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The cover styling of this CSR Report was inspired from the logo of China Southern Power Grid. Integration of cross-links and smart cities reflects the Company's progression in accelerating its pace of building the organization into a world-class enterprise, supplying power to meet people's ever-growing demand for electricity for a better life. The main part of the cover - "seven leaves" - characterizes the company's power supply services throughout five provinces in Southern China. The picture in the middle of the scene exemplifies the Company's dedication to serving its millions of customers with consistent electricity supplies.

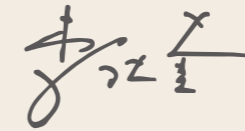
2017

Corporate Social Responsibility Report

CSG Lights up Every Household in Southern China

Board Chairman's Message

“Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will further implement the general requirements of Party building, accelerate the establishment of a globally competitive enterprise and contribute our best to realize the Two Centenary goals”.



Li Qingkui, Board Chairman of CSG



Looking back at Year 2017, under the decisive leadership of the CPC Central Committee with President Xi Jinping as the core, China Southern Power Grid has taken the unique opportunity to deepen the study and implementation of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th CPC National Congress. CSG actively fulfills its political, economic and social responsibilities, constantly pursuing the maximization of integrated economical, social and environmental values and strives, each day, to provide the best electric power support for sustainable and sound economic and social development throughout the five South China provinces. In Year 2017, the Company sold 890.2TWh of electricity, a year-on-year increase of 7.3% with a total revenue reaching RMB 494.6 billion, an increase of 4.5% and holds total assets amounting to RMB 744.5 billion, an increase of 8%. In Year 2017, China Southern Power Grid was ranked 100th among Fortune 500 companies.

The Company adheres to the principle of "following the leadership of the Party" and continuously enhances its implementation. It is a glorious tradition of state-owned enterprises to adhere to the Party's overall leadership and strengthen Party building, which is also their "root" and "soul". The Company has been firmly fostering the "four consciousness" (consciousness of the need to maintain political integrity, think in big-picture terms, uphold the leadership core, and keep in alignment) and "four matters of confidence" (confidence in China's path, guiding theories, political system, and culture), decisively upholding the authority of the CPC Central Committee and its unified leadership while maintaining a high degree of ideological and political consistency with the Central Committee with President Xi Jinping as the core. For the past two years, the Company has formulated the No. 1 document for CSG Party Committee to promote the effective implementation of key Party building tasks and to ensure that the Party's overall leadership and Party building are always the "fixed weather vane" and "ballast stone" of our reform and development. The Company follows the concurrent establishment of primary-level party organizations, business and administrative organizations with officials, systems and evaluation mechanism installed on both sides. CSG enhances the Party's role in corporate Party building, system, business and development and have fully completed the revision of articles on Party building and established the statutory footing of Party organizations in the corporate governance structure. The Company has selected outstanding professional senior managers who have firm convictions, serve the people and date to take charge. These selected senior managers are diligent and pragmatic in government affairs. They are also honest and loyal to the Party. As a result, the "satisfaction and basic satisfaction rate". The Company has persevered in putting disciplines and rules to the forefront and fights back against every corruption, taking appropriate steps concerning any inappropriate official. As a market-leading organization, China Southern Power Grid has given full play to inspections and achieved positive results through "four forms" of discipline supervision and enforcement, including criticism, minor disciplinary penalties, severe punishment and demotion and possible legal and Party remedies which has discouraged, disabled and dispirited all forms of corruption.

The Company has adhered to the corporate mantra of "best services for the people" and has always been doing the utmost to meet people's ever-growing demands for electricity for a better life. CSG has implemented the central government's strategy of stabilizing growth, restructuring and benefiting people's livelihood, focused on power supply capacity upgrading, and completed a fixed asset investment of RMB 115.1 billion, a year-on-year increase of 12.6%. Some projects were placed into production ahead of (or on) schedule such as the bipolar low-end and receiving-end supporting project of UHVDC transmission from power stations in northwest Yunnan to Guangdong; the expansion of Luxi back-to-back HVDC project; the first units of Hainan pumped storage project and Shenzhen pumped storage project. The Second Hainan Interconnection Project and other projects were also advanced of schedule. The macro electric grid structure became even stronger as the Company has invested RMB 34.1 billion in a new round of rural grid upgrading to support rural rejuvenation. CSG has worked tirelessly in its participation in targeted poverty alleviation tasks as the Company has approved an investment of RMB 40.2 billion for poverty alleviation activities and an additional RMB350 million in fixed-point poverty alleviation, which directly assisted 280 poor villages and lifted 179,000 people out of poverty. CSG has also successfully dealt with severe challenges presented by natural disasters, including typhoons "Hato", "Pakhar" and "Mawar" by fully restoring power supplies to impacted areas and providing streamlined power supplies to Macao in record time. These and other timely responses earned the praise of Party committees and government at all levels and all walks of life. Likewise, the level of electric power services was continuously improved throughout Year 2017. The coverage of smart meters in the entire network reached 93% and the coverage of low-voltage meter reading was 73%. The reliability of power supply was also further improved. The average power outage time (low pressure) was 20.08 hours, a decrease of 10%. The average power outage time in downtown areas was 2.14 hours, a reduction of 21.3%. In Year 2017, CSC's third-party customer satisfaction reached 81/100. CSG has also earned first place accolades in public satisfaction evaluation of local public services.

CSG has adhered to the direction of socialist market economy reform and given full play a responsible role as an important pilot company of reform. Focusing on supply-side structural reforms, CSG unwaveringly promotes the performance of important duties such as power system and state-owned enterprise reforms. In Year 2017, CSG completed full coverage of transmission and distribution price reforms in the provincial power grids and orderly promoted inter-provincial and inter-regional transmission tariff verification, which provided references for national power transmission and distribution tariff reform at large. The Company also actively released reform bonuses and witnessed

a reduction of overall annual costs of electricity in the real macro economy through transmission and distribution tariff reforms, market-oriented transactions and tax and fee reductions. Additionally, CSG continued, throughout Year 2017, to expand the scale of market-oriented transactions, the transaction volume in Guangdong accounted for 30.1% of the total electricity sold in the whole network. The Company also proactively promoted state-owned enterprise reform and completed the comprehensive system reform of 138 subsidiary companies as well as advancing hybrid power market reforms in Shenzhen Qianhai (under a pilot program) and realized the practical operation of power supplies, market-oriented electricity sales and integrated power services. CSG has constantly deepened the reform of its institutions and systems and established a management and control mode of "headquarters focusing on planning, provincial companies focusing on businesses, local power supply bureaus focusing on strengthening power infrastructure, and competition-based companies focusing on dynamic development". CSG has made preliminary progress not only in power grid regulation, integrated energy and finance, but also in businesses located in countries along the Belt and Road and has continuously quickened the pace of transforming the entire organization into an integrated energy service corporation.

CSG has upheld green and low-carbon development and makes meaningful contributions to building a beautiful China. As a trusted and valued member of society, CSG realizes that clean water and lush mountains are invaluable natural assets, so as to continue to promote revolution in energy production and consumption which in turn makes the sky bluer, the land greener and the water clearer. By implementing west-to-east power transmission strategies, CSG transmitted a record high 202.8TWh of power during Year 2017. In accordance with the trading model of "plan + market", CSG used redundant power capabilities to carry out inter-provincial market transactions and improved the trading mechanisms for swapping hydropower and thermal power. Throughout Year 2017, the accumulated surplus of hydropower in Yunnan reached an impressive 27.7TWh. The utilization rate of hydropower in Yunnan also reached 88%, exceeding targets set by the National Development and Reform Commission. In addition, CSG vigorously promoted the deployment of clean energy and realized full consumption of new energy sources such as wind power, PV and nuclear power. In Year 2017, non-fossil energy generation and installed capacities in the five South China provinces and regions accounted for 50.8% and 50.2% respectively, far surpassing the national average level. CSG vigorously promoted electrification and deployed the development of 13 key fields such as electric boilers, shore-to-shore power, electric vehicles and others according to local conditions. The annual incremental power volume of electrification increased by 11.4 TWh.

The company has followed the principle of shared benefits through consultations and common development and actively participated in the building of the Belt and Road Initiative. CSG has proactively served the Party and society by fully playing its part as an executive unit of the Chinese side in the Greater Mekong Subregion's electricity cooperation and actively promoted grid interconnection with neighboring countries and electricity cooperation along the Belt and Road. CSG has achieved power grid interconnection with Vietnam, Laos, and Myanmar through 12 circuits of 110 kV and above. By the end of Year 2017, CSG's electricity transaction reached a total of 51.65TWh. The overall completion progress of Vinh Tan I Coal-Fired Power Plant BOT Project in Vietnam and of the Nam Tha 1 Hydropower Project in Laos were 90% and 94% respectively. These two projects were listed as key demonstration projects of the Belt and Road by the Chinese government. CSG also successfully acquired 27.8% of Chilean stake owned by BIP in Transelec and 37% of Malaysian Edra Company's shares. The Company actively implemented the Belt and Road concept of justice and benefit and vigorously promoted people-to-people connections. For example, a large number of local staff were recruited for overseas projects to support local economic and social development. We paid special attention to resident resettlement, carried out charitable activities and aid relief and worked tirelessly to present a positive image for Chinese enterprises at large. CSG placed great emphasis on conducting people-to-people and cultural exchanges. Since Year 2010, 67 college undergraduates have been trained for Laos, Myanmar, Vietnam and Cambodia, and 10 post-graduate students have been trained for Cambodia. Senior managers attended the 7th Guangdong-Hong Kong-Macao Power Industry Summit, the 4th Power Utility Summit and the 2nd CSG-KPX-TEPCO Summit which helped expand the Company's circle of good friends and elevated its influence throughout the international community.

Year 2018 will mark the first year for profoundly implementing Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th CPC National Congress, marking the 40th Anniversary of China's reform and opening up to the international community. It is a crucial year for securing a decisive victory in building a moderately prosperous society in all respects and for continuing to implement the 13th Five-Year Plan. The Company pledges to unite more closely around CPC Central Committee with President Xi Jinping as the core, and to hold high the banner of Xi Jinping's socialist ideology with Chinese characteristics in the new era to meet the people's growing needs for a better life as the starting point and ultimate goal. CSG pledges to meet the challenges of this exciting new era, promote high-quality development and accelerate the establishment of a globally competitive, world-class business enterprise, so as to contribute our best to fight for a great victory in this new era of socialism with Chinese characteristics!

Introduction

This Corporate Social Responsibility Report 2017 focuses on the concepts, initiatives, ongoing business practices and performances of China Southern Power Grid Co., Ltd., as it fulfilled its social responsibilities throughout Year 2017. It is our fervent prayer that you will appreciate our sincerity and, as always, understand and support the Company's ongoing reform and development activities.

This CSR Report follows the preparatory processes recommended by the Global Reporting Initiative's Sustainability Reporting Guidelines (GRI G4). The Company has invited internal and external stakeholders to join in the formulation of this annual Report, listened to their expectations and appeals, evaluated material topics and finalized all issues concerning the sustainable development of China Southern Power Grid, which will be disclosed in this Report.

Listening

China Southern Power Grid maintains constant contact with its key stakeholders and adheres to the principle of "inviting in and going out". Senior managers from the Company learned of the priorities of varied stakeholders through various platforms such as expert reviews, key customer discussions and information summits.

Evaluation

Based on China Southern Power Grid Corporation's Social Responsibility Index System (CSG-CSR 2.0) and feedback from stakeholders, the Company has selected 52 issues from its internal information bank and conducted a first-time, questionnaire-based survey on Weibo, China's "Twitter-like" platform.

Through in-depth and follow-up analysis, screening and evaluation, material topics have been identified and have been followed closely by the Company's talented senior management team with their inclusive statements becoming part of this annual Report.

Report

This year's Corporate Social Responsibility Report is presented in four main chapters: Overview, Main Body, Management and Performance Evaluation. The Main Body section is being offered in four major sub-sections: power supply, environmental protection, operating efficiency and social harmony. Additional material topics are disclosed in additional chapters of this Report.

Overview 06-09 About Us 10-17 Spotlight

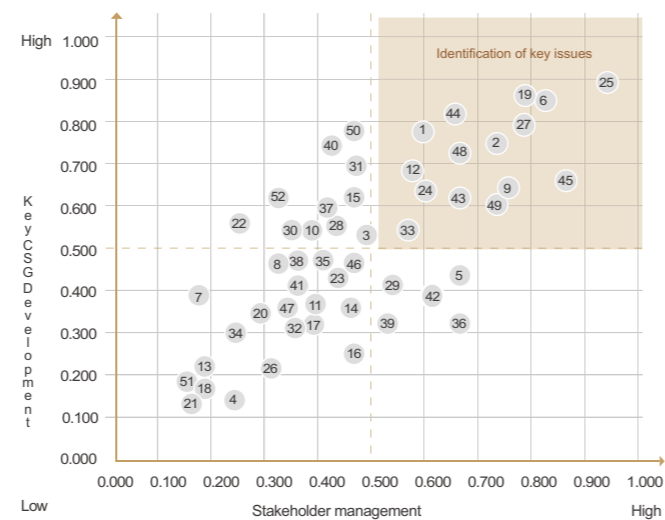
Stakeholders Involved

In order to deliver a sound Corporate Social Responsibility Report 2017, the Company conducted real-time communication with customers, government departments, regulatory agencies, industry associations, partners, non-governmental organizations and experts on social responsibility.

These senior leaders held informal discussions with functional departments within the China Southern Power Grid corporate organization at its headquarters in Guangzhou and those at the "grassroots" levels throughout Southern China in order to absorb and understand customer expectations and appeals. CSG is dedicated to the needs of its key stakeholders and will respond to the each concern as outlined within this annual review.



Identification of Material Topics



Identification of Key Issues

- | | | |
|---|--|---|
| 1 Improving power quality | 19 Consumption of hydropower in Yunnan Province | 43 Implementing the Belt and Road Initiative |
| 2 Enhancing emergency capabilities | 24 Supporting new energy development | 44 Expediting development in the Guangdong-Hong Kong-Macao Greater Bay Area |
| 6 Optimizing procedures and improving efficiency | 25 Addressing climate change | 45 Improving employees' sense of fulfillment |
| 9 Managing safety challenges | 27 Comprehensive energy services | 48 Implementing targeted poverty alleviation |
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About Us

China Southern Power Grid Co., Ltd., (i.e. CSG) was established at the end of Year 2002. The Company is under the management of Central Government and the State-owned Assets Supervision and Administration Commission of the State Council fulfills the responsibility as its primary investor. CSG constructs and operates power networks throughout Guangdong, Guangxi, Yunnan, Guizhou and Hainan, with a total service area spanning one million square kilometers and a population base of more than 252 million people and 84.9 million households.



Corporate Purposes

Best Service for the People



CSG Image

CSG Lights up Every Household in Southern China



Corporate Philosophy

Integrity - Service - Harmony - Innovation



Our Mission

Providing Safe, Reliable Electricity to Boost Economic Development



CSG Spirit

Ready for Change, Innovation and Contribution



Corporate Vision

Building a Safe, Reliable, Green and Efficient Smart Grid and Becoming a Well Respected Enterprise in Power Grid Development



Development Strategy

Building CSG into a World-leading Power Grid Company Featuring Sophisticated Management, Fine Service, Outstanding Performance and Excellent Brand.



Safety Principle

Every Incident is Preventable



Business Philosophy

To Create Value and Innovate Development



Service Philosophy

Customer-oriented, Harmonious and Mutually Beneficial



Philosophy of the Rule of Law

To Raise Awareness of and Abide by the Law



Team Principle

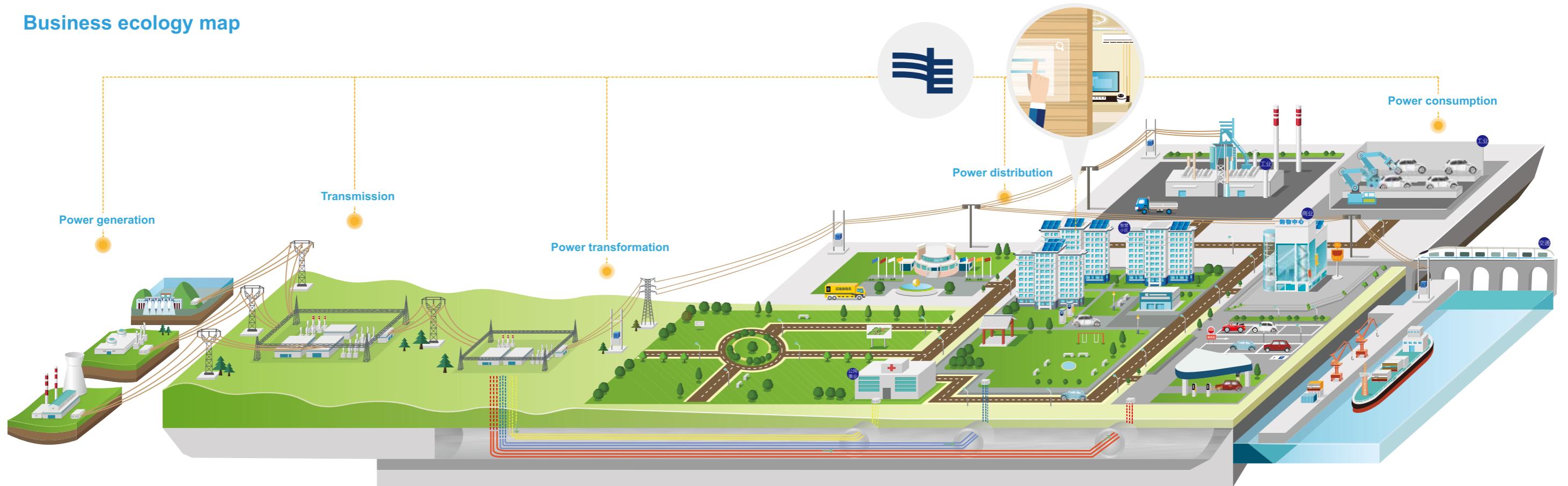
Being Loyal to the Company and Nation while taking Personal Ownership in Building a Better CSG



Behavior concept

Be Honest Observe the Rules

Business ecology map



CSG works with key stakeholders, including government, customers, partners, employees, the environment, communities and other stakeholders to create an ecosystem that covers the upstream and downstream of the industrial chain as all shareholders strive to maximize their participation in and integrated value of the economy, society and the environment.

Economic Values

- Provide continuous, year-round electricity services which sells 890.2 TWh.
- Provide electric support for economic and social development with per kWh of electricity ... which in turn produces RMB13.64 of GDP.
- Pay appropriate taxes and operate its business in accordance with the law while realizing profits and taxes of RMB 49.5 billion.
- China Southern Power Grid ensures the maintenance and appreciation of state-owned assets' value and has earned a Class A rating by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) for its exceptional performance for 11 consecutive years.

Social Values

- Provide quality electricity services to more than 252 million people in its designated power supply areas of southern China.
- Provide impetus to the development of rural areas as well as agriculture with an investment of RMB 34.1 billion.
- CSG is dedicated to public welfare and charities as dedicated nearly 180,000 hours in voluntary service throughout Year 2017.
- Carry out targeted poverty alleviation efforts and directly assisted lifting 179,000 citizens out of poverty.

Environmental Values

- Encourage non-fossil energy power generation with installed capacity of non-fossil energy accounting for 50.2% of its total installed capacity
- Carry out energy-saving power generation dispatch with 142.5g standard coal/kWh consumed for per unit electricity generation and dissemination.
- Reduce operational losses with 6.52% of overall line losses.
- Provide energy-saving services to aid business and residential customers that in Year 2017 saved more than 1.21 TWh.

Management Team



Li Qingkui
Board Chairman



Cao Zhi'an
Board Director, President



Shi Zhengjiang
Vice President



Bi Yaxiong
Vice President



Wen Limin
Chief Accountant



He Xiqiang
Vice President



Yang Zhihong
Head of the Discipline
Inspection Commission
of the Party Committee



Jiang Yi
Vice President



Chen Yunpeng
Vice President

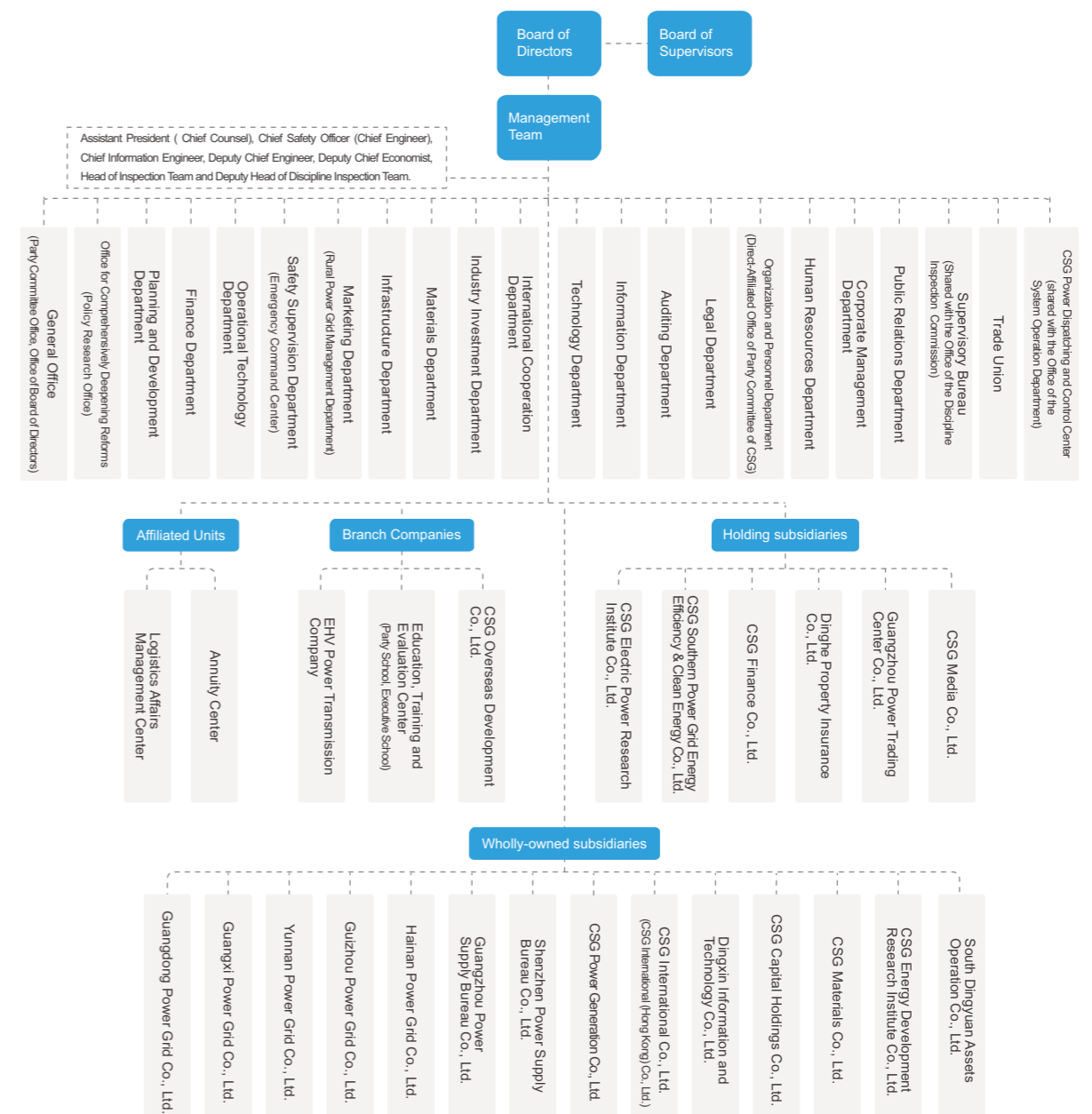
Corporate Governance

China Southern Power Grid is a state-owned "backbone" company and in accordance with Company law and the requirements of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), CSG has established a modern corporate governance structure consisting of a board of directors, Board of Supervisors and operational senior management team.

Focusing on the development strategy of building a market leading power grid and corporate structure that excels in management, service, performance and corporate image and the development goal of "185611", the senior management team at CSG has defined its rights, responsibilities and decision-making procedures at all levels and departments in order to ensure that laws, regulations and efficient operations are implemented and realize the maintenance and substantial appreciation of state-owned assets. These and other actions work in tandem to create and improve the Company's corporate governance structure and with an established board of directors and board of supervisors in Guangdong, Guangxi, Yunnan, Guizhou and Hainan Power Grid Co., Ltd., and Guangzhou, Shenzhen Power Supply Bureau Co., Ltd., all work together to improve the Company-wide decision-making processes.

Organization Chart

Based in Guangzhou, CSG Headquarters has 22 functional departments and controls two affiliated units, three branch companies, 14 wholly-owned subsidiaries and six holding subsidiaries.



Spotlight Bright Lights - Warm Bay Area

In Year 2017, China explicitly proposed promoting deeper cooperation between the Chinese Mainland and Hong Kong and Macao and formulated development plans for a new city cluster, to be named the Guangdong-Hong Kong-Macao Greater Bay Area, thus taking the unique advantages of Hong Kong and Macao and strengthening their roles and functions in China's economic development and opening-up to the international community.

With the support of the central authorities, Guangdong, Hong Kong and Macao have improved their cooperation mechanisms on innovation to achieve mutual benefits and significant win-win cooperation and are committed to building the Guangdong-Hong Kong-Macao Greater Bay Area into even more vibrant economic zone and a quality place for life, work and entertainment ... and a demonstration zone for the in-depth cooperation of Mainland-Hong Kong-Macao which will aid in forming a world-class Bay Area and city cluster.



Mr. Li Qingkui, Board Chairman of CSG, attended the 7th Guangdong-Hong Kong-Macao Power Industry Summit and delivered his remarks.

China Southern Power Grid resolutely implements the central policies to push forward the substantial opportunities of developing Guangdong-Hong Kong-Macao Greater Bay Area. The Company is dedicated to building a community of shared future for power enterprises in this area and building the Greater Bay Area into a world-class city cluster featuring sustainable development, green environments and social harmony.

Making electricity an “engine for economic change” within the Greater Bay Area

The Guangdong-Hong Kong-Macao Greater Bay Area city cluster is one of the most economically dynamic regions in China. As it transforms itself into an integrated energy service provider and serving the construction of the Greater Bay Area with market-leading standards, CSG has adopted a scientific grid planning structure and provides exceptional services to help build the city cluster of the Greater Bay Area into a world-class innovation center and a new “engine” for global economic growth.

Improving the power quality in the Greater Bay Area

A world-class city cluster cannot be built and maintained without steady and reliable electrical power support. High-end manufacturing and high-tech enterprises are gathered in the Greater Bay Area and CSG thus sets its customer needs as its working foundation, focusing on salient problems while continuing to improve power quality and provide reliable electricity to a large number of manufacturing and high-tech clients.

By strengthening its foundation through technical prowess, CSG focuses on voltage “sags” and other power quality issues, studying improvement techniques for voltage eligibility rates while conducting comprehensive evaluations of power quality and research on power supply technologies.

Value-added service. Focusing on customers' need, CSG offers consumers comprehensive value-added power supply choices as it continues to transform low-voltage areas. The company also carries out power quality diagnosis and management.

- Extended reading: The Guangdong-Hong Kong-Macao Greater Bay Area refers to the city cluster formed by nine cities including: Guangzhou, Shenzhen, Foshan, Dongguan, Huizhou (excluding Longmen), Zhongshan, Zhuhai, Jiangmen, Zhaoqing (urban area and Sihui City) and Two special administrative regions - Hong Kong and Macao
- This area is one of the four largest bay areas in the world alongside the New York City Bay Area; the San Francisco Bay Area and the Tokyo Bay Area.
- These large metropolitan markets are an important region for China to build a world-class city cluster and participate in global competition.

Taking the construction of the Greater Bay Area as a major cornerstone, all Company business areas are working as one with their counterparts in Hong Kong and Macao to accelerate the pace in building a world leading Bay Area and world-class city cluster.

Xi Jinping, General Secretary of the CPC Central Committee and President of China and Chairman of the Central Military Commission

Improving the reliability of power supply in the Greater Bay Area

With its focus on customers' needs, CSG has continuously consolidated the building of power grid, improved power outage management to systematically reduce outage time and improve the reliability of power supply for city clusters in the Greater Bay Area.

The Greater Bay Area wins its first four places in the reliability of power supplies

	Zhuhai Power Supply Bureau No. 1	Shenzhen Power Supply Bureau No. 2
	Guangzhou Power Supply Bureau No. 3	Zhongshan Power Supply Bureau No. 4

Smart distribution automation facilitates a world-leading free trade zone. CSG has adopted the 20 kV double-link “backbone” grid operation structure - a market leading product and first of its kind in China - and relay automation design in grid construction of the Hengqin Free Trade Zone.

Facilitating the construction of key projects in the Greater Bay Area

CSG accelerates the integration of new technologies, new methods and traditional services and actively participates in key construction projects of the city cluster within the Greater Bay Area.



China Southern Power Grid supports the Hong Kong-Zhuhai-Macao Bridge power project. The Company is fully invested in the 110 kV artificial island power transmission project and is primarily responsible for the power supply of this artificial island and the Hong Kong-Zhuhai-Macao Bridge project to meet the power demands in this area, providing strong electricity support for the integrated transportation system and highway network in Guangdong, Hong Kong and Macao.



