

CSG is committed to lighting up households in South China



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Dear readers, as we did in previous years, we hope our exquisite cover illustration can better your understanding of CSG's development. This year's Report cover is designed under the philosophy of "CSG Dream, To-Top Road". The cover delivers three folds of meanings:

An abstract *three phase AC concept* responds to CSG Logo.CSG is on the road to top, and it requires a dynamic, sustainable approach.

Scenes of power generation, power transmission and power consumption. The three scenes refer to a harmonious power eco-system consisting of power source, power grid and clients.

The letter E refers to CSG's mission of establishing itself as a leading international power company with focus on Excellence, Efficiency, and Environment.



CSG Lights Up Every Household
in Southern China



CSG 2013 Corporate Social Responsibility Report

2013

Corporate Social Responsibility Report

Interview with CSG Board Chairman



Board Chairman



Against the backdrop of the National-level “China Dream” , CSG has brought forward a complimentary concept of the “CSG Dream” ; asking ‘What is the relationship between the CSG Dream and CSG’ s corporate social responsibility?’



China’s President, XI Jinping, pointed out that rejuvenation of China is the greatest dream of our nation throughout modern history, noting that the national “China Dream” is the shared responsibility of every company and every person. We of CSG have our own *dream* too. In the short-term, our dream is to overcome our disadvantages in management and build CSG into a truly outstanding company that matches our ranking in the Fortune 500 list. In the long run, the CSG *Dream* is to become a world-leading power grid company that excels in service, management and corporate image. Such is the embodiment of “China Dream” within CSG.

Shouldering social responsibility and practicing “CSG Dream” go together. They share the common aim to pursue quality and efficient development of the company, and to go to great length to provide customers with safe, reliable and high quality power supply. To promote the CSG Spirit “To Light up Every Household with My Hard Working”, and to make the intelligence and strength agglomerate, CSG actively shoulders social responsibility. By constructing a World Leading Power Grid Company, and fulfilling China Dream, CSG Dream as well as individual dreams, CSG will spare no effort to archive Customers’ Satisfaction, Business Development and Employees’ Happiness.



What specific measures has CSG taken to realize the “China Dream” ?



In the current campaign, CSG has firmly established service awareness and the understanding of CSG as a service provider and window a transparent organization, and is working to ensure that all our activities served to ensure the safe and stable operation of the grid, appreciation of sState assets, decrease of customer’s outages and improved customers’ satisfaction. In 2013, the average grid-wide outage time dropped 8.8% than from the year before, and, in particular, outages in the western region dropped by 58%. Five CSG power supply bureaus were awarded *national level-A golden* companies in power supply stability, accounting for half of all awards ed tp CSG companiesies. The awards were a result of the an independent, third-party customer satisfaction survey focused on CSG. They revealed an overall rating of was 81 points, 4 points higher than the year before. CSG ranked top in the customer satisfaction surveys in the Guangdong, Guangxi, Yunnan, Guizhou, Guangzhou and Shenzhen areas.

At the same time (in this year), we have carried out 28 rectification projects and 7 special campaigns with a principle focus of “*caring for the under-privileged, ensuring power for affordable housing schemes, supporting the rural area’s development towards a well-off society and in supporting business development*”. CSG staff visited 1.13 million people in urban and rural areas, all of whom live on governmental subsidies, and the company carried out voluntary power safety checks for 1.15 million customers in these categories. Additionally we have arranged one customer service manager for each of the 702 affordable housing communities in the five provinces and regions in CSG service area. Among the new communities scheduled to have power access in 2013, CSG accomplished installation of standard power supply facilities in advance, for 450 communities, giving access to power inside 33 days on average. We made an investment of RMB 20.5 billion to renovate and upgrade rural grids in 2013, and have improved power quality for 840 thousand rural clients. CSG has been actively supporting local development plans and delivering high quality power supply to key projects. We established the “Quick Power Access” service brand and have appropriate delivered power supplies to a number of key clients with power demands above 100 kVA 32 days in advance of the installation date promised. We have also conducted energy conservation diagnoses for 1,025 businesses. Moreover, we have launched education campaigns to establish closer relationships with the public and strengthen our brand image.



In recent years, air pollution has caused constant smoggy weather across much ost of China, raising great public concerns in related to environmental issues. The CPC Central Committee has called for stronger initiatives to promote green, circular and low-carbon development, and strongly opposes sacrificing the environment in exchange for short-term economic growth.

You might ask “What has CSG done in promoting green development?”



Transformation of the electricity development model is significant as it drives the company to adopt a smart, efficient, reliable and green grid development plan and process. We are leveraging CSG’ s platform role for optimized resources deployment and its instructive role to upstream and downstream industries to make every effort at reducing the consumption of fossil fuels and making every watt of power generated *greener*. To realize this goal, CSG has continued to further the “Green Action” program. In 2013, the fossil fuel consumption for generation of electricity sold by CSG dropped to 215g standard coal/kWh, which equals a CO₂ emission level of 572g, or about 18% lower than the national level. This is the result of the concerted efforts by various stakeholders. On the power supply side, CSG has endeavored to realize energy-efficient power generation and dispatch, and to optimize hydropower in Yunnan. These efforts have avoided a waste of 19 TWh, and enabled 131.4 TWh of power transmission from the West to the East, setting an historical record. On the other hand, CSG has been actively promoting the development of clean energy, especially renewable energy including hydropower, wind power and solar power. By the end of 2013, across the CSG grid, the installed capacity from non-fossil fuels accounted for 47% of the grid ’s total, the generated power accounted for 38% of the grid ’s total, resulting in a 31% and 22% higher total than national averages respectively. On the power grid side, CSG spared no effort in the development of planning, management, technology development and operational growth programs and has successfully cut the overall line loss to 6.02% (according to the parent company ’s statistical scope), reaching the same level with advanced countries such as the US and France. On the customer side, we have striven to provide more energy conservation services and helped them to save a total of 930 GWh in 2013. In the future, CSG shall continue to implement the energy conservation and emission reduction strategies now in motion, we will actively support the low-carbon pilot province/city projects and provide a green force for a beautiful China



CSG’ s performance in corporate social responsibility is already at the top- level among all SOEs. What will CSG do to further efforts in this area in the future?



Fulfilling corporate social responsibilities is a complex strategic process, and a systematic project and a project of this scope asks for everyone’ s participation. In the past few years, CSG has systematically implemented responsible management practices, responsible business practice, installed responsibility integration processes, encouraged responsibility dissemination and follow-up research in responsibility sharing and has developed a strategy-driven social responsibility management model. CSG’ s “*Strategy-driven social responsibility management*” efforts were documented as a business case and recognized as one of the 10 best social responsibility practices among central enterprises. (question: By whom?)

For the next steps, we will continue to comply with the “*Implementation guidelines for the harmonious development strategy of central enterprises in the 12th five-yearplan*” . We shall bring CSG’ s social responsibility practices in-line with international standards and guidelines from the perspective of both the stakeholders’ interests and the company’s business features. CSG’s responsibilities consist of six parts: Core responsibility; political responsibility; basic responsibility; historical responsibility; special responsibility and common responsibility. To accomplish these goals we shall earnestly work to raise the quality of our work around them. We have also established a social responsibility implementation mechanism to impart specific requirements to every level, every profession, every post in CSG so that everyone may be involved in the practice of social responsibility and in building our brand image. “A myriad of twinkling lights symbolizes the great rapport of CSG” and in our society.

CSG Management



From Left to Right

| | | | | | | | | | | |
|---------------------------------------------------------------------------|-------------------|--------------------|-----------------------------------------|-----------------------------------------|-------------------|---------------------------------|-----------------------------------------|--------------------------------------------|---------------------|---------------------|
| • LIAO Jianhua | • HE Xiqiang | • WANG Liangyou | • QI Dacai | • XIAO Peng | • ZHAO Jianguo | • ZHONG Jun | • WANG Jiuling | • SUN Xiaoyi | • ZHANG Xiaodong | • LI Wenzhong |
| Vice President and Board Chairman of the Guangdong Power Grid | Vice President | Vice President | Board Director/ Vice President | Board Director/ Vice President | Board Chairman | Board Director/ President | Board Director/ Vice President | Head of Discipline and Inspection | Vice President | Chief Accountant |

Guide to Reading This Report

This report consists of the Introductory Chapter, the CSR report and the Summary. The Introductory Chapter is composed of the feature report on social responsibility and an update on implementation of the *Mid-to-Long-Term Development Strategy*; the CSR report systematically discloses CSG’s practice of corporate social responsibility programs in the year 2013 including power supply, environmental protection, economic performance and social harmony; the Summary gives a detailed account of the company’s sources of responsibility, responsibility management and outlook for 2014.



