency response ability, implement the emergency monitoring and reporting requirements, and also establish a cooperation mechanism with external rescue forces. As a result, we successfully met the peak demand of electricity in summer and winter, and carried out flood prevention and control in 2018.

To improve the emergency coping ability, our subsidiaries carry out a series of drills about power outages, fire and explosion, flood control, leakage of hazardous chemicals, mine water disaster, geological disasters, etc. In 2018, we organized 1,732 emergency drills with 37,085 participants.

CSR Case: Successfully responding to the massive floods in Jialingjiang River Basin

#### Further Reading

As flood is coming, we guard your safety (WeChat Account of CDT)



On July 8, 2018, many regions of Sichuan province had a heavy rainfall, and the flood in Tingzikou of Jialingjiang River Basin reached its highest peak in nearly 80 years. Datang Tingzikou Hydropower Station made full use of its strength as the only control of the main stream of the Jialingjiang River and the backbone of the Yangtze River flood control system. Through proper operation and effective flood control, the Station successfully responded to flood and made contribution to the life and property of the people living in the downstream of Jialingjiang River.



Datang Tingzikou Hydropower Station

#### Stakeholder Feedback

Yangtze River Flood Control and Drought Relief Headquarters, and Sichuan Provincial Party Committee and Provincial Government spoke highly of Datang Sichuan Power Generation Company's efforts in flood control and disaster reduction.

Yangtze River Flood Control and Drought Relief Headquarters sent a letter of thanks: "China Datang Corporation strictly implemented its responsibility of safety management, actively took various flood control measures, strictly followed reservoir operation instructions, and gave full play to the role of reservoir in flood control and disaster mitigation. It maintained contact with the flood control headquarters and strengthened monitoring and reporting, making an important contribution in the fight against the No. 1 and No. 2 floods of Yangtze River this year..."

### 长江防汛抗旱总指挥部办公室

#### 或谢信

山田土市朱田水田へ乐-中国天地震振用有限公司: 今年3月份。受长江上路持续强限因繁秀。长江送续发生 1号、2号洪水、龙关長3月3日-11日。岷江大震河、沱江、 沾江、嘉陵江的上游发生大洪水或特大洪水,造风沱江、沿江、 通知正常现在不过上游于说计游疗很水位规模证水位。三硫水 库入源洪峰波量达 60000 立方术带移。 在国家贸易、水利部的正确领导下,在费公司的大力支持 下,长江防总、长江委加密会商研判、科学组织调度、提前预 警核移、强化警查指导,有效应对了2018年长江1、2号洪水, 没有违成人员信亡,最大程度减轻了灾害损失。在此期间,费 公司严格落实安全管理责任, 积极落实各项防汛储施, 严格执 行水库调度指令。充分发挥水库防洪减灾作用。密切与防汛指 挥机构联系,强化汛期值守和信息报送,为战胜今年长江1号、 2 号洪水作出了重要贡献, 凸层了国有企业的社会责任和工作

目前,长江流域仍然处在"七下八上"即讯关键期,即讯 形势依然严峻。我们一道,认真贯彻厚实习近平总书记、李克 强总理等中央领导关于防汛处防由安工作的重要社乐精神、检 **贾国家除总决策需要要求,进一步加强协作,营切配合,形成** 合力, 继续发挥好事于口、观音游等水厚扮淡等公益功能。为 夺取今年游派抗草马泰斯胜利作出百大的贡献。

**翌当,在此,谨向你们付出的寺勤劳祉和大力支持表示衷心的** 

# **Safety Education**

# Publishing professional materials for production safety education

Cooperating with the National Energy Administration, we have issued the Production Safety Education Series for Power Generation Industry. By displaying typical accidents in the power generation industry through animation, we give warnings and education on production safety for employees in the industry.



# Strengthening the safety culture development of teams

We comprehensively implement the CDT Administrative Measures for Selecting Model Teams and CDT Instructions on Furthering Safety Culture Development to promote safety culture in teams and in the Corporation.

In June 2018, the Corporation organized a meeting to promote safety culture, with an aim to comprehensively foster model enterprises and team model rooms on safety culture, and also improve the working efficiency.

# Improving the quality of safety education and training

We have a total of 1,328 certified safety engineers. In 2018, there were 632 trainees in the training for safety risk assessors and 420 participants in the continuing education for registered safety engineers. During the Production Safety Month, there were 148,894 participants and 1,196 lectures, and 3,905 participants in the safety training. We also organized 1,776 accident warning and education activities with 47,731 participants, thus enhancing the safety awareness and ability of all employees.

# CSR Case: Safety Training and Experience Base of **Datang Huangdao Power Generation Company**

Huangdao Power Generation Company has built a safety training and experience base on helmet hit, safety belt usage, incidents of falling off the hole, sliding platform, first aid, wire rope display and use, comprehensive use of electricity, and the use of fire extinguishers, making it an important platform for external personnel. The company trains more than 600 participants each year, and the training and experience rate of production personnel can reach over 90%.



Production safety education series for power generation industry



The Corporation holds a meeting to promote safety culture.



Outsourced construction team is experiencing the safe use of electricity.

# GREEN DEVELOPMENT

Implementing the development idea of 'lucid waters and lush mountains are invaluable assets', CDT has actively adapted to the energy revolution by continuously strengthening structural adjustment, eliminating backward production capacity, and vigorously developing clean energy such as new energy and renewable energy. The Corporation promotes clean and efficient coal-fired power generation in an orderly manner, and prioritizes the development of energy-saving and eco-friendly cogeneration units with large-capacity, high-parameter units and high-efficiency. As a result, the power supply structure has been continuously optimized and green development has been significantly improved.





# **Structural Optimization**

In 2018, the total installed capacity of the Corporation was 139 GW. Electricity generated from clean energy and renewable energy such as gas turbines, wind, light and water increased by 14.131 TWh, up by 10.88% year on year. We totally reduced the emissions of sulfur dioxide, nitrogen oxides and carbon dioxide by 2,300 tons, 3,100 tons, and 13.15 million tons respectively.

### Proportion of clean energy

#### Further Reading

Gaojing Thermal Power Plant "replaces coal with gas", providing power supply for another more area of 7 million square meters (people.cn)



#### (unit: %)∙ 40 r 35.57% 35 30 25 20 15 10 5 Λ 2012 2013 2014 2015 2016 2017 2018

# **Energy Conservation and Emission Reduction**

In 2018, The Corporation compiled the Three-Year Plan on Defending the Blue Sky, which specifies 6 objectives, 12 key tasks and 8 implementation plans, resolutely fulfilling its political and social responsibilities as a central SOE.

We also actively promote the application of proven technologies, and have invested a total of RMB 1.06 billion in energy conservation. All coal-fired units are equipped with efficient desulfurization, denitrification and dust removing facilities. We have a number of leading new eco-friendly technologies in the industry, such as the desulfurization + dust removal technology as well as the urea hydrolysis technology, which also have been widely used. In 2018, the emissions of sulfur dioxide, nitrogen oxides and soot were decreased by 19.5%, 10.45% and 13.8% respectively as compared with 2017, making outstanding contributions to energy conservation.