Night scene of the Hong Kong-Zhuhai-Macao Bridge

Deepening Power Guangdong-Hong Kong-Macao Cooperation

China Southern Power Grid takes advantage of its unique geographical location and long-term cooperative relations in Hong Kong and Macao to strengthen the interconnection of power trading in the Greater Bay Area, ensuring the reliable 24/7 power supplies of Hong Kong and Macao SAR and takes proactive action to promote the long-term prosperity and stable development of Hong Kong and Macao SAR.



Since Year 2013, a total of 57.181 TWh has been delivered to Hong Kong.

The Guangdong-Hong Kong Power Cooperation.

In the two decades since Hong Kong's return to the motherland, CSG has connected Hong Kong power grids through four 400 kilovolt lines and seven 132 kilovolt lines. Relying on advanced power supply equipment, technology and exceptional management, CSG is focused on developing long-term safe and reliable power supplies to Hong Kong, helping this important region enjoy political stability and economic prosperity.



Since Year 2013, a total of 19.88 TWh has been delivered to Macao.

The Guangdong-Macao Power Cooperation

Connected to Macao through six 220 kV lines and three 110 kV lines (hot spares), CSG signed supplemental agreements to provide long-term power supplies to Macao which in turn will expand the scale of Macao's power transmission and the ratio of clean energy transmission, in a bid to meet power demands of Macao's economic and social development.

Boosting regional development

With its focus on the Greater Bay Area, CSG has promoted the coordinated development among the eastern, western and northern parts of Guangdong, Yunnan, Guangxi and Guizhou fueled by West-East power transmission and by providing power support for industrial planning.

Guangdong

As the “pioneer” of power business, CSG has offered its support to the interactive development between the eastern, western and northern parts of Guangdong and the Pearl River Delta region, and to the development of China (Guangdong) Pilot Free Trade Zone. Meanwhile, we have promoted power planning and power building in Shenzhen-Shantou Special Cooperation Zone and Guangdong-Guangxi Cooperation Pilot Zone, so as to provide better and more efficient services for regional cooperation.

Yunnan

The Company gives full play to the role of seeing the Kunming Power Trading Center serving as a platform to improve the trading rules and enrich the trading varieties. CSG makes significant contributions to the formation of an “all-win” cycle of Yunnan's electricity market by consuming Yunnan-created hydropower.

This in turn, further aids the economic and social development of Yunnan Province.

Guangxi

The senior management team of China Southern Power Grid is dedicated to helping Guangxi solve their challenges of imbalanced and inadequate urban and rural power services, a successful conclusion of which promotes a sustainable economic and social development to improve people's livelihood.

Guizhou

CSG has shifted the source of power generation from thermal power in Guizhou to hydropower in Yunnan, and fully tapped the potential of West-East transmission and the its underlying market. These measures have facilitated the generation and consumption of clean energy in western China.

West-to-East Power Transmission Helps Green Development in Greater Bay Area

As a platform for regional resource optimization and deployment, the Company transported clean energy from the west to the Greater Bay Area through the West-to-East power transmission channel to continuously improve the energy distribution in this area and contributed to the green development of the city cluster in Guangdong-Hong Kong-Macao Greater Bay Area.

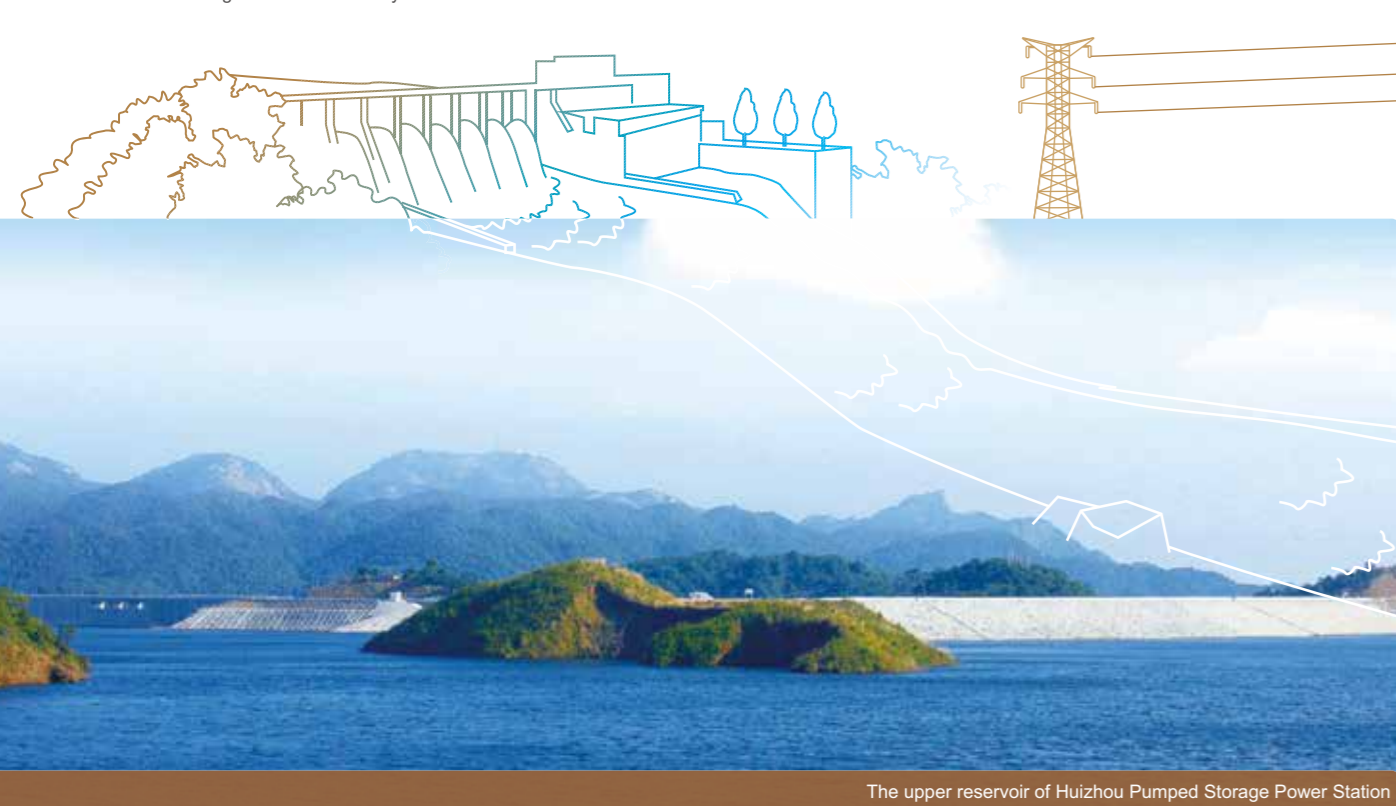
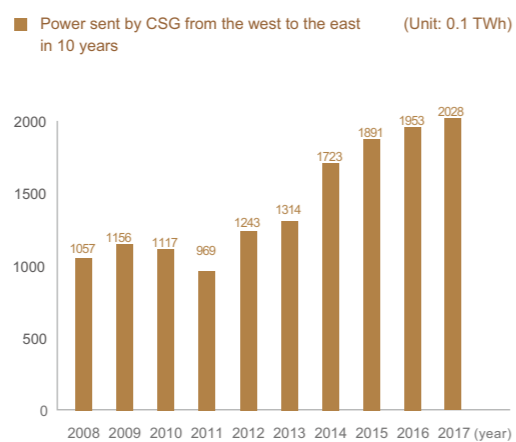
Delivering clean power to the Greater Bay Area

In the 15 years since its establishment, CSG has been committed to strengthening the construction of the West-to-East power transmission channel.

The Company transports clean hydropower resources from the west to the Guangdong-Hong Kong-Macao Greater Bay Area to achieve a balanced resource utilization among regions and significantly reduce fossil energy use.

During Year 2017, the ± 800 kV Northwest Yunnan UHVDC transmission project has developed substantial transmission capacity, with a new additional 2.5 GW of new cloud power transmission capacity. When this project reaches full operation, it will be able to deliver clean energy to nearly 20 TWh annually to Guangdong Province.

To date, CSG has formed 18 large-scale channels for West-to-East power transmission with a maximum transmission capacity of 47.5 GW, providing clean energy in support of the economic development of Guangdong-Hong Kong-Macao Greater Bay Area.



The upper reservoir of Huizhou Pumped Storage Power Station

Working together to build a thriving Greater Bay Area

China Southern Power Grid ensures the safe and stable operation of the power grid, providing green and intelligent integrated energy services to millions of business and residential customers and plays a vigorous leadership role in the construction of a world-class, livable and affluent city cluster in the thriving Guangdong-Hong Kong-Macao Greater Bay Area.

Industry

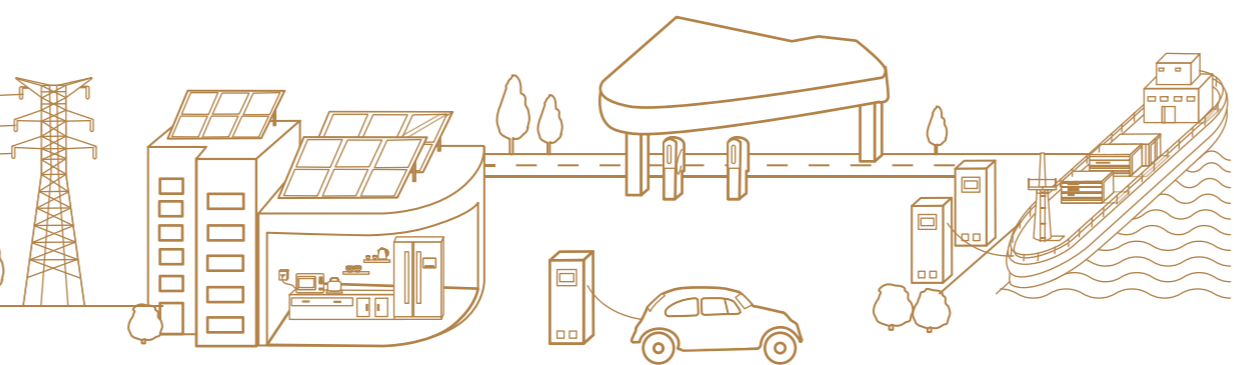
To provide customers with value-added technical services such as power quality inspection, assessment and management, so as to comprehensively improve the power quality for customers and drive the development of high-tech industries in the Greater Bay Area.

- The Shenzhen Power Supply Bureau has completed the largest city power quality monitoring system in China, building (and placed on line) three technical support platforms for power quality which provides customers with a greater level of power supply system reliability and power quality evaluation services.

Food

CSG leads China's "green revolution" in the catering industry and promotes an entire "electric kitchen concept" into restaurants, school canteens and other venues to popularize a green lifestyle.

- In Year 2017, the Guangzhou Power Supply Bureau held a "Green Earth for the Future" salon using the theme of a "green kitchen" ... inviting nearly 30 corporate representatives to enhance their understanding of the energy-saving impact of electromagnetic kitchen utensils and the charm of bringing the "green kitchen" to the modern home.



Accommodation

China Southern Power Grid is a true pioneer in the construction of smart, green and low-carbon communities while promoting CCHP system in new home fabrication to reduce household energy consumption.

- In Year 2017, the Foshan Power Supply Bureau of Guangdong Power Grid Co., Ltd., carried out an automatic collection of electricity, water and gas consumption data for 376 residents in the Baoli Zishan Green Garden District and provided comprehensive services of supplying various types of energy, intelligent use of electricity and data value analysis.

Transportation

In the Pearl River Delta region, the Company promoted the inter-connection of rapidly charging networks with emphasis on the construction of electric vehicle charging stations as well as port and shore-to-ship power projects in ports such as Zhuhai and Nansha.

- The Guangdong Power Grid Company's Dongguan Power Supply Bureau built 16 charging facilities at varied locations, including the Sports Park in Chang'an Town and Wanjiang Bus Station. These facilities spanned 16 towns and streets in Dongguan City, as well as the "last mile" for electric vehicle charging.

Securing power supply in Macao

On August 23, 2017, a strong typhoon named "Hato" struck the Pearl River Estuary, causing substantial damage to various parts in Guangdong-Hong Kong-Macao Greater Bay Area.

The destruction caused by Typhoon Hato caused power outages in the Macao peninsula and the outlying islands. Thousands were evacuated, flights cancelled and schools closed after the storm triggered Hong Kong and Macao's most severe warning, indirectly impacting the water supply system and wireless network in many buildings and residential homes.

China Southern Power Grid organized more than 5,500 staff to repair downed power lines in Zhuhai and after more than 10 hours work in fierce wind and rain - and in pitch darkness - CSG personnel successfully connected two 220 kV lines at Guozhu at 9:00 a.m. on August 24 to fully restore the power services to Macao.

"Traffic in Macao has been largely resumed, but some parking lots were still waterlogged. Some of the generators provided by CSG were used for pumping water and supplying power in the three larger parking lots, which greatly eased the traffic pressure in Macao".

- Deputy Commissioner of DSAT-Zheng Yuewei and Jia Jinglong



Employees from Guangdong Power Grid Company braved the rain to repair the power lines

- On the morning of August 27, Macao authorities made a request for 50 emergency generators.
- At 13:00, CSG urgently assembled 53 emergency generators to aid Macao.
- At 22:00, CSG aid workers conducted immediate technical assistance on the streets of Macao.
- At 15:00 on the 28th, the Guanzha underground bus terminal was flooded and the working group of CSG offered its professional advice on getting the generator operation back on line.
- At Noon on August 28, relief material arrived in Macao.
- By 11 a.m., the working group sent by CSG arrived at the Macao Inspecting Vehicle Center and conducted a technology transfer.

Spotlight An established technical foundation comes innovation-driven development

In the front lines of reform and opening-up to the international community, China Southern Power Grid regards innovation as one of the most important driving forces for development and the numerous benefits derived from innovation-driven development to build a technological innovation system that is in line with international standards.

The Company also focuses on launching cutting-edge technologies in the grid field with centralized innovation to cultivate core competitiveness and technological innovations to build an innovative enterprise business.

National Awards

Outstanding Winner of National Award for Scientific and Technological Progress

Academician, Li Licheng, as the person-in-charge, worked closely with the State Grid Corporation of China and the "UHV ± 800 kV DC Transmission Project"



Second Prize of National Award for Science and Technology Progress

"Ultra-large AC and DC Power Grid Technology Innovation and Its Application in National West-to-East Power Transmission"



UHV ±800 kV DC Transmission Project

UHV ±800 kV DC transmission is the most successfully applied electric power transmission technique in the world, featuring the highest voltage, largest capacity and longest economic transmission.

It represents the preeminent technology for international high voltage, large capacity, long distance and cost-effective power transmission and is a key technology for large-scale cross-regional energy optimization throughout China.

By the end of 2017, CSG project completed 141 studies on key

technologies, created 37 world "firsts" and significantly promoted the development and international influence of China's electric engineering discipline and electric power industry.

Since the launch of the ±800 kV UHV DC transmission technology and engineering application research in Year 2006, CSG has continuously invested in individual staff and management talents and material resources to take a leadership stance in completing a series of technical research and development, standard formulation and results application tests.

- CSG completed a feasibility demonstration of the higher-level voltage requirements of the grid and completed a technical development of the UHV ±800 kV DC transmission project.
- Scientists from CSG guided the R&D of UHV DC equipment, led the final installation of the equipment and honed its technological specifications while resolving many technical challenges.
- CSG launched the standard formulation of the ±800 kV UHV DC transmission, which formed the first standard system of UHV DC design and equipment in the world, promoted the internationalization of standards and raised China's "power of discourse" in the field of international UHV and DC standards.
- The world's first demonstration project - the ±800 kV Yunnan to Guangdong UHVDC power transmission - was built and placed on-line and in doing so, created a myriad of technical challenges such as system integration, project design and construction and debugging.

Trial operations were overcome which is moving the project toward achieving long-term safe operation and full-load power transmission.



The sending end of ±800 kV Yunnan Northwest DC Project- Xinsong converter station, DC field

Development is one of the top priorities with individual staff talent serving as a primary resource and scientific innovation as a key driving force.

Xi Jinping, General Secretary of the CPC Central Committee and President of China and Chairman of the Central Military Commission

Enhancing innovation foundation

Throughout Year 2017, CSG scientists and staff continued to optimize the Company's internal technology management system by increasing investments in science and technology and pushing forward true scientific and technological research and development.

- CSG optimized the evaluation system of scientific and technological innovation and encouraged its affiliated units to increase investments in scientific research and development and accelerate the commercialization of research outcomes.

CSG promoted the construction of the National Key Laboratory of DC transmission enterprises and completed the construction of R&D and technology exchange platforms which lay the foundation for R&D.

- CSG shared its key laboratories and scientific discoveries while promoting joint construction of laboratories between universities and enterprises and worked with Northeast Electric Power University to construct a wind proof, ice proof power grid laboratory on the green island.

- China Southern Power Grid continued to increase its corporate investment in science and technology projects which accounted for 1.54% of overall revenue with 1.65 billion yuan set aside for science and technology projects.

Supporting employees in innovation

CSG has further promoted employee scientific innovation and built a "platform for employee innovation" as these employee innovation projects have obtained 1,100 national patent licensing on the basis of which two established national demonstration studios which have motivated nearly 40,000 people to participate in innovation projects.

A special fund of RMB 89.16 million was invested in employee innovation projects. CSG gave its support to 2,013 technology innovation projects developed by its employees.

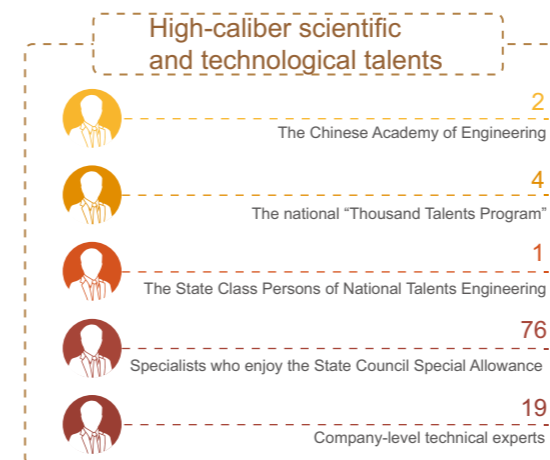
Strengthening transformation of research results

In-house scientists at CSG have earned a number of internationally advanced achievements, patents and standards with independent intellectual property rights.

By Year 2017, CSG held more than 10,000 valid patents that were successfully used in power grid construction and dispatch operations, which in turn ensures the safe and stable operation of large power grids.

Talent Development

CSG focuses on national strategic needs and takes the initiative to undertake major national science and technology projects and draws upon top technology talents at home and abroad so the Company can discover and take practical use of staff and senior management talents.



Promoting the application of artificial intelligence

With scientific and technological advancement, CSG has made efforts to build itself into a digital and smart grid company. Making full use of cloud computing, big data, Internet of Things, mobile Internet, and smart city, CSG has upgraded its power supply services, with the core technological competence of AI as its basis, and "Internet + AI" as its fuel. By the end of 2017, many AI technologies have been applied to transmission line operation and maintenance, instrument check, and customer service.



- Spitfire drones:** Cleaning suspension on high voltage lines, which relieved staff from having to climb transmission towers to maintain power lines.
- Instrument calibration robot:** Improving the overall operating efficiency and accuracy of the electricity meter.
- Tunnel inspection robots:** Monitoring underground tunnel conditions in real time and improving efficiency of long-distance operation, maintenance and inspection.
- Intelligent operation robots in transformer station:** Automatically completing 10kV emergency switching-off



Answering the Party
Central Committee's Call

- ▶ We must ensure the principal status of the people, and adhere to the Party's commitment to serving the public good and exercising power in the interests of the people. We must observe the Party's fundamental purpose of wholeheartedly serving the people, and put into practice the Party's mass line in all aspects of governance. We must regard as our goal the people's aspirations to live a better life, and rely on the people to move history forward.
- ▶ We will promote safe development, and raise public awareness that life matters most and that safety comes first; we will improve the public safety system and the responsibility system for workplace safety; we will take resolute measures to prevent serious and major accidents, and build up our capacity for disaster prevention, mitigation, and relief.
- ▶ We should aim for the frontiers of science and technology, strengthen basic research, and make major breakthroughs in pioneering basic research and groundbreaking and original innovations. We will strengthen basic research in applied sciences, launch major national science and technology projects, and prioritize innovation in key generic technologies, cutting-edge frontier technologies, modern engineering technologies, and disruptive technologies.

*Excerpt from the report delivered at the 19th CPC National Congress



CSG in Action

- ▶ CSG regards the people's demand for electric power as a stepping stone towards a better life. It is the deepest aspiration of all work completed at China Southern Power Grid. The Company continues to improve the quality of electricity supplies and service, fully honoring its promises of 24/7 service as the organization shifts from providing adequate electricity to producing the high quality electricity and services.
- ▶ With the principle of "Life First, Safety First", the Company consistently improves its risk awareness, laying a firm foundation for safety as staff and senior management join hands to increase the overall prevention capabilities of the power grids against natural disasters.
- ▶ The Company fully believes in the national innovation-driven development strategy, accelerating the application of cutting-edge technology that upgrades the traditional power grid and vigorously promotes scientific and technological innovations, individual innovations from its senior managers as well as staff and consultants.



**Power
Supplies**



Meeting the demand for power for a better life

CSG always regards the people's demand for power for a better life as the starting point and ultimate goal of all daily work.

Continuously upgrading the comprehensive customer service system.

Innovating in the service model to enhance service efficiency.

Making the power supply service even more convenient, efficient and user-friendly.

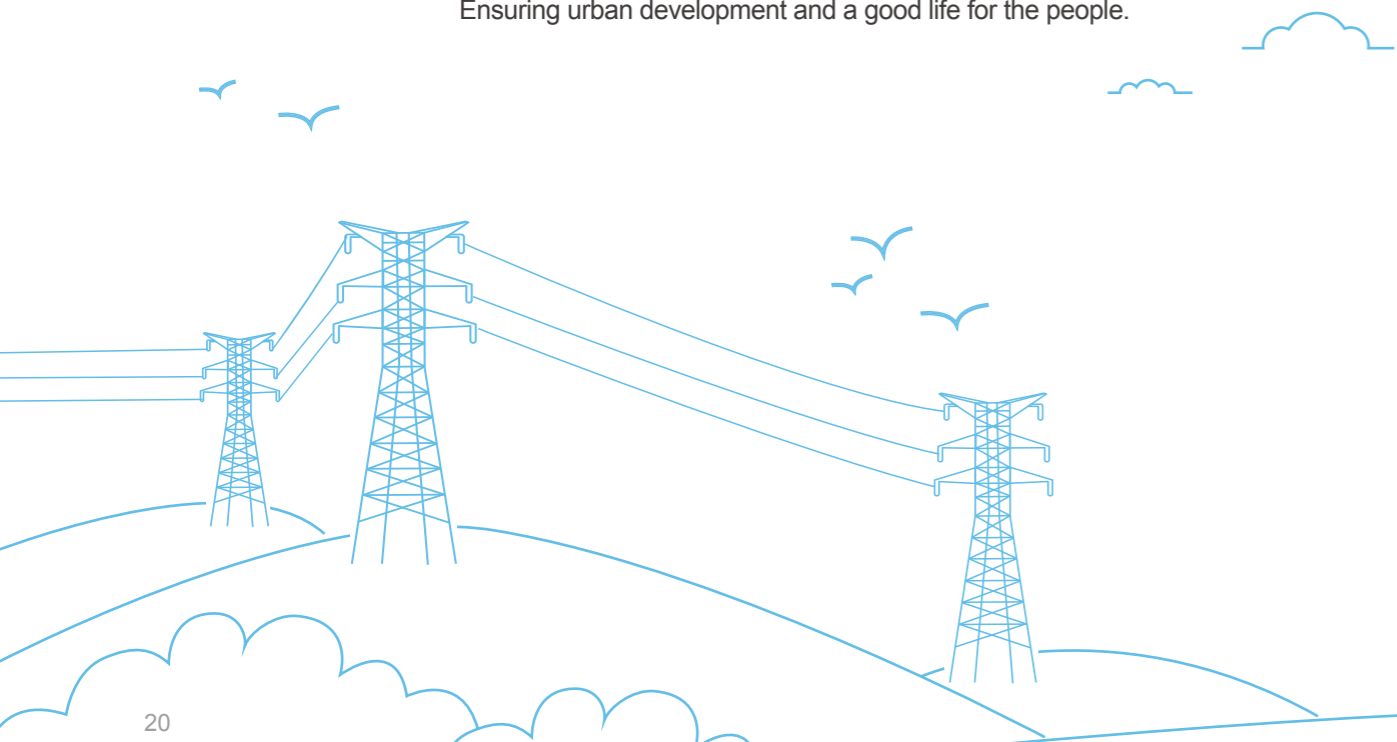
Reducing power outages and improving power quality.

Providing reliable and quality electricity to a growing customer base.

Embracing the change of the times and implementing innovative development.

Creating a safe, reliable, green and efficient electrical grid.

Ensuring urban development and a good life for the people.



Key Issues Management



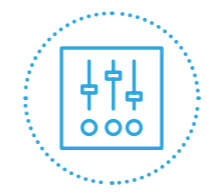
Key Issues

- ◆ Providing quality service.
- ◆ Ensuring safe business operations.
- ◆ Quickening emergency response.
- ◆ Building a smart power grid.



Major Action Strategies

- ◆ The Company has adhered to the safety philosophy of "every incident is preventable", strengthened closed-loop risk management and ensured the safe and stable operation of large power grids.
- ◆ The Company has improved its customer-centric service system, offering customers with various service channels and delivering faster and diversified services.
- ◆ The Company constantly explore the remarkable technological and management potential. Their service and dedication to CSG services to minimize power outage time and improve power quality in multiple dimensions.
- ◆ The Company has strengthened the development of talents for scientific and technological projects and carried out research on key technologies for smart electrical grids which constructing safe, reliable, green, and efficient smart grids.



Core Management Performance

- ◆ Throughout Year 2017, the Company has continued in its efforts to improve overall business and residential customer services. Guangdong Power Grid; Guangxi Power Grid; Yunnan Power Grid; Guizhou Power Grid; Guangzhou Power Supply Bureau and the Shenzhen Power Supply Bureau ranked first in the professional evaluation of respective local public services.
- ◆ Zhuhai, Shenzhen, Guangzhou and Zhongshan Power Supply Bureaus ranked among the top four in terms of reliability of power supplies in China.
- ◆ There have been no major accidents or casualties in the whole system. Nor have there been accidents caused by power supply or equipment failure, or incidents that have major adverse effects on the society and the company.



Providing quality service

Introduction	Corporate Social Responsibility value Less outage time and higher value	Main stakeholders involved Customers, employees, government	Responsibility issues covered Smooth service channels, less power outage time and improved power quality	Main responsibility fulfillment performance The score of third-party customer satisfaction reached 81
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With the principle of "Customer-Oriented, Coordinated and Win-Win", CSG has improved the all-round customer-centric service systems for its millions of business and residential customers, and at the same time has fully upgraded all service channels and procedures.

Commitment to upgrading service standards

In November 2017, CSG officially released *Power Supply Service Commitment of China Southern Power Grid*, which outlines the Company's high business standards. This important outline carefully explains to the user the organization's commitment to upgrading the voltage eligibility rate of rural residents' clients; customer's power-on limit time; the time for power supply resumption after customers have paid their electricity bills and other indicators which combined helps meet consumer demands for electricity utilization.

Fulfillment rate of all service commitment has reached

an astounding **100%**



Press conference for power supply commitment.

Content of power supply service	National power supply standards	CSG power supply service commitment	Performance in Year 2017	Compared with that in Year 2016
Power supply service hotline: 95598 Connection within 20s(%)	None	90 ^①	95.6	None
The reliability rate of power supply in urban areas is not lower than (%)	99	99.9	99.9245	↑ 0.0016
The reliability rate of power supply in rural areas is not lower than (%)	None	99.5	99.6768	↑ 0.0355
The voltage eligibility rate at the receiving end of urban customers is not lower than (%)	95	98	99.420	↑ 0.296
The voltage eligibility rate of rural customers end is not lower than (%)	None	94	98.021	↑ 0.196
The time before arrival for power supply and repair personnel in urban areas does not exceed (minutes)	60	45	34	Flat
The time before arrival for power supply and repair personnel in rural areas does not exceed (minutes)	120	90	62	↓ 11
The time before arrival for power supply and repair personnel in special remote areas does not exceed (minutes)	240	120	72	↓ 20
The reply period of power supply plan for residential customers does not exceed (working day)	2	2	1.6	Flat
The reply period of power supply plan for customers with customers with low-voltage supply does not exceed (working day)	5	5	3.3	↓ 0.2
The reply period of power supply plan for customers with single high-voltage supply does not exceed (working day)	15	15	7.4	↓ 0.1

Note: ① Power Supply Service hotline: 95598 - Connection Rate within 20s: CSG made a new commitment in Year 2017.