Feature Report on Responsibility

Four measures designed to solve the problems in people' s access to power

We have focused on reducing customer' outages and raising their level of overall satisfaction. In response to issues of most concern, including power quality and power supply expansion, CSG has strengthened efforts in four areas: Caring for under- privileged users,;

ensuring power for the affordable housing schemes; , supporting rural area' s developments towards realization of a well-off society and supporting business development in an endeavor to solve acute problems in people's access to power and usage.

15KkWh of free electricity is registered monthly for 1.38 million low-income households



1.15 million free power safety checks were conducted

CSG staff visited people in urban and rural areas who live in publicly subsidized facilities and conducted free power safety checks to resolve any potential threats to them and their safe access to adequate power supplies.

CSG teams have also launched major publicity campaigns and liaised with both government and community organizations to ensure the free power policy has truly benefited the under-privileged .

Two energy-saving bulbs were provided for every family who lives on economic subsidies

36,000 potential safety threats were cleared

2.27 million energy-saving bulbs given free of charge



Caring for disadvantaged people



Supporting rural area' s development towards becoming a well-off society



RMB 20.5 billion has been invested in rural grid development

176 35-110kV substations were built in 2013

Power quality has been elevated for 840,000 rural households

Zero transformer overload damage was registered during the Spring Festival power consumption peak

CSG has been strengthening rural grid renovation to improve its power supply capability and quality. Since 2012, in order to prevent the overload and/or short- circuit of the 10 kV distribution transformers during the Spring Festival power consumption peak, . CSG has invested a cumulative sum of RMB 780 million to upgrade 11,308 distribution transformers in rural areas. 2013 saw no distribution transformer breakdowns during the Spring Festival.

CSG has adopted the model of supplying power in rural areas in collaboration with village committees and has aided rural development; the company also actively carried out supporting projects for the rebuilding of rural grids.

Responsibility Integration – Awarding staff achievement to encourage their enthusiasm

Everyday, thousands of CSG frontline staff members fulfilltheir responsibilities: they patrol all along power cables in remote mountain areas, they read meters in remote rural areas, and they conduct emergency repairs in all types of weather. Too, they stay on duty in the depth of night ... dedicating themselves to this cause on what may be seen to be a every ordinary post. CSG respects every member' s diligence and contribution and has held various activities to strengthen team-building, to inspire staff initiative and entrepreneurship and inspire their sense of honor and belonging. In 2013, CSG held the 1st award ceremony for staff where the individuals and teams that made outstanding contributions in the production, operation or management were given awards and honors. Five teams and seven individuals were selected as first-grade honor receivers, while another five teams and 10 individuals were honored as "Moving CSG" role models. Such honoring activities make the role models into mirrors and encourage others to promulgate their spirits; these activities also recognize the value of staff, gather all CSG members' wisdom and strength together and encourage everyone to put into practice the core value of "A myriad of twinkling lights, reflects the great rapport of CSG" on their job.



Scan the QR code to follow the award ceremony for "Moving CSG" teams and individuals

Receiving recognition from the public

By making the four service measures the focus of solving the electricity issues of most concern to the public, CSG' s service received positive recognition from the people and has been ranked the top utility service provider in public opinion surveys done by local governments.



Ranking No.1 in public opinion surveys in many provinces and regions:

"Power service is great!"

The Guangdong Power Grid Company

The company has ranked No. 1 in residents' satisfaction among companies of 10 service sectors in Guangdong for seven consecutive years, and has been awarded top place for utility service by the Guangdong Provincial Government for five consecutive years.

The Guangxi Power Grid Company

The company has won first place in public satisfaction among companies of 10 utility service sectors in Guangxi.

The Yunnan Power Grid Company

The company has ranked No. 1 in public satisfaction among companies of 10 utility service sectors in Yunnan for five years in a row.

The Guizhou Power Grid Company

For three years, the company has been ranked as top in overall customer satisfaction among all utility service providers in Guizhou

The Guangzhou Power Supply Bureau

For 13 consecutive years, the Bureau has won the No. 1 spot in Guangzhou' s public opinion surveys

The Shenzhen Power Supply Bureau

For three years in a row, the Bureau has held the top place among companies in the 40 governmental utility services in Shenzhen

No.1

Note Hainan Province did not conduct a public opinion survey in 2013.



Further Reading

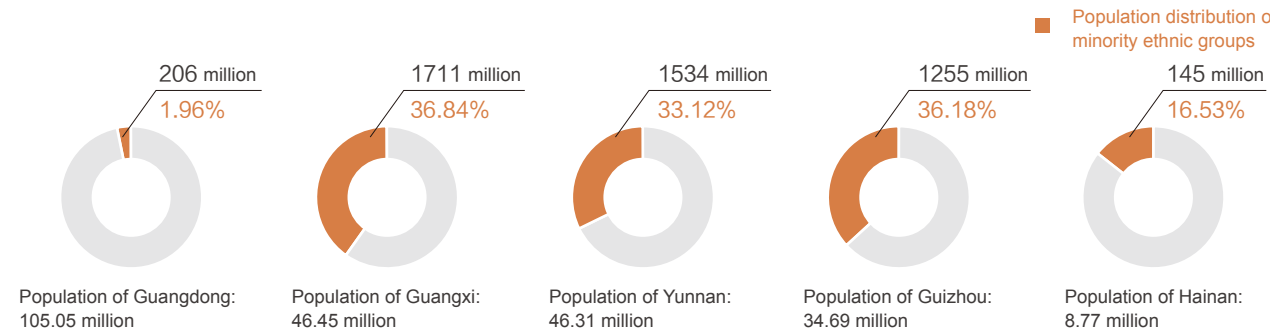
The utility service sector mainly refers to water, gas, electricity, public transport, telecommunication, banking and other sectors that relate closely to people' s life and work. Governments at all levels regularly conduct public opinion surveys to learn the public' s opinion on services provided and to gather comments on utility services so as to provide feedback for governmental decision- making processes and sector reform, and to continuously enhance service quality of these sectors.

Feature report on responsibility –popularizing power services in CSG’s vast rural areas

Imbalances in regional, urban and rural area program and project developments are characteristics of recent modernization programs in China. In the five provinces and regions of CSG’s service area, the Pearl-River-Delta area, in particular, has demonstrated a more advanced economic development whereas the vast rural areas in the west have developed relatively slowly. CSG has been actively supporting the National development plan, implementing the policies to foster development and benefit rural areas, endeavoring to popularize utility services within its’ service area, ensuring reliable, safe and satisfactory power access for the public and contributing to the harmonious social economic development in all regions.

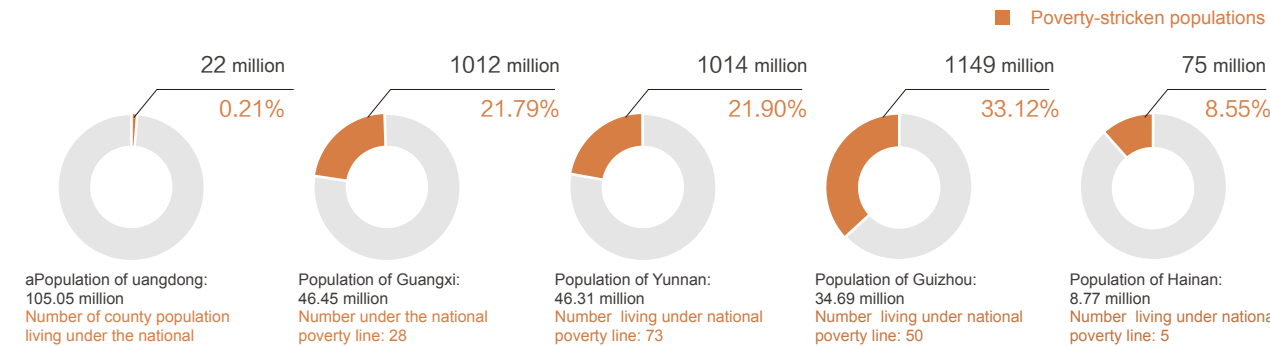
There are 34 minority ethnicities living in the five provinces and regions of the CSG service area including Zhuang, Yao and Miao. According to the 6th national demographic census, there are 48.51 million minority ethnic people in these five provinces and regions, representing 20% of the total population. Most of the minority communities live in remote areas with poor access to transportation. CSG fully respects the traditions, cultures, customs and feelings of minority ethnicities and protects cultural diversity. With the faith of “Lighting up thousands of homes no matter how distant they are”, CSG has committed itself to delivering electricity to every home of the minority groups and supporting harmony among all ethnicities.