# Promoting ultra-low emission transformation

In 2018, 14 units completed the ultra-low emission transformation. By the end of the year, 226 units with a total of 92.499 GW realized ultra-low emission, accounting for 94.7% of the total capacity of coal-fired units in service, which was among the highest in the industry.



8 units of Datang Yangcheng Power Generation Company complete ultra-low emission transformation.

# Strict emission management

We strengthen the environmental management of subsidiaries in key regions to ensure that the sound operation of supporting facilities for yards of coal, limestone yards, raw materials, etc. We promoted ecological improvement and reduced emissions by carrying out closed governance of 23 coal yards in 2018.



The closed coal yard of Datang Binzhou Power Generation Company

### Improving the pollutant discharge permit management

We have established a pollutant discharge permit management system to strictly follow the requirements for the application, change, renewal and implementation of the permit, and conduct regular monitoring of waste gas, wastewater and noise in accordance with the law.



Datang Saihanba Wind Farm

### Promoting the application of advanced technologies

We actively promote the application of proven technologies and the transformation of energy-saving technologies. Since 2012, the coal consumption for power supply has dropped by 16.52 g/kWh, and we have 161 winning units of the Energy Efficiency Benchmarking Competition in China's power industry, maintaining a leading position in the industry.

We have strictly fulfilled our responsibility for resources and the environment by formulating the action plan to reduce energy consumption from 2018 to 2020 and signing the letter of responsibility with leaders of subsidiaries to clarify their management responsibility for energy conservation.

We continue to carry out the "design value" activity, and have formulated a diagnosis system for 109 energy consumption indicators to provide comprehensive energy consumption diagnosis. The economic performance of units are continuously improved through management improvement, equipment management and operation optimization.

In 2018, the Corporation's coal consumption for power supply was 301.85 g/kWh, representing a year-on-year decrease of 3.44 g/kWh, and saved 4.0577 million tons of standard coal in total.

# **Eco-friendly Development**

# **Carbon emission management**

In 2018, we reported the carbon emission statistics of 94 subsidiaries and completed the carbon emission verification of 77 subsidiaries. We performed the carbon emission duty in four pilot subsidiaries including Gaojing Thermal Power Plant, Baochang Gas Power Generation Company, Panshan Power Generation Company and Ningde Power Generation Company, and maintained and increased the value of carbon assets. Our carbon asset management information system is ready for trial operation, which can effectively improve the efficiency of carbon asset management.

### Developing circular economy

We actively promote the development of circular economy, innovate in the recycling of waste, and deal with nearly 90% of ash through direct utilization and harmless disposal.

# CSR Case

At the National Science and Technology Awards Conference held in January 2018, the "Poly-generation Technology Development and Industrial Demonstration of High-aluminum Fly Ash Alumina Extraction" project independently developed by CDT won the second prize of National Science and Technology Progress Award. Breaking through the traditional utilization of fly ash in construction or as building materials, the project used high-aluminum fly ash as a mineral resource, and extracted and utilized the valuable resources with different components, phases and structure step by step, achieving a breakthrough from zero in core technology and industry demonstration.



The High-aluminum fly ash conveyor of Datang Inner Mongolia Renewable Resources Company

# Protecting the eco-environment

CDT always pays attention to protecting the topsoil and ecological environment, and contributes to environmental protection by releasing fish, carrying out river water sampling and planting trees.



Guangxi Yantan Hydropower Company carries out fish breeding and releasing activities in the reservoir area.

#### Stakeholder Feedback

"In the past, Hongshuihe River is literally a 'red' and silt-laden river with rapid flow. Since the dam was built, the river gets greener and cleaner with a steady flow, and we have clean drinking water supplied by the hydropower station.



# CSR Case: Yantan Hydropower Company promotes the eco-environment of the reservoir area

Guangxi Yantan Hydropower Company laid pipes for residents in the reservoir area to supply tap water to every household, and also provided more than 20,000 tons of clean drinking water for them every month, completely solving problem of low quality drinking water for over 1,000 households. The company invested RMB 67 million to build a fish breeding station at the Hongshuihe River Hydropower Base (Yantan-Letan) to restore fishery resources in the basin and protect the aquatic ecological environment. The company carries out fish breeding activities in the reservoir area every year, and has released 300,000 high-quality fish fry, promoting the ecological improvement in the reservoir area.

-- Residents of Yantan town

# INNOVATION-DRIVEN DEVELOPMENT

Attaching great importance to technological innovation, we focus on improving our independent innovation capability, and comprehensively enhance the innovation system. We have promoted the optimization and upgrading of industrial structure, improved the basic technological innovation ability, fostered the application of technological achievements, and cultivated and inspired innovative talents, so as to lead and support safe, efficient, clean and low-carbon development through technological innovation.

O Investment in technology RMB 3.3 billion 261 100 items

1,212 items

New standards at the industry level or higher





# Investment in technology in 2018 RMB 3.3 billion

A vear-on-vear increase 20.83

We implement the 13th Five-Year Plan for Science and Technology Development of China Datang Corporation. Based on the 88 key technologies in the Plan, we determined 300 science and technology projects in 2018, including 8 projects at national, ministerial and provincial level, 201 major projects at the Corporation level, and 99 management projects of subsidiaries and branches, which covered sectors of thermal power, hydropower, renewable energy, distributed energy, Internet + big data, and coal.

In 2018, we allocated RMB 4.82 million to technological awards at the industry and Corporation level in total. 437 projects and 980 employees received the rewards, reaching a new high.

We set up 8 research centers for scientific and technological information, computational analysis, cogeneration and urban heating, air cooling technology, boiler combustion technology, intelligent and simulation technology, environmental engineering technology, and wind power design research. We also actively conduct research on national leading-edge technologies, and three projects have been selected into the national research and development plan for key projects.

# **Technological Achievements**

In 2018, we won 49 awards at the industry level including the China Electric Power Science and Technology Award, China Power Innovation Award and Energy Innovation Award. We were among top enterprises in the industry in terms of the total number of awards and first prizes.

In 2018, we had a total of 6,642 authorized patents, up by 10% year on year, among which invention patents increased by 20% year on year.

**Innovation System** 

In 2018, our technological achievements could generate income of RMB 4.291 billion per year, an increase of RMB 395 million year on year, and can increase profit by RMB 1.48 billion per year. The patents could generate income of RMB 90 million and profit of RMB 26 million per year respectively. The contribution made by technological development to the profitability of the Corporation significantly improved.

According to the third-party evaluation, we had 13 internationally advanced technological achievements, 5 leading technologies in the world and 8 leading technologies in China



Quality Control Circles 2018 Excellence & Quality Circles Conve 2018 (IFOCC 2018) 22-25.00 Future-proof, Future and Quality

In October 2018, Hebei Zhangjiakou Power Plant's project "Reducing Bearing Bush Overtemperature Alarms of Steam Turbines" won the Gold Award of ICQCC.