Improving power business environment

CSG has improved customer services in different businesses, promoted the efficiency of business expansion, galvanized investment interface extension, and reduced energy costs, so as to free customers from worries of time, money and troubles. We have provided them with better services and a better business environment.

- Improving business efficiency via power business expansion.** As a result of the effort, power business expansion processes for low-voltage residents and non-residents have been further streamlined. We have extended the investment interface of power expansion project to "customer redline" (the redline of the land property of the building customers live in) via power business expansion, and cancelled design inspection, intermediate inspection and final inspection. Also, we have streamlined businesses for high-voltage single and dual power supplies by cancelling approval processes and decentralizing investment management authority. Moreover, the 10kV power supply plan approved by power supply bureaus at county (district) level has made typical design available. Guided by the new measures, it now takes low-voltage residents and non-residents only 4 and 8 workdays respectively for electricity businesses to be completed, and as for high-voltage power supplies, it only takes 34 and 43 workdays to go through all the business procedures.
- Reducing energy costs.** CSG has actively responded to the calls of the central government, and worked closely with the government to reduce electricity prices. We have further decreased the electricity costs for industrial and commercial use in five provinces of Southern China by cancelling temporary power connection bills, reducing West-East transmission prices, and temporarily reducing the prices of provincial-level power grid transmission and distribution.
- Galvanizing investment interface extension.** CSG has invested in the circuits of power grid access points and implemented such investment on the entire network since September 2015, so as to reduce customers' investments and support CSG's innovation and development. In January 2017, we achieved the goal of extending investment interface to "customer redline" on the entire network, totaling 8.2 billion yuan throughout the year.

Accurate metering and billing

CSG has strictly implemented relevant national laws and regulations, continue to promote the intensive metering construction and standardization management, completed the establishment of a provincial-level centralized metering automation system and actively promoted the full coverage of smart meters and low-voltage meter reading.

By the end of 2017, the coverage rate of smart meters was 93%, and that of the low-voltage meter reading was 73%. Smart metering and low-voltage meter reading were fully covered in the provinces of Hainan, Guangzhou, and Shenzhen.

- CSG has improved its measurement management system, is actively carrying out measurement authorization which in turn effectively enhances the legitimacy and authority of the measurement work. In Year 2017, CSG officially obtained the national measurement special authorization, making breakthroughs in the legal measurement management field.

The number of stamps required for documents decreased from 21 to 6	The extended investment throughout the network reached RMB 8.2 billion
Construction period of supporting projects reduced from 187 days to 90 days	The completion rate of special inspection rectification of power business expansion was 100%



Speeding up power service supplies and improving service quality, so as to inject impetus into the development of Guangxi Beibu Gulf Economic Zone

Multiple service channels

Working in advance to meet the need of each customers, CSG has accelerated the innovation of blending traditional electricity business and the Internet and strives to broaden power supply service channels covering entity services, remote services and third-party services.

CSG is a market leader in establishing a unified service platform on the Internet in China, and is diligent in enabling customers at all levels of business and private (and with multiple needs) enjoy high-quality and convenient power supply services.

Remote service channels

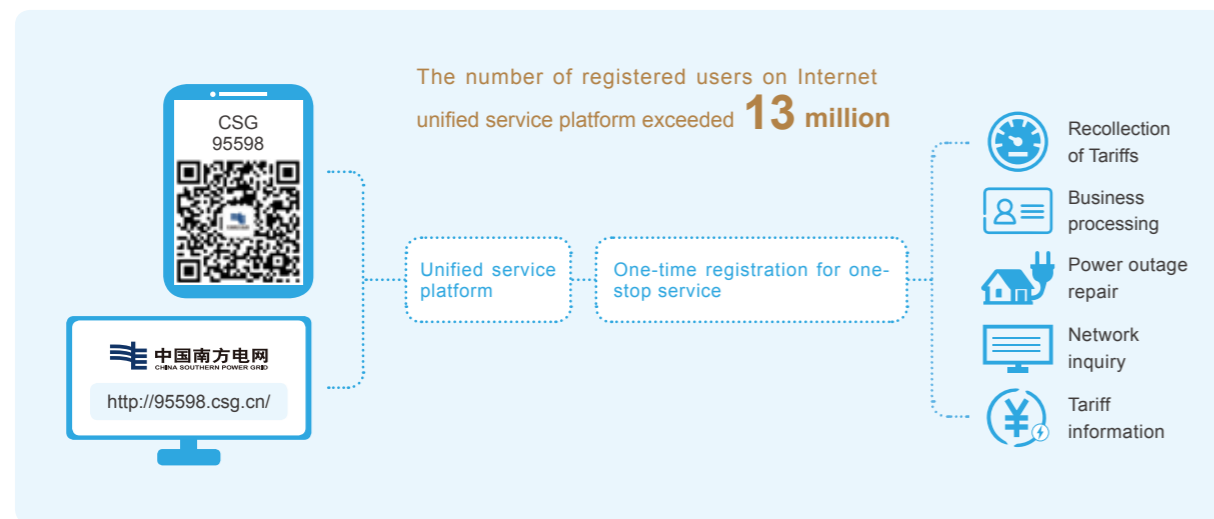
Integration upgrading and building an efficient service system



Unified service platform on the Internet, new reform of "Internet plus electricity service"

CSG has optimized, integrated and upgraded provincial-level online business and WeChat service accounts; launched the first WeChat service applet in power industry and built a unified Internet service platform of the Company.

Customers today only need to register once to handle their business through all Internet channels. "CSG 95598" has become the first WeChat account with more than 10 million users in China's power industry.



95598 provincial-level concentration, 24-hour efficient service

In September 2017, the company realized 95598 provincial-level "four integrations"^① intensive management objectives. The intensive management promoted the efficiency and customer service staff for the 95588 hotline was actually decreased by 27% and the cumulative traffic connection rate was 95.6%, an increase of eight percentage points over the same period of Year 2016, solving the 95598 "hard to get through" challenges.

Note: ① "Four integration" refers to integration of service standards, integration of customer experience, integration of business control and integration of back-stage support.



Entity service channels

Smart upgrading, introducing smart services to service halls

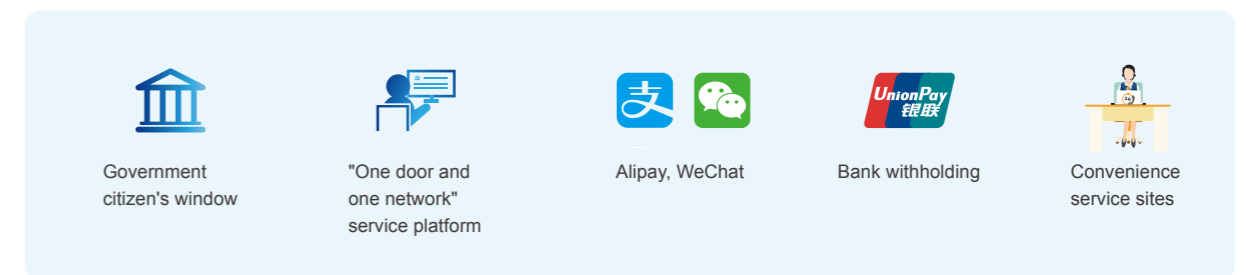
Through new technologies such as: Internet Plus, Artificial intelligence and mobile applications, and The intelligent upgrading of business halls, equipment, and service environments has been realized and the intelligent mode of customer service in business halls has been introduced.

- Guangzhou's first community-based smart power supply business hall was unveiled at the Haizhu Power Supply Bureau. The robot "YouYou" became the first smart power salesperson in Guangzhou, and customers can enjoy self-service without queuing up.
- The Nanshan Smart Business Office of Shenzhen Power Supply Bureau is the first power supply business hall in the power industry in China that integrates smart customer service with smart electricity display experience. The smart service terminal can save 3/4 of the time compared with manual service counters.



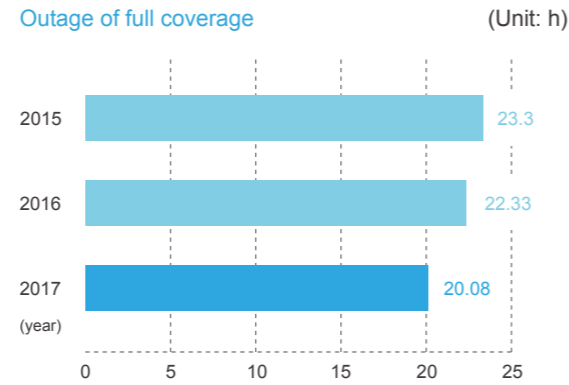
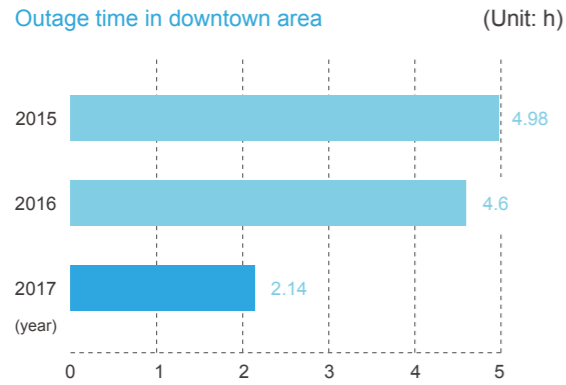
Expanding upgrading, achieving new breakthroughs in service channels

CSG has continuously optimized third-party service platforms such as banks, Alipay, WeChat and convenience service sites, developing new third-party service platforms such as "residents' window" self-service terminals and "one-door and one-network" government service platform and allowed customers to handle electricity supply business in less time and with less documents, further saving the customer's business processing time.



Reducing power outage time

CSG is centered on creating a "two exquisites and two excellences, world-class" development strategy. In Year 2017, with the goal of minimizing power outage time, the Company focused on grid management equipment, blackout management and scientific and technological advances to explore management and technology potential, systematically reducing outage time and frequency and continuously improving the reliability of power supplies.



Creating stable power supplies from reliable distribution networks. CSG has continuously improved the distribution network construction and promoted the upgrading of distribution network equipment and management of its distribution network to satisfy electricity demand with a professionally maintained distribution network.

Live line operation plays an important role in improving the reliability of power supply. CSG has carried out in-depth research and the development of the core technologies of "live working", expanded the coverage of this new company outreach and reduced the impact of equipment overhaul on customers.

CSG recorded fewer power outages through scientific management as the Company has integrated its outage management systems, promoted a collaboration mechanism of "one stop and multiple use, comprehensive maintenance", and reduced circumscribed overhauls and repeated, overtime and temporary power outages which effectively improves power supply reliability.

China Southern Power Grid has proven that electricity can be restored quickly after unplanned events, such as a typhoon and has improved its internal fault repair management mechanism and repair process, promoting the coordination of service scheduling and scheduling of distribution network deployment during repair operations and carried out the rapid restoration of defective distribution network in an orderly and safe timetable. CSG sends out customer notices so that key clients will be informed (in advance) of any scheduled outage plan.



RMB 54.54 billion has been invested in the distribution network reconstruction.

The coverage rate of distribution network automation was **53.94%**

The Year 2017 implementation of live line operation on distribution network reached **86,067 times**



The world's first integrated intelligent detection current transformer developed by the Guangzhou Power Supply Bureau has realized the shift in its function from "off-power tests" to "live working tests" and intelligent operation and maintenance.



Throughout Year 2017, CSG focused on the most prominent challenges to power quality such as voltage dips, short interruptions and low voltage for residents in the urban power grids. Giving priority to the needs of its business and residential clients, CSG has continuously improved power quality management and power quality in multiple dimensions to meet the demands of high-end, high-quality, high-tech modern industries with high quality power.

- CSG has increased its investment in power grids and monitoring systems for areas sensitive to power quality while fully grasping power quality changes in its vast electric grid.
- The Company has "triple secured" the classified business files of its key clients and provided customers with value-added technical services such as power quality inspection, assessment and security management.

Power quality performance

(Unit: %)

	2013	2014	2015	2016	2017 (year)
The voltage eligibility rate at the receiving end of urban resident customers	99.74	99.77	98.730	99.124	99.420
The voltage eligibility rate at the receiving end of rural residents	98.22	98.83	97.449	97.825	98.021
50±0.2Hz frequency eligibility rate	100	100	100	100	100
500 kV voltage eligibility rate	99.9999	99.9999	99.9999	99.9998	99.9999

Note: ① The statistics from Years 2013 to 2014 only covered the parent company and that from Years 2015 to 2017 is of full coverage.



High-quality electricity supports the industrial development of the big data industry

The Gui'an New Area of Guangzhou Province is at the forefront of the development of big data in China and is increasingly home to big data information companies from home and around the globe.

The Gui'an Power Supply Bureau of Guangzhou Power Grid Co., Ltd., intensified its investment in power grid construction, closely followed the big data industry and actively carried out specific projects to improve its power quality from the power grid side and the customer side ... this in turn provided powerful electricity guarantees for the development of big data industry in Gui'an New Area.

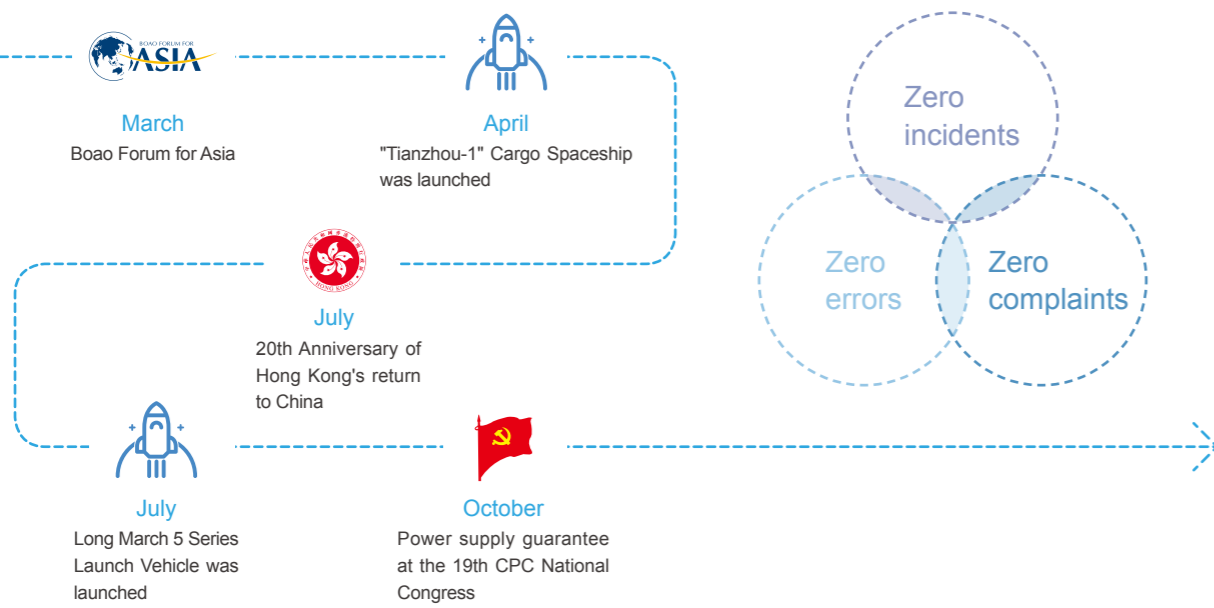
With the support of reliable and quality electricity, "Gui'an on Cloud" continues to grow.



Guaranteeing power supplies at major national activities and special events

CSG comprehensively promoted the lean management of power supply (from the aspect of organization, emergency management and monitoring, power grid operation, equipment operation and maintenance, customer service, evaluation and inspection, emergency power supply support, and information security) under the clearly defined requirements of 15 tasks during major events in Year 2017.

Top-level tasks of unstoppable power supply were successfully completed



During its power supply guarantees for the 19th CPC National Congress, CSG invested 57,498 employees; 8,648 vehicles; the use of 361 emergency generators each day; 18,949 "grass-root" forefront stations to achieve full coverage with CSG personnel on duty 24 hours a day ... culminating to the successful completion of the power supply guarantee tasks at the 19th CPC National Congress.

Earning customers' satisfaction

CSG always regards the people's electricity demand for a better life as the starting point and ultimate goal of all work. The Company has optimized and upgraded its exclusive customer full-service system and has thousands of staff working daily to solve customer concerns about power consumption. China Southern Power Grid has been widely applauded by customers in five South China provinces and regions for its reliable and quality power supplies and sincere and caring service. In Year 2017, CSG scored 81 in its third-party customer satisfaction, an increase of 1.5 over the same period last year and earned first place satisfaction honors from public evaluation of local public services for several consecutive years.

Ranked first in public evaluation among all provincial (level) companies during Year 2017

The Guangdong Power Grid Co., Ltd.

Earned first place in a satisfaction survey of the public service industry for ninth consecutive years with its flawless satisfaction ranking.

The Guangxi Power Grid Co., Ltd.,

Won a first place satisfaction award – within the public service industry - for the fifth consecutive year.

The Yunnan Power Grid Co., Ltd.,

Captured first place in its public satisfaction surveys of the Top 10 public service industries for nine consecutive years.

The Guizhou Power Grid Co., Ltd.

Won top honors in a satisfaction survey of key provincial industries for the seventh consecutive year.

The Guangzhou Power Supply Bureau

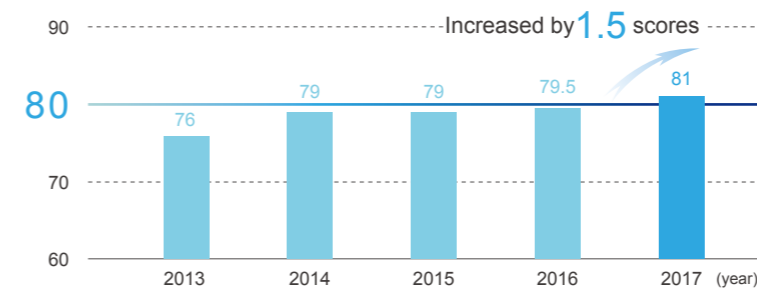
Won first place in a public service industry survey for the ninth consecutive years. 17th year in a "citizen evaluation of city status" survey.

The Shenzhen Power Supply Bureau

Won 40 first places awards in government public service for its seventh consecutive year.

Third-party customer satisfaction

(Unit: score)



81 scores

The third-party customer satisfaction reached 81 scores, exceeding the 80th score plateau for the first time.

Safe Operational Guarantee

Introduction	<p>Corporate Social Responsibility value Ensuring the bottom line of power grid safe operations</p>	<p>Main stakeholders involved Employees, contractors, governments, customers and scientific research institutions are but a few of the major stakeholders invested in the safe operation of the power grid that serves millions of customers throughout South China</p>	<p>Responsibility issues covered Strengthening the management foundation, stable operation of the electrical grid and sound operation of all company equipment</p>	<p>Main responsibility fulfillment performance Nor have there been accidents caused by power supply or equipment failure</p>
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Given the increasingly complex electrical system and the on-going “tug of war” between power supply and demand, and regional frequent natural disasters, CSG holds fast to its safety mantra that “all incidents can be prevented” with staff dedicated to effectively resolve safety risks in energy production while transmitting quality power to millions of households.

Management improvements




CSG works through a “closed-loop” management structure, thereby supervising any possible safety risks and improving its production safety responsibility system, to the fullest and continuously strengthened the construction of the production safety risk management system to ensure the stable operation of the power grid.

The Company has promoted the close integration of production safety risk management with professional management and daily work. This has required the production and release of a new production safety Risk Management System to improve the quality and applicability of the localization revisions of operational standards and to strengthen practical application.

CSG staff works to improve its seasonal safety inspections and the Company has improved its internal safety inspection forms while creating an inspection team to conduct invasive supervision of constituent companies and grass-roots units to ensure the implementation of safety requirements.

CSG achievements of production safety risk management system from Year 2015 to Year 2017

107 power supply companies have achieved ratings above three stars, accounting for 89% of the total. (Unit: piece)

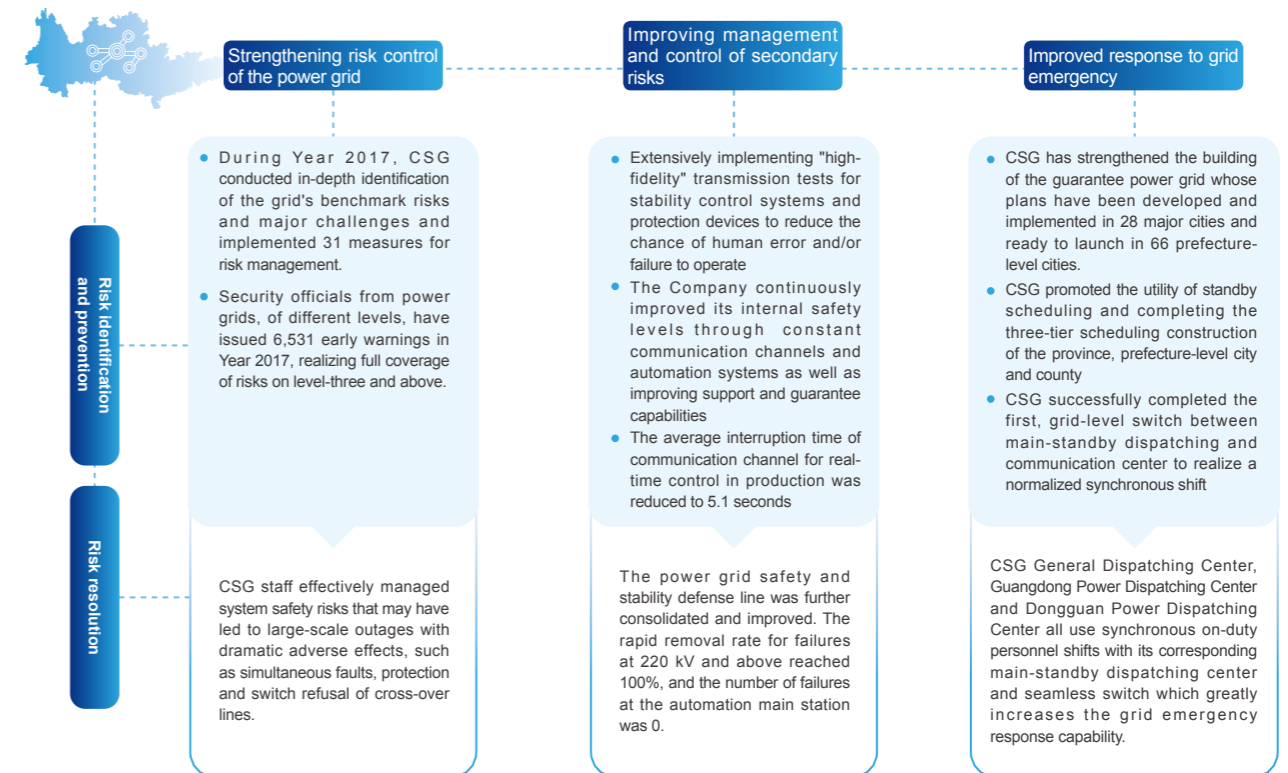
	2015	2016	2017 (year)
Five-star 	1	1	5
Four-star 	22	26	31
Three-star 	70	69	71



Zhuhai Power Supply Bureau of Guangdong Power Grid Company patrols the 220 kV Qinyun Substation.

Stable system

In response to various operational risks of the power grid, CSG continues to improve its closed-loop risk management and control mechanisms while refining the operation and maintenance of the power grid which in turn ensures the reliable operation of the power grid. There have been no major accidents or casualties in the whole system. Nor have there been accidents caused by power supply or equipment failure, or incidents that have major adverse effects on the society and the company.



CSG staff used Unmanned Aerial Vehicles (UAV) to visually inspect the electric grid/operation.

Healthy equipment

CSG has implemented concepts of asset life cycle management, comprehensively promoting the construction of the master mechanism for equipment and the rating of star teams. This issue focuses on equipment risk management to make refined power transmission and transformation equipment, differentiated operation and maintenance and standardized overhaul. The level of equipment sound operation continued to rise in Year 2017 with zero incidents occurring in the power grid (or related equipment) caused by the destruction of power facilities.

- CSG developed specific inspections of important equipment which then promoted equipment management mode of "localization of operation and maintenance and intensification of overhaul" to realize a shift from periodic inspection to state-based maintenance. Based on the condition evaluation of equipment, CSG implemented risk-linked closed-loop management and control, focused on the special patrols and maintenance of submarine cables, major channels for the transmission of electric power from west to east, important crossing points, key and major equipment, and to ensure safe and stable operation of equipment, especially the main power transmission channel from the west to east.
- CSG enhanced the entire "life cycle" of management and equipment, which in turn improved the quality and "lifetime" of critical power grid equipment. These special teams promoted the construction of asset life cycle management and technical standards, updated equipment selection guides and technical specifications and carried out GIS model reviews. These and other actions have vastly improved quality control and supervision and saw a "zero defect" handover of equipment. In Year 2017, the newly commissioned 220 kV GIS equipment achieved "zero defect" and "zero failure" for the first time.



Robot of Zhaoqing Converter Station patrolling converter station equipment

First robot for internal inspection of transformers placed into production

Tracing internal defects and faults of oil-immersed transformers has always been a challenge that upsets personnel during substation inspection. At present, there are no simple and effective technical means to search for internal faults of transformers. After one year of technical breakthroughs, the Shenzhen Power Supply Bureau successfully developed the first "robot" capable of internal inspection of oil-immersed transformers and it was put into use in November 2017.

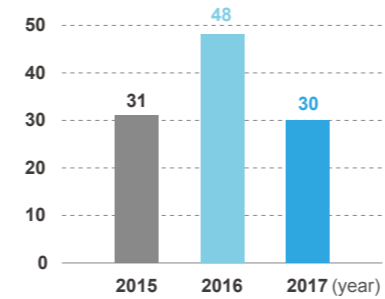
The successful development of the Company's internal "patrol" robots is an important measure to improve the intellectualization level of the power grid. It has realized the internal automation and intellectualization of transformers, effectively solving many issues such as difficulty in internal inspection and high work risk of transformers and greatly shortened the inspection time inside transformers.



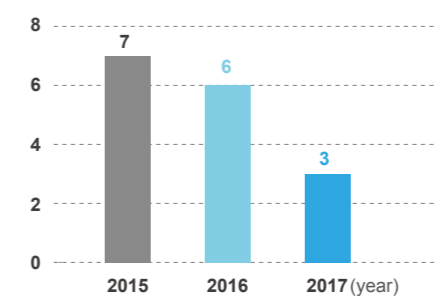
Personal safety

CSG actively promotes the implementation of 26 measures to prevent personal injuries; launched specific overhaul on electrical safety incidents; electricity misoperation prevention and "hidden dangers" of public electrical safety and strengthened safety management of infrastructure construction sites (specifically the safety management of outsourced construction teams).

Level 3+ electrical safety accidents (Unit:case)



Number of personal injuries (including contractors) (Unit:case)



Security reflection Warnings

Production safety responsibilities have not been implemented; safety management has not yet been fully implemented; procedures have not been implemented and personnel habitual violations of rules have not been managed effectively. It needs to take a full range of effective measures to improve this situation.

Carrying out Safety Year of Electric Power Construction activities

CSG has thoroughly implemented a series of important "deployments" for production safety made by the Party Central Committee and the State Council; launched the "Safety Year of Electric Power Construction" and "Production Safety Month" activities and carefully advanced all safety work to build an intrinsically safe grid organization.

- Guangdong Power Grid Co., Ltd. Construction site "7S" management meeting
- Guangxi Power Grid Co., Ltd. Contractor safety supported by "blacklist" management
- Yunnan Power Grid Co., Ltd. The project's equipment and personnel were managed through two-dimensional code
- Guizhou Power Grid Co., Ltd. "Safety year" on-site exchange meeting
- Hainan Power Grid Co., Ltd. Researching and utilizing "on-site management and decision system of infrastructure construction"
- Guangzhou Power Supply Bureau Promoting the app "Ji Jian Bao"
- Shenzhen Power Supply Bureau Building a comprehensive information system for security management
- Ultra-high Voltage Company Camera app for construction applied systematically
- Power Generation Company Launching a "double-blind" emergency drill for wind and flood prevention and personal injuries



Information security

As required by the government for network and information security, CSG has finalized network security management and technology standards, promoted research on key security technologies and system construction for network security situation awareness and guarded against major network security incidents.

- CSG has organized all-round risk assessment and "hidden trouble" investigation and rectification, completed network penetration tests of 71 dispatching centers at prefecture-level (or above) in operational environment, and eliminated cross-network interconnected risks.
- CSG has established a professional team of experts to work on network security to timely cope with the "3.3" worm virus; "5.15" WannaCry ransomware virus outbreak and other emergencies and have implemented 17 problem-oriented prevention and control measures in four aspects such as the removal of system vulnerabilities to improve the ability to defense against cyber-attacks and viruses.

"CSG performed well in defending against the WannaCry virus, fully demonstrating the high attention and fruitful performance of the central state-owned enterprise in network security".

—Guo Qiquan, Chief Engineer of the Ministry of Public Security Cyber Security Bureau

Strengthening publicity and education

- CSG organized a series activities during Cyber Security Week;
- Inviting professionals from the Ministry of Public Security to offer professional lectures on current-event topics.

Strengthening team building

- CSG created a self-control network security team that is tasked with the mechanism of underpinning between attack and defense.
- CSG held the first "Exquisite Work Cup" for professional skills in network security to enhance staff and senior management capabilities.