Distribution of minority ethnicities in five provinces and regions of the CSG service area



Distribution of the populations living in poverty in five southern provinces and regions

Among the 592 national poverty-alleviation target counties, 156 are in CSG the service area, accounting for 26% of the national total. CSG has always paid great attention to the remote, underdeveloped regions and disadvantaged communities, allocating more resources in these regions, providing power service at the same price, and of the same management standard and service quality with as the more developed regions, supplying high quality, clean and efficient power to every home in the underdeveloped areas, supporting local economies and social development and sending brightness and happiness to these local rural communities.



- Note
- CSG realized delivery of power to every home within its service area by the month of October, 2012.
 - Population figures of minority ethnicities come from statistics of the 6th national demographic census.
 - The populations under the poverty line are numbers gathered at the end of 2011 and calculated by the national poverty line standard released in 2011: per capita annual income of 2,300 RMB in rural area (Poverty population of Guangdong is calculated by taking out the number of people above poverty line from the total population).
 - Populations of all provinces and regions are those at the end of 2011, referring to the *China Statistical Yearbook 2013*.

Strengthening management of the rural power grid

CSG has been earnestly implementing the Central Government’s policy and the CSG mid-to-long-term development strategy and has developed “*Opinions to Promote Rural Grid Development*” according to the principles of coordinated development of urban and rural power grids and integrated management. The company has also taken advantage of its resources, management strength and the synergy among all professional departments and local power bureaus to reinforce the fundamental management of rural grids, enhance support to rural grid development and reform, and to continue to improve the management and service levels in rural areas.

Optimizing management models of rural grid installment and power delivery

CSG departments at all levels have been diligently carrying out their management responsibilities and integrating rural grid services into the unified management system; municipal power supply bureaus have taken the county power bureaus in their administrative areas as their subordinate organizations and manage them directly. As a result, an integrated management structure combining general management departments with technical management departments and directly overseen by municipal power supply bureaus has been established in rural areas.

Promoting standardization

At the county level, the local power organizations operated separately, with ill management results, for a long time. CSG has launched a standardization scheme at all county-level power companies. CSG took the power supply stations as the pilot starting-point and phased in integrated professional services in the rural grid. During 2013, 30% of all rural power supply stations have been standardized with significant management and service improvements.

Supporting rural grid development

County power supply companies often lack a sustainable development capability, CSG provincial companies have actively supported projects in this area by capital injection, loans, and power generation expansion. CSG has also gradually improved rural grid infrastructures through generous investment in major grid repair and technical reform programs, unifying the production and service facilities and other measures. Furthermore, CSG has set up employee allocation pilots in nine county power companies to explore solutions to address structural labor shortages at frontline production posts.

Regulating rural grid employment

CSG employs staff in strict accordance with relevant laws and establishes harmonious labor relations. It has included the staff members of rural grid facilities in the company’s unified employment management system to gradually realize “same post/ same job/same salary” within the same organization.

Due to historical reasons, county-level power companies have many problems in the area of employment, including complex property relations, coexistence of multiple management models such as direct management and agent management, non-standard employment management, unclear labor relations, different salary systems and incomplete social insurance mechanisms. In light of all these problems, CSG has established a labor system under the guidelines of the “legal entity as the accountability body; labor contract management as the key and post management as the basis”, and has launched reforms in organizational structure, staff structure, salary systems and performance appraisal systems in order to promote harmonious development of county power companies.

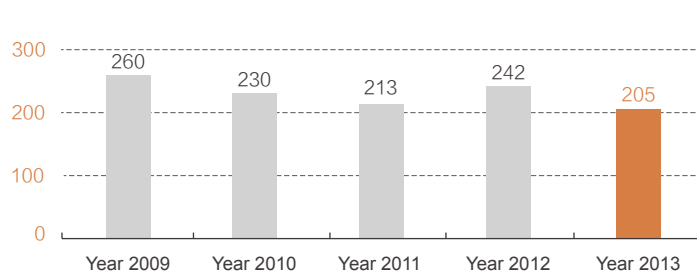


With standardized employment management, workers in the rural power companies are actively working for rural grid reform.

Advancing rural grid reform

CSG has been closely watching the changes of power demand in both rural and urbanized areas. The company continues to complete grid structures in rural areas and has established at least one 110kV+ power station in every county and completed a new rural grid ... which is safe, reliable, energy saving, environmentally friendly, technologically advanced and normatively managed.

Investment in rural grid construction and rebuilding (unit: 100 million RMB)



- Note
- With China’s economic structural adjustments, the Central Government’s budget for rural grid renovation investment has decreased relative to other programs/years. CSG has made active efforts to increase its self-generated capital to ensure stable investment for rural grid renovation. CSG investments accounted for approximately 1/3 of the total grid construction investment.

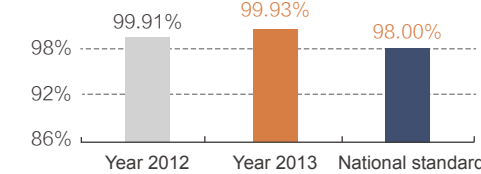


Trekking through mountains and waters to transport power materials

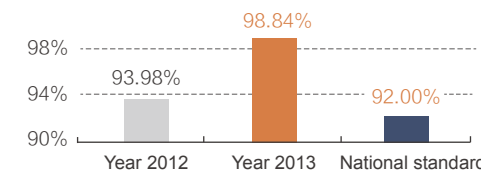
Improving the quality of electricity in rural areas

CSG is dedicated to building a well-off rural area and has taken a number of solid measures including: rural grid outage management; special projects to upgrade voltage in rural areas and research projects to improve rural electricity quality. As a result, the power supply reliability and the passing rate of overall voltage in rural areas have increased significantly.

Power supply reliability in rural areas



Overall voltage passing rate in rural areas



Raising the service level of rural grids

CSG has strengthened rural grid companies’ service awareness, promoted integration of urban and rural power supply service, narrowed regional differences and continued to enhance rural power service quality. Most CSG county-level power supply companies have ranked top in local business surveys.

Providing convenient electricity usage service. CSG power supply business windows have covered over 80% of townships and over 1/3 of administrative villages so as to meet the rural customers’ needs.

Fulfilling service promises for rural areas. CSG has strengthened the county-level organizations’ service initiatives, increased business efficiency, realized total coverage of the 95,598 service hotlines in rural areas and 100% fulfillment of its service promises for rural power service.

Electricity stimulates rural economies

According to the characteristics of the agricultural production in different provinces and region, CSG has allocated dedicated funds for power supply facilities upgrading and renovation to assist local timber processing in Guangxi, tobacco fire-curing and greenhouse vegetable planting in Yunnan, tealeaf processing in Guizhou and mariculture in Hainan to meet the power demands of agricultural production.



The Kaili Power Supply Bureau ensures power service for the Taizi ginseng planting base



Electricity helps the fueling of the timber processing industry in Guangxi



Sparing no effort to ensure the power supply for spring farming and greenhouse vegetable planting

Electricity brightens up farmers lives

Power quality in rural areas has continued to improve; rural residents no longer are bothered with the problem of unstable voltage and constant tripping. They can use modern household appliances including refrigerators, air conditioners, induction cookers and other appliances with peace of mind.