# **Technology Demonstration**

We encourage all employees to innovate by publishing the technical journal, establishing the WeChat Account, building employee technology innovation studios, and giving innovation awards. In 2018, we built a total of 261 employee innovation studios, overcame 300 difficulties about the production technology, made more than 300 innovation achievements and over 50 award-winning achievements, and 25 projects participated in the Shining Star Innovation Competition of Central SOEs.

In March 2018, the Corporation was approved to build the National Technical Standards and Innovation Base (International Standardization of Power Generation) by the Standardization Administration. The base aims to unite upstream and downstream enterprises and research institutes to build an influential international standard development and innovation platform in power generation industry, which highlights an open and sharing attitude, multi-participation, and industry-university-institute collaboration.

Our subsidiaries have cooperated with nearly 70 universities, equipment manufacturers, design and research institutes to carry out exchanges and cooperation on energy efficiency control and corn straw gasification, etc., based on big data analysis and real-time calorific value of the coal.

In order to promote innovation achievements of young employees and cultivate a group of young model workers, we have created an innovation practice platform mainly composed of young employees within CDT system since 2018. We organized the CDT youth innovation achievements competition. 161 achievements were listed in the second round, 30 achievements were commended, and 2 achievements were awarded the Bronze Award and Excellence Award of the 3rd Youth Innovation Award of Central SOEs. At the same time, we also selected 10 model young workers in grassroots subsidiaries.

# CSR Case: Datang Longtan Hydropower Station launches the youth innovation and excellence event

Datang Longtan Hydropower Station organized a youth innovation and excellence event with the theme of "Upgrading the Five-Little and Pursuing Excellence in Longtan". During the event, the young technical personnel of the station and 28 QC groups actively carried out technical research and created a large number of practical and applicable QC results. Among them, QC results such as "headlight failure diagnosis", "excitation temperature and humidity controller failure diagnosis", "adjusting operation mode to reduce comprehensive power consumption rate of the plant" have been applied, which added strong momentum for upgrading and efficiency.



Datang Longtan Hydropower Station organizes a youth innovation and excellence event with the theme of "Upgrading the Five-Little and Pursuing Excellence in Longtan".

# CSR Case: UAV inspection in Datang Saihanba Wind Farm

Saihanba Wind Farm uses UAVs equipped with visible light cameras, infrared cameras, and three-dimensional laser scanners to conduct inspections on the wind turbines and transmission lines, and transmit data to the ground monitoring system in real time. Then automated analysis can be realized with artificial intelligence and big data. Thus a new, safe, efficient and high quality blade inspection mode is formed.



UAV intelligent inspection in Datang Saihanba Wind Farm

In 2018, we participated in China's first popular electric power science day themed "Light of Power", and demonstrated our technologies and achievements in "clean electricity, blue sky project, solar-coal coupling, ultra-low emission, wind power, harmony between man and nature" through the sand table and videos.



CDT holds and participates in China's first popular electric power science day themed "Light of Power".

Founded in 1941, Datang Tianjiaan Power Plant has a long history. The History Exhibition Hall of Tianjiaan Power Plant, built to commemorate the 75th anniversary of the plant, is a comprehensive exhibition hall that combines history introduction, popular science, and corporate promotion. On November 13, 2018, China Society for Electrical Engineeing named the Datang Tianjiaan Power Plant History Exhibition Hall as an electric science education base to popularize electric power knowledge and promote scientific communication.



The first generating unit of 6000 KW expanded and installed by Tianjiaan Power Plant in 1954



People from all walks of life visit the Datang Tianjiaan Power Plant History Exhibition Hall.

# INTERNATIONAL COOPERATION

We actively respond to the Belt and Road Initiative, and follow the principle of "extensive consultation, joint contribution and shared benefits" to promote exchanges and cooperation with other countries. We have initially developed multiple international business including overseas investment, project contracting, technical services, international trade, international financial services, etc., striving to contribute to the development of host countries and regions.

**Q** Regional secondary subsidiaries with international business 10 • Overseas organizations 50 **O** Total overseas assets RMB 15.55 billion **b** Total installed capability overseas 360 мм O Belt and Road partner countries have business with CDT 16 



# Key Projects in Operation

CDT has three projects overseas in production and operation, including the Taipingjiang River Phase I Hydropower Station in Myanmar, the Stung Atay Hydropower Station in Cambodia, and the transmission project from the Phnom Penh to Battambang. These projects have a total installed capacity of 360 MW with three 230 kV-substations and 294 km-long power lines.

These three power projects are of great significance to local regions: as our first power project overseas, the Taipingiiang River Hydropower Station in Myanmar is important for strengthening China-Myanmar energy cooperation and enhancing economic and cultural exchanges between the two countries. The Stung Atay Hydropower Station in Cambodia, and the transmission project from the Phnom Penh to Battambang were selected as the "Silk Road Pearl" project by the Chinese Ministry of Commerce (MOFCOM), which set a good example for China-Cambodia cooperation. The transmission project from the Phnom Penh to Battambang is also Cambodia's first main power grid project and its power transmission capacity has increased year by year, accounting for one-third of Cambodia's electricity consumption.



There is a "Tonghui Bridge" between Stung Atay Hydropower Station and the nearby Liewen county of Pursat province. The red Chinese character of "唐(Tang)"and a brief introduction on the stone tablet symbolize the friendship between China and Cambodia: Combadian Power Grid Co., Ltd and Combadian HydroPower Development Co., Ltd of Datang funded the project to relocate the road flooded by the reservoir from Liewen County to Ousang Town. The project built a 20-kilometer-long new road, which facilitated local traffic and promoted the economic development of Liewen County.



CDT invested in the construction of the main teaching building for Luodixita Middle School in Anlongwen village, Xiya town, Gandian county in Cambodia, which greatly improved the school's teaching environment.

In the construction of the Stung Atay Hydropower Station in Cambodia, the company transformed the open channel diversion of the second-cascade power station to a diversion tunnel, which helped protecting about 100,000 square meters of primeval forests and tropical rainforests.



# **Overseas Projects Development**

# Meulaboh coal-fired power generation project in Indonesia

We plan to start the BOOT thermal power project in Indonesia with a total installed capacity of 450 MW in 2019. We will continue to fulfill our responsibilities and obligations in the Power Purchase Agreement, ensure clean electricity supply, and help improve local economic and social development as well as people's livelihood.

# Pak Beng Hydropower Project in Laos

The project is planned to have an installed capacity of 912 MW, which has been approved by the National Development and Reform Commission and passed the review of the Mekong River Commission. With the BOT (Build-Operate-Transfer) mode, the project will focus on power generation and also create benefits through comprehensive utilization such as shipping and fish pass structure, thus setting an example and supporting the implementation of the Belt and Road Initiative in Laos.