Taking special actions

- China Southern Power Grid successfully completed the work of network information security during the 19th CPC National Congress.
- CSG collaborated with government regulators and third party organs to fix bugs.

0 Senior company officials successfully prevented attacks such as new-type network ransomware threats - but there were no level 2+ network security incidents during Year 2017

The Company (on average) resisted nearly two million malicious network attacks from the Internet during Year 2017 - more than 200,000 Trojan virus attacks - and more than one million suspicious visits per month.



The internal information security team has made every effort to ensure CSG's network security.

Improving Emergency Capability

Introduction	Corporate Social Responsibility value Safeguarding public safety and public interest	Main stakeholders involved Governments, clients and the public as major stakeholders	Responsibility issues covered Response to natural disasters	Main responsibility fulfillment performance Effective response to 11 typhoons in one year
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CSG always takes public safety and the interests of society as a priority; vigorously promoting the construction of emergency management mechanisms; comprehensively enhancing the intrinsic safety of the power grid and its ability to resist disasters and provide reliable power supplies for economic and social development.

CSG has fought against natural disasters. CSG has completed the construction of emergency bases, so as to ensure an efficient and orderly operation of the emergency response mechanism. Throughout the year, the company has deployed more than 130,000 people for emergency power recovery, repaired more than 34,000 vehicles, and effectively fought against 16 heavy rainfalls and 11 typhoons in power supply areas.

CSG has constantly intensified its efforts to fulfill the three goals of disaster prevention. CSG has made great efforts to promote power grid development planning, building, operation and maintenance, as well as to improve the company's regulations, standards and structure. By doing so, CSG aims to achieve three goals: to build safe and reliable guarantee power grids in urban areas; to build power grids with a stronger capacity for Hong Kong and Macao with higher standards; to build power grids in coastal areas with differentiated standards.

Lean emergency management

CSG has improved its disaster prevention and resilience capabilities and emergency management services - ranging from information obtained on the telephone to visualizing the power grid - from the hasty response to a natural calamity to the improvement of the emergency system and technical equipment.

Full information	Speedily providing supplies	Precise and effective in providing repairs
<p>Real-time transmission of disaster-driven site information via satellite communications network</p>	<p>Nine types of information to be checked at any time on the emergency command platform and information system</p>	<p>"Level 1 + Level 2 + First Aid Pack" mode making transfer of supplies faster</p>
	<p>Emergency supplies allocation platform - Hotline 7100 - is available for 24 hours during these natural disasters</p>	<p>Helicopters and unmanned aerial vehicles are used to investigate on-the-ground situation as CSG staff and senior managers work tirelessly to find ways to regenerate electricity services as soon as possible</p>
		<p>The first domestic application of reinforced tower technology to improve the wind resistance</p>



Mr. Li Qingkui, Secretary of Leading Party Group and Board Chairman of CSG, traveled to Zhuhai to inspect the ongoing repair process to regenerate electricity services in South China and Macao in the aftermath of Typhoon Hato.

Construction of smart grids

Introduction	Corporate Social Responsibility value Leading the economic and social development	Main stakeholders involved Employees, governments, contractors	Responsibility issues covered Construction of smart grids	Main responsibility fulfillment performance Investment for power grid construction reached RMB81.7 billion
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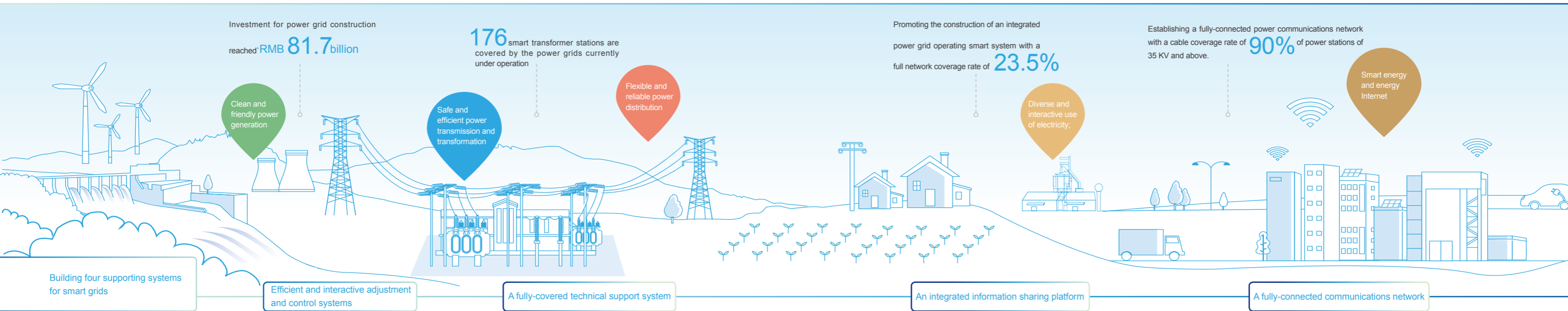
CSG has carried out research on key technologies for smart grids, strengthening the construction of support systems for smart grids, and gradually promoted varied demonstration projects while striving to build safe, efficient smart grids.

Promoting 36 key projects as planned. CSG has vigorously carried out project-related party management and conducted transparent communication on related issues of the power grid construction on a professional basis. The expansion project of the 500 kV Luxi back-to-back converter station was placed into operation ahead of schedule and the ±800 kV power transmission capacity was also on line in advance from the Northwest Yunnan to Guangdong.

Strengthening the application of new technologies. CSG has organized an "exchange conference" on smart grid planning and construction technology as well as the fifth "Golden Dot Award" competition. CSG has also released the first power grid engineering digital standard covering all voltage levels in the domestic power industry.

Comprehensively improving the quality of project construction. China Southern Power Grid has dramatically improved the quality control of key links such as check upon acceptance and assessment standards of infrastructure as well as quality control WHS standards to manage quality issues that could impact the safe operation of the power grid.

Enhancing design management. China Southern Power Grid has established guidelines for smart transformer station design technology, completed design standards for power distribution networks and standard cost revisions and fully supported the construction needs of medium and low voltage distribution networks, power business expansion and other supporting projects.

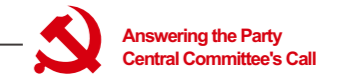


Investment in Power Grid (Unit: 100 million yuan)

	2013	2014	2015	2016	2017(year)
500 kV and above	167	156	178	139	140
220 kV	111	148	154	136	104
110 kV and below	359	349	342	500	573

Awards for Quality Project

- 3** Three projects won the 2016-2017 National Quality Project Award
 - 500 kV Jingxi Transformer Station of the Ultra Voltage Corporation
 - Kaili Zhouxi 500 kV Power Transmission and Transformation Project in Guizhou
 - ±500 kV Chuxiong Yongren Power Converter Station of the Yunnan Power Grid
- 9** Nine projects won the 2017 China Electric Power Quality Engineering Award



- ▶ We must realize that lucid waters and lush mountains are invaluable assets and act on this understanding, implement our fundamental national policy of conserving resources and protecting the environment, and cherish the environment as we cherish our own lives. The modernization that we pursue is one characterized by harmonious coexistence between man and nature.
- ▶ In addition to creating more material and cultural wealth to meet people's ever-increasing needs for a better life, we need also to provide more quality ecological goods to meet people's ever-growing demands for a beautiful environment.

*Excerpt from the report delivered at the 19th CPC National Congress



- ▶ CSG has vigorously pushed forward the optimization of its energy structure, increased the proportion of non-fossil energies and strives to make the sky cleaner with a balanced eco-system throughout the southern region of China.
- ▶ CSG adheres to a "green and low-carbon" development philosophy and places the concepts of green development into the entire process of production and operation to minimize its own energy consumption.
- ▶ CSG continuously promotes the concepts of low carbon and environmental protection as it offers energy-saving services and makes substantial contributions to the economy and society with environmentally friendly products available to millions of customers.



Environmental Protection



To be an envoy of green energy transfers

Green development and clean energy use is a scale plate for measuring the ecological civilization.

To deliver more clean electricity to the five southern provinces is our unshakable responsibility.

CSG bears the weight of driving green development through West-East Electricity Transmission Project.

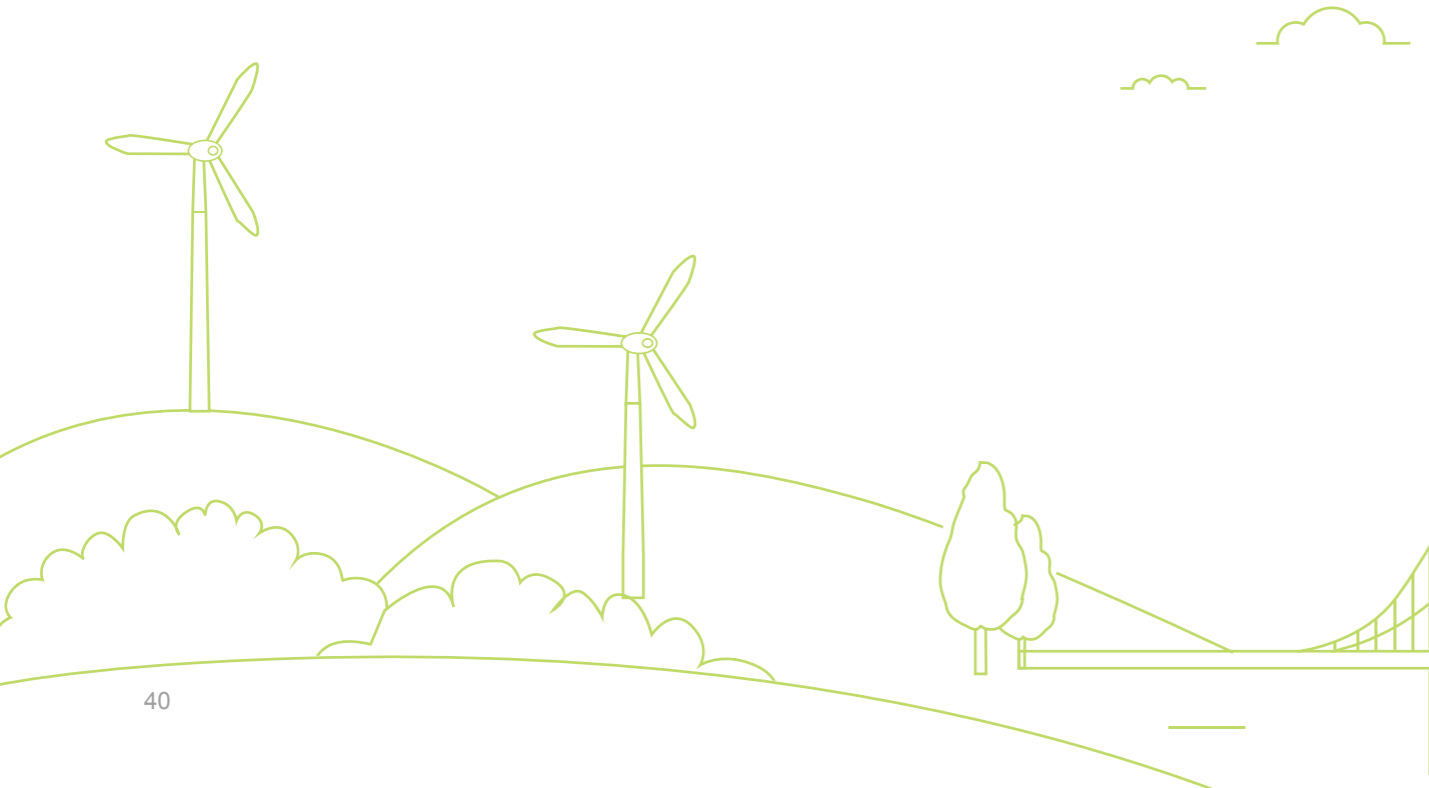
CSG has created an "energy bridge" for a green transmission with a green grid.

CSG promotes its own energy conservation and emission reduction programs through green operations.

CSG contributes to a green development with energy saving services.

CSG is committed to using its power and community involvement to promote an energy consumption "revolution".

CSG builds a clean, low-carbon, safe and efficient energy system and strives to be an envoy in the transmission of green energy.



Key Issues Management



Key Issues

- ◆ Green power supplies
- ◆ Green grid construction
- ◆ Green operations promotion
- ◆ Comprehensive energy services

Major Action Strategies

- ◆ CSG has helped to put into practice the national strategy of "West-East Electricity Transmission" to promote the consumption of clean hydropower in the west.
- ◆ The Company has integrated the concepts of environmental protection into the entire process of power grid planning, construction and operations to create a green corridor.
- ◆ CSG has tapped into its potential for energy saving and consumption reduction to promote its own internal green operations.
- ◆ CSG has provided more diverse, high-quality green products and services and helped society to foster a green and low-carbon production lifestyle.

Core Management Performance

- ◆ Non-fossil energy power generation accounts for 50.8% of the Company's total output.
- ◆ The comprehensive line loss rate of the entire power grid is 6.52%.
- ◆ More than 202.8 TWh of electricity has been transported from the west to the east, a year-on-year increase of 3.84%.
- ◆ Electricity saved on the demand side has exceeded 12.1 TWh.



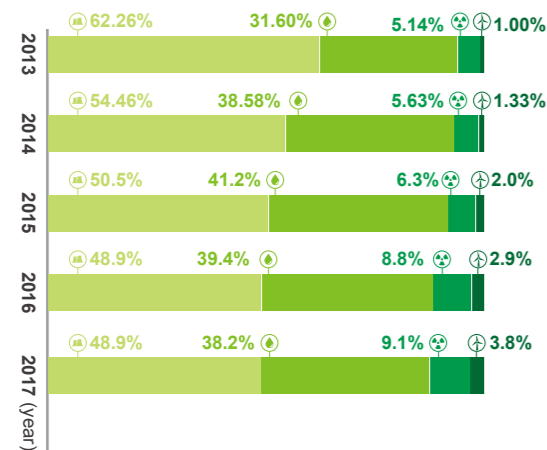
Providing Green Power Supplies

Introduction	Corporate Social Responsibility value Providing green energy for social development	Main stakeholders involved Governments, employees, power generation companies and environment	Responsibility issues covered Accelerating the West-East electricity transmission project and supporting the development of new energies	Main responsibility fulfillment performance Power transported from the west to east stood at 202.8 TWh; abandoned water in Yunnan was reduced by 27.7 TWh.
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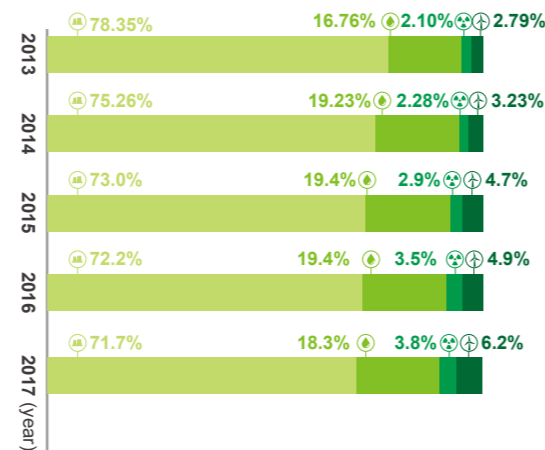
CSG has given full play to the functions of optimal resource allocation platforms to continuously optimize the energy structure and promotes the transformation of energy supplies from centralized, large-scale traditional fossil-based energy, to green and low-carbon sources with distributed green energy and new energies as one of the main sources and thus fostered a new picture of harmonious coexistence between humanity and nature. In Year 2017, installed capacity of CSG's non-fossil energies accounted for 50.2% of the Company's total output; comprehensive energy consumption per RMB10,000 output value stood at 0.151 tons of standard coal. The energy consumption of electricity generated and received per unit was 142.5 grams of standard coal per kilowatt hour, a year-on-year decrease of 0.90%; West-East electricity transmission delivered 87% clean energy, an increase of 5.3%.



CSG's regional power generation structure:



National power generation structure:



The greenest 50Hz

Hydropower utilization in Yunnan with all efforts

CSG has tapped into its potential for energy saving and consumption reduction to promote its own internal green operations. During Year 2017, the accumulated water during the flood season in the Lancang River and the Jinsha River in Yunnan Province was more than expected with water levels of major hydropower stations such as Xiaowan and Nuozhadu reaching (or approaching) the warning line many times and thus the hydropower enterprises were under great pressure to abandon water.

With the scientific management of the Company, 20 measures for hydropower utilization were implemented in Yunnan to enhance the capacity of the West-East power transmission channel. CSG then increases space for hydropower utilization in Yunnan to reduce the amount of abandoned water-generated power.

Innovatively replacing thermal power from Guizhou with hydropower from Yunnan in delivering electric power to Guangdong

In September 2017, after holding coordination meetings among relevant governmental departments of Guangdong, Yunnan and Guizhou provinces and power grid companies on replacing thermal power from Guizhou with hydropower from Yunnan to deliver power to Guangdong, contract trading between thermal power in Guizhou and hydropower in Yunnan was first listed at the Guangzhou Power Exchange Center, as a means of market-oriented transactions. The transaction volume reached 0.62 TWh in side electricity generation via the power grid. Fourteen hydropower stations had bid for the project and the transactions were completed in full.

The listing of contract trading between thermal power and hydropower that was then transferred to Guangdong via diversified cross-provincial and cross-regional power trading, achieved a great synergy among hydro, and thermal power originating sources which improved the utilization of clean energy sources and achieved outstanding environmental protection, energy conservation and emission reduction benefits.

This in turn effectively eased the pressure on the regional coal supplies and made a substantial contribution to the sustainable development of the Guizhou provincial energy industry. The listing of contract trading between thermal power and hydropower that was then transferred to Guangdong via diversified cross-provincial and cross-regional power trading, achieved a great synergy among hydro, and thermal power originating sources which improved the utilization of clean energy sources and achieved outstanding environmental protection, energy conservation and emission reduction benefits.

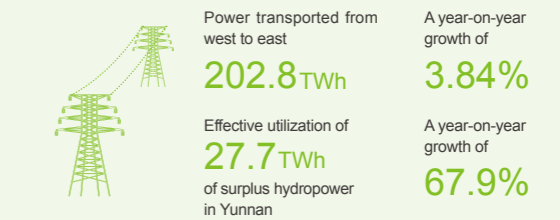
This in turn effectively eased the pressure on the regional coal supplies and made a substantial contribution to the sustainable development of the Guizhou provincial energy industry.

Optimizing the dispatch running schedule

China Southern Power Grid optimized the cascade hydropower dispatch running schedule to give full play to the regulating role of the main reservoir. CSG further optimized the cascade hydropower generation arrangements, according to the water inflow from each basin and the water level of the reservoir. The role of the main reservoirs, including Xiaowan and Nuozhadu, were brought into full play to minimize the abandoned water pressure of cascade hydropower stations in the middle areas of the Jinsha River and other runoff hydropower stations.

Strengthening channel construction

CSG completed the defect elimination of STATCOM in the Funing Converter Station before the Year 2017 flood season. It was the Yongfu's DC transmission capacity that reached 3 GW, which increased Yunnan's outgoing capacity by 600 MW. The unit extension project of the Luxi Back-to-Back Converter Station was placed into operation, increasing the outgoing capacity of Yunnan by one million kW. In Year 2017, Yunnan's power transmission capacity peaked at 26.2 GW.



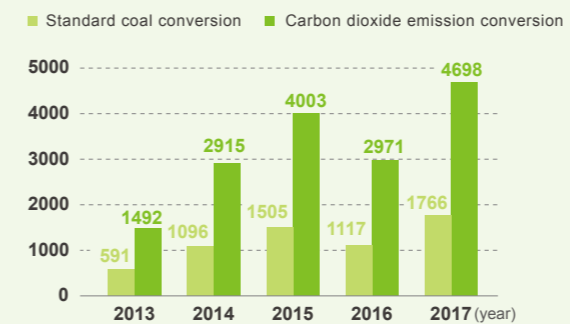
Improving power price mechanisms

CSG has pushed forward the improvement of cross-provincial power transmission price mechanism to enhance Yunnan's competitiveness in delivering hydropower. The Company has further launched the first electricity package plan across the nation. In it, residents who use more than 4,000 kilowatt hours of electricity, per year, could select multi-step electricity pricing or electricity package.

Expanding utilization market

CSG has accelerated the extension of its fiscal investments to improve the efficiency for power business expansion which shortened the construction time for customers and realized quick access and sufficient use of electricity; CSG has vigorously exploited the marketplace for electric power replacement and during Year 2017, the Yunnan Power Grid Co., Ltd., had achieved electric power replacement of 1.26 TWh.

Environmental Benefits Generated from Clean energy deployment (Unit: 10,000 tons)



Advanced development of new energy

China Southern Power Grid strives to build a smart grid that adapts to green and low-carbon development and smart usage demand of distributed new energy access as well as of higher levels of automation and intelligence. During Year 2017, new energy capacity of grid-connected access of wind power, photovoltaic power and other new energy sources reached 6.4 GW, a year-on-year increase of 30%, and the proportion of wind power and photovoltaic power generation utilization stood at 97.74% and 99.41% respectively.

Installed wind power capacity within the region reached **17.12 GW**
 Installed photovoltaic capacity within the region stood at **8.33 GW**

Installed biomass power capacity within the region reached **1.58 GW**



China Southern Power Grid has accelerated the construction of new energy management standards, technical specifications and monitoring systems, and made new energy sources including full-scale wind power and photovoltaic power generation plans fully included in the dispatch system to ensure coordinated and orderly development of these exciting new energies.



CSG has stepped up the improvement of new energy generation supporting measures and the new energy set grid-connected standard system to increase technological innovation and enhance the ability of grid-connected utilization of new energies.



CSG has proactively supported new energy equipment manufacturing enterprises to provide basic support for new energy development.



The Company has actively participated in the construction of new, nationwide energy demonstration projects. In Year 2017, the Nansha Smart Micro-Grid Project of the Guangzhou Power Supply Bureau was approved as a National New Energy Micro-Grid Demonstration Project.

Serving the world's first grid-connected PV power plant for fishpond

In 2017, the PV power plant for fishpond in Lanchong Village, Guangpo Town, Gangkou District, Fangchenggang City, Guangxi, served by Fangchenggang Power Supply Bureau of Guangxi Power Grid Co., Ltd., has achieved grid-connected power generation. Lanchong Village has combined photovoltaic power generation with shrimp industrial aquaculture. It places the photovoltaic modules above the shrimp industrial aquaculture workshops, and integrates outdoor power generation and indoor aquaculture, contributing to the world's first PV power plant for fishpond. CSG has been dedicated to building the power plant and helping villagers make use of the solar power, which has boosted green energy development.



"With the strong coordination of the power supply sector, the mariculture solar energy project was completed with high quality and efficiency. Next, we will focus on the work of promoting photovoltaic strong towns, and bringing wealth to the villagers through photovoltaic energy."

- Chen Hongyuan, Head of Mariculture Solar Energy Power Station

Construction of Green Grids

Introduction	Corporate Social Responsibility value The harmonious coexistence between the power grid construction and environment	Main stakeholders involved Governments, employees, subcontractors, the public and environment	Responsibility issues covered Building green transformer stations, creating green corridors and establishing power grid construction communication	Main responsibility fulfillment performance 99% of infrastructure project designs reached first class in green design
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CSG has continued to improve the management mechanism and early warning emergency mechanism of environmental protection; integrating green environmental protection into the power grid construction and the entire process of planning, construction and operation of transformer stations, establishing a normalized communication mechanism with stakeholders thus joining hands with stakeholders to participate in the construction of green power grids.

Constructing green transformer stations

The company adheres to the ideas of resource conservation and environmental protection, vigorously adopted new types of environmentally-friendly and energy-saving materials, introduced intelligent equipment to make transformer stations more energy-efficient, water, land and material saving, which is more in line with environmental protection standards and requirements, and strives to achieve harmonious integration of transformer stations and the surrounding environment.

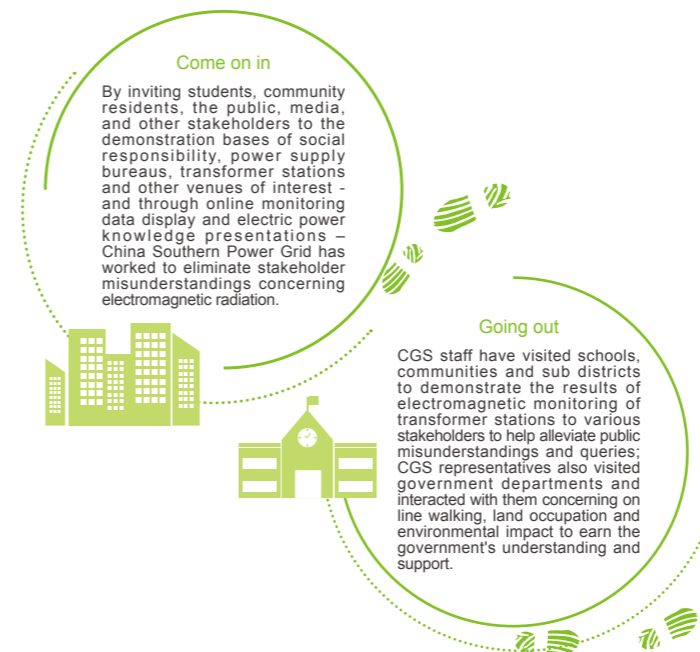
- Conserving resources:** China Southern Power Grid has promoted consumer use of water-saving appliances and used green construction materials with rational distribution of transformer station areas to strictly implement national energy-saving standards during new construction.
- Reducing pollution:** Plate-type double-layer sound-absorbing panel walls were installed around the main transformer interior walls to reduce noise pollution; the production of solid waste was reduced through earthwork balance; sewage was discharged through the sewage treatment system.



The country's first plant-insulated oil transformer was successfully developed in Guangzhou with each transformer saving nearly 20 tons of mineral oil per year.

Power grid construction communication

CSG has adopted an open and transparent attitude to build a comprehensive communication network that covers all stakeholders, and created a two-way communication atmosphere conducive to honest dialogue. Through the Power Grid Open Day, 95598 hotline, Dual Micros platform and other channels, CSG achieved timely communication and exchanges with stakeholders on power grid construction planning, electromagnetic radiation and other issues of concern to eliminate misunderstandings and concerns and strive to obtain understanding and support from their stakeholders.

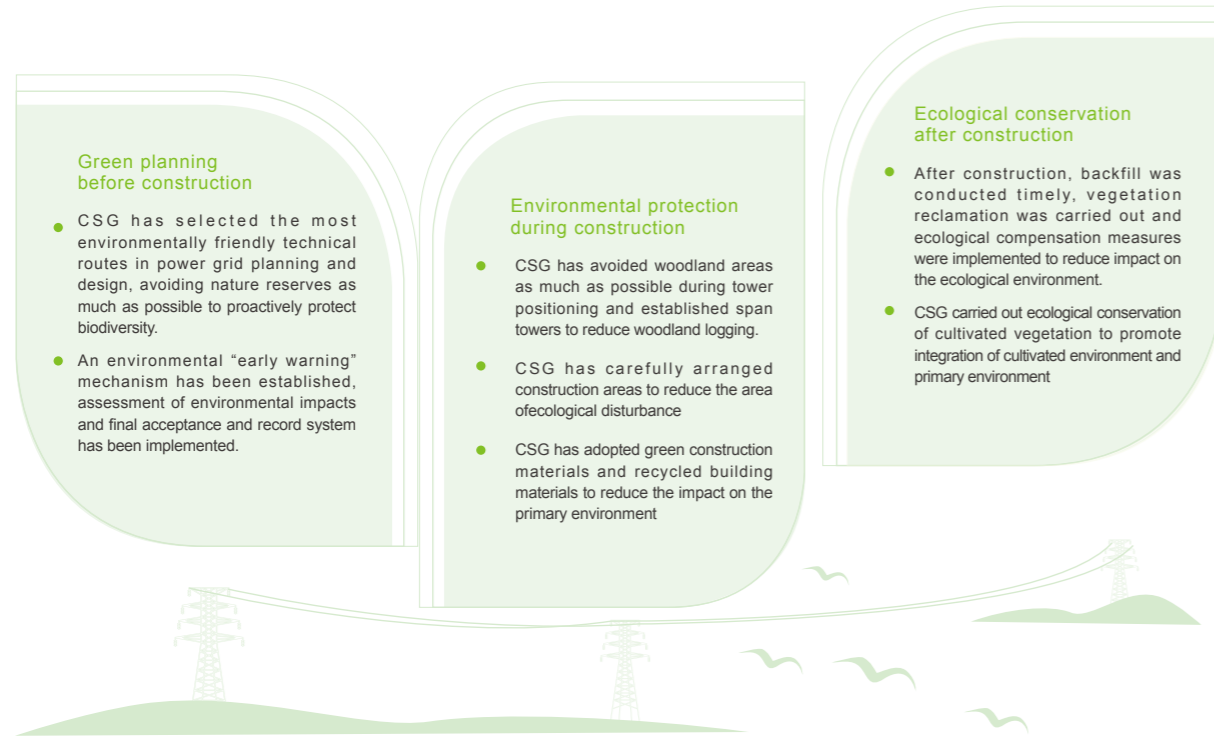


Big news agency digging into the 500 kV Meilin Transformer Station

Creating a green corridor

CSG has integrated the functions and requirements of ecological services such as protection of biodiversity and prevention of soil erosion into the entire life cycle of the power grid construction and clarified the environmental protection requirements for each link of power grid construction to strive to create a green corridor in harmony with the environment.