Resplendent night view in a rural area



Farmers using an induction cooker without worry with improved electricity quality



Power supply remains uninterrupted during a power check and repair; villagers of Lapien Village, Yaoshan Township singing and dancing under electric lights

Implementation of CSG Mid-to-Long-Term Development Strategy

CSG’s To-the-Top campaign has come at the most critical and challenging period of our time. We have furthered the implementation of strategy and unified management; strengthened top-level structures; constructed an advanced management system and moved toward key steps for the actualization of CSG strategies with the goal of becoming an international leading power grid company that excels in service, management and corporate image.

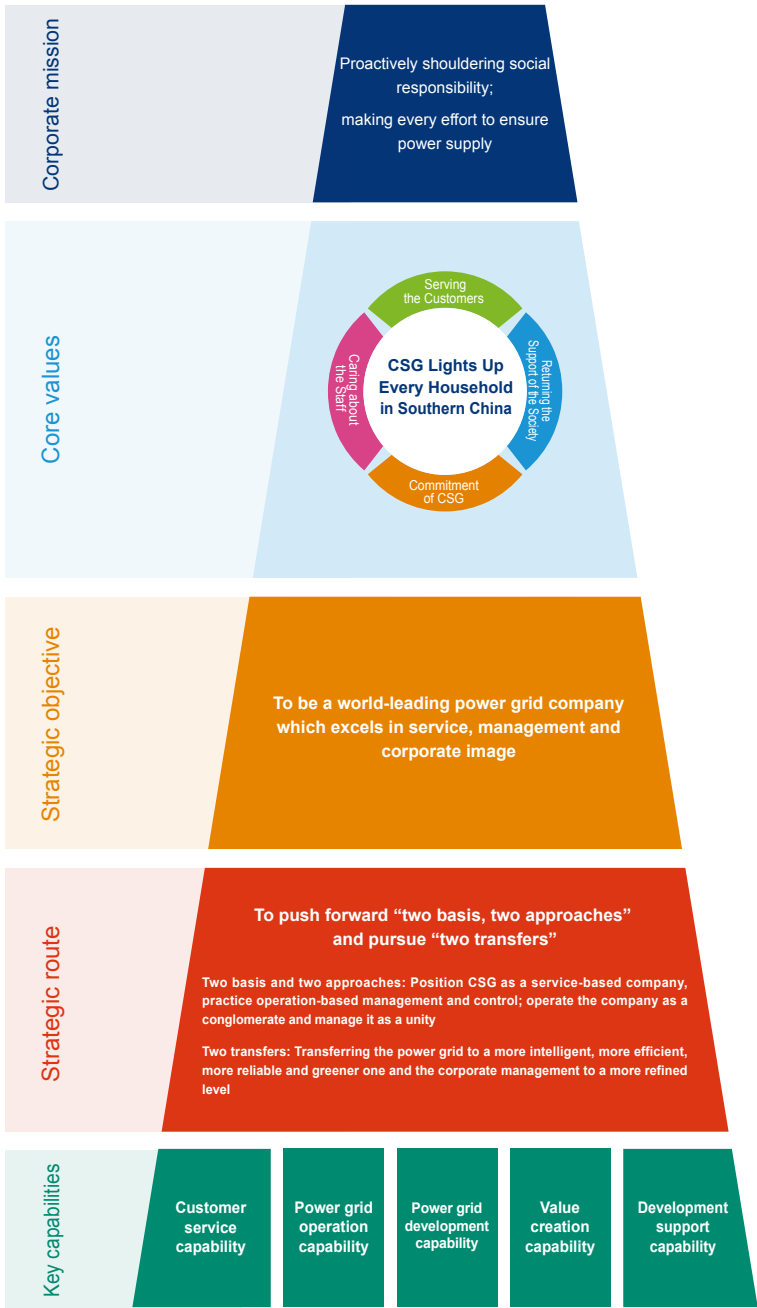
Developing a Complete Strategy System

CSG has established a complete strategic implementation system; formulated 14 sub-strategies in support of CSG mid-to-long-term strategy for the branches and subsidiaries; identified a strategic management principle of “strategy-oriented, innovation-led, unified leadership; clear professional categorization, tiered accountability and effective monitoring”, and pushed forward the all-round actualization of strategy

Establishing Comprehensive Management Committees

Eight management committees were established: a budget management committee, an assets life-circle management committee, a corporate-level decision supporting system and comprehensive planning management committee, a customer all-round service management committee, a capital/whole-process management committee, a risk management committee, a human resources management committee and a supervision management committee. These committees identify those key issues which call for coordination and push for closer collaboration between business links.

All management committees shall learn from internationally advanced management philosophies, absorb grass-roots/first-hand experience, continue to deepen the top structure design of various business fields, coordinate a united push-forward toward the implementation of CSG key strategic themes and establishment of an advanced CSG management system.



Deepening the unified management structure

CSG has systematically summarized the experiences of the early phase of the “To-the-Top” campaign, deepened unified management, focused on establishing a business management system with CSG characteristics and pushed corporate management toward a lean model.

CSG has issued the integrated corporate management framework, clarified and unified the guidelines and future directions, categorized and standardized the company’s core businesses including 75 level-one businesses, 237 level-two businesses and 696 business items. On such a basis, CSG has optimized, integrated and implemented the overall design for corporate business under the guidelines of the three operational principles; mapped out a business blueprint for five business models and laid the foundation for fully realizing a normalized and standardized CSG business pattern.

Established a unified institution system at CSG headquarters. 14 panel discussions were held on institutional centralization with 2,362 suggestions dealt with, 261 problems in institutional coordination addressed and 237 institutional items resolved. CSG has also regularly examined and clarified institutions to identify effective ones and simplify redundant ones. In 2013, CSG abolished 6,192 institutions representing a 40% reduction from the year before, further strengthening system integrity as well as coordination between institutions.

Established an all-round CSG business management network. CSG has systematically identified business/ management related factors, built four structures i.e., a framework structure, criteria structure, delivery structure and support structure and revised eight factors such as business frameworks, organizational structures, business processes, management mechanisms and work standards.

Supporting the operation of the various CSG management committees are twelve (12) level-one businesses and 77 level-two businesses, additionally 203 business items have been refined, and 41 key coordination problems have been addressed, 483 cross-departmental and cross-discipline processes have been reviewed, and 4,112 potential risks have been identified. Too, the company streamlined businesses and information design.

Pushing forward management improvements

CSG’s management, currently, may be said to lag behind international counterparts. Therefore, CSG has been diligently incorporating management improvement actions with strategy implementation in order to leverage the “To-the-Top” campaign to optimize operations.

CSG has successfully completed all stages and areas of the management improvement scheme, realized the transition goals ion schedule and met the requirements of the management improvement scheme of the SASAC.

CSG continued to do comparative research related to performance assessment. CSG has selected 13 key internationally advanced power companies as benchmark counterparts and carried out in-depth research related to their characteristics and on how these characteristics affect the companies performance and image.

CSG has supported the Guangzhou Power Supply Bureau and the Shenzhen Power Supply Bureau’s endeavor to catch up with world-leading power companies, identifying key areas for improvement.

CSG has won 18 awards in the power sector for management innovation, including 5 top awards. Among them, the “Framework design and application of unified management for a conglomerate”, an award which recognizes one of the top 10 power sector management innovation achievements in 2013 by Chinas’ Electricity Council.

Strengthening the management information process

To realize the goal of integrating informationalization with corporate strategy and new advanced management systems, CSG has optimized the information management business modelpaying greater attention to business linkages, horizontal coordination and grass-roots needs to effectively enhance the quality of information management and related services. In 2013, CSG has won an A-level award in the area of informationization quality assessment for central enterprises, indicating that CSG has stepped into tier-one among central enterprises in this field.



Power Supply

Ensuring power availability and quality for all customers



CSG has always considered grid safety and stability as the company's lifeline and followed the service principle of "customer-first, realizing a win-win in terms of harmony". In practice, CSG has continued to minimize customers' outage time, provide quality services, enhance customer experience and ensure a safe, stable, reliable and high quality power supply for sustainable economic and social development.