# **EDF New Energy Project in Greece**

The project is a key project jointly developed by CDT and EDF in the third-party market. It will have a total installed capacity of 277 MW, of which the wind power and solar power installed capacity will be about 265 MW and 12 MW respectively. We are actively communicating with EDF to promote this project.

# CSR Case: Love rescue in Attapu of Laos

On July 23, 2018, an auxiliary dam of a Hydropower Station in Nansai county of Attapu province in Laos collapsed. 10 villages were affected with many causalities, and more than 6,000 people were left homeless. After the accident, Datang (Laos) Pak Beng Sanakham Company donated USD 6,200 and materials worth USD 4,000 to the affected area immediately



Donating to the disaster-stricken area in Attapu of Laos

# **Technical Services**

As of the end of 2018, 5 secondary subsidiaries of CDT have provided technical services overseas with 15 overseas technical service projects in implementation. Their services cover 10 countries including Cambodia, Myanmar, Indonesia, Malaysia, the Philippines, Sao Tome, Bangladesh, Saudi Arabia, Brazil as well as Morocco.

The Balingian project in Malaysia is an important project in Belt and Road countries in Southeast Asia, and two 300MW units have been successfully connected to the grid.



The Cilacap Power Station in Indonesia is the only energy base in southern Java. The operation, repair and maintenance of the base were entrusted to us.



The general contracting projects of the NPP5A and NPP9 biomass power plants in Thailand are the "bellwethers" of CDT's overseas development. The NPP9 project is the largest biomass power station in Asia, fully demonstrating our strength in undertaking contracted projects overseas.

# **International Exchanges**

While promoting overseas project development and business operation, we actively take advantage of multilateral trade and cooperation platforms such as China Council for the Promotion of International Trade, China Chamber of International Commerce, and the Silk Road Business Council to comprehensively foster exchanges and cooperation with world-known companies in project investment, technological innovation, and talent cultivation.



We cooperated with GE to

China Chamber of International Commerce, World Chambers Federation and the Silk Road Business Council jointly organized the "Belt and Road" Trade and Investment Forum. As the chairman of China Committee of the Silk Road Business Council, we held the "CDT Night" activity and 400 guests from over 60 countries attended the activity.

jointly plan and launch a media campaign themed "working together to explore digital power generation and promote the upgrade of green and efficient energy systems". More than 20 journalists from influential media such as Xinhua News Agency and Economic Daily visited and interviewed Beijing Gaojing





Chen Feihu shakes hands with Vera Songwe, the UN Under-Secretary General.



When the French Prime Minister visited China, we signed the Agreement for Low-carbon Energy Cooperation Project at Home and Abroad with EDF, witnessed by Chinese Premier and French Prime Minister.

Chen Feihu, Chairman of CDT, attended the 2018 Beijing Summit of the Forum on China-Africa Cooperation and 2018 High-level Dialogue Between Chinese and African Leaders and Business Representatives and the 6th Conference of Chinese and African Entrepreneurs.

September

2018

#### In September 2018, the 15th China-ASEAN Expo and China-ASEAN Business and Investment Summit were held in Nanning. State leaders of Cambodia and Chinese CEOs had a roundtable dialogue.



Chen Feihu meets with Hun Sen, the Prime Minister of Cambodia during the roundtable dialogue between state leaders of Cambodia and Chinese CEOs.



Chen Feihu communicates with Somdy Douangdy, the Deputy Prime Minister of Laos.

# **Fostering Development**

Regarding social responsibility fulfillment overseas as an important part of "going global", we not only provide power support for host countries, but also spare no effort to protect local ecological environment, promote the localized operation, actively provide aid, assistance and carry our charity activities.

#### Further Reading

Speaking highly of the achievements of CDT, Cambodia welcomes more energy investment from China (China Daily)



# CSR Case: Sao Tome Power Assistance Project Phase I passes the acceptance

Since December 2016, under the guidance of the Chinese Ministry of Foreign Affairs and the MOFCOM, CDT has taken on the task to assist the power production of Sao Tome and Principe in Africa.

In 2018, the experts of the power assistance team worked together, overcame language barriers, and successfully completed the customs clearance, transportation, handover, warehousing and checking of aid materials. We provided a total of 529 materials in 9 batches worth over RMB 12 million. Under the technical guidance of experts, local workers were hired and completed repair and maintenance of 9 units. In the same year, we passed the quality acceptance of the MOFCOM and successfully completed the first emergency assistance mission, which was well recognized by the MOFCOM and the Ministry of Foreign Affairs. We signed a phase II assistance agreement with the Agency for International Economic Cooperation under the Ministry of Commerce.

# CSR Case: A model for China-Cambodia win-win cooperation

The 230kV power transmission project from Phnom Penh to Battambang is the main power grid of Cambodia, which was invested by CDT. In the eight years since the project was put into operation, the amount of electricity being transmitted has increased significantly year by year. In 2018, the project transmitted 3.19 TWh of electricity, accounting for one third of Cambodia's electricity consumption. The total electricity transmission had reached 10 TWh in the past 8 years, which strongly supported the energy independence and security of Cambodia, greatly promoted industrialization and improved people's livelihood in provinces and regions along the line.



The Phnom Penh - Pursat - Battambang 230kV power transmission project in Cambodia

In order to improve the professional level of Cambodian employees, CDT organized various trainings and cultivated dozens of technical talents to local power industry.



#### Stakeholder Feedback

"We know very well the location and condition of the towers of line 737. I can find the tower immediately once the tower number is given... We owe this to CDT's training of local talents. CDT provides experts to teach Chinese and technical classes for us."

"I was wearing work clothes when dating. Hearing that I was an employee of CDT, my mother-in-law agreed my marriage with her daughter without asking for any betrothal gifts. I have a stable job now and my life quality has improved!"

--- Zeng Yongjie, a Cambodian employee of Datang Cambodia Grid Company Limited

#### Further Reading

Zeng Yongjie: I am safeguarding the main power grid of Cambodia (CCTV)



# COMMON DEVELOPMENT

external organizations to achieve win-win and shared development, and also pay attention to the interests and development of our employees, striving to





#### Further Reading

I work in a central SOE (CDT WeChat Account)



# **Employee Development**

Adhering to the people-oriented principle and common development with employees, we build a platform for employees' quality improvement and career development by implementing talent development plans, and strive to make them our most valuable and sustainable strategic resources with great potentiality while endowing them with a stronger sense of fulfillment, happiness and security.

# Strengthening training for employees

CDT has carried out a total of 33,800 training programs at all levels, with 1.91 million participants. We promote the career development of technical and skilled employees, and have given 3,989 intermediate and senior professional and technical qualifications, 997 technician certifications, and 145 senior technician certifications. We focus on cultivating all-rounded employees that are good at management, experts that are "familiar with business and good at innovation" and technical personnel that have fine skills, good at sharing, and the craftsmanship spirit.