Throughout Year 2017, 99% of infrastructure project designs earned "First Class" honors in green design with ecological restoration and control rate of the grid construction reaching 100% ... and the environmental rate of approval for the grid construction standing at 100%.



CSG Brother Lei Feng service team protect the home of little egrets

CSG Brother Leifeng Service Team of the Guangxi Power Grid Co., Ltd., persisted in long-term patrolling at the habitat of the little egrets in the Wanhe Mountain in Wutou to safeguard more than 10,000 migratory little egrets each year. They voluntarily organized donations to purchase saplings to plant trees within the forests of Jing. They also advocated that villagers and tourists in the surrounding areas cooperate with them in patrolling these habits. During the holidays, they spontaneously organized inspection areas and stopped tourists from potentially doing harm to the surviving environment, created promotional slogans and proposals and advocated people from all walks of life to protect little egrets. Since the establishment of the Jiangping group, they have carried out 26 volunteer publicity activities; set up 20 billboards and warning signs; saved 28 injured white little egrets; planted 650 mangrove seedlings and demolished 1,300 meters of bird nets. All this and much more was done with the purpose of creating an ideal home for egrets.



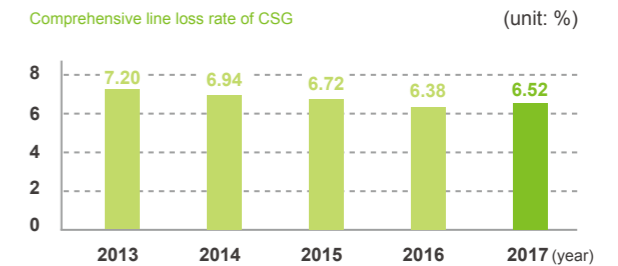
Promoting Green Operations

Introduction	Corporate Social Responsibility value Improving energy conservation and emission reduction impact at the power grid side	Main stakeholders involved Governments, employees, subcontractors, the public and environment	Responsibility issues covered Lean management of line loss, waste management and green office	Key performance indicators of CSR The comprehensive line loss rate was 6.52%.
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CSG works to reduce energy losses and adverse impacts on the environment during the operational process, actively promoting the integrated development of energy conservation, pollution reduction, consumption reduction and carry out green operations with "real world" results.

Lean management of line loss

CSG is truly creative when dealing with ideas of line loss management, improved lean management of line loss and reduced operating line loss from all aspects such as management and technology. During Year 2017, the rate of comprehensive line loss was 6.52%, and the rate was controlled at a low level below 7% for four consecutive years.



Note: Increased long-distanced power supply in West-East transmission across provinces and improved management contributed to a more accurate line loss rate. This can be reflected in the statistics in 2017, i.e. an increased comprehensive line loss rate.

Management

- Daily tracking, weekly analysis and monthly reporting mechanisms were established to form a systematic line loss management experience for promotion. The statistical analysis of the line loss in Guangzhou and Shenzhen were carried out on a daily basis rather than on a monthly basis.
- Problem-oriented and project-based analysis and solutions were conducted to resolve issues relating to the monthly fluctuation of line loss rate caused by different periods of electricity meter reading.

Technology

- CSG promotes the use of energy-saving environmental protection equipment, replaced energy intensive transformers and increased reactive compensation capacity.
- CSG has pushed forward lean management of power usage in power plants and stations to reduce power consumption. For example, the Qingyuan Pumped Storage Power Station has undergone a technological transformation, realized by sub-metering and visualized management of the power plant with direct plant electricity consumption rates reduced by 32% - year-on-year.

Fighting against line loss - winning back lost power

During Year 2017, the Yanhe Power Supply Bureau of Guizhou Power Grid Co., Ltd., carried out an "sword action" to reduce line loss. Throughout the entire year, CSG completed the "labelling" work of 55 10kV lines in 2328 stations to clarify the line loss management in each area. Combined with electricity inspection, CSG staff eliminated such behaviors as misappropriation, missed reading and wrong reading to recover the electricity of 86.1 MWh. Since the launch of the "sword action", the line loss rate of the Yanhe Power Supply Bureau decreased by 0.23%, and 1194.4 MWh of power losses were retrieved.




Waste management


CSG has actively explored ways to maximize the use of waste resources, continuously improving the recycling rate of waste and strived to reduce the impact of waste emissions on the environment.

- **Solid waste management:** The waste generated during power grid construction was backfilled on site; with the goal of "lowest stock of idle materials", a cross-bureau and cross-project resource allocation mechanism was established to increase the utilization rate of idle inventory.
- **Waste water management:** According to the difference of domestic sewage and oily wastewater, different treatment processes were adopted to maximize recycling.
- **Exhaust gas management:** Sulfur hexafluoride, a major gas pollutant, was collected, stored, purified and re-entered the circulatory system for utilization.



Ultra-high voltage company performing substation equipment maintenance.

 Waste oil recovery rate of transformers **100%**

 Sulfur hexafluoride recovery rate **100%**


Green office

CSG took energy management and resource conservation as the starting point, integrated the idea of green development into the daily work of employees, created a green office "atmosphere" and encouraged employees to save water, save electricity, save paper, and choose green travel to support green and low-carbon development with practical results.

- After abundant research and studies, CSG established an energy-saving office management index system, carried out energy monitoring and management through energy-saving office indicators, implemented energy-saving reforms and improved overall office energy-savings.
- All major conferences used paperless conference systems to reduce conference supplies consumptions and steadily advance network video conference applications.
- CSG actively promotes the energy-saving renovation of office buildings by using a contract energy management model, conducted year-on-year and ring-to-quarter analysis of office energy consumption and focused on controlling office energy consumption.

 Year-round video conferences increased by **21%** - year-on-year

Headquarters meetings were decreased by **14%** Conference costs were reduced by **29%**

 CSG's office energy consumption per ten thousand output value reached **0.0036** tons of standard coal per RMB10,000

A year-on-year decrease of **5%**

Integrated energy services


Introduction	 Corporate Social Responsibility value Driving demand-side energy conservation and emission reduction	 Main stakeholders involved Employees, customers, the public and the environment	 Responsibility issues covered Supporting electric vehicle development, assisting customers in energy savings	 Key performance indicators of CSR Newly added 11.4 TWh of electric power replacement electricity
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On the basis of strengthening its main business, China Southern Power Grid accelerated its internal industrial transformation and actively developed an integrated energy business, making green and low-carbon electric power a priority.

Developing an integrated energy service system

China Southern Power Grid exerted its advantages in brand, technology and customer resources and played the role of a professional platform of integrated energy business ... thus developing an integrated energy service system in all aspects. In Year 2017, the demand side's saving of electric power reached 726.3 MW.

Placing a concentration on industrial parks, industrial enterprises, large public buildings, large commercial complexes and other key objects, CSG staff utilized such technologies as "Cloud Big Things" (cloud computing, big data, mobile internet and artificial intelligence) to develop a new smart energy business model that is focused on users and based on electricity, thus providing customers with diversified integrated energy supply and value-added services.

 Newly added **11.4 TWh** of electric power replacement electricity


Conducting electrification

The Company accelerated the process of electrification and promoted such electrification technologies as an electric boiler heating system; heat pump system; electric cold storage air-conditioning system; port electrification system and electromagnetic kitchens in line with local conditions, thus increasing the proportion of electric power in terminal power consumption and improving industrial technology upgrading. During Year 2017, 4,232 electric power replacement projects were completed.


CSG is the nation's pioneer in developing electromagnetic kitchens. On the basis of carrying out developments from the inside out, the electromagnetic kitchen reformation within the system was carried out in Guangdong, Guangxi, Yunnan and Hainan provinces.

CSG has steadily advanced port electrification business. In response to related national policies of port electrification, the Company finished its first project using high-voltage frequency conversion shore-based power supply technology - the Dongguan Humen Shore-to-ship Power Project - having newly built two sets of 800 kW of shore-side power equipment for the port.

CSG has accelerated distributed energy projects. "The Distributed Natural Gas Energy Station Project of the National Supercomputer Center in Guangzhou" was heavily invested and built by CSG. This project used natural gas as a key fuel to realize combined cooling and electric power supply, with its energy utilization efficiency exceeding 70 %.

 **The first "Comprehensive Demonstration Area for Internet + Smart Energy Consumption" was placed into operation**

In Year 2017, the company's first "Comprehensive Demonstration Area for Internet + Smart Energy Consumption" was launched at the Sino-Singapore Guangzhou Knowledge City. This program has been designed as an integrated energy service system for users. Based on a communication network constructed with electric fiber for home users which is augmented with key elements including an integrated centralized meter reading systems of electricity, water and gas; these smart homes feature distributed energy and charging facilities, offering homeowners a true energy-efficient use of electricity consumption.

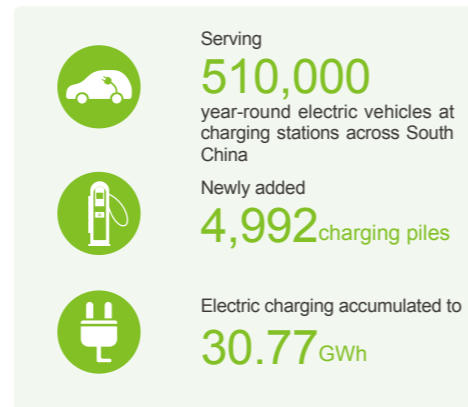


Supporting electric vehicle development

China Southern Power Grid increased its investment in the infrastructure of electric vehicle charging stations and dramatically improved electric vehicle intelligent charging service platforms to support the burgeoning electric vehicle industry with conveniently located, fast charging services.

Building up the regional infrastructure. CSG enhanced the construction of charging facilities in public areas in cities such as Guangzhou and Shenzhen; placing an intercity "fast charging station" every 50 kilometers, serving as a "safety net" in key areas. These actions build confidence in company staff to purchase and use their electric vehicles on a daily basis.

Building charging platforms. CSG staff improved the network-level "Duduchong" electric vehicle charging intelligent service platform, realizing the integration of intelligent charging terminals and provided a "quick-steering, one-button navigation, one-button charging, one-button payment" and other rapid service functions. The "Duduchong" charging platform has access to 2,257 charging stations and 15,360 charging points.



CSG built the country's first "transformer station + charging station" site

41 fast AC charging points

9 fast DC charging points

Photovoltaic power generation system generates **64** MWh of electricity per year

Be able to meet the fast charging requirements of **720** electric vehicles per day

Shenzhen Lotus Hill Charge-swapping Station

Innovation of green and smart service

CSG has integrated the concepts of "Internet +" into the development of its energy-saving services to the general public, and taking an active role in working with engineers in the planning of the urban energy internet by constructing a cloud service platform of smart energy consumption that aids in measuring smart energy consumption communities and demonstration areas, thus laying an energy foundation for the transformation and upgrading of the city. The Company completed specific plans of the first eight "Internet +" smart energy demonstration projects as two demonstration projects were selected as the first "Internet +" smart energy (energy Internet) demonstration projects of the National Energy Administration.

Building integrated energy demonstration areas to realize smart energy consumption

In 2017, the Dongguan Power Supply Bureau, the subsidiary of Guangdong Power Grid Company, and Dongguan SSL (Eco-park) National Hi-tech Industrial Development Zone Administrative Committee signed a "Strategic Cooperation Framework Agreement of Dongguan SSL International First-Class Integrated Energy Demonstration Area".

The demonstration area would be based on a "smart grid" to form an integrated energy network that uses a combination of electricity, heat, and natural gas. With the help of advanced technologies such as cloud computing and intelligent control, plans call for the building of an efficient, intelligently utilized, integrated energy demonstration area which will be a national model of green and low-carbon development.

During Year 2017, CSG improved the "upstream and downstream" performance of energy conservation and emission reductions.

Items	Amount of electricity (0.1 TWh)	Standard coal conversion (10,000 tons)	Carbon dioxide emission conversion (10,000 tons)	Sulfur dioxide emission conversion (10,000 tons)
Incremental power generation by non-fossil energy	602	1735	4614	33.3
Clean energy deployment	-	1766	4698	34.6
The decline of comprehensive line loss rates	19	55	146	1.1
Demand-side energy conservation and emissions reduction	12.1	37	99	0.7
Grand total	-	3593	9557	69.7

Accumulated performance enhancement of the "upstream and downstream" energy conservation and emission reductions in the electric network since Year 2011.

Items	Amount of electricity (0.1 TWh)	Standard coal conversion (10,000 tons)	Carbon dioxide emission conversion (10,000 tons)	Sulfur dioxide emission conversion (10,000 tons)
Incremental power generation by non-fossil energy	7609	22624	60182	436
Clean energy deployment	-	6785	18048	131.7
The decline of comprehensive line loss rates	244	728	1936	13.5
Demand-side energy conservation and emissions reduction	78.24	247	655.4	5.15
Grand total	-	30384	80821.4	586.35



 **Answering the Party
Central Committee's Call**

- » Law-based governance is an essential requirement and important guarantee for socialism with Chinese characteristics. We must exercise Party leadership at every point in the process and over every dimension of law-based governance, and be fully committed to promoting socialist rule of law with Chinese characteristics. We must improve the Chinese socialist system of laws, at the heart of which is the Constitution; establish a Chinese system of socialist rule of law; build a socialist country based on the rule of law.
- » Only with socialism can we save China; only with reform and opening can we develop China, develop socialism, and develop Marxism. We must uphold and improve the system of socialism with Chinese characteristics and continue to modernize China's system and capacity for governance.
- » We should pursue the Belt and Road Initiative as a priority, give equal emphasis to "bringing in" and "going global," follow the principle of achieving shared growth through discussion and collaboration, and increase openness and cooperation in building innovation capacity. With these efforts, we hope to make new ground in opening China further through links running eastward and westward, across land and over sea.

*Excerpt from the report delivered at the 19th CPC National Congress

 **CSG in Action**

- » The Company takes its business operations according to law as a main task as well as defending rights according to law as its entry point, exercising power according to law and takes the culture of the rule of law and the rule of law team construction as the foundation to accelerate the advancement of managing enterprises according to law.
- » The Company follows the law of the marketplace and the development laws of the electric power industry, using a problem-oriented approach that challenges supply-side structural reform, focusing on key issues, supplements shortcomings and making improvements along the way that enhances the company's vitality, international competitiveness and risk resistance capability.
- » The Company is ramping up its posture of "going global" as it accelerates the construction and operation of power interconnection projects with neighboring countries with emphasis on electric power cooperation to help construct the Guangdong-Hong Kong-Macao Greater Bay Area.



Operating efficiency



A good life is earned through hard work

Economic development is inseparable from electricity.

CSG is in joint efforts with its valued customers to work hard and earn a better

life for the five provinces and regions of South China; managing the Company

according to law and regulations to be a driving force for development.

Electric power market reform adds vigor to development.

In joint efforts with value-chain partners, CSG shares its development results.

Under the Belt and Road Initiative, the footsteps of CSG become firmer.

Let's join hands together, to build a better world.

Key Issues Management



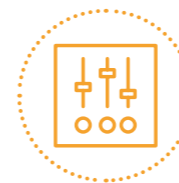
Key Issues

- ◆ Company management according to law and regulations
- ◆ Deepening and furthering reform
- ◆ International exchange and cooperation
- ◆ Lean management promotion
- ◆ Liability value extension



Major Action Strategies

- ◆ CSG insists on managing the Company according to law and regulations, CPC Party conduct and clean government construction and internal audits.
- ◆ CSG promotes lean management to reduce and eliminate waste in the whole process by involving all factors.
- ◆ CSG carries out transmission and distribution price reforms to advance the construction of the electric power marketplace.
- ◆ The Company also extends the value chain of responsibility to help suppliers and contractors fulfill their responsibilities.
- ◆ CSG also practices the "Belt and Road Initiative" in carrying out various forms of international exchanges and cooperation.



Core Management Performance

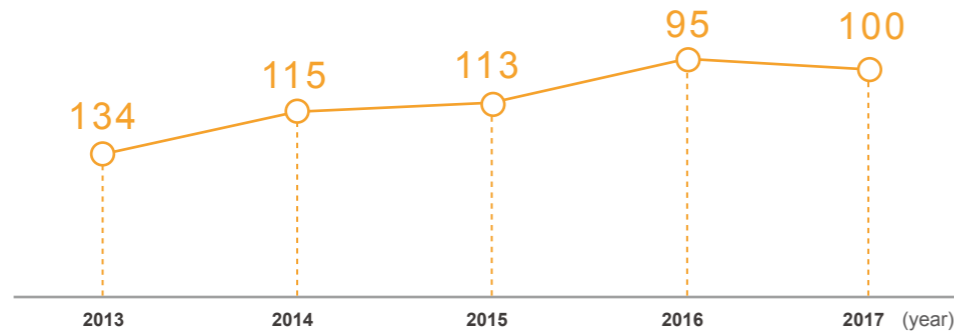
- ◆ Electricity sales topped 890.2 TWh for an increase of 7.3%.
- ◆ Total assets reached RMB744.5 billion for an increase of 8%.
- ◆ For the 11 consecutive years, CSG has been honored as Class A in the Examination of Business Performance by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). The Company ranks 100th among the world's top 500 companies.



Key business performance

China Southern Power Grid continues to increase efficiency, promote reforms and address potential internal challenges. Through an active adaptation to new mechanisms of electricity transmission and distribution price reforms, the achievement of annual operating goals and the steady decline of asset-liability ratio, CSG has been awarded a Class-A Prize in the Examination of Business Performance by the SASAC for 11 consecutive years, ranking 100th among the world's top 500 companies and – for the first time – ranked 299th among the world's top 500 brands.

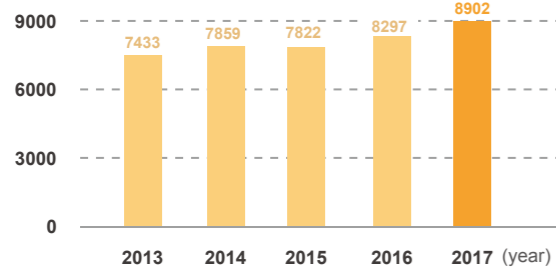
The Company's ranking in the world's top 500 companies



Key performance indicators of the company's operation in Year 2017

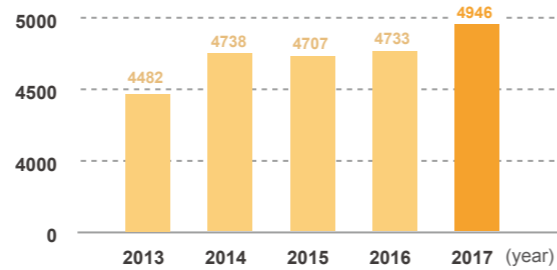
Electricity sale: 890.2 TWh (unit: 0.1 TWh)

Year-on-year growth of 7.3%



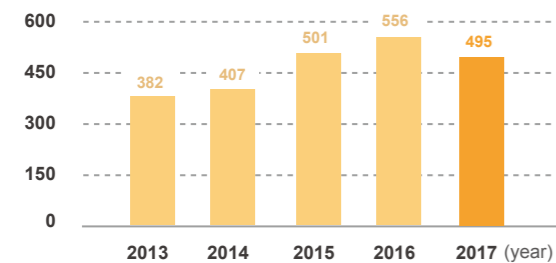
Revenue: RMB 494.6 billion (unit: 100 million yuan)

Year-on-year growth of 4.5%



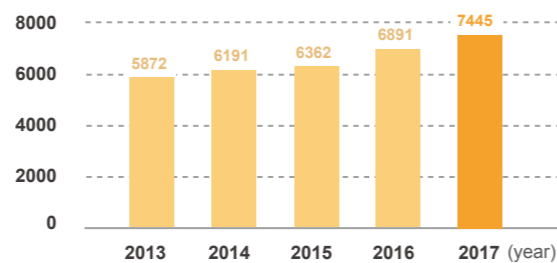
Total tax revenue: RMB49.5 billion (unit: 100 million yuan)

Year-on-year decline of 11.0%



Total assets: RMB744.5 billion (unit: 100 million yuan)

Year-on-year growth of 8%



Note: CSG has reduced power transmission and distribution prices, delivering benefits of such reform. CSG has supported the development of real economy and replaced business tax with value-added tax, leading to a lower tax burden and a decline in total profits and taxes in 2017.

Solid foundation for development

Introduction

- Corporate Social Responsibility value**
Business operations are conducted according to law and regulations and optimization of operating capabilities
- Main stakeholders involved**
Government, regulatory agencies, employees
- Responsibility issues covered**
Law-based corporate governance, anti-corruption, internal audit and lean management
- Key performance indicators of CSR**
Total labor productivity: RMB 520100 /person per year

CSG insists on comprehensively managing the Company according to the law, deepening the reform of internal institutional mechanisms and establishing a management and control mode of "headquarters focusing on planning, provincial companies focusing on business, and local power supply bureaus focusing on strengthening the base, and competition-based companies focusing on dynamism" to build a thoughtful and thoroughly professional management system.

Business operation according to law and regulations

As a leader in the international community, China Southern Power Grid takes great pride in its corporate identity which has as its hallmark the essence of integrity, rule of law and internal auditing as a "troika" of stability and works hard to build a rule-based, state-owned enterprise that is well-managed, operationally compliant, regulated and law-abiding.

Taking clean atmosphere as escort



CSG has always placed intensive internal challenges on "not dare to rot", which contributes to the continuous decline of corruption stock, effectively curbing corruption and effectively improving its political foundation. The Company actively promotes a pilot program of standardization of "four forms" of discipline supervision and enforcement and improves employees' awareness of integrity which aids in effectively preventing "small problems" from turning into "big mistakes".

The Company rebukes improper practices and corruption that can damage the interests of the people, banning market entry of suspected bribery suppliers, thus safeguarding a fair and just market environment. CSG carries out an activity of "reviewing" inspection tours for rectification and action against specific problems and actively promotes the construction of the "non-corruptible" institutional mechanisms in eight key areas to continue to enhance its business practices.

For seven years in a row, CSG has held seminars on integrity for Company leaders and conducted interviews with staff who have undergone corrective actions; continuing to strengthen staff awareness of "unwilling to corrupt".

The assistance of the rule of law



CSG gives full play to the role of legal review and approvals to ensure seamless progress of many major reforms; resolving major legal cases and avoiding or recouping economic losses of RMB1.06 billion.

Promoting management through audit



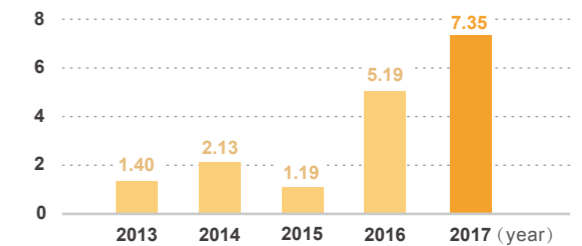
CSG has both reformed and streamlined its internal audit system to effectively carry out project audits which strengthen the Company's major project management.



The Guangdong Power Grid Zhaoqing Power Supply Bureau built a visualized "incorruptibility education base" with electricity waste materials

Opinions on Accelerating the Stringent Corporate Management in Accordance with the Law formulated by CSG was promoted by the State-owned Assets Supervision and Administration Commission of the State Council as one of the top three outstanding cases of top-down design for the rule of law in state-owned enterprises.

Revenue growth and expenditure reductions by auditing (unit: 100 million yuan)



Management promotion



Cao Zhian, Board Director, General Manager of the company and Deputy Secretary of the Leading Party Group, visited the production line and gave in-depth guidance

The Company is focused on "eliminating waste, creating value, making improvements, and seeking the best". Taking a good grasp of two carriers for comprehensive benchmarking management and independent improvement for all staff, the Company has vigorously established improvement mechanisms such as compliance incentives to build up a management advancement system.

When it comes to problem-oriented approaches, since Year 2015, CSG has carried out "special operations" in key areas and key links of production and operations to accurately solve challenges to the Company's production and operations. In Year 2017, eight special operations generated remarkable results in continuously improving business performance and the generation and use of clean energies.

CSG employs a service philosophy to lead all staff by organizing training at different layers and levels and through the combination of theory and practical training exercises.

CSG sets-up, organizes and conducts benchmarking for all affiliated companies under its direction with 78 companies meeting or exceeding domestic and industry-leading standards.

CSG shares the benefits! The Company has implemented 7S management and launched the "Lean CSG" app and encourages staff to carry out reforms based on their own posts to reduce the burden on the specialized management teams and improve their own business expertise.

Gaining Development Momentum

Introduction	Corporate Social Responsibility value Deepening and furthering reform to release its dividends	Main stakeholders involved Government, regulatory agencies, employees	Responsibility issues covered Electricity system reforms, state-owned enterprise reforms and internal system reforms	Key performance indicators of CSR Reducing electric power consumption costs of customers by RMB54.5 billion throughout the year
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China Southern Power Grid has always insisted on the orientation of Socialist market economy reforms. Taking supply-side structural reforms as the main task, the Company promotes a "revolution" of quality and efficiency and continues to deepen the reforms of the electric power system, state-owned enterprise and assets and internal systems so that these structural changes can be widely shared among the society.

Electric power system reforms

The Company continues to play its role as a "practical field" of electric power system reforms and further promotes the implementation of transmission and distribution price reforms, electric power market construction, electricity sale side reforms and incremental power distribution reforms, thus presenting the "CSG experience" as a positive nation-wide example.

Carrying out transmission and distribution price reform in all aspects

- Five southern provinces including Guangdong, Guangxi, Yunnan, Guizhou and Hainan have fully carried out transmission and distribution price reforms
- The approval of cross-provincial and cross-regional power transmission price is promoted in a professional manner

Steadily promoting retail side reforms

- The company has established 25 power sales companies and actively participated in market competition.
- The company acting as an agency has traded 11.89 billion kilowatt hours of electricity, which accounted for more than 11.1 % of the total agent electricity traded within the company's service territory.

Reducing electric power consumption costs of customers by RMB

54.5

billion throughout the year

Steadily advancing electric power market development

- The provincial-level electric power trading centers within the company's service territory were all established and an electricity market system with effective competition was in place. During Year 2017, 268 billion kilowatt hours of intra-provincial market-based electricity were sold, accounting for 30.1 % of the total electricity sold by the company.
- The company has established and perfected market rules and trading technology platforms to standardize the trading institutions at both company and provincial levels.
- The company has kept increasing trading varieties. The spot market development has been included in the first batch of national pilots and officially launched.

Launching incremental power distribution reforms in an orderly manner

- The company takes the initiative to assist the government with special distribution network planning and technical standards establishment so as to attract social capital to incremental power distribution. The first group of 20 projects within the company's service territory was all co-funded by different parties.
- The company has incorporated 219 independent power supply districts and achieved breakthroughs in regional grid reforms in Laibin (Guangxi Autonomous Region) and Baoshan (Yunnan Province).

The leanest 50Hz

The Company takes its responsibility to its millions of customers very serious, seeking a conscious effort for every staff's daily work and providing people with access from "electricity", to "good electricity".

Production and construction

The Guangdong Power Grid Company has implemented a streamlined project that has increased the balance of production project progress while managing security and capital risks.

During the first three quarters of Year 2017, project progress reached a year-on-year increase of

38.4%

Grid dispatch

The power supply bureaus in all 66 cities and regions of the entire network have established an integrated control and operation mechanism to dispatch and directly monitor and control equipment, greatly improving daily production and incident response efficiency.

The coverage rate of centralized monitoring of transformer station of the entire network reached

94.5%

Low-voltage meter reading

The Hainan Power Grid Co., Ltd., Guangzhou Power Supply Bureau Co., Ltd., and Shenzhen Power Supply Bureau Co., Ltd., track real-time customer information on power consumption and resolve customers' concerns about power consumption in a professional and timely manner through the improvement of low-voltage meter reading which uses a full-caliber electric accounting rate.

Low-voltage meter reading coverage reached

100%

Electricity power supply insurance

The Dinghe Property Insurance Co., Ltd., introduced a new process-wide platform for the management and control of claim settlements to improve the management efficiency of insurance and Reducing the social impact of power supply incidents.

Power supply liability insurance management efficiency increased by 23% on year-on-year basis

23%



Reforms in state-owned enterprises and assets

The company keeps improving the state-owned assets supervision system, actively and prudently carries out reforms of mixed ownership and adheres to improving quality and efficiency to help China's economy enter a new era of high quality development.

Promoting classification control

- The company has promoted reforms in corporate business and subsidiary classification. It prompts all branch companies and subsidiaries to launch corporate reforms and has comprehensively restructured 138 subsidiaries.
- The company has made substantial progress in cooperation with local governments. In December 2017, Yunnan Baoshan Industrial and Trade Park Electricity Distribution and Retail Co., Ltd., jointly funded by Yunnan Power Grid Co., Ltd. and Baoshan Power Grid Co., Ltd., was established to promote industrial upgrading and development.