- safe power generation
- reliable supply
- contingency management
- grid construction
- science and technology innovation

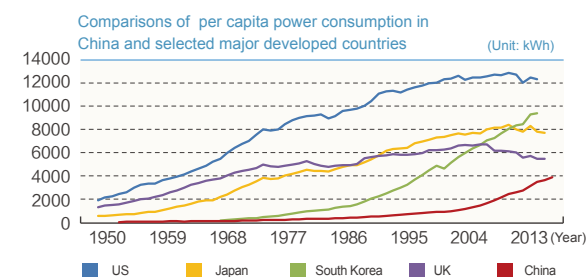
CSG members carefully checking insulators before laying the UHV transmission line ▲

For more details on page 46.



Every watt counts

Whenever you want electricity, just insert the plug into the socket or turn on the switch and the power is on. It seems so simple and easy. But, do you know that transmitting every watt of electricity safely is actually not easy? Electricity is different from other tangible objects. It is generated in a power plant and transmitted to thousands of homes through power cables. The generation, transmission, dispatching and sale of power all happen instantaneously and simultaneously. Electricity is difficult to be stored in large amounts and is irreplaceable. Therefore the responsibility exists at every second to ensure a safe, stable, reliable and quality power supply.



In 2013, China's per capita power consumption was 3,911 kWh, equal to that of the US in 1961, the UK in 1967, Japan in 1975 and South Korea in 1995, or 78% of the internationally accepted amount of power consumption per capita when a country is fully industrialized. (Source of information: China Electricity Council)

Number of major and severe power safety incidents
Number of major and severe facility incidents

0

Average outage time among urban customers (statistics from the parent company)

2.31 hours/household
28.04% decrease year-on-year

Third-party customer satisfaction rate:

81 points
(out of 100) Reaching internationally leading level



Washing power equipment in the air ▲



Ensuring power supply to the flower market during the Spring Festival ▲



Climbing over snow and ice to ensure the weather conditions ▲

Safe Production

CSG has always considered grid safety and stability as its lifeline. While in 2013 China, as a whole, saw an increase in major production safety incidents, CSG had no equipment or power safety incidents, no major security incidents that caused widespread negative impact on society or the company, and no serious operation errors; additionally, the total number of power safety incidents of all kinds, at all levels, dropped nearly 40% over the year before, making 2013 the safest production period in recent years.

Power grid operates stably

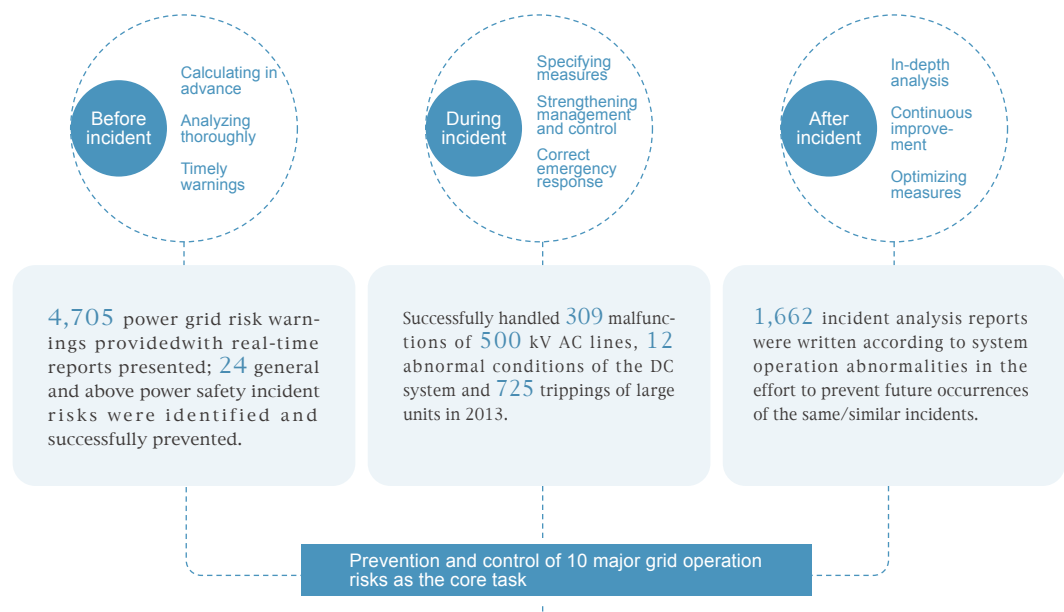
CSG considers the prevention and control of grid operation risks as the core safety task and has been strengthening real-time control of operational risks to realize risk anticipation, and has implemented thorough measures and correct contingency response plans to optimize performance. Though under high safety and risk prevention pressures and with a large panorama of operational tasks, CSG has successfully handled various complex malfunctions and safeguarded the power grid's operation.

- Improving the headquarters- provincial-level two-tier deployment and risk precaution consultation mechanism in-place; deepening the rolling operation linkup by season, month, week and day; closely monitoring power grid risks caused by natural disasters, outage and equipment defects.
- Adhering to the three "Don'ts" in everyday risk management and control, i.e., don't not arrange operations that damages grid stability, don't not arrange operations that might cause general and/or above general risk of power safety incidents, and don't not arrange operations that might result in customer outages with serious negative impacts.
- Identification of ying 39 key prevention and control tasks, successfully overcoming the risks brought on by the longtime near-limit operation of the West-to-East Project cables and the change of power grid system characteristics before and after the operation of the two major hydropower transmission projects.



Hard working staff in the Dispatching Room ▲

- Targeting the 10 major grid operation risks; CSG has continued to improve the closed-loop risk management and control mechanisms including timely prevention before incidents happen, effective response during incidents and continuous improvement after incidents; as a result CSG has effectively prevented and controlled grid operation risks and ensured a safe, stable and reliable power supply.



Number of major and above major power safety and equipment incidents for which CSG is responsible

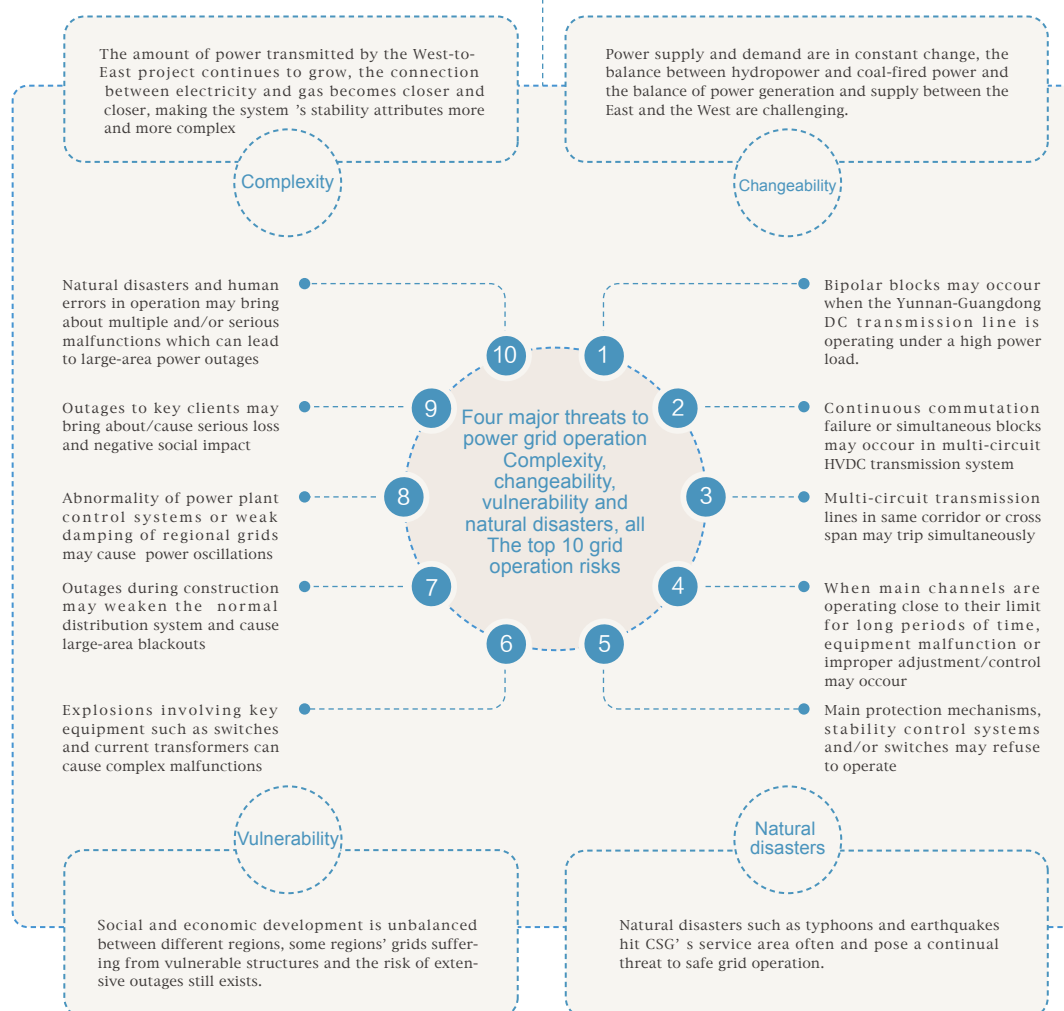
0

Number of safety incidents causing serious negative impacts to society and the company