### Caring for the development of employees

In 2018, we implemented the Management Measures for Building the Expert Database, and selected 80 technical experts at the Corporation level in 29 professional fields for the first time. While continuing activities such as "experts come to grassroots" and lectures, we also actively participated in international, national, central SOEs and industry competitions, and organized the 16th CDT Professional Knowledge and Skills Competition, involving all employees.

Also, three employees were awarded the title of National Technical Expert, three won the title of Technical Expert in the Power Industry, and 38 were awarded the CDT Technical Expert.

#### CSR Case: Yan Huanhuan, our heroine

"Always do the best". This is exactly what Yan Huanhuan is doing, who is a "craftsman" in desulfurization of Datang Environment Industry Group Company. Yan Huanhuan, who is 30 years old now, has been dedicated in environmental protection for more than six years. Starting from learning in the desulfurization operation team, she has won the first place in our 14th skill competition and in the 10th National Vocational Skills Competition of the Electric Power Industry, became a "national technical expert" and won the awards of "National March 8th Red Banner" and "National May 1st Labor Medal". As an outstanding representative of female employees in central SOEs, Yan Huanhuan was elected as the representative of China's 12th National Women's Congress in 2018.



Yan Huanhuan attends China's 12th National Women's Congress.



Ren Jun from Datang Shaanxi Binchang Power Generation Company, won the first place in the final of the 11th National Vocational Skills Competition of the Electric Power Industry (control operator).

Datang Tianjiaan Power Plant won the first prize.

# **Employee Happiness**

The workers' representative congress system have been established in more subsidiaries. Major decisions and issues concerning the interests of employees such as employment, salary distribution, welfare and benefits, labor protection, social insurance, etc., are submitted to the Workers' Representative Congress for deliberation. We have organized employee representatives to carry out special safety inspections, and protect employees' rights and interests.

We have established 328 independent trade unions with all employees involved. There are 36,800 young employees under the age of 35, 15,800 youth league members, and 1,047 grassroots organizations of the Youth League covering all our subsidiaries.

The Corporation insists on understanding and solving the needs of employees based on the reality. In 2018, 563 "Six Mosts" projects were completed, helping employees solve the problems that are most concerned and most urgent, and greatly enhancing the happiness of employees.



Group wedding of young workers





175 players from 23 secondary subsidiaries

participated in the 16th CDT Professional Knowledge and Skills Competition, 18 of them won the title of "CDT Technical Expert", and 36 won the title of "CDT Excellent Technician".

# CSR Case: Creating spark of love

In October 2018, Datang Yunnan Power Generation Company held the second group wedding of young workers. 12 couples from 9 subsidiaries got married with blessings from colleagues. The company has established a WeChat group called "CDT Love" for young employees, which provided opportunities for them to start a relationship. At present, there are more than 110 members in this group.

# Social Welfare

We actively organize social welfare activities, integrate public welfare into our culture and pursuit, and encourage employees to promote social harmony with actions and gain happiness while giving love, striving to provide positive energy for building a moderately prosperous society in all respects and realizing the Chinese Dream.

### **Datang Star Class**

"Datang Star Class" is a large cultural public welfare activity that we carry out every year. Each year, we organize a "star teacher group" to go to primary and secondary schools, who teach students about safe use of electricity, electricity saving with forms of prize-winning guizzes, comics, pictures, etc., thus bringing our care to schools.

In 2018, a total of 87 subsidiaries organized the "Datang Star Class" activity, and popularized the knowledge about power generation and safe use of electricity to more than 8,000 teachers and students. Hundreds of media such as the China National Radio, people.cn, news.sohu.com and NetEase reported this activity.



### **Datang Youth Hand in Hand**

Datang Star Class comes to Qiseguang Primary School in Handan city of Hebei province.

For a long time, all our subsidiaries and employees have actively carried out various public welfare activities in communities, and focus on vulnerable groups, targeted poverty alleviation projects as well as urgent and dangerous tasks. We have organized over 1,800 batches of volunteer activities such as "Datang Youth Hand in Hand". There were 25,000 participants from over 200 subsidiaries in our volunteer services.

# CSR Case

Seven years ago, Guo Shaofeng, a worker from Douhe Power Plant, met Yang Yufang couple who survived the Tangshan earthquake, and then the compassion journey started. That was how "Guo Shaofeng Volunteer Team" was set up. In the past seven years, Guo Shaofeng and his colleagues have sent care to disabled couple with sincerity and perseverance. Guo Shaofeng was elected as the "most charming volunteer" of the Corporation.



The "Guo Shaofeng Volunteer Team" of Douhe Power Plant visits the family of Yang Yufang, who was disabled in the earthquake.

# **Cultural Development**

Upholding the core value of "first class", we cultivate the corporate culture, guide employees to have good professional conduct and follow regulations, and create a dynamic and happy environment, so as to continuously unite the employees for common development. At the same time, we tell the CDT stories to the world, promote our brand, and establish a good corporate image.



On the eve of the Spring Festival in 2018, the overseas subsidiaries and project departments of CDT jointly organized the cultural activity themed "Celebrating the Spring Festival with the World". Chinese and foreign employees as well as foreign partners gathered together to enjoy the charm of Chinese culture.

### "Datang Cultural Cavalry" goes to grassroots

In 2018, we organized the activity of "Datang Cultural Cavalry" in grassroots. In 11 days, we traveled 4,000 kilometers to give performances to over 2,000 advanced model workers and frontline workers, which were written, directed and acted by our employees. As the Spring Festival was approaching, we also organized the activity of "Culture in Grassroots, Fortune to Households". Calligraphers and painters in the Corporation went to many enterprises, brought greetings and blessings to more than 3,000 employees, and gave them Spring Festival couplets, the calligraphy works of "Fu(good luck)" and paintings.

# "Datang Cultural Landscapes" with a long history

In 2018, we organized the fourth selection and review activity of "Datang Cultural Landscapes" to protect and inherit the industrial heritage, important sites and landmark buildings with historical and cultural meaning and development value. By 2018, a total of 29 projects were awarded the title of "Datang Cultural Landscape". Among them there was the well-preserved site of Datang Nanjing Power Plant with a hundred years of history, the newly built model park of the first thermal power plant in northern Shaanxi, and the coal transporting trestle with the slogan of "Yan'an Spirit is always shining". These landscapes embody the history of China's power industry development for more than 100 years and have witnessed the growth process of the Corporation to be a large power generation enterprise.



#### Further Reading

CDT promotes the spread of Chinese culture in the world by carrying out the activity themed "Celebrating the Spring Festival with the World" (SASAC website)



The performance tour of "Datang Cultural Cavalry" for model workers



The steam turbine rotor of Unit 3 of Beijing Gaojing Thermal Power Plant, China's first 100MW generating unit, was manufacutred in 1966 and disabled in 2003 during the heat supply reform of the power plant. It has been displayed inside the gate of Gaojing Power Plant and was awarded as a Datang Cultural Landscape.