Promoting pilot programs of mixed ownership reforms in Qianhai

The company keeps promoting the mixed reform pilot programs of Qianhai, organizes reform and development outlines for Qianhai pilot companies, and actively injects electric power supply assets. Three types of businesses, namely, power supply companies, market-oriented electricity sales and integrated power services, have taken off in an orderly manner in Qianhai, playing an effective role in the pilot programs of mixed ownership reforms.

Internal system reforms

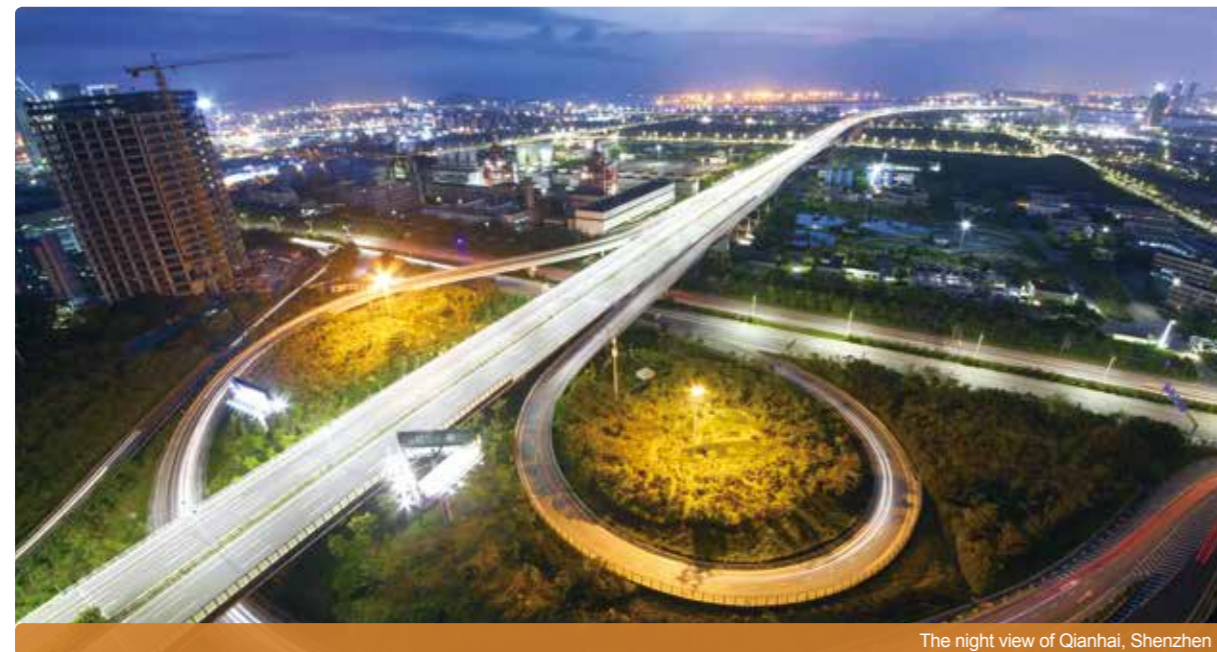
The company is further pursuing the industry development strategy of prioritizing grid business, developing comprehensive energy and financial services and expanding the global market" and has built a diversified business sector closely centering around the value chain of the electric power industry, and promoted industrial transformation through internal system reforms, thus laying a deep and solid foundation for sustainable development.

Gradually improving internal institutional mechanisms

- The company keeps optimizing the establishment of institutions at all levels, steadily restructures the Power Generation Company, promotes reforms and development of transmission and distribution companies in an orderly manner and basically establishes a new materials and tendering and bidding management system featuring "separating management and implementation".
- The company also accelerates reforms of enterprises under collective ownership. It has formulated a working plan to this end, completing basics research and analysis of 134 collectively owned enterprises throughout the year.

Achievements of streamlining and strengthening

The company comprehensively promotes streamlining and strengthening as well as quality and efficiency improvement, and carefully carries out the reforms of the state-owned enterprises to reduce management layers and the number of legal persons. The management layers have all been reduced to 4 layers, and the number of legal persons has decreased by 163, fully meeting SASAC's assessment requirements.



The night view of Qianhai, Shenzhen

Promoting Joint Development

Introduction	Corporate Social Responsibility value Leading the Sustainable Development of the Value Chain	Main stakeholders involved Governments, Suppliers, Subcontractors, Power Generators	Responsibility issues covered Safeguarding the Rights and Interests of Partners and Serving Regional Development	Key performance indicators of CSR One kilowatt hour of electricity supports 13.64 yuan of GDP within the company's service territory
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CSG joins hands with value-chain partners for sustainable development, creates an open and transparent responsibility ecological circle, and shares the achievements of reforms and opening-up, jointly serving the economic transformation and upgrading of the five provinces the company serves. Reducing electric power consumption costs of customers by RMB54.5 billion throughout the year.

Transparent material management

CSG advocates responsible procurement, strictly implements fair, open and impartial procurement, and promotes lean management of quality and logistics to improve procurement efficiency.

Implementing accountability	<ul style="list-style-type: none"> • The company has founded China Southern Grid Materials Co., Ltd. and actively planned to establish provincial material companies to separate the supervision and implementation of bidding. • The company has improved the centrality and standardization of procurement at both headquarter and subsidiary level. The centralized procurement at these two levels reached RMB58.72 billion • The company works hard to ensure that bidding and procurement are conducted on its online bidding platforms. The company's e-commerce system is awarded certification at the highest level, with more than 45,000 items purchased online. 	The centralized procurement rate 96.9%
Optimizing Warehousing and Logistics	<ul style="list-style-type: none"> • The company keeps reducing the amount of asset reserves (in ten-thousand yuan) to increase inventory turnover ratio. • The company works out special solutions to project materials returned to effectively reduce waste generated during the construction process • The company carries out lean management in community-level teams, strengthens 7S management and on-site improvement and promotes the use of barcode to improve work efficiency 	The turnover ratio of conventional reserve materials reached 722%

Barcode proves highly useful in warehouses

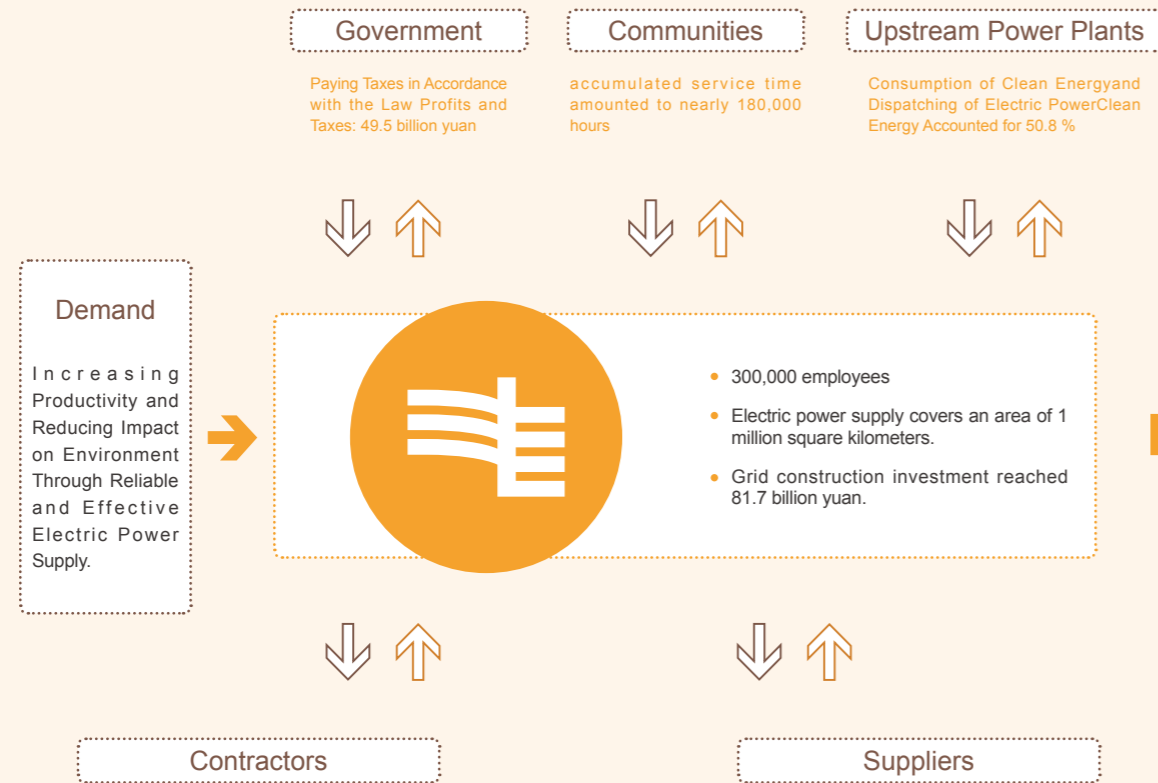
During Year 2017, Chongzuo Power Supply Bureau of Guangxi Power Grid Co., Ltd. took the lead in implementing the V1.0 pilot program of barcode mobile applications materials, and systematically carried out warehouse system modeling, basic data collection, material information tag specification, and barcode application training. In July 2017, Guangxi Power Grid Co., Ltd. fully promoted the pilot operation of mobile applications. This is also a successful application of mobile Internet in the lean management CSG's warehousing, effectively improving the precision of management information and reducing the excessive number of frontline staff.



The mobile terminal barcode is so convenient that it will make our job easier.
 —Huang Lingling, a warehousing executive from the Warehousing and Delivery Division of Guangxi Power Grid Co., Ltd.

Sustainable value chain

CSG gives full play to its role as a bond between different parties. It establishes strategic partnership with power plants to secure power supply. It also helps suppliers and contractors to improve their ability to perform responsibilities, builds sustainable value chains, and provides strong, green, and smart support for the five southern provinces it serves to achieve their development goals of the new era.



Construction safety

CSG builds a contractor management system with an optimized mechanism to promote the building of an integrity system. The company, using the information system, has completed the registration and filing of 6,268 contractors, and carried out a mark deduction and evaluation mechanism based on their violation of related rules and regulations. Contractor evaluation is conducted every six months and the evaluation results will be applied to project bidding.

The company strengthens safety education of the contractor through education, training, instruction manuals, on-site guidance, etc., urging contractors to deploy safety management personnel and increase awareness of safety production and self-protection.

In order to promote infrastructure contractors' Safety Risk Management System Construction, the company has evaluated 283 infrastructure contractors, eliminating one diamond-level infrastructure contractor and degrading 26 diamond-level and three star-level infrastructure contractors.

Transparent Procurement and Accountability Enhancement

The company actively carries out assessment of supplier qualifications, adding such evaluation indicators as environmental management system, occupational health and safety management system, employee social security coverage, participation in disaster relief or emergency contribution, participation in social welfare undertakings, on-site occupational safety protection measures, etc. in supplier's qualification assessment criteria to guide and encourage suppliers to actively fulfill their social responsibilities.

100% All suppliers are certificated by the Quality Management System (QMS)

91.93% of the suppliers are certificated by the Environmental Management System (EMS)

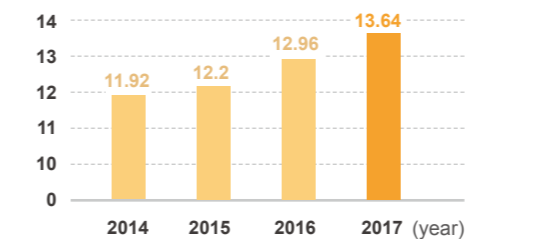
90.16% of the suppliers are certificated by the Occupation Health and Safety Management System (OHSMS)

Facilitating the Development of the Five Provinces the Company Serves

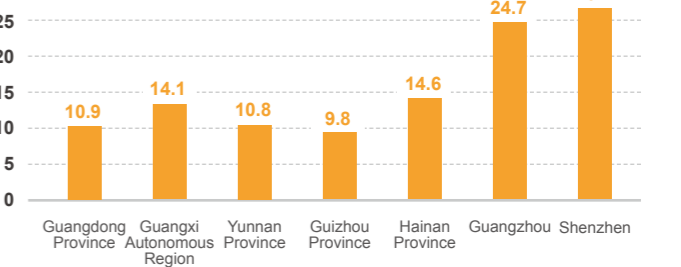
CSG performs the task assigned by the central government for stable growth, restructuring, and public welfare, helping the five provinces it serves to successfully achieve the annual economic and social development goals.

- Guangdong Province**
 Taking the Lead in Building a Moderately Prosperous Society in All Respects
 CSG aims to build itself into a world-class integrated energy services provider to make new contributions to province's mission of building a moderately prosperous society and speeding up socialist modernization.
- Guangxi Autonomous Region**
 Striving to Write a New Chapter for the Development of Guangxi in the New Era
 CSG has built a safe, reliable, green, and efficient smart grid to provide strong support for socialist modernization in Guangxi.
- Yunnan Province**
 Speeding up the Building of a Beautiful Yunnan
 CSG assists Yunnan in strengthening local energy sector and gives a full play to the role the company plays in boosting local development.
- Guizhou Province**
 Creating a Brand New Future for Guizhou Featuring Affluence and a Beautiful Environment
 CSG accelerates the the transformation and upgrading of rural grids to achieve full coverage of smart meters and low-voltage meter reading, sparing no efforts in helping Guizhou tackle poverty alleviation and build a well-off society in an all-round way.
- Hainan Province**
 Building a Beautiful Hainan
 CSG has evidently increased its ability of serving the people by providing quality electric power and thus has been able to meet the needs of Hainan to succeed in building a moderately prosperous society in all respects.
- Shenzhen**
 Building a Global Innovation Hub of Sustainable Development
 CSG adheres to the new development philosophy and aids Shenzhen in piloting socialist modernization.

During Year 2014 to 2017 GDP output per kilowatt hour of electricity in the five provinces the company serves (unit: yuan)



In 2017, GDP output per kilowatt hour of electricity in the five provinces the company serves (unit: yuan)



Note: GDP output per kilowatt hour = GDP/overall electric power consumption Based on actual business performance of the company, the data of Guangdong is calculated excluding Guangzhou and Shenzhen.

International Exchanges and Cooperation

Introduction	Corporate Responsibility Value Expanding Circle of Friends and Extending Influence	Main Stakeholders Involved Foreign Governments, Counterparts, Local Communities	Responsibility Issues Covered Undertaking the Belt and Road Initiative and Participating in International Cooperation	Key Performance Indicators Overseas assets have risen by 9.3 billion yuan, accounting for 3.9% of the total
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CSG undertakes the Belt and Road Initiative by participating in power cooperation along the Belt and Road

New Progress in Interconnection

CSG has earnestly undertaken the Belt and Road Initiative advocated by President Xi Jinping, the five types of connectivity, as well as the new development concepts. It actively promotes grid interconnection and power cooperation with neighboring countries for a shared social and economic growth through negotiation consultation and cooperation. CSG's grid is connected to Vietnam, Laos, and Myanmar through 12 circuits of 110 kV and above. By the end of 2017, the power had amounted to 51.65 billion kWh, which has played an active role in promoting the optimal allocation of regional resources.



Li Qingkui, Board Chairman of CSG, visited the site of Vinh Tan I Coal-Fired Power Plant BOT Project in Vietnam

High Standard and Quality Construction Project

Vinh Tan I Coal-Fired Power Plant BOT Project (Vietnam)

Located in Binh Thuan Province, Vietnam, Vinh Tan I Coal-Fired Power Plant employs two 600 MW supercritical thermal power units, using the most advanced power generation technology in the world. It can reduce CO₂ emission by about 20,000 tonnes per year, creating a technologically advanced, safe, reliable, green and environmentally-friendly demonstration power plant. July 18, 2015 marked the groundbreaking ceremony of the project. It is expected that the first unit will be put into operation in September 2018 and the other in March 2019. This will effectively relieve the electricity shortage in southern Vietnam and contribute to greater cooperation and friendship between China and Vietnam.



Vinh Tan I Coal-Fired Power Plant BOT Project

Nam Tha 1 Hydropower Project

The Nam Tha 1 hydropower station is located in Bokeo Province, Laos, with an installed capacity of three 56 MW units. A ground-breaking ceremony was held in December 2013. The concession agreement and financing agreement were signed in 2014. On November 6, 2015, the river closure was successfully implemented. The three units of the project are expected to be fully operated in December 2018. This will promote local economic and social development and greatly improve the living standards of the people in the old revolutionary areas.



Nam Tha 1 Hydropower Project

Fulfilling Overseas Social Responsibilities and Undertaking the Belt and Road Initiative

Hiring Locals to Support Local Socio-Economic Development

CSG hires locals in project construction, creates more job opportunities locally, raises foreign employees' awareness of safety and quality, provides skills training to make foreign employees experts and benefit from such activities. All these cement the friendship between China and other countries.

Currently Vinh Tan project has hired more than 1850 Vietnamese workers, 66.1% of the total. Nam Tha 1 Hydropower Project has hired more than 770 Laotian workers, 61.6% of the total.

CSG has offered disaster relief, properly relocated immigrants and contributed to local public welfare.

All these have benefited local people and established a responsible image of Chinese companies.

After rare wind disasters at the Hardmoak resettlement site in Bokeo Province, Laos and severe flooding in Myanmar, CSG actively offered disaster relief and won praise from the local people and government. During the construction of Nam Tha 1 Hydropower Project, CSG built high-standard resettlement villages, hospitals, schools, roads and other facilities to improve the living standards of the local people. The company got the companies and employees involved in Vietnamese project to donate school supplies to local poverty-stricken students and build entertainment rooms in an effort to bring tangible benefits the local people.

Extensive people-to-people exchanges are conducted to promote connectivity

Providing financial assistance to students from GMS countries to study in China

Since 2010, 77 students from Mekong countries have studied in China with the help of CSG. At present, a total of 39 graduate students and undergraduates from the Mekong countries, funded by CSG, are studying at Guangxi University and Kunming University of Science and Technology. The cultivation of foreign students helps promote people-to-people connectivity.

CSG has held training for power technicians from neighboring countries

For more than a decade, CSG has carried out professional technology training for 25 batches of 413 people from neighboring countries in power markets, power dispatching and UHV transmission technologies.

International Exchanges and Cooperation

CSG keeps expanding foreign exchanges and cooperation channels and the social circle, joins international organizations and participates in standard setting to increase international influence and voice.

CSG's multilateral and bilateral exchanges and cooperation mechanisms have been consolidated

CSG has participated in the 7th Guangdong-Hong Kong-Macao Power Industry Summit, the 4th Power Utility Summit for Lancang-Mekong Countries and the 2nd CSG-KPX-TEPCO Summit, giving full play to the leading role of the company in the summit mechanism and continuously consolidating international influence and right of discourse. The company has promoted exchanges and cooperation with all parties through summits. The company has renewed the Memorandum of Understanding with the Royal Group of Cambodia and signed an exchange and cooperation agreement with the U.S. Energy Foundation. The company has reciprocal high-level visits with EVN, KEPCO etc. and received 52 foreign delegations, 374 people in total, expanding its social circle and influence.

CSG has actively participated in international conventions and exhibitions and extended new platforms for international exchanges and cooperation

As the vice chairman company of GO15, CSG actively participates in meetings at all levels. The company has joined the Power Trading Association, China Chamber of International Commerce, opening up a new platform for international technology exchanges. The company attended 2017 annual conference and overseas sub-forum of Boao Forum For Asia, the 14th China-ASEAN Expo, APEC CEO Summit, BRICS Business Forum 2017, 2017 Fortune Global Forum, and other well-known international conferences and exhibitions, constantly improving its international brand image. The HVDC transmission technology exchange meeting was jointly held by ONS and CSG in Guangzhou to lay a solid foundation for the company to deliver transnational technical services.



 **Answering the Party
Central Committee's Call**

- ▶ In our Party, each and every one of us must always breathe the same breath as the people, share the same future, and stay truly connected to them. The aspirations of the people to live a better life must always be the focus of our efforts.
- ▶ The wellbeing of the people is the fundamental goal of development. We must do more to improve the lives and address the concerns of the people, and use development to strengthen areas of weakness and promote social fairness and justice. We should make steady progress in ensuring people's access to child-care, education, employment, medical services, elderly care, housing, and social assistance. We will intensify poverty alleviation, see that all our people have a greater sense of fulfillment as they contribute to and gain from development, and continue to promote well-rounded human development and common prosperity for everyone.

*Excerpt from the report delivered at the 19th CPC National Congress

 **CSG in Action**

- ▶ CSG puts the employee first while setting strict requirements for them, so as to ensure they can work and live happily, obtain all-round development and share the company's benefits of reforms and development. CSG adheres to the enterprise tenet of "people's electric industry for the people". To meet the people's ever-growing power demand for better life is taken as our goal, promoting social development and national harmony and continuing to enhance the people's sense of fulfillment and wellbeing.



**Social
Harmony**



For the Happiness of the People, Bringing Warmth to Society

For the Happiness of the People,
Continuously enhancing people's sense of fulfillment and happiness.

These have been CSG's constant pursuit.

With the people-oriented approach, let's grow together.

We strive for the happiness of every employee;

We advance rural revitalization and implement targeted poverty alleviation.

On the road to building a well-off society,

We leave no ethnic group or village behind;

We promote the socialist core values,

practice the traditional virtues of the Chinese nation.

Help the poor, protect the elderly and love the young. It is what we all need to do.

Key Issues Management



Key Issues

- ◆ Improving employees' aense of wellbeing
- ◆ Implementing targeted poverty alleviation policies
- ◆ Serving the construction of beautiful countryside
- ◆ Enthusiastically engaging in public social welfare



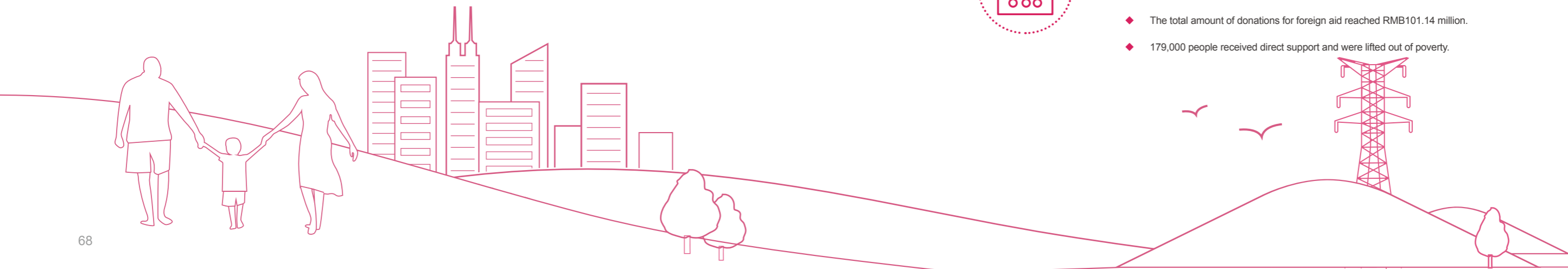
Major Action Strategies

- ◆ Protecting the rights and interests of employees, and striving to provide employees with more substantial benefits, a broader space for development, and a more comfortable working atmosphere, so as to enhance their sense of well-being.
- ◆ The transformation and upgrading of rural power grids will help the construction of beautiful countryside and inject strong impetus into rural development.
- ◆ CSG gives full play to its professional advantages, conduct targeted poverty alleviation, and engage in social public welfare with full commitment.



Core Management Performance

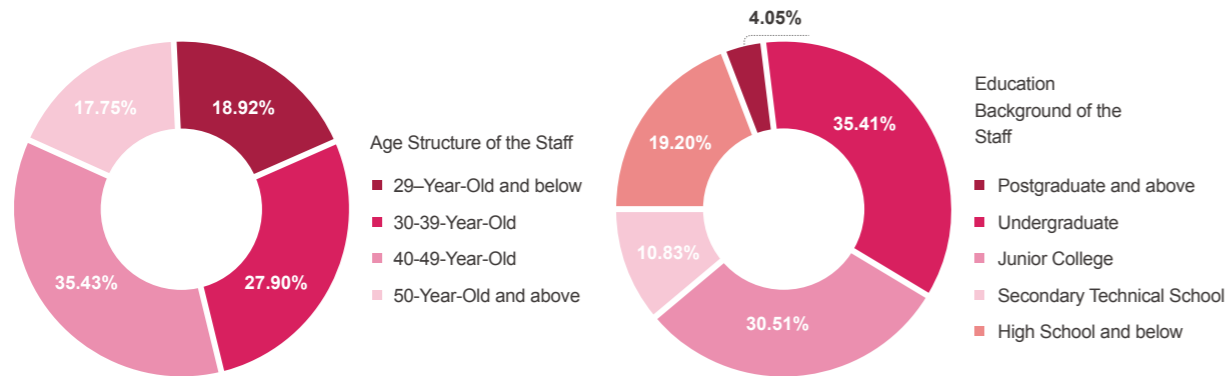
- ◆ RMB34.1 billion has been invested in the new rural power grid transformation.
- ◆ The total amount of donations for foreign aid reached RMB101.14 million.
- ◆ 179,000 people received direct support and were lifted out of poverty.



Care and Love for Employees

Introduction	Corporate Social Responsibility value Safeguarding internal harmony	Main stakeholders involved Employees, the government	Responsibility issues covered Rights protection, staff development, employee care	Key performance indicators of CSR Social insurance coverage reached 100%.
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CSG insists on putting people first, actively safeguarding the rights and interests of all staff members, and supporting their professional development while striving to create a healthy, energetic and warm corporate atmosphere, thus continuously enhancing staff member's sense of fulfillment and wellbeing.



Safeguarding Employees' Rights and Interests

CSG strictly abides by labor laws and regulations as well as labor policies. The Company respects the privacy of each staff member, optimizes the pay distribution mechanism, smooth communication channels. The Company respects and protect employees' legal rights, and actively build harmonious and stable labor relations.

- The Company follows all tenants of professional, fair and open recruitment and hiring, and works to eliminate all form of employment discrimination. Collective contracts were signed according to the law, with a labor contract signing rate of 100%.
- CSG has established a salary distribution mechanism that gives priority to efficiency and maximum fairness. The company strictly implements national and local social security mechanisms, securing 100% coverage of social insurance coverage throughout the year.
- The Company has been diligent in making substantial improvements in the enterprise democratic management system with the Workers' Congress as the basic form, strengthening the system of inspection by employee representatives, and consolidated the achievements of the certification of openness for factory affairs. The proportion of staff participating in the trade union is 100%, and the reply rate of the labor union chairpersons at all levels also stands at 100%.
- CSG has formulated and implemented the Company's three-year occupational health management work plan, organized training courses on occupational health management, and initiated the design and development of occupational health management modules. The annual physical examination coverage rate is 100%.

Total number of employees	Proportion of female employees	Per capita paid leave
300,000	25.43%	9 days

Supporting Staff Development

Staff development is the driving force for any company's growth. CSG has been continuously enriching its staff training system, improving the assessment incentive mechanism, and building a multi-channel career development system to stimulate the growth and vitality of staff.

Officials Management

CSG has further regularized and institutionalized the requirements for all Party members to have a solid understanding of the Party Constitution, Party regulations, and related major policies. The Company solidly promotes the construction of primary-level party organizations and the development of Party members, and continues to improve the mechanism for selecting and employing staff so as to train outstanding officials for the company's reforms and development.

- The Company increased the selection and training of young officials and accelerate the deployment of young officials around the age of 30 in the third-tier units. Meanwhile, CSG quickened the implementation of the professional manager system in CSG Energy Efficiency & Clean Energy Co., Ltd. and Dinghe Dinghe Property Insurance Co., Ltd.
- The company has adapted to the situation of leadership of the 17 branches and subsidiaries. Through in-depth discussions with local and regional officials, senior managers work to obtain full understanding of their thoughts, work and life conditions. In Year 2017, a total of 311 people from department-level managers and 4,658 people from division-level managers were called for talks.
- CSG has established at working mechanism for party committees at all levels to connect with service experts, supporting their expertise. Company officials also worked to integrate these technical experts, overseas high-level talents and post-doctoral personnel in a continued effort to advance the plan for outstanding innovative talents in the west and promote the coordinated development of talents in the easternw and western regions.

Staff Training

- In the promotion and reform of education and training institutions. CSG works to build a modern vocational training system which is geared towards the career development of all staff members.
- Improving supporting resources of training. Throughout the year, CSG built 53 skill training rooms and 258 simple training fields according to local conditions.
- Keeping innovating training methods. A new model of "hybrid teaching" was established which included a combination of concentrated learning and online learning, theoretical study and practical application, and on-campus training and off-campus experience.

Assessment and Incentives

- CSG improved the management of the Chairman's Award Fund, highlighting the assessment and rewards for emerging businesses, established a lean management assessment and incentive mechanism, as well as reviewed performance salary distribution.
- CSG deepened the training, evaluation, certification, and employment mechanism, and boosted the transformation of employees from "I'm required to learn" to "I want to learn." A total of 66,654 frontline employees passed the assessment test throughout the year.
- Based on production needs and job requirements, CSG held competitions on communication, network security, and chemistry and other skills. Ten company technical experts were selected through those competitions.