0

Number of serious incidents caused by operational mistakes

0





● Sound Operation of Facilities

CSG's facility assets take up over 80% of its total assets therefore, asset management has a direct bearing on the safety and reliability of the power grid. According to the principle of assets life cycle management, CSG has controlled the risks and enhanced management of facility assets with the objective of long-term, sound operations.

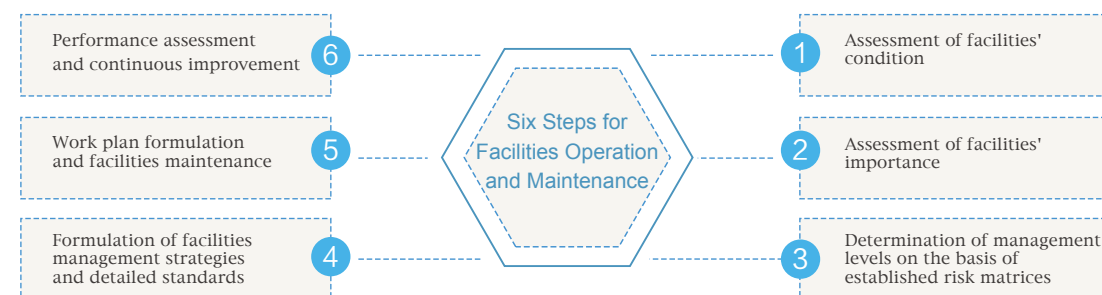
○ Strategies for Facility Management Enhancement

— Drawing upon advanced ideas in the philosophy of assets management, CSG has adopted the top level design for its assets; formulated strategies of the life cycle management of said assets leading to prolonged life and sound operation of facilities, at the same time this has decreased the net rate of asset retirement and assures optimal results of risk management as well as increased efficiency and cost controls.

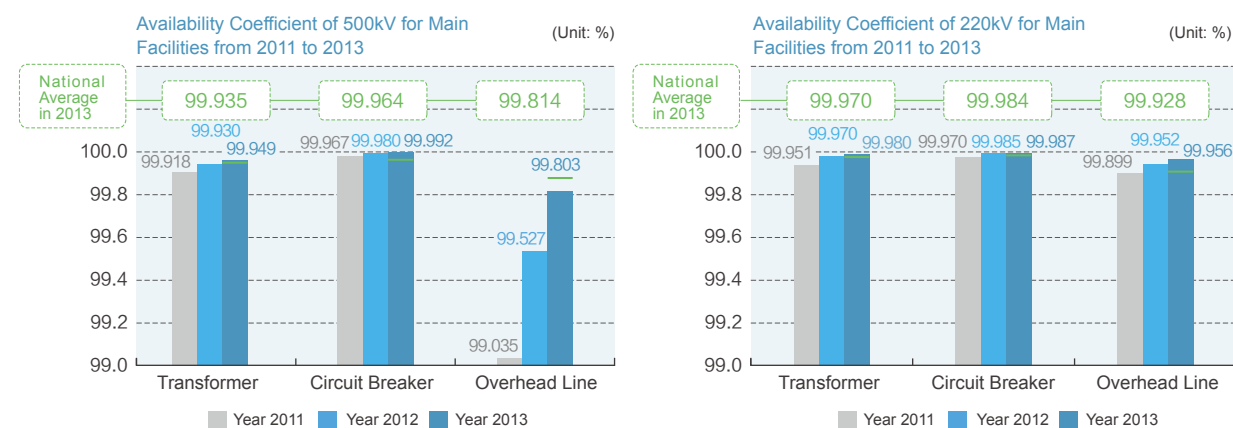


Making use of the assets during their life cycle

— The cost of operation of facilities and maintenance vary with such factors as their characteristics, type of management of power grid operations and weather. Facilities operation and maintenance procedures have been formulated scientifically for better/lean management, efficient control of risks and sound operation.

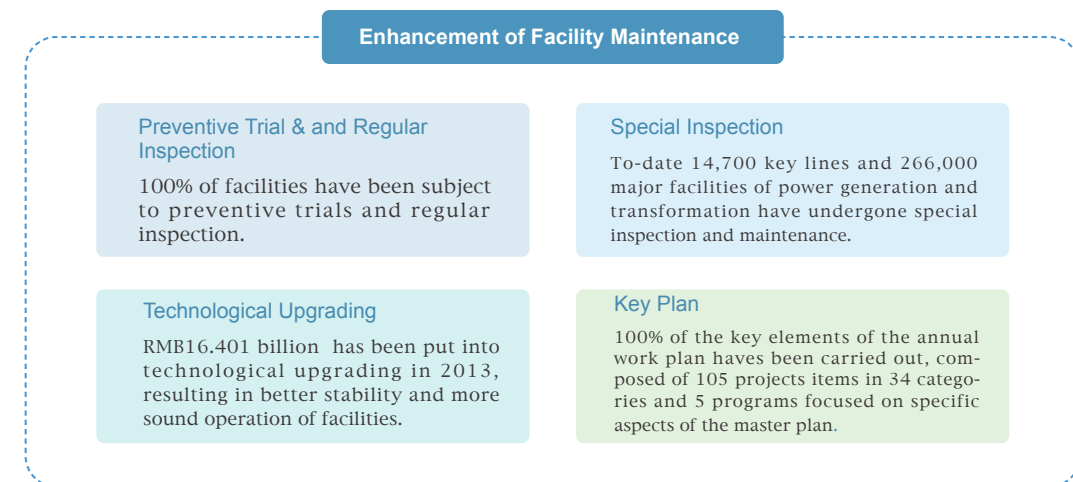


— The operational indices of main facilities are the best ever, whose availability coefficient has been improving year-by-year.



○ Enhancement of Facilities' Sound Operation

CSG has enhanced the management of facilities by improving their maintenance and control, including standardization of ledger information, formulation of maintenance manuals, key diagnosis and repair of all major new and old facilities. Sound operation is assured thanks to such means as monitoring, preventive trials, regular inspection, special maintenance and technological upgrading.



New Technologies and Equipment for Facilities Inspection



Sea Submarine Cable Protection achieved with Advanced Equipment

Submarine cables in the 500kV Hainan Network Project are the lifeline of the power supply to Hainan. The Submarine Cable Maintenance Department of the UHV Ultra-high Voltage Company had to overcome many difficulties, such as seasickness and complex sea conditions, and these efforts, and others, have safeguarded the cable with including use of such advanced equipment as a buried-depth detector.



Land Inspection by Smart Robots

500kV Guishan Inspection Center, Zhongshan Power Supply Bureau, carries out real-time inspection of facilities with smart robots to ensure the reliability of services.



Sky Transmission Line Patrols by Helicopter

A Helicopter and Drone Power and Operations Technology Center was established. With 19 thousand km of transmission lines under inspection by helicopters and drone aircraft, 6,245 defects were spotted.