# OUTLOOK

The year 2019 is the 70th anniversary of the founding of the People's Republic of China (PRC), and also a crucial year for achieving the first Centenary Goal of building a moderately prosperous society in all respects. Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will adhere to the general principle of pursuing progress while ensuring stability, and continue to apply the new development philosophy. We will keep pursuing the goal to build a world-class energy group, and follow the general requirements of "act with first class standard, be the world-class energy group", and continue to take tough steps to forestall and defuse major risks, carry out targeted poverty alleviation, and prevent and control pollution by strengthening Party building, gathering strength, seeking development, promoting reform, improving efficiency, preventing risks, and ensuring safety.

Embracing the future, we will firmly uphold the principle of production safety and promote responsibility fulfillment at all levels to ensure safety and stability. We will keep fostering reform and innovation and accelerate transformation and upgrading to achieve high-quality development. We will quicken the pace of "going global" and promote development of key projects overseas. We will adhere to green development, further increase the proportion of clean energy, and improve energy conservation and emission reduction to protect the blue sky, lush mountains and lucid waters. We will protect and stimulate the entrepreneurial enthusiasm of the staff, expand the career development platform, and solve their difficulties and problems, so as to continuously enhance their sense of fulfillment, happiness and security. At the same time, we will enhance cooperation and strengthen communication and exchanges with all walks of life while fulfilling our poverty relief responsibility as a central SOE to support the battle against poverty.

We will bear in mind our mission and write a new chapter of "building a world-class energy group", making great efforts to create a better life!



OUTLOOK

# **THIRD-PARTY EVALUATION**

While keeping the strengths of previous reports, 2018 Social Responsibility Report of CDT has also made innovation. In general, it can be summarized by "Three Furthers".

Further enriching the content. The Report identifies the characteristics and followed requirements of the era. Focusing on "value creation", "production safety", "green development", "innovation-driven development", "international cooperation" and "common development", the Report comprehensively shows CDT's new measures and achievements in implementing the new development vision, promoting energy production and consumption revolution as well as steering the new normal of economic development. The Report adds information about supply chain management, extends its content to upstream and downstream enterprises along the value chain, and spreads the values of integrity, lawful operation and win-win cooperation, so as to lead the partners' CSR fulfillment. The Report systematically discloses social responsibility management from five aspects including CSR philosophy, management system, CSR fulfillment, CSR communication and CSR achievement, which also demonstrate the CSR progress from multiple perspectives.

Further enhancing in-depth analysis. With the two features of "high-guality development" and "targeted poverty alleviation", the Report further demonstrates CDT's efforts in carrying out the decisions of the CPC Central Committee and the State Council, and improving guality and efficiency as a SOE model. Based on facts and figures, the Report sets section of CSR Case in every chapter, which not only takes the demands of shareholders and employees into account, but also pays attention to the needs and expectations of external groups such as customers and the public. The Report vividly shows CDT's obligations and responsibility for stakeholders and presents CDT's CSR philosophy from different perspectives and aspects. The Report includes a large amount of statistics, which well reflects the achievements of CDT as it keeps improving its understanding of social responsibility management and making innovations in accordance with the requirements of high-quality development.

Further optimizing the Report design. The Report innovatively adds big pictures of power stations in the beginning with brief words to tell the story behind the pictures, which are very intriguing and impressive. The design of inside pages adopts a modern style. The Report also adds gradients to the 2D design and pays attention to the selection of pictures and type setting, improving the readability of the Report. Adhering to the design philosophy of visualization, the Report uses multiple graphic elements to highlight core statistics, which provides good reading experience.

In general, 2018 Social Responsibility Report of CDT is a high-quality report. I look forward to see that CDT can keep making new breakthroughs and taking the lead, set a good example in CSR performance and extend its influence, and make greater contributions to high-quality development!

A

Chief Expert of GoldenBee Secretary of ISO 26000 Stakeholder Global Network (ISO 26000 SGN)

# **CONTENT INDEX**

Chapters	Ten Principles of the United Nations Global Compact (UNGC)	GRI	CASS-CSR (4.0)
Message from the Chairman		64-1;64-2;64-43	P2.1;P2.2
About CDT		G4-1;G4-2;G4-3;G4-4;G4-PR5;G4-6;G4-7;G4-8;G4-9; G4-17;G4-42;G4-56	P4
Corporate Governance	Principle 10	G4-20;G4-S03;G4-S04;G4-S05;G4-34;G4-35;G4-36; G4-37;G4-38;G4-40;G4-41;G4-42;G4-44;G4-47; G4-48;G4-51	S1.4;M1.1-M1.4;M1.6-M1.8
CSR Management	Principle 3/Principle 4	64-15;64-16;64-25	P3.1;G1;G2;G6;A2;A3
Annual Feature	Principle 1/Principle 6	G4-2;G4-17;G4-43;G4-EC1;G4-HR1;G4-SO2;G4-SO6	P3.2; S4.1;S4.4;S4.5;S4.6;S4.12-S4.14
Value Creation	Principle 9/Principle 10	G4-15;G4-16;G4-25	\$1;E2
Production Safety	Principle 4	G4-PR3;G4-PR4;G4-PR1;G4-PR2;G4-14;G4-HR4;G4-LA5; G4-LA6;G4-LA	\$3.1;\$3.2;\$3.3;\$3.6;\$3.7
Green Development	Principle 7/ Principle 8/ Principle 9	G4-13;G4-EN4;G4-EN5;G4-EN6;GE-EN15;G4-EN12; G4-EN21	E2;E3
Innovation-driven Development	Principle 7/ Principle 9	G4-44;G4-PR3;G4-EN4;G4-EN12;G4-EN28;GE-EN34	M2.1-2.7
International Cooperation	Principle 1/ Principle 2/ Principle 3/ Principle 4/ Principle 5/ Principle 6	G4-9;G4-10;G4-11;G4-HR5;G4-HR2;G4-LA8;G4-LA9; G4-LA10	P4.2;P4.3;M3;S2.1;S2.2;S2.4; S2.5-S2.8;S2.12-S2.18;S3.1-S3.5; S4.4-S4.6;S4.9;S4.10;E2;E3
Common Development	Principle 1/ Principle 2/ Principle 3/ Principle 4/ Principle 5/ Principle 6	G4-LA12;G4-EC7;G4-EC8	S2.4;S2.6;S2.8;S2.12;S2.13;S2.17;S2.18; S4.1;S4.2;S4.5-S4.10
Outlook	Principle 7/ Principle 8/ Principle 9/Principle 10	64-1;64-2;64-43	A1
Third-party Evaluation		G4-33	Α4
Content Index		G4-32	A5
Report Information		G4-5;G4-PR5;G4-18;G4-19; G4-22;G4-28;G4-29;G4-30;G4-31	A6