Number of Training Sessions: 6532	CSG obtained RMB4.386 million of incentive funds from governments at all levels for personnel development.
Staff Training Rate: 96.3%	
"The Project of Exploration and Construction on Organizational Learning Development System in Shenzhen" won the training industry's "Oscar"	
Association of Talent Development (ATD) "Excellent Practice Award"	

The company launched the first professional skills competition for distribution posts

From November 20th to November 24th, 2017, the first professional skills competition for power distribution was held at the Qinghe No. 2 Base of the Guangzhou Power Supply Bureau. The competition had expanded the cable production, overhead line operation inspection and other projects on the basis of the distribution network live work skills competition, and adopted new methods such as random selection of contestants, using scanning code, face recognition, iPad on-site assessment, monitoring along with on-site assessment and other technological means to comprehensively review and improve the skills of the distribution staff.



Building CSG in Pursuit of Happiness

The company implemented the CPC Central Committee and the State Council's *Reform Plan for the Staff Construction of Industrial Workers in the New Era*, strengthened the ideological and political leadership of employees and promoted the improvement of employees' quality, dedicated to serving the staff.

CSG keeps forging three brands, namely, "CSG Model Workers, CSG Artisans, and CSG Makers". It creates a sound atmosphere of advocating, learning from and trying to become the advanced employees to obtain a happy life through hard work.

Since October 1st, 2017, 8 subway lines in Beijing, 1605 high-speed railways in Beijing-Guangzhou and Beijing-Shanghai, and Wangfujing Commercial Street in Beijing have presented public posters for the 18 "Party member Idols" selected by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). They are idols, role models, and the best interpretation of the spirit of state-owned enterprises in the new era. "Overhaul leader He Mantang" and "Sansha Party Service Team" were selected.

Over a five-year period, Sansha Service Team built Sansha Yongxing Island from an "electric-isolated island" into an "electric-affluent island" covered by green smart micro-networks. They are a group of pioneers, innovators, and builders who use the power of technology and the spirit of dedication to light up every household in Sansha City. The establishment of the Sansha Power Supply Bureau gave them opportunities to cultivate their characters and enhance their ability, and also offered them a stage to realize the value of life.

The Happiest 50Hz

Focusing on the construction of a "Staff Home", CSG implants the concept of lean management as well as benchmarking for improvement. Its work pattern is based on the principle of universal home building, focusing on achieving standards and upgrading quality, and features level-to-level construction and administration. Throughout the year, 150 million yuan was invested to improve working and living conditions as well as cultural activities of employees in 2218 primary stations. During 2017, a total of 34 five-star staff model homes and 65 five-star staff model standard homes were built to enhance all staff member's sense of fulfillment and belonging.

- Fully promoting the construction of "Caring Mummy Hut". A plaque awarding and experience exchange meeting was held to commend 53 "Caring Mummy Hut" demonstration sites and 53 "Caring Ambassadors".
- Caring for all staff members. With secondary units serving as the main body, CSG continually improves the standardization of its support mechanisms. Blessings and benefits come from participating in festivals ... as well as celebrating birthdays and other special events are part of the CSG staff experience and a full expression of the Company's care for its staff.



Devotion to Universal Services

Introduction	Corporate Social Responsibility value Guaranteeing people's rights to use electricity	Main stakeholders involved Employees, communities, and the government	Responsibility issues covered Serving agriculture, rural areas, and rural people	Key performance indicators of CSR RMB34.1 billion was invested in Year 2017 during the latest round of rural power grid transformation.
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CSG takes the initiative to assume responsibilities of power universal services, and strives to solve unbalanced and inadequate power development issues, in the hope that it can help rural areas change from "electricity-available" to "electricity-convenient", thus ultimately serving rural development strategies.

Promoting Rural Power Grids Upgrading

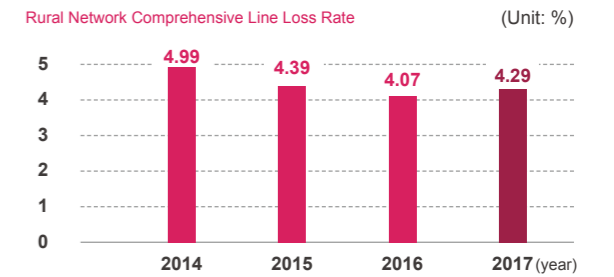
By strengthening the grid structure, increasing the capacity of transformers, and upgrading old lines, the quality of rural power grids was improved and rural power supply capacity equally enhanced. CSG accelerates its pace to resolve issues concerning rural power consumption "bottlenecks" of low voltage and dynamic electricity. By releasing rural electricity demands, and supporting rural breeding, agricultural product processing and other industries, the Company directly injects impetus into the development of China's beautiful countryside.

Improving Rural Ecological Environment

CSG actively carries out rural electrification, increases the level of rural electrification, and reduces harmful emission brought by agricultural development. In 2017, there were more than 1,800 electrification items for agricultural products processing, with an estimated replacement capacity of approximately 9.5 million kWh, equivalent to a reduction of approximately 2736 tonnes of standard coal and a reduction of approximately 7278 tonnes of carbon dioxide emission.

Docking Relocation of Supporting Grid construction

CSG proactively cooperates with the government in completing the relocation of supporting grid project construction to ensure that "where the immigrants relocate, where electricity is available," so that immigrants can have access to electricity. During Year 2017, a total of 2,434 supporting grid projects for relocation sites have been completed, which met the electricity demand of approximately 790,000 relocated households.



Providing Sufficient Electric Power to Support the Development of Pitaya Demonstration Garden in Yiling Valley, Wuming, Nanning City of Guangxi Autonomous Region

Bringing Warmth to Society

Introduction	Corporate Social Responsibility value Building a harmonious society	Main stakeholders involved Employees, the public, the government	Responsibility issues covered Charity, volunteer services, targeted poverty alleviation	Key performance indicators of CSR 179,000 people received direct support and were lifted out of poverty
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CSG pays close attention to social livelihood issues, uses its core strength to carry out targeted poverty alleviation, supports regional development, and enthusiastically engages in social welfare. It integrates social development needs into daily business activities, lights up every household and brings warmth to communities.

Enthusiastically Engaging in Social Welfare

CSG is actively involved in social welfare undertakings by participating in charitable donations and encouraging employees' volunteer services, thus injecting its power into social welfare undertakings.

- Charity .CSG actively participates in disaster relief, education assistance, medical assistance, infrastructure construction, etc., and uses the power of enterprise development to help people in impoverished areas and vulnerable groups to create a better life.
- Volunteer Service .CSG established a voluntary service system entitled "Net Corporation-Member Corporations-Power Supply Bureaus of Various Cities-County Companies (Power Supply Bureau)", and a coordinating voluntary service team. The Company encourages all staff members to participate in volunteer services, and created "Youth Lights up Every Household" volunteer service brand and volunteer service sub-brands such as "Happy Kitchen". With practical actions, CSG has been truly furthering its volunteer spirit. During Year 2017, units affiliated to CSG at all levels set up 336 volunteer service teams in total, conducted more than 3,000 volunteer service activities, and served around 740,000 person-time and accumulated service time amounted to nearly 180,000 hours.

Types of Donation	Amount (unit: ten thousand yuan)
Relief donation	9758
1. Donation to disaster-affected areas	0
2. Donation to targeted poverty alleviation areas	9714
3. Other relief donations	44
Non-profit donation	181
1. Donation to the development of education, culture, sports, and health	78
2. Other public welfare donations	103
Other donations	175
The Amount of Outward Donations	10114

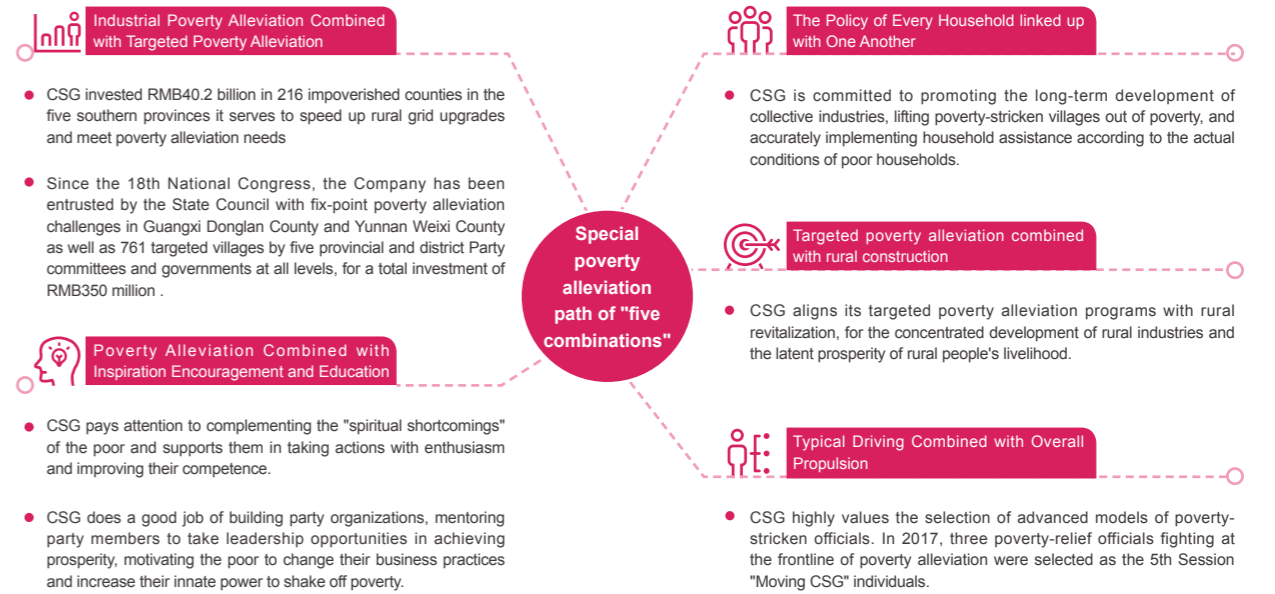


Conducting Lei Feng Volunteer Activities

Implementing Targeted Poverty Alleviation

CSG positively responds to the nation's call for targeted poverty alleviation. Adhering to "precision, quality, long-term effectiveness", it builds a poverty alleviation linkage system and works out a special route for poverty alleviation, thus contributing to the nationwide poverty alleviation efforts. The company was invited to be a member of the State Council Leading Group for Poverty Alleviation and Development. And Party Secretary and Chairman Li Qingkui was included as a member of the Group.

- We set up a leading group for poverty alleviation and five major mechanisms for poverty alleviation, namely, the system of responsibility, system, work, supervision and evaluation.
- Based on the power industry's main business to participate in poverty alleviation, we aim at facilitating the special poverty alleviation path of "five combinations".



Longmei, CSG's first secretary staying at the Yongmo village of Donglan County, talks with the elderly.

- CSG won the Guangdong Province "Kapok Cup" Gold Cup for two consecutive years.
- Poverty-stricken people's electricity consumption, dynamic electricity supply, and the power supply quality are all ensured.
- With the direct help of CSG, 280 poor villages and 179,000 people were lifted out of poverty during Year 2017.
- The governance capabilities of the primary organizations under the Company's direction have been significantly increased.

Innovation Path, Precision and Effectiveness

The Company is fixed on targeted poverty alleviation and has adapted measures to meet local conditions with a coordinated poverty alleviation program, including fixed-point ones in the power industry. CSG constantly explores innovative poverty alleviation paths and effectively meets its responsibilities as a vibrant central enterprise.

Exploring Ways of Rendering Support

In the process of aiding Weixi County, CSG established the Weixi County Special Agricultural Products Poverty Alleviation Company in cooperation with the county government. Through a "company+base+farmer (cooperative)" operating model, CSG has helped Weixi County nurture and develop characteristic agricultural industries. During Year 2017, Company sales volume of agricultural products in Weixi County more than 400 million yuan, which helped Weixi County establish a platform for producing and selling specialty agricultural products.

Building demonstration village of targeted poverty alleviation

CSG has firmly grasped the essence of "target" and focuses on the construction of the model village of targeted poverty alleviation. In CSG's subjects of counterpart support, 12 sites of targeted poverty alleviation demonstration villages were identified, 12 indicators were formulated and six "targeted" requirements were implemented in the entire process, ensuring that "targeted poverty alleviation and accurate poverty reduction" could have a successful landing.

In December 2017, CSG's leading group on poverty alleviation identified the first batch of four demonstration villages for targeted poverty alleviation, which provided demonstrations and accumulated experience for accurately promoting poverty alleviation work.

Sketch Map of the First Batch of Targeted Poverty Alleviation Demonstration Villages



Vigorously Carrying out Industrial Poverty Alleviation

The Company has intensified efforts in rural grid reforms in the five southern provinces we serve, promoting special construction projects such as upgrading rural grids in small towns and central villages, powering rural wells and delivering dynamic electricity in poor rural areas. In these and many other ways, the Company has channeled significant resources into solving specific challenges including low voltage and impassable dynamic electricity in poor areas.

CSG has vigorously developed photovoltaic poverty alleviation projects as it explores three different operating models of "corporate+government+poor village", "corporate+charity organization" and Corporate Support Fund.



Establishing an "Internet+Poverty Alleviation" Platform

CSG developed a new "Light up Well-off Life" application, set up donation assistance modules such as dream recognition, love pairing, and combined with company volunteer service activities to provide a communication and assistance platform for employees, social forces and poor villages on the Internet, which successfully helped the poor village children realize 355 dreams.

"One-Stop" Education for Poverty Alleviation

CSG takes advantage of the company's subordinate power schools to cultivate middle school graduates from Donglan County and Weixi County (extended to Hechi City and Diqing Prefecture), and they are hired to work on the local grid system after graduation. The "one-stop" solution settles problems like the education, employment and poverty alleviation of students from impoverished families. A total of 184 impoverished students have entered the company's system through their studies.

Devoted to Shouldering Responsibilities, Obtaining Recognition

After reaching out to the Guangxi Autonomous Region and Yunnan Provincial Party Committee Organization Department, CSG sent 11 poverty alleviation officials to Donglan County and Weixi County. After these poverty-alleviation officials came to work in the village, they closely followed the requirements for targeted poverty alleviation, actively seeking support for government funding projects, and injecting themselves into the poverty-stricken population, and exchanged their thoughts with local residents. A number of advanced models such as Long Mei and Yang Sijun were repeatedly applauded by relevant leaders of the central and provincial governments, winning support and recognition from people in these poverty-stricken areas.

- CSG's first secretary, Mr. Yang Sijun quickly engaged in the work in Yangfang Village, Taijiang County of Guizhou Province. He did a lot in the introduction of excellent crop varieties and assistant locals into the sales of their agricultural products with significant results. He was then praised by Comrade Zhao Leji, member of the Politburo of the CPC Central Committee and minister of the Central Organization Department.
- In December 2017, Dongshan County and Weixi County conducted three levels of satisfaction surveys in villages, townships, and counties, as well as questionnaires and interview evaluations on China Southern Power Grid's assistance programs throughout the year.

Officials involved in the surveys at the three levels of villages, townships, and counties, expressed

100% satisfaction with CSG's efforts towards poverty alleviation.



CSG's First Party Secretary Yang Fangyu worked together with villagers throughout the farmland.

Responsibility Management

Responsibility Governance

CSG has established a three-tiered system of social responsibility which includes leadership, management, and execution. It covers the Company's headquarters, branches and subsidiaries, and conducts focused social responsibility work. In 2017, this social responsibility outreach work was handled by the Public Relations Department., forming a new management model which integrated brand, culture and practice with responsibility as its core elements.

Responsibility Research

The Company insists on taking a global perspective view as its corporate benchmark, continuously exploring and learning valuable experience of advanced CSR management and transforming it into CSG's action, thus continuously improving our level of social responsibility work.

- CSG continuously carries out an empirical level of research in the pages of this globally-focused, advanced CSR report and selects excellent companies including energy and power companies and power equipment suppliers for research exploration. The Company takes the United Nations' 2030 Sustainable Development Agenda as its working thesis and conducts in-depth research on the latest, market-leading social responsibility outreach

programs.

These best practice provide reference markers which improves the quality of this CSR Report preparation as the Company carefully analyzes its best social responsibility management and practice.

- The Company has concluded its experience in targeted poverty alleviation services and issued its first *White Paper on Accurate Poverty Alleviation by the China Southern Power Grid Corporation (2013-2017)*. This "white paper" document serves to exemplify CSG's efforts and achievements in leveraging its expertise, resources and technology to support the development of poor areas and help build a prosperous society.



Responsibility Exchanges

CSG enthusiastically exchanges ideas with its counterparts, scholars and experts, and SOEs directly under the central government. Focusing on the UN 2030 Sustainable Development Goals, CSG actively contributes its wisdom and energy to the global community for its sustainable development.

<p>11 SUSTAINABLE CITIES AND COMMUNITIES Target 11 Sustainable Cities and Communities</p> <p>May 2017 The 7th Guangdong-Hong Kong-Macao Power Utility Summit CSG conducted in-depth communication around issues such as creating a community of shared future for Guangdong, Hong Kong & Macau Electric Power Companies, promoting the sustainable development of the urban agglomeration of Guangdong-Hong Kong-and-Macau Greater Bay Area, and playing due roles to help build Guangdong, Hong Kong, and Macao into a world-class livable and desirable urban agglomeration.</p>	<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Target 9 Industry, Innovation and Infrastructure</p> <p>September 2017 The 4th Energy Forum and International Top-level Forum on Engineering Science and Technology Development Focusing on promoting in-depth energy revolution, we exchanged views with government representatives, scientific and technical experts, etc., on the topic of the effect of generalized HVDC transmission technology on the development pattern of power grids.</p>	<p>1 NO POVERTY Target 1 Eliminating All Forms of Poverty in the World</p> <p>January 2018 First Corporate Responsibility Forum of SOEs Directly under the Central Government CSG conducted peer exchanges with SOEs directly under the central government on implementing the central government's call for deepening targeted poverty alleviation, and sharing CSG's unique approach and results of "upholding five combinations and building five major systems".</p>
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Major Honors of Responsibility



CSG Corporate Social Responsibility Report has been assessed as Five-Star report by Research Center of Corporate Social Responsibility, Chinese Academy of Social Sciences for seven consecutive years.



The report has won the award of Golden Bee Outstanding Corporate Social Responsibility Report Evergreen Award for five years in a row.



CSG Targeted Poverty Alleviation project was included in the first 2017 Central Enterprise Social Responsibility Blue Book by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC).



It has won the Responsible Golden Bull Award—Targeted Poverty Alleviation Award in the Fifth Annual Meeting of China Social Responsibility 100 Forum.



The related projects of CSG poverty relief and fixed-point poverty alleviation in the electric power industry were listed in 2017 China's Enterprise Poverty Alleviation Blue Book as the Excellent Case of Poverty Alleviation, and were selected as the Most Beautiful Pictures of Poverty Relief and the Most Beautiful Poverty Alleviator by Poverty Relief Office of the State Council.



Responsibility Communication

Since Year 2013, the Company has held its Social Responsibility Week for five consecutive years, releasing social responsibility reports and the fascicule of corporate social responsibility practices, drew affinitive communications with its key stakeholders to achieve a stronger force of corporate social responsibility and a higher level of corporate public transparency. These and other efforts have received positive feedback from all walks of life. During the Social Responsibility Week, CSG invited representatives of varied stakeholders including the SASAC, the China Electricity Council, mainstream social responsibility agencies, other related central enterprises and the media to launch a special research program on the "the Social Responsibilities of CSG" to visit and survey the company's grass-root units for its good practices of social responsibility.

A Total Journey of over
20000 km

Participants of More Than
10000

2013 Guangzhou - Dongguan - Shenzhen - Nanning



Children in Guangxi Electric Power Science Exhibition Hall

The research team visited the China Southern Power Grid's electric vehicle demonstration center, the Dongguan 500kilovolt transformer substation, the Shenzhen Flower Transformer Substation, Wangzhou South Community in Nanning City etc. to learn about CSG's practice of responsibility for electric vehicles, reliable power supply, green power grids, and community construction and other areas.



CSG Lights up Hmong Minority Area

2014 Foshan - Zhongshan - Leishan County, Guizhou



The research team visited the rooftop photovoltaic installations in modern factory, the self-service payment terminal in modern community, and finally the Hmong and Dong minority areas in Guizhou Province, which gave them a full knowledge of CSG's endeavors in every post and every piece of land to light up every household in China.

2017 Guangzhou - Shenzhen - Haikou - Sanya



The research team witnessed in Guangzhou the departure of the first train with the theme of social responsibility report in China and all kinds of applications of clean energy and new energy like nuclear power, waste power, electricity transformation and submarine cable. All these serve as strong evidence for the achievement of CSG's green development of more than 50% of the electricity coming from non-fossil energy.



Canton Tower Subway Station - Making Guangzhou an Electric and Powerful City: Exhibition of Social Responsibility



Nujiang Power Supply Bureau employees serve minority customers



2016 Kunming - Nujiang

The delegation travelled to border areas in Southwestern China to visit Yundian Technology Park, Nujiang Power Supply Bureau, Dulongjiang Power Supply Bureau and other places and have witnessed that the company has fulfilled its responsibility to provide high-quality electric power services for every ethnic minority, which demonstrates CSG's social responsibility of missing out no ethnic minorities.

2015 Jiangmen - Zhuhai - Shenzhen - Dongao Island, Zhuhai



The research team visited the large-span section of the Taishan Nuclear Power Phase 1 Access System Project, the Hengqin Island Cable Tunnel, the Power Quality Center of Shenzhen Power Supply Bureau, and the Dongao Island Smart Micro-grid System to gain insight into effects of the clean energy access, power quality upgrade, smart micro-grid and other aspects.



The research team boarded Yamen's large span

Outlook 2018

Year 2018 will be an important one for profoundly implementing Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th National Congress. It marks the 40th Anniversary of China's reform and opening up and it is a crucial time period for securing a decisive victory in building a moderately prosperous society in all respects and for continuing to implement the 13th Five-Year Plan. Under the guidance of Xi Jinping Thought on socialism with Chinese characteristics for a New Era and in the spirit of the 19th CPC National Congress, the Company pledges to follow the energy strategic ideas of five requirements in respect of energy production and consumption revolution (i.e., energy consumption revolution, energy supply revolution, energy technology revolution, energy system revolution and international cooperation). Under the requirements of high quality development along with supply-side structural reforms, China Southern Power Grid will "pick up the pace" in transforming CSG into a competitive world-class enterprise and make significant new contributions to securing a decisive victory in building a moderately prosperous society in all respects.

Power Supplies

To enhance the quality of the power grid development, The company plans will highlight the systematic solving challenges of unbalanced and inadequate development of power grids; eliminating major and serious power safety and equipment incidents and major serious personal injuries. This will be based upon a customer-centric principle where China Southern Power Grid is committed to its promise towards constant service improvements

The average power outage of customers in the downtown area does not exceed **1.78** hours

The score of third-party customer satisfaction exceeds **81**

Operating Efficiency

We fully promote the law-based enterprise management and optimize the allocation of resources with the creation of value as the core; make supply-side structural reform as the main task and actively release the reform bonus; focus on the industrial development layout of optimizing main grid, enhancing distribution grid and expanding overseas business to provide driving force for stronger and better competitive business.

Electricity Sales: **935** TWh ↑ Year-on-Year growth of 5%

Revenue: **514.5** billion yuan ↑ Year-on-Year growth of 4%

Environmental Protection

CSG will raise the level of green development, implement the requirements of addressing pollution, speed up the construction of a smart grid adapted to green and low-carbon development, deepen the implementation of the West-to-East Power Transmission strategy, promote the optimization of energy structure, and expand the accommodation of non-fossil energy sources to help the whole society to achieve a low carbon development

Non-fossil energy electric power accounts for **50.5%** of the total. We will achieve **16.4** TWh of electric power replacement throughout the year

Power transmitted from the west to east stands at **208** TWh

Social Harmony

CSG will deepen the program of employees' ability improvement to revitalize the deposit of human resources, deliver excellent universal service as well as bottom-guaranteeing service to facilitate the rural revitalization strategy and secure a victory in the fight against poverty.

We will meet the target of **24** Demonstration Counties of High Quality Electricity Consumption. We will complete the grid construction in the first batch of **20** small towns with Chinese characteristics

The reliability rate of power supply of rural distribution network will not be lower than **99.78%**

Ratings and Evaluations

Rating Report of CSG Corporate Social Responsibility Report 2017.



Commissioned by China Southern Power Grid, the China Expert Committee for CSR Rating formed a team to rate its Corporate Social Responsibility Report 2017 (i.e. Report).

I. Rating Basis

Compilation Guide to Chinese Corporation's Social Responsibility Report (CASS-CSR 3.0) - Power Supply Industry and Rating Criteria for Chinese Corporation's Social Responsibility Report (2018).

II. Rating Process

•The process assessment team interviewed major members that compiled the Report and reviewed relevant information on site

•The rating team evaluated the compilation process and the contents of the Report before drafting a rating report.

•The rating report was submitted to the Vice Chairman of the Expert Committee for CSR Rating and the leader of the rating team for their signatures.

III. Rating Conclusions

Process (★★★★★)

The CSG Public Relations Department has been specifically tasked to create the Report Compilation Team with participating senior leaders from China Southern Power Grid, including the Board Chairman, President and Deputy Secretary of the CSG Leading Party Group guiding this compilation. The CSG Leading Party Group reviewed and approved the final version of this Report. CSG clearly defined the functions and value of the Report, built a complete report system and compiled **Social Responsibility Management Measures** to further strengthen the standardized management of Report compilation. All substantial issues were identified on the basis of the corporation's major events, national policies, industry benchmarking analysis, internal and external stakeholder surveys and investigations and a special conference was held to release the Report, which will be presented via an electronic (Internet) version, printed version and H5 version ... all these identified the exceptional performance of CSG in the process of writing this Report.

Materiality (★★★★★)

The Report revealed key issues in the power supply industry, such as: guarantee of reliable power supply, power utility in rural/remote areas, improvement of power quality, reduction of power outage time, reinforcement of safety management, promotion of green power supplies, healthy operation of electrical equipment, and the improvement of power transmission efficiency and safeguarding employees' rights and so on, are revealed detailed and elaborate narration. The substantiality of the Corporate Social Responsibility of China Southern Power Grid is exceptional.

Completeness (★★★★★)

The main contents of the Report systematically revealed that 93.1% of core indicators of the power supply industry from the perspectives of "power supply"; "green environmental protection"; "economic performance"; "social harmony" and "responsibility management" ... therefore, this Report is fully complete.

Balance (★★★★★)

The Report revealed significant "negative" information such as: full caliber power outage times, comprehensive line loss rates, incidence of occupational disease cases throughout the year, human error incidents, personal casualty accidents, and level-three electric safety incidents or higher and so on. The Report briefly describes the causes and improvement measures of the corporation's "personal safety incidents" and presents an excellent balance between the Company's social and corporate business responsibilities.

Comparability (★★★★★)

The Report pointed out 44 key indicators, including: sales of electrical power, total taxes and profits, R&D input, power grid construction investment, environmental benefits from clean energy deployment and social welfare expenditures during the past three consecutive years. The Report also made a "horizontal" comparison among "National Power Supply Reliability"; "Power Measurement Failure and Error Rates" and "Public's Appraisal Satisfaction of Local Government's Public Service" as well as other data.

Readability (★★★★★)

This current Report continues with the Company's ongoing theme of "CSG Lights Up Every Household in Southern China", which is rich in connotation and fully displays the Company's excellent responsibility management and daily business practice. The cover creatively integrates the corporation's identity and the design of the opening pages showcases the Company's responsibility practice in a panoramic presentation. These designs not only enhance the impact of the Company's dynamic brand culture but also highlights CSG's pursuit of its sensitive social responsibilities. The design style is fresh and simple; the color scheme is harmonious with the overall atmosphere, which significantly enhances the pleasant sense of the Report and its readability.

Innovativeness (★★★★☆)

The Report begins with two key areas of responsibility - "Lights and Love Are Full in the Bay Area" and "Grid of Science and Technology Shows Innovation-Driven Development" - which focuses on key policy issues regarding the Company's best business practices and its implementation of macro-policies. Taking "50Hz" and "SDGs" as the explicit and implicit themes throughout the main chapters, the Report will also presents the characteristics of CSG's performance of responsibilities and highlights its important central state-owned enterprises' duties. Each chapter mirrors the United Nations' sustainable development goals in the form of "SDGs Activists". The Report also echoes the Company's practice and effectiveness during key challenges and demonstrates the progress made as well as the corporation's leading responsibilities.

Overall Rating (★★★★★)

In accordance with the rating team's assessment, CSG Corporate Social Responsibility Report 2017 has earned a five-star rating.

IV. Suggestions for Improvement

It is suggested that China Southern Power Grid judiciously enhance the timeliness of the reporting framework which is expected to further develop this innovative CSR Report.

Rating Team

Team Leader: Mr. Zhong Hongwu, Director of Research Center of Corporate Social Responsibility, Chinese Academy of Social Sciences.

Team Member: Mr. Zhang Xiaosong, Director of Social Responsibility Department of Comprehensive Bureau under the State-owned Assets Supervision and Administration Commission of the State Council (SASAC).