Index Express

| Index | Accomplishments |
|--------------------------------------------------------------|--------------------------------------|
| Percentage of Employees Receiving Health and Safety Training | 100% |
| Personal Injuries | One accident |
| Casualty Rate in related to Personal Accidents | 1/316 (person/1000 persons per year) |

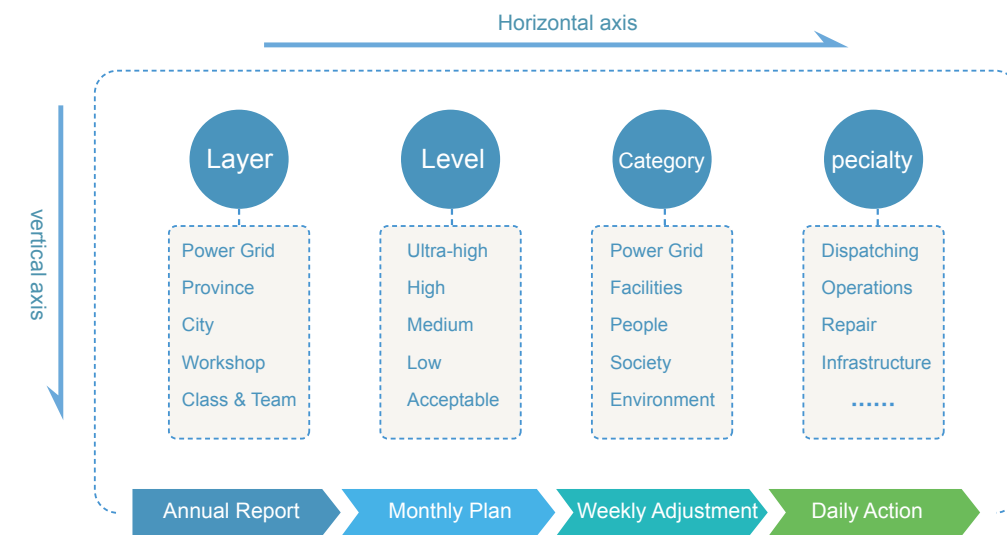


● Standardization of Safe Production Management

CSG has been continually improving the Safe Production and Risk Management Systems, enhancing systems applications and consolidating the basis for safe production management. As a result, accidents and malfunctions have been reduced significantly and safe production has witnessed a stable positive trend.

○ Safe Production and Risk Management

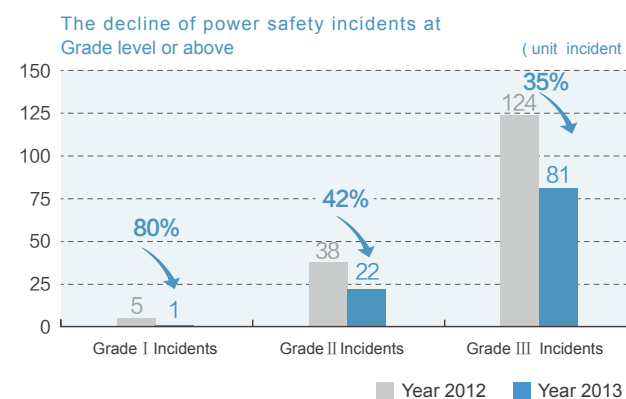
- CSG has improved the closed-loop management model for safe production and risk management, managing and controlling various risks to the letter. In 2013, CSG effectively controlled 54 major risks and eliminated 10 serious hidden dangers enhancing safe production.



- CSG has promoted Safe Production and Risk Management Systems in the production process by organizing 28 units in the eastern and western regions to carry out “one-to-one” partner assistance campaigns, thus improving the construction and application of the system at a grassroots level. We have promoted the verification of the entire system in 79 units of CSG in prefecture/municipal-level cities, improving overall safety management and performance.

| Verification of the Safe Production and Risk Management Systems in Prefecture-level Units | | | | |
|-------------------------------------------------------------------------------------------|-----------|-----------|-----------|--|
| | Year 2011 | Year 2012 | Year 2013 | |
| Five Diamonds | 1 unit | 1 unit | 1 unit | |
| Four Diamonds | 1 unit | 10 unit | 12 unit | |
| Three Diamonds | 48 units | 59 units | 57 units | |
| Two Diamonds | 29 units | 9 units | 5 units | |

- In 2013, the power safety incidents of Grade III level, or above, have declined greatly. There was one incident at Grade level, 80% down year-on-year; 22 incidents at Grade level, 42% down year-on-year; 81 incidents at Grade III level, or down by 35% year-on-year



○ Safety Supervision

We have optimized the safety supervision process, specified standards and established a long-term and effective mechanism for safety supervision achieving a dynamic supervision process, promoting rectification, and implementation of safety production.

- In line with the requirements of “full coverage/zero tolerance, strict law enforcement and substantial effects”, CSG has carried out a general inspection on safety production, investigated and managed hidden dangers utilizing 178,000 inspection staff in total, investigating 34,000 potential problems and hidden dangers as they were discovered. The rectification rate for 2013 was 95% and those units not suitable for rectification have all implemented the risk control measures recommended.



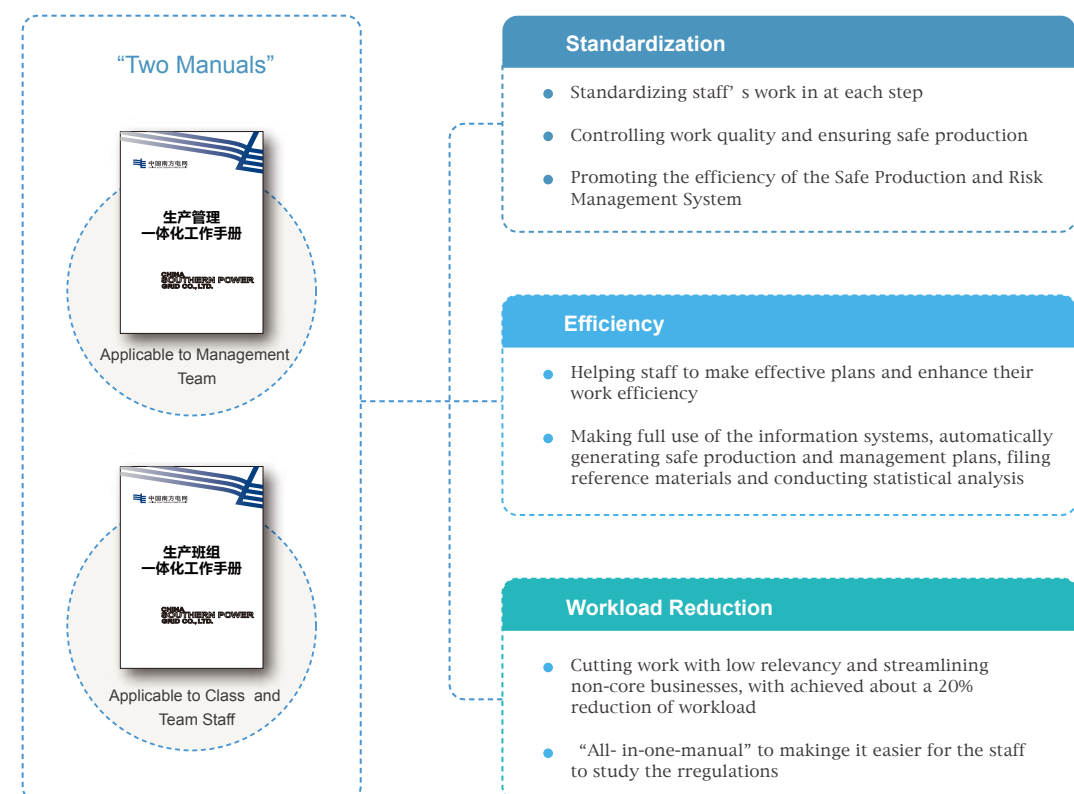
Using infrared devices to test facilities and investigate hidden dangers in the wild ▲

- CSG has dedicated itself to evaluating the safety management of subsidiaries and branch enterprises, and, as well, enhancing safety supervision and management from the following perspective: safety supervision, emergency and power supply management, systems management, and comprehensive management, etc and more.
- CSG has implemented the procedure of “making things clear” and “interviewed” accident-related subsidiaries and branch enterprises, and penalized them based on their responsibility.