# Information Disclosure on CDT's Contribution to SDGs

SDG	CDT's Practice	Page
1 Poverty <b>市<sub>新</sub>希希</b> 清節	<ul> <li>Targeted poverty alleviation: The fixed-point poverty alleviation projects of CDT cover 80 countries and cities, and have helped 334 villages. We invested RMB 395 million in various poverty alleviation funds and assigned 129 full-time officials to poverty-stricken areas. Poverty alleviation projects through industrial development, education support, and medical and health support, etc. were carried out, having helped more than 23,000 households and nearly 85,000 people in poverty.</li> </ul>	22-27
2 ZERO HUNGER	Targeted poverty alleviation: CDT has constructed the demonstration poverty alleviation base through industry development and took the measure of "donation instead of procurement" to help poor people sell agricultural and sideline products.	24-25
	<ul> <li>International cooperation: CDT has actively provided aid, assistance and carried our charity activities. We have provided emergency assistances to host countries many times.</li> </ul>	57-61
	Common development: We carried out community public welfare activities and organized volunteer activities of over 1,800 batches such as "Datang Youth Hand in Hand", involving 25,000 participants.	66-67
3 GOOD HEALTH AND WELL-BEING	<ul> <li>Green development: CDT accumulatively invested RMB 1.06 billion in energy-saving and emission reduction funds. All coal-fired units were installed with desulfurization, denitration and dust removal facilities. 94.7% of coal-fired units completed ultra-low emission transformation.</li> <li>We continued to improve the pollutant discharge permit management, and conducted regular monitoring of waste gas, wastewater and noise in accordance with the law, so as to effectively reduce urban air pollution, improve environmental quality and promote a healthier living environment for residents.</li> </ul>	44-46
	<ul> <li>Common development: We regularly organize employee medical examinations and pay attention to the health of employees. We carry out investigation on employees' mental state and care about their mental health. In 2018, 563 "Six Mosts" projects were completed, helping employees solve the problems that are most concerned and most urgent.</li> </ul>	65
4 QUALITY EDUCATION	<ul> <li>Targeted poverty alleviation: We adhere to helping people increase confidence in their own ability to lift themselves out of poverty and see that they can access the education they need to do so. We carry out the Hope Educational Support Project and the "Datang Star Class" activity to provide equal access to educational resources and knowledge for poor children in mountain areas.</li> </ul>	25
	<ul> <li>International cooperation: CDT provides staff knowledge and skills training in the host countries where overseas projects are located, and delivers professional skills to the local.</li> </ul>	61
	<ul> <li>Common development: CDT carried out a total of 33,800 training programs at all levels, with 1.91 million participants, and the training rate was 99.3%. We also organized professional knowledge and skills competitions with all employees involved. Three employees were awarded the title of National Technical Expert, three won the title of Technical Expert in the Power Industry, and 38 were awarded the CDT Technical Expert.</li> </ul>	64-65
5 GENDER EDUALITY	<ul> <li>CSR management: In CDT, female employees enjoy fair treatment. CDT has increased the proportion of female managers, and also frobids gender discrimination.</li> </ul>	13
6 CLEAN WATER AND SANITATION	Targeted poverty alleviation: CDT inspects the construction and use of drinking water projects in the poverty-stricken mountain areas to ensure that the drinking water is clean and safe.	24
<b>V</b>	<ul> <li>Value creation: CDT carries out comprehensive upgrading of generating units, and has installed the seawater desalination system to provide water for production and reduce fresh water consumption.</li> </ul>	31
	• Green development: CDT reduces wastewater discharge, and lays drinking water pipes for residents to provide clean water and help improve the drinking water quality.	47
7 AFFORDABLE AND CLEAN ENERGY	<ul> <li>Targeted poverty alleviation: CDT builds photovoltaic poverty alleviation projects in poverty-stricken areas, constructs photovoltaic power stations, installs power supply devices for people in remote mountainous areas, and increases the proportion and scope of clean energy use in poverty-stricken areas.</li> </ul>	25-26
-00-	<ul> <li>Production safety: CDT strengthens the tracking and guidance of the unit's operating conditions to ensure safe and stable operation and improve power generation efficiency. The Group's annual power generation was 554.1 TWh in 2018.</li> </ul>	38-39
	<ul> <li>Green development: We actively eliminate backward production capacity and increase energy structure adjustment. In 2018, the proportion of installed capacity of clean energy accounted for 35.57%. Electricity generated from clean energy and renewable energy such as gas turbines, wind, light and water increased by 14.131 TWh, up by 10.88% year on year.</li> </ul>	44-47
	International cooperation: We provide electric power support for some countries along the Belt and Road, build national power grid projects, and improve the electricity consumption level of local residents.	60
8 DECENT WORK AND ECONOMIC GROWTH	<ul> <li>Value creation: We continue to improve its profitability and take measures to deleverage and reduce assets-liability ratio. In 2018, the Corporation eared profits of RMB 9.598 billion. We vigorously expand the international market and follow the Belt and Road Initiative to build a Datang international trade platform.</li> </ul>	28-30/34
	<ul> <li>Common development: We respect the legitimate rights and interests of employees, and the collective contract coverage rate reaches 100%.</li> <li>We also implement the unified salary distribution system, and pay social insurance on time and in full. The employee satisfaction rate is 99.6%.</li> </ul>	13/65

#### SDG **CDT's Practice**



- High quality development: We have constructed large thermal power power plant in China. We have independently developed and constru Innovation-driven development: We comprehensively strengthen the science and technology innovation, promote the transformation of t
- and low carbon development of energy. In 2018, we invested RMB 3.3 built a total of 261 employee innovation studios, and made more that patents, up by 10% over that of 2017. We also undertook 34 industrial International cooperation: We invest in power projects overseas, sup aim to upgrade the local infrastructure.
- · International cooperation: We actively engage in the Belt and Road Initi skills training for them. We provide energy technology services to 10 cou Myanmar, Cambodia and other countries, with a total installed capacity



10 REDUCED NEOUALITIES

∢≣⊁



- · Production safety: We strive to build an intrinsically safe enterprise. In carried out 166 safety inspections of all kinds. The timely rectification r production safety standardization rate was 100%.
- 13 CLIMATE ACTION
- · Green development: We invested in RMB 1.06 billion in energy-saving and denitration and dust removal facilities. 94.7% of coal-fired units complete nitrogen oxides and soot was decreased by 19.5%, 10.45% and 13.8% respe



- · Green development: We increase our protection of life below water by invest in the construction of cascaded fish breeding stations, organize resources in the basin to protect aquatic ecosystems.
- 15 LIFE



17 PARTNERSHIPS FORTHEGOALS

**&** 

- · CSR management: We maintain public interests, operate according to law of openness and transparency, we have established a comprehensive, m International cooperation: We take advantage of multilateral trade and o Trade, China Chamber of International Commerce, and the Silk Road B
- Innovation-driven development: We cooperate with 70 organizations, inclu to carry out industry-university-research cooperation. · International cooperation: We actively promote the Belt and Road Initia
  - provide energy and technical services. In 2018, we participated in inter Forum and CHINA-ASEAN Exposition, to build a sustainable international Cooperation Project at Home and Abroad with EDF and signed the Men. Power Corporation to promote the development of clean energy at hom