Wang Zhimin, Process Evaluator



中国企业社会责任报告
专家评级委员会
Chinese Expert Committee on CSR Report Rating

钟宏武
Leader of the rating team

魏紫川
Vice Chairman of the
Rating Expert Committee



Scan this code to view corporate rating files

Third-Party Evaluations

Cheng Duosheng Director of Business Innovation Department of China Enterprise Confederation

The report centers on "New". First, it has a new concept. The report closely follows national strategies and the overall situations of CSG's reforms and development. The opening chapter includes the Party Central Committee's Call and CSG's Action, explaining CSG's initiative to fully implement the requirements of 19th CPC National Congress Report under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. Second, it has a new perspective. The report communicates with stakeholders on an equal footing and with the same frequency. A 50Hz column is set up in each chapter to describe CSG's special performance of responsibilities and demonstrate the values created and shared by CSG and its stakeholders. Third, it has a new idea. The report focuses on satisfying the electricity demand of the people who want to live a better life. Prior to the contents of each chapter, it presents with plain words and beautiful illustrations the company's vision of creating value for shareholders and meeting the needs of people to live a better life. Fourth, it has a new style of management. The innovation of the report is reflected in CSG's new approach of to the report's preparation in which the shareholders participate. Following the process of listening-evaluating-reporting, the preparation of the report functions as a bond between the internal and external shareholders to exchange and communicate with each other. Hopefully, CSG will continue its innovation in the future and contribute more fresh insights and experience to the CSR management in China.

Yin Gefei Chief Advisor of China WTO Tribune

I am very pleased to see in the report that the Company has made achievements in promoting responsibility management and comprehensively upgrading the ability to perform responsibilities. Firstly, the concept has been updated. The report focuses on implementing Xin Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th CPC National Congress to clearly express that the key to its social responsibility is to satisfy the electricity demand of people who want to live a better life. Secondly, the management system has been upgraded. The report systematically presents the stakeholders' participation in CSG's performance of social responsibility, which reflects that the company attaches great importance to the concern and attention of stakeholders. Thirdly, the practice has been upgraded. The report has disclosed in depth the responsibility practices of CSG in the development of the Guangdong-Hong Kong-Macau Greater Bay Area, technological innovation, consumption of hydroelectric power from Yunnan Province, release of reform dividends, and implementation of targeted poverty alleviation in the past year, leaving readers with a distinct impression. Fourthly, the performance has been improved. CSG has received 81-point third-party customer satisfaction and Special National Award for Scientific and Technological Progress. It has also transmitted 202.8 billion kWh of electric power from West to East, and 27.7 billion kWh of surplus hydropower from Yunnan Province. These fully reflect the Company dedication to its responsibilities.

Report Benchmarks

Actions to achieve the Sustainable Development Goals

<p>1 NO POVERTY</p> <p>Action:</p> <ul style="list-style-type: none"> With the direct help of CSG, 280 poor villages and 179,000 people were lifted out of poverty during Year 2017. <p>P75-77</p>	<p>2 ZERO HUNGER</p> <p>Action:</p> <ul style="list-style-type: none"> Helped county nurture and develop characteristic agricultural industries. <p>P76</p>	<p>3 GOOD HEALTH AND WELL-BEING</p> <p>Action:</p> <ul style="list-style-type: none"> Organized training courses on occupational health management. The annual physical examination coverage rate is 100%. <p>P70</p>
<p>4 QUALITY EDUCATION</p> <p>Action:</p> <ul style="list-style-type: none"> The promotion and reform of education and training institutions. Staff training rate reached 96.3%. <p>P71</p>	<p>5 GENDER EQUALITY</p> <p>Action:</p> <ul style="list-style-type: none"> CSG pays salaries on time and strictly complies with male and female. Proportion of female employees reached 25.43%. <p>P70</p>	<p>6 CLEAN WATER AND SANITATION</p> <p>Action:</p> <ul style="list-style-type: none"> Building green substations in accordance with the requirements of "saving energy, land, water and materials and protecting environment" <p>P45</p>
<p>7 AFFORDABLE AND CLEAN ENERGY</p> <p>Action:</p> <ul style="list-style-type: none"> Non-fossil energy power generation accounts for 50.8% of the Company's total output. <p>P41-44 P49-51</p>	<p>8 DECENT WORK AND ECONOMIC GROWTH</p> <p>Action:</p> <ul style="list-style-type: none"> Protecting the rights and interests of employees .to enhance all staff member's sense of fulfillment and belonging. <p>P70-72</p>	<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> <p>Action:</p> <ul style="list-style-type: none"> Increase investment in technological innovation and power grid construction <p>P16-17 P36-37</p>
<p>10 REDUCED INEQUALITIES</p> <p>Action:</p> <ul style="list-style-type: none"> CSG takes the initiative to assume responsibilities of power universal services, and strives to solve unbalanced and inadequate power development issues <p>P73</p>	<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> <p>Action:</p> <ul style="list-style-type: none"> Improving emergency management, comprehensively enhancing the intrinsic safety of the power grid and its ability to resist disasters and provide reliable power supplies for economic and social development. <p>P35</p>	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>Action:</p> <ul style="list-style-type: none"> CSG has actively explored ways to maximize the use of waste resources, continuously improving the recycling rate of waste and strived to reduce the impact of waste emissions on the environment. <p>P48-51</p>
<p>13 CLIMATE ACTION</p> <p>Action:</p> <ul style="list-style-type: none"> Promoting green development from the power side to the customer side <p>P40-51</p>	<p>14 LIFE BELOW WATER</p> <p>Action:</p> <ul style="list-style-type: none"> Enhancing marine ecology and biology protection in the process of implementing 	<p>15 LIFE ON LAND</p> <p>Action:</p> <ul style="list-style-type: none"> Creating a green project, to protect biodiversity <p>P46</p>
<p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p> <p>Action:</p> <ul style="list-style-type: none"> Taking clean atmosphere as escort, promoting management through audit <p>P57</p>	<p>17 PARTNERSHIPS FOR THE GOALS</p> <p>Action:</p> <ul style="list-style-type: none"> CSG undertakes the Belt and Road Initiative by participating in power cooperation along the Belt and Road <p>P64-65</p>	

Note: Goal 14 is not disclosed in detail in the report but are available on the Company's website.

Report Indicators and Indexes

Cover	GRI Benchmark	CASS-CSR Indicators for Chinese Academy of Social Sciences
Board Chairman's Message	G4-1/G4-2	RP3.1/ RP3.2
Report Review	G4-DMA/G4-24/G4-25/G4-26/G4-27/G4-37	RP2.1/RP2.2/RP2.3/RM1.3/RM2.2/RM4.1/RM5.1/RM5.2/RM5.3/RM5.5
About Us	G4-3/G4-4/G4-5/G4-6/G4-7/G4-8/G4-9/G4-13/G4-14/ G4-34/G4-35/G4-38/G4-49/G4-56	RM1.1/RA1.1/RA1.2/RA1.3/RA1.4/RA1.5/RA1.7
Spotlight (1)	G4-EC7/G4-EC8/G4-SO1/ G4-SO2	SP1.9/EP1.6/RA2.1
Spotlight (2)	G4-EC6/G4-EC7/G4-EC8/ G4-EC9/ G4-SO1/ G4-SO2	ES6.1/ES6.2/ES6.3/ES6.4/RA2.1
Power Supplies DMA		
Key Business Performance	G4-PR2/G4-PR3/G4-PR5/G4-PR8/ G4-SO1/ G4-SO2	ES1.1/ES1.3/ES1.4/ES1.5/ES1.6/ES1.8/ES1.10/ES3.1/ES3.2/ES3.3/ES3.4/ES3.5/ ES3.6/ES3.7/ES3.8/ES3.9/ES3.10/ES3.12/ES3.14/ES3.15/ES3.16/ES4.2/ES5.1/ES5.5
Guaranteeing Safe Operation	G4-14/G4-HR7	ES2.1/ES2.5/ES2.6/ES2.7/ES2.9/ RM4.4
Improving Emergency Capability		ES2.4/ES5.2/ES5.3/ES5.4/ES5.6/ES5.7/ES5.8
Construction of Smart Grid	G4-PR1 / G4-SO2	ES4.1/ES4.5/ES4.6/ES4.7/ES4.8
Environmental Protection DMA		
Key Business Performance	G4-EN19 /G4-EN21	EP2.1/ EP2.2/ EP2.3/ EP2.4/ EP2.5/ EP2.6/ EP2.8/ EP2.10
Construction of Green Grid	G4-EN11/G4-EN12/ G4-EN29	EP1.1/ EP1.2/ EP2.13/ EP2.14/ EP3.1/ EP3.2/ EP3.3
Promoting Green Operations	G4-EN2/G4-EN23/G4-EN27/ G4-EN30	EP1.5/ EP1.7/ EP1.8/ EP1.9/ EP2.11/ EP2.12/ EP2.15
Integrated Energy Services	G4-15/G4-16/G4-EN6/G4-EN7/ G4-EN19	EP1.6/ EP2.17/ EP2.18/ EP2.19/ EP2.20
Operating Efficiency DMA		
Key Business Performance		OP1.1/OP1.2/OP1.3/OP1.6/OP1.7/OP1.8/OP1.11
Solid Foundation for Development	G4-SO4/ G4-SO5	OP1.10/OP2.1/OP2.2/OP2.3/ SP1.1/ SP1.2/ SP1.3/ SP1.4/ SP1.5/ SP1.6
Gaining Development Momentum	G4-43/G4-56/G4-57/G4-48/G4-SO3/G4-SO4/G4-SO5/ G4-SO8/G4-PR1	OP1.10/ SP1.10
Promoting Joint Development	G4-12/G4-EN33/G4-LA14/ G4-LA15G4-SO1/G4-SO2/ G4-SO10	ES1.9/ES2.3/ES2.11/OP2.4/OP2.7/OP2.8/OP2.9/OP2.10/OP2.11/OP2.12/ OP2.13/ RM3.2/ SP1.9
International Exchanges and Cooperation	G4-16	OP2.14
Social Harmony DMA		
Care and Love for Employees	G4-10/G4-11/G4-EC3/G4-L1/G4-LA7/G4-LA8/G4-LA9/G4-LA1 0/G4-LA12/G4-LA13/G4-LA16/G4-HR5/G4-HR6	SP1.7/SP1.8/SP2.1/SP2.2/SP2.3/SP2.4/SP2.5/SP2.6/SP2.7/SP2.8/SP2.12/SP2.13/SP2.14/ SP2.15/SP2.17/SP2.21/SP2.23/SP2.24/SP2.25/SP2.26/SP2.27/SP2.28/SP2.29/SP2.30
Devotion to Universal Services	G4-SO2	ES3.17/ SP3.5/ SP3.6/ SP3.7
Promotion of Common Good	G4-SO6	SP3.1/ SP3.2/ SP3.9/ SP3.10/ SP3.11/ SP3.12
Management		
Responsibility Governance	G4-35/G4-36/G4-42/G4-49/G4-46/G4-49	RM2.1/ RM2.3/ RM2.4/ RM2.5/ RM5.1
Responsibility Research	G4-43	RM3.1/ RM6.1/ RM6.4
Responsibility Exchange		RM1.2/ RM4.3/ RM5.6/ RM6.2/ RM6.3
Major Honors of Responsibility	G4-50	RA2.3
Responsibility Communication	G4-50	RM1.2/ RM4.3/ RM5.6/ RM6.2/ RM6.3
Outlook 2018		RA3
Performance Evaluation		
Ratings and Evaluations	G4-2	RA4
Report Benchmark	G4-17/G4-22/G4-23/G4-28G4-29/G4-30/G4-31	RA5
About the Report		RP1.1/ RP1.2/ RP1.3/ RP1.4/ RP1.5/RA6
Key Performance of Responsibility after the 18th CPC National Congress		ES4.3/ES4.4/ RM4.2

About this Report

This report is the eleventh annual social responsibility report issued by CSG. The previous report was released on May 23, 2017 while the next one is scheduled to be released in May 2019.

Based on the principles of objectiveness, standardization, transparency and comprehensiveness, the report discloses the company's performance in economic, social, environmental and other aspects. The report is in both Chinese and English. In case of any discrepancy, Chinese shall prevail.



- Time Range of the Report**

The report covers a whole year from January 1, 2017 to December 31, 2017 while some of the contents were extended to enhance the comparability and perceptiveness of the report.

- Subjects of the Report**

The report focuses on China Southern Power Grid Company, including its branch companies, subsidiaries, and subordinate bodies.

- Compilation Basis of the Report**

Index System of Corporate Social Responsibility of China Southern Power Grid Corporation (CSG-CSR 2.0);

Guidelines to State-owned Enterprises Directly under the Central Government on Fulfilling CSR by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC and NDRC Research [2008] No. 1);

GB/T36001-2015 Guidelines for Social Responsibility Reports Compilation;

China's Corporate Social Responsibility Report Compilation Guide 3.0— Power Supply by Chinese Academy of Social Sciences (CASS-CSR 3.0);

Sustainability Report Guidelines by Global Reporting Initiative (GRI G4);

Guidelines for Social Responsibility of China's Industrial Enterprises and Industrial Associations by China Federation of Industrial Economics.

- About the Data**

The data used in the report is derived from documents and reports officially issued by CSG and other agencies. The data of 2017 disclosed in this report are from flash reports, which may differ slightly from the final statistics.

- Reliability Guarantee**

The company guarantees that there are no false records, misleading statements or major omissions in the report.

- About the Appellations in the Report**

For convenience, "CSG", "the company" and "we" are used in this report to refer to China Southern Power Grid Co., Ltd.

- Extended Reading**

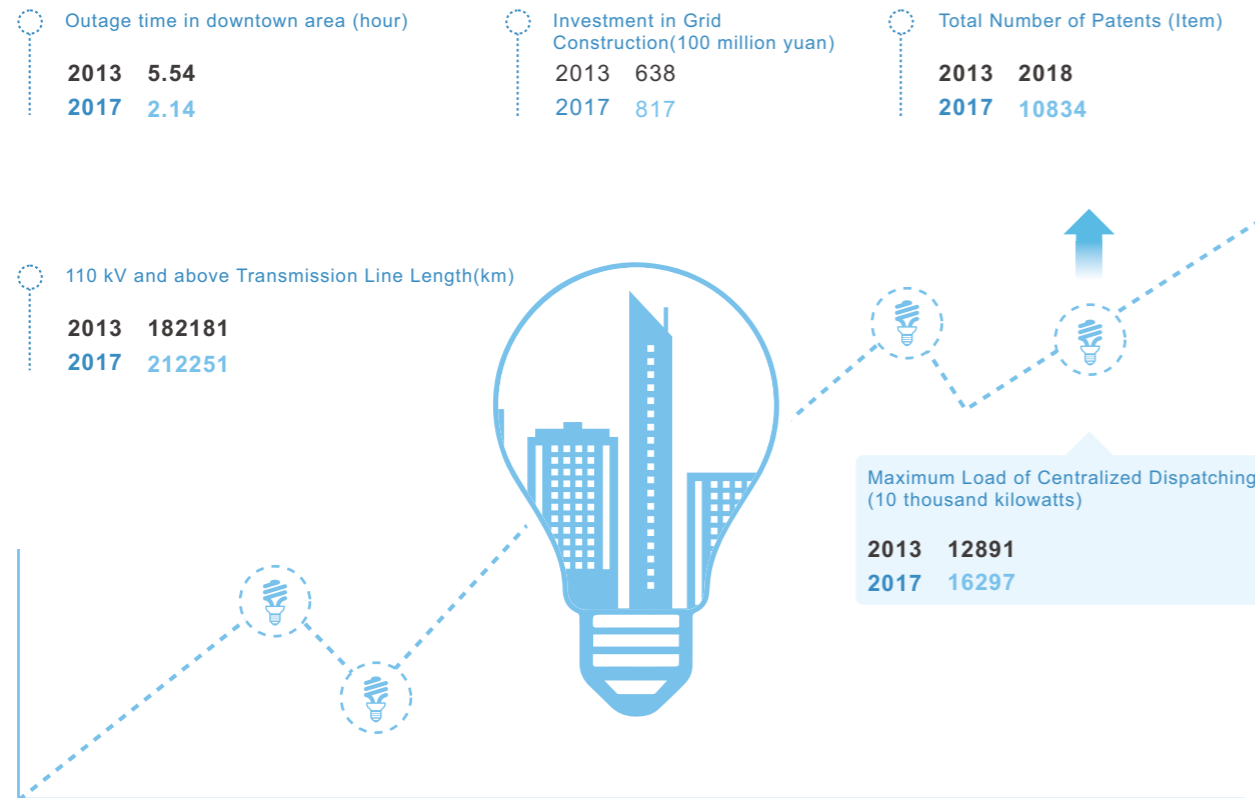
A social responsibility information disclosure system has been created in CSG. Please visit CSG's website www.csg.cn for the company's previous reports and other materials such as the Social Responsibility Practice Booklets 2017 of Guangdong, Guangxi, Yunnan, Guizhou, Hainan Power Grid Corporations, and Guangzhou and Shenzhen Power Supply Bureau to know more about the company's corporate social responsibilities.

- To Obtain Different Versions of the Report**

E-text of this report is available on our website. Should you have any questions about the report or demand a hard copy, please contact us by E-mail: csr@csg.cn, or by phone: (020) 36621917. For more information, please scan the QR code on the back cover.

Key performance since the 18th CPC National Congress

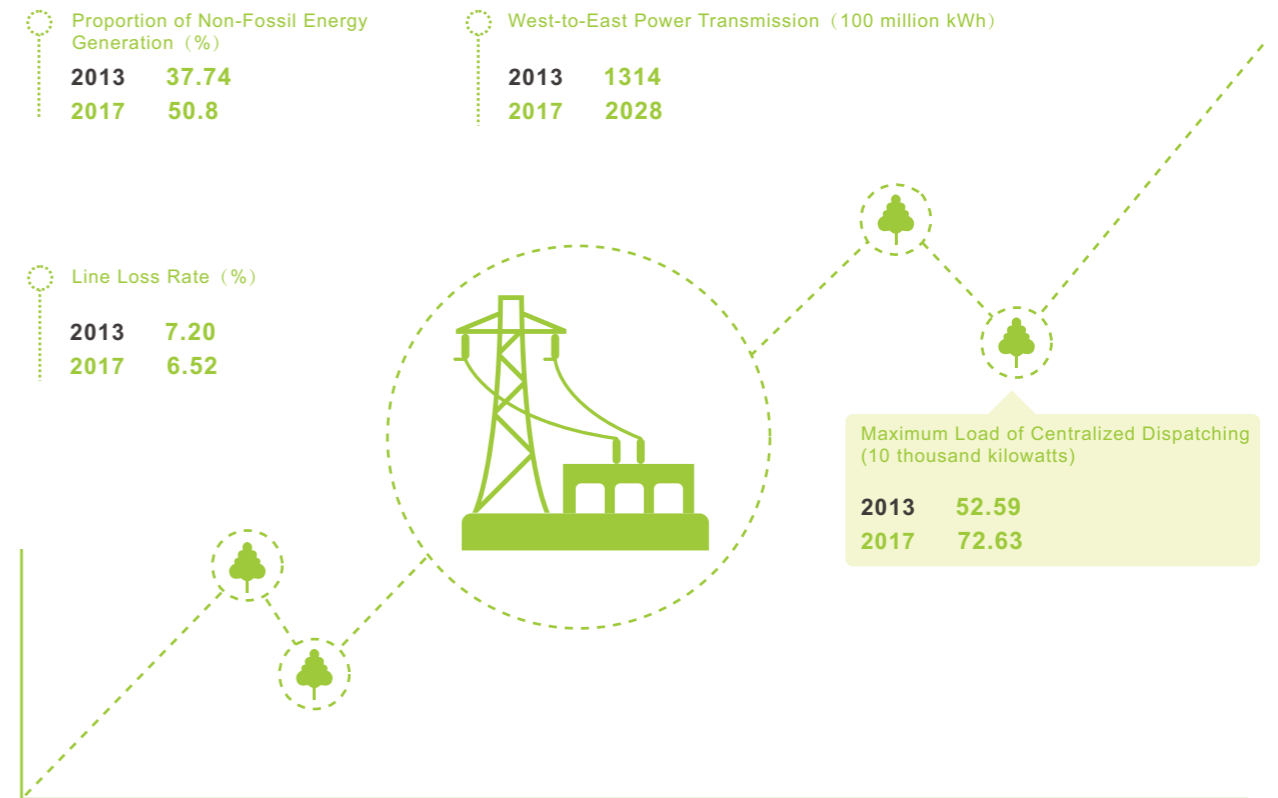
Power supplies The score of third-party customer satisfaction increased from 76 in 2013 to 81 in 2017.



Key Performance Indicators of Corporate Social Responsibilities	2013	2014	2015	2016	2017 (year)
Outage time in downtown area (hour)	5.54	3.57	4.98	4.6	2.14
Investment in Grid Construction (100 million yuan)	638	658	674	775	817
R & D Investment (100 million yuan)	26.28	20.23	21.90	58.5	76.2
Length of 110 kV and above Transmission Line (km)	182181	191371	200821	208438	212251
110 kV and above Transformer Capacity (10 thousand KVA)	73099	78919	83181	92368	97429
Maximum Load of Centralized Dispatching (10 thousand kilowatts)	12891	13614	14164	14743	16297

Environmental Protection

Consumption of fossil fuel per unit power generated and sold decreased from 215 grams of standard coal per kWh in 2013 to 142.5 grams of standard coal per kWh in 2017.

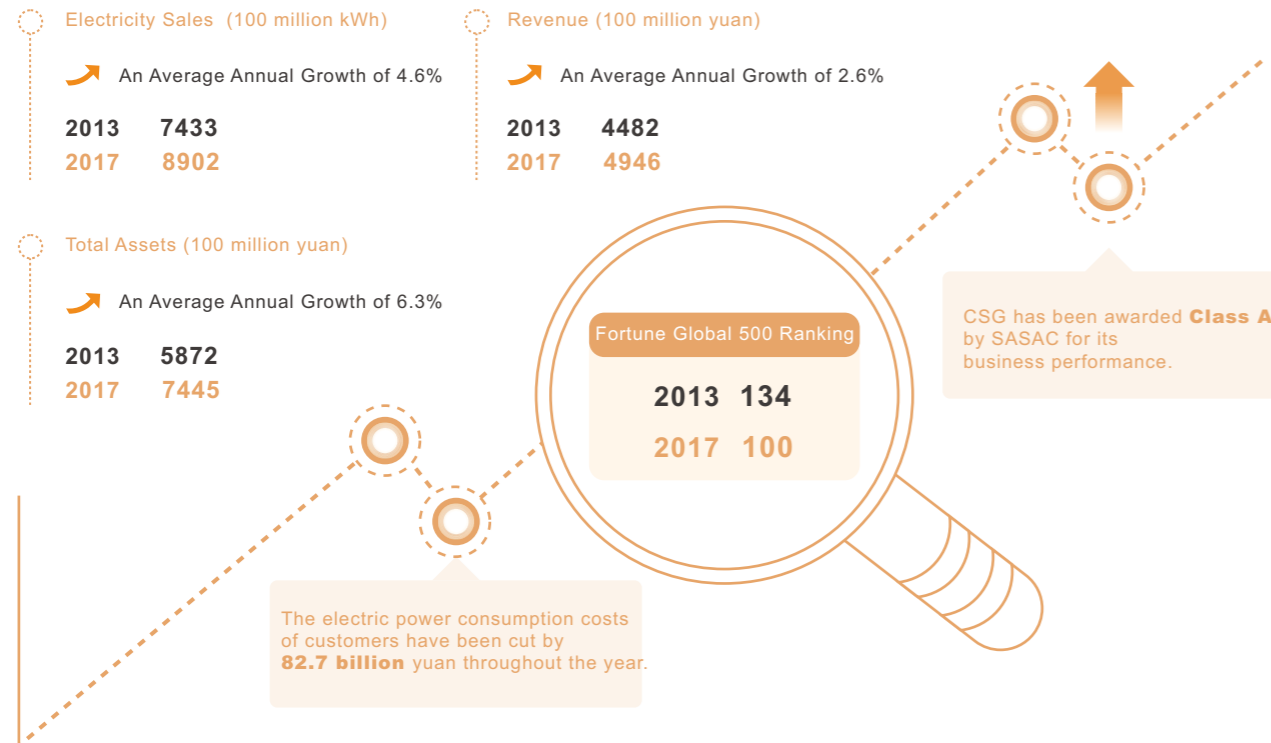


Key Performance Indicators of Corporate Social Responsibilities	2013	2014	2015	2016	2017 (year)
West-to-East Power Transmission (100 million kWh)	1314	1723	1891	1953	2028
Environmental Benefits of Clean energy deployment (10,000 tonnes of standard coal)	591	1096	1505	1117	1766
Comprehensive Line Loss Rate (%)	7.20	6.94	6.72	6.38	6.52
Helping Customers Save Energy (100 million kWh)	9.3	9.03	9.94	10	12.1
Energy Conservation Training (session)	220	197	147	123	158
Energy-Saving Diagnosis (household)	1437	1325	1135	1100	1092

Key performance since the 18th CPC National Congress

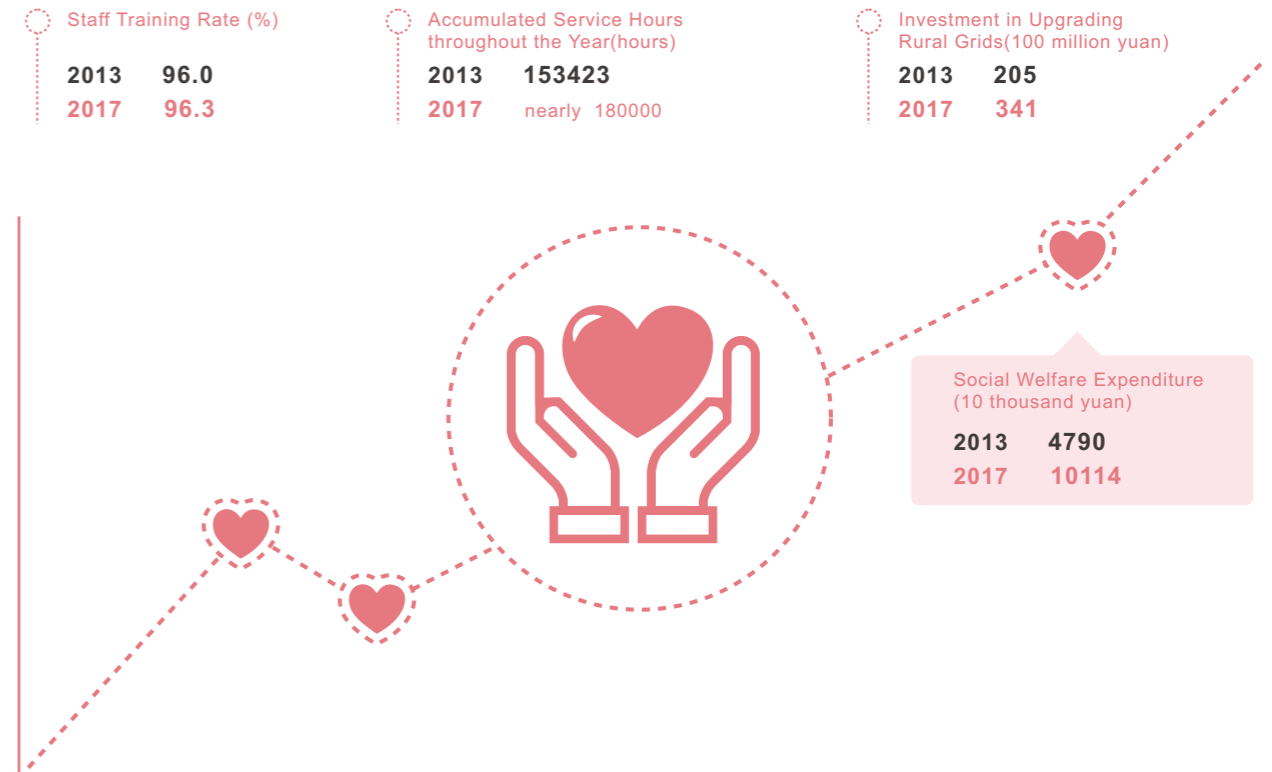
Operating Efficiency

GDP output per kWh increased from 11.2 yuan in 2013 to 13.64 yuan in 2017.



Social Harmony

Social welfare expenditure increased from 47.9 million yuan in 2013 to 101.14 million yuan in 2017.



Key Performance Indicators of Corporate Social Responsibilities	2013	2014	2015	2016	2017 (year)
Total Assets (100 million yuan)	5872	6191	6362	6891	7445
Electricity Sales (100 million kWh)	7433	7859	7822	8297	8902
Revenue (100 million yuan)	4482	4738	4707	4733	4946
Total Tax and Profits (100 million yuan)	382	407	501	556	495
Fortune Global 500 Ranking	134	115	113	95	100
Revenue Growth and Expenditure Reduction Through Auditing (100 million yuan)	1.40	2.13	1.19	5.19	7.35

Key Performance Indicators of Corporate Social Responsibilities	2013	2014	2015	2016	2017 (year)
Female Employees (%)	24.1	24	24.38	24.30	25.43
Staff Training Rate (%)	96.0	95.0	96.4	100	96.3
Social Welfare Expenditure (10 thousand yuan)	4790	6176.8	13358	7663.7	10114
Investment in Upgrading Rural Grids (100 million yuan)	205	182.9	173	324	341