Promotion of Standard Operation

CSG has promoted standard operations across the whole organization and compiled 577 operation guidebooks related to 20 specialties, incorporating high-level trade standards, enterprise systems and requirement risk management systems with work procedure for specific posts. These guidebooks provide specific work procedures for staff, enabling them to know “what to do” and “how to do it”.



Voice

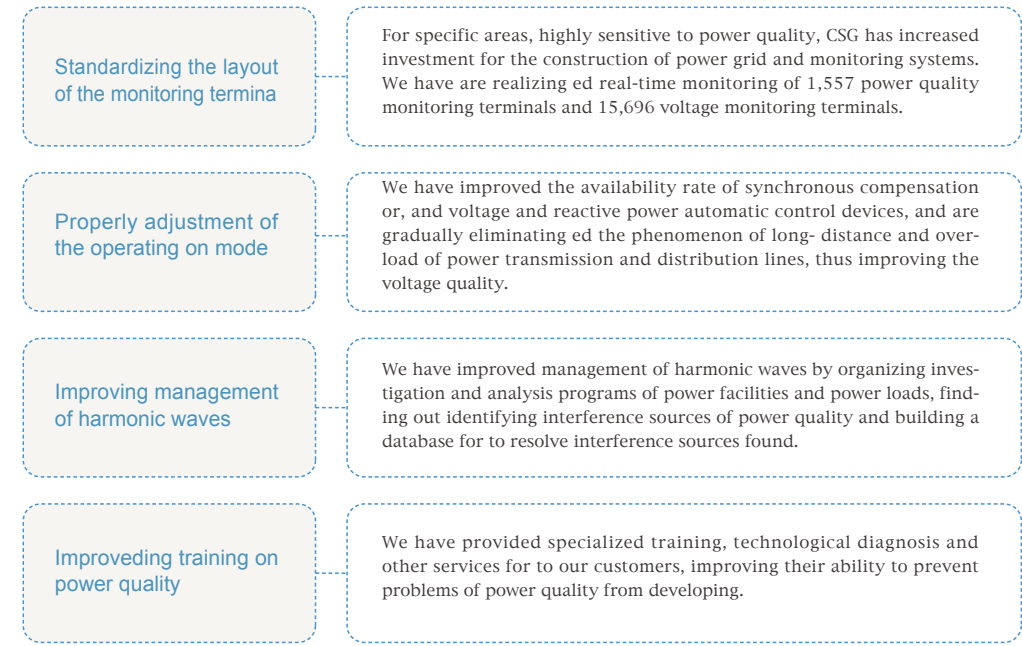


The project monitor for the power transformation and operations team kept three separate records every day, each one monitoring distinct/different management requirements because many overlapped at the grassroots level. This complexity increased the burden on the monitor but, after the implementation of a standard operations process, the monitor only needs to keep one record.

(Staff memo from Foshan Power Supply Bureau)

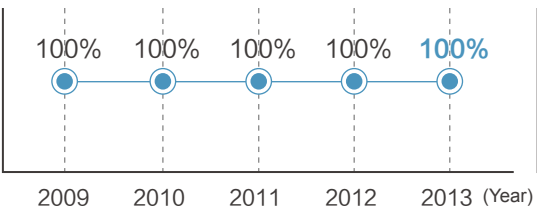
● Power Quality Management

Customer expectations of a higher quality delivery of their power supply has posed a challenge for units working in these areas and demonstrates crews are achieving higher demand expectations for power quality. By enhancing power quality management and working mechanisms, CSG has improved both overall power quality and client satisfaction.

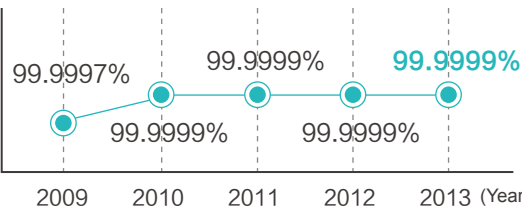


Frequency and voltage are main indicators for power quality. In 2013, the passing rate of 50±0.2Hz frequency and 500 kV voltage for the entire grid were 100% and 99.9999% respectively, ranking top in the country.

The passing rate of 50±0.2Hz frequency



The passing rate of 500 kV voltage



Reliable quality power supply supports modern industrial production ▲



Reflection on Accidents: The Alarm is Sounding!

CSG insists on a people-oriented strategy and highly values safe production but, three personnel accidents still occurred in CSG's service area in 2013, which claimed four lives. One accident happened within the organization, causing the death of one staff member in charge of communications acceptance; the other two accidents were related to other units, causing the death of three workers.

Personal Injuries

| | | Description of Accidents | Nature of Accidents |
|----------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Within CSG | July 28 th | When the Qijing Bureau of the EHV Power Transmission Company inspected and accepted the newly built ±500kV Niuzhai Converter Station, one member of the information inspection team member fell and died. | The accident happened due to the ignorance of occupational safety practice, inadequate of operational regulations, and ill poor safety management. |
| Relevant Units | September 18 th | When the Fangcheng Port Power Supply Bureau of the Guangxi Power Grid Corporation changed the insulating ed conductor of some 3*10kV lines and carried out technological transformation of power cable poles in Qisha district, the construction unit and its subcontractor violated operation regulations, which led to two deaths by electric shock. | The outsourcing construction unit and its subcontractors ignorance of occupational safety practice, inadequate knowledge of operational regulations were determined to be at fault. The proprietary unit's safety management and supervision was evaluated and found to be ineffective. |
| | November 15 th | When the Sanya Power Supply Bureau of the Hainan Power Grid Corporation organized the outsourcing construction unit to repair a 10kV Nanbin line damaged by Typhoon "Haiyan", one newly set pole fell down, causing one worker to die, which was listed as a general personal accident. | An operations worker of the outsourcing construction unit was without technical qualifications to work at a critical level and operated against regulations; without qualification to work at high place; the construction unit lacked efficient organization and effective supervision at the construction site; and the proprietors supervisory unit lacked effective coordination and supervision experience in post-disaster repair. |



Reflection on Accidents and Improvements Made and In Process

The three accidents noted claimed the lives of four people, bringing great sorrow to families of the dead and causing great loss to the enterprise, for which CSG expresses its deeply felt grief. We have organized and implemented an investigation and analysis of causes of the accidents, held responsible the units accountable for the breaches in safe production and severely punished the related persons in charge. We have also initiated a process of continual reflection on problems shown by the accidents and implemented strict, corresponding prevention measures to improve our both production and safety management.

CSG as the proprietor unit

- Poor execution of access to systems for by outside units
- Ineffective Safety supervision of construction sites and areas needing management focus and establishment of stricter control procedures for of areas where construction quality is critical.
- Lack of safety awareness on the part of some staff.

Relevant units

- Poor safety management; chaotic construction sites
- Inadequate education and skills training of workers on related to occupational health and safety practices.
- Lack of safety awareness and training of contract workers; unqualified contract workers

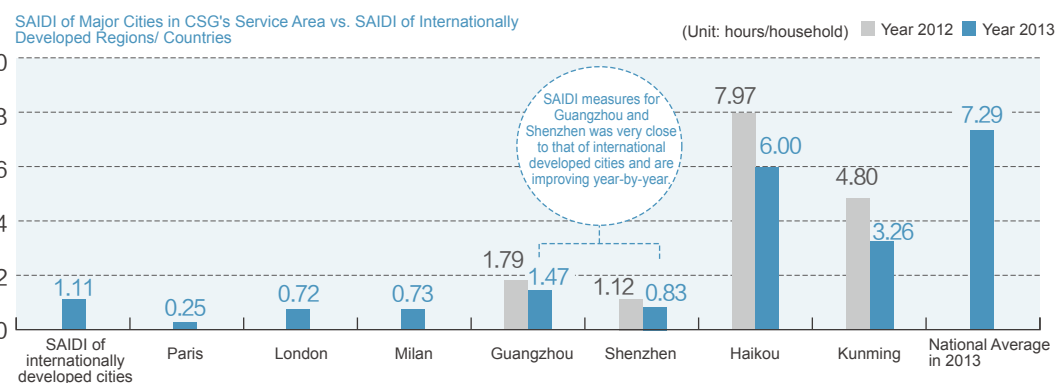