72

C	DT's Practice	Page
	High quality development: We have constructed large thermal power plants, large hydropower stations, large wind farms, and the first smart power plant in China. We have independently developed and constructed offshore wind power projects. Innovation-driven development: We comprehensively strengthen the development of innovation systems to enhance our basic capabilities of science and technology innovation, promote the transformation of technological achievements, and lead and support the safe, efficient, clean and low carbon development of energy. In 2018, we invested RMB 3.3 billion in technological innovation, an increase of 20.83% year on year. We built a total of 261 employee innovation studios, and made more than 300 innovation achievements. We had a total of 6,642 newly authorized patents, up by 10% over that of 2017. We also undertook 34 industrial standards or above in 2018.	16-18 48-53
•	International cooperation: We invest in power projects overseas, support the road and bridge construction, and build teaching buildings with an aim to upgrade the local infrastructure.	58-61
	International cooperation: We actively engage in the Belt and Road Initiative. Pursuing localized development, we hire local staff, and provide relevant skills training for them. We provide energy technology services to 10 countries including Indonesia and Malaysia, and have built three power projects in Myanmar, Cambodia and other countries, with a total installed capacity of 360 MW and the total overseas assets reaches more than RMB 15.5 billion.	54-61
	Production safety: We improve our ability to respond to emergencies. In 2018, we organized 1,732 emergency drills with 37,085 participants. We successfully responded to the massive floods in the Jialing River Basin and the Dadu River Basin, effectively prevented natural disasters such as Typhoon Mangkhut and Maria, and successfully guaranteed power supply for summer and winter peaks of power consumption.	38-40
	Production safety: We strive to build an intrinsically safe enterprise. In 2018, the total investment in production safety was RMB 8.356 billion and we carried out 166 safety inspections of all kinds. The timely rectification rate of technical problems found in inspections was 90.35%, and the corporate production safety standardization rate was 100%.	36-40
	Green development: We invested in RMB 1.06 billion in energy-saving and emission reduction and all coal-fired units were installed with desulfurization, denitration and dust removal facilities. 947% of coal-fired units completed ultra-low emission transformation. In 2018, the emissions of sulfur dioxide, nitrogen oxides and soot was decreased by 19.5%, 10.45% and 13.8% respectively as compared with 2017.	42-46
	Green development: We increase our protection of life below water by releasing fish, carrying out river water sampling, etc. Our hydropower stations invest in the construction of cascaded fish breeding stations, organize fish breeding activities in the reservoir area every year, and restore fishery resources in the basin to protect aquatic ecosystems.	47
•	Green development: We pay attention to protecting the local natural ecological environment along the project construction sites and pay attention to protecting ecosystems and biodiversity. International cooperation: We transform the open channels to diversion tunnels in the construction of overseas projects, so as to protect local primeval forests and tropical rainforest resources.	46-47 56-57
	CSR management: We maintain public interests, operate according to law and with integrity, and keep market economic order. Adhering to the principle of openness and transparency, we have established a comprehensive, multi-channel, and regular communication system.	10-11
•	International cooperation: We take advantage of multilateral trade and cooperation platforms such as China Council for the Promotion of International Trade, China Chamber of International Commerce, and the Silk Road Business Council to comprehensively foster exchanges and cooperation with world-known companies in project investment, technological innovation, and talent cultivation.	59-60
	Innovation-driven development: We cooperate with 70 organizations, including colleges and universities, equipment manufacturers and design institutes, to carry out industry-university-research cooperation.	51-52
	International cooperation: We actively promote the Belt and Road Initiative, and build power stations and power grids in many countries as well as provide energy and technical services. In 2018, we participated in international exchange activities such as the Forum on China-Africa Cooperation Forum and CHINA-ASEAN Exposition, to build a sustainable international cooperation relationship. We signed the <i>Agreement for Low-carbon Energy Cooperation Project at Home and Abroad</i> with EDF and signed the <i>Memorandum of Understanding on Renewable Energy Projects</i> with Korea Electric Prover Comparison to promote the development of clean energy and abroad.	58-61

# FEEDBACK SHEET

Thank you for reading the 2018 Social Responsibility Report of CDT. Please give your opinions and suggestions here for us to improve future reports.

1. What is your overall impression of the Report?				
Good		Deor		🗌 Fair
2. Do you think the Report covers all asp	ects of social responsib	ility performance of CDT?		
Yes				🗌 Fair
3. Could you easily find the topics you are interested in this Report?				
Yes		□ No		🗌 Fair
4. Do you think the layout of the Report is	s reader friendly?			
Yes	2	No		🗌 Fair
5. Which part of the Report do you like m	nost?			
6. What other information do you expect	to know in the Report?	,		
	formance and faiture 1	Japanta)		_
7. Is there any suggestion on our CSR per	riormance and future l	keports?		
Which type of stakeholder do you belong	j to			
Government/regulator	Investor	Community resident	Customer	□ Financial institution
□ Research university	□ Supplier	🗌 Media	□ Social organization	□ Others

### **Contact information**

Company name: China Datang Corporation Ltd. Address: No.1 Guangningbo Street, Xicheng District, Beijing Postcode: 100033 Hotline: 010-66586666 Fax: 010-66586677

Official website: www.china-cdt.com Email: shzr@china-cdt.com Contact department: Department for Publicity Work of Party Leadership Group (Corporate Culture Office), China Datang Corporation Ltd.

# **REPORT INFORMATION**

#### **Reporting Scope**

Headquarters of China Datang Corporation as well as its subsidiaries.

Reporting Period and Cycle
This is our 13th CSR report, which covers the period between January 1, 2018 and
years.
D-f
Reference
For readability, " China Datang Corporation Limited" is also referred to as "we", "the
Data Sources
All data in the report are taken from official documents, reports and informatio
Standard for Business Enterprises and Accounting System for Business Enterprise
Compilation Conformance

The Report referred to Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0) and the Sustainability Reporting Guidelines issued by the Global Reporting Initiative (GRI) as well as the opinions and suggestions for previous annual reports from the evaluation experts.

#### Access to the Report

The report is available in both Chinese and English, including paper and electronic versions. Welcome to visit the official website to read and download the report at http//www.china-cdt.com. The HTML5 version is available in CDT WeChat Account.

#### Access to the Printed Report

Department for Publicity Work of Party Leadership Group (Corporate Culture Office), China Datang Corporation Ltd.

Address: No.1 Guangningbo Street, Xicheng District, Beijing Postcode: 100033

#### Report preparation team

Team leader: Liu Zhihui Vice team leader: Yang Liu Members: Yun Duan, Wu Kunpeng, Yang Li, Li Xuejun, Jiang Yazhou nd December 31, 2018, with some dating back to previous years or referring to later

he Corporation" and "CDT" in the Report.

ion platforms of the Corporation in compliance with regulations of the Accounting *ises* issued by the government.

Hotline: 010-66586569 Fax: 010-66586374 Official website: www.china-cdt.com Email: shzr@china-cdt.com









The Report is printed on environmental-friendly paper

Welcome to visit our official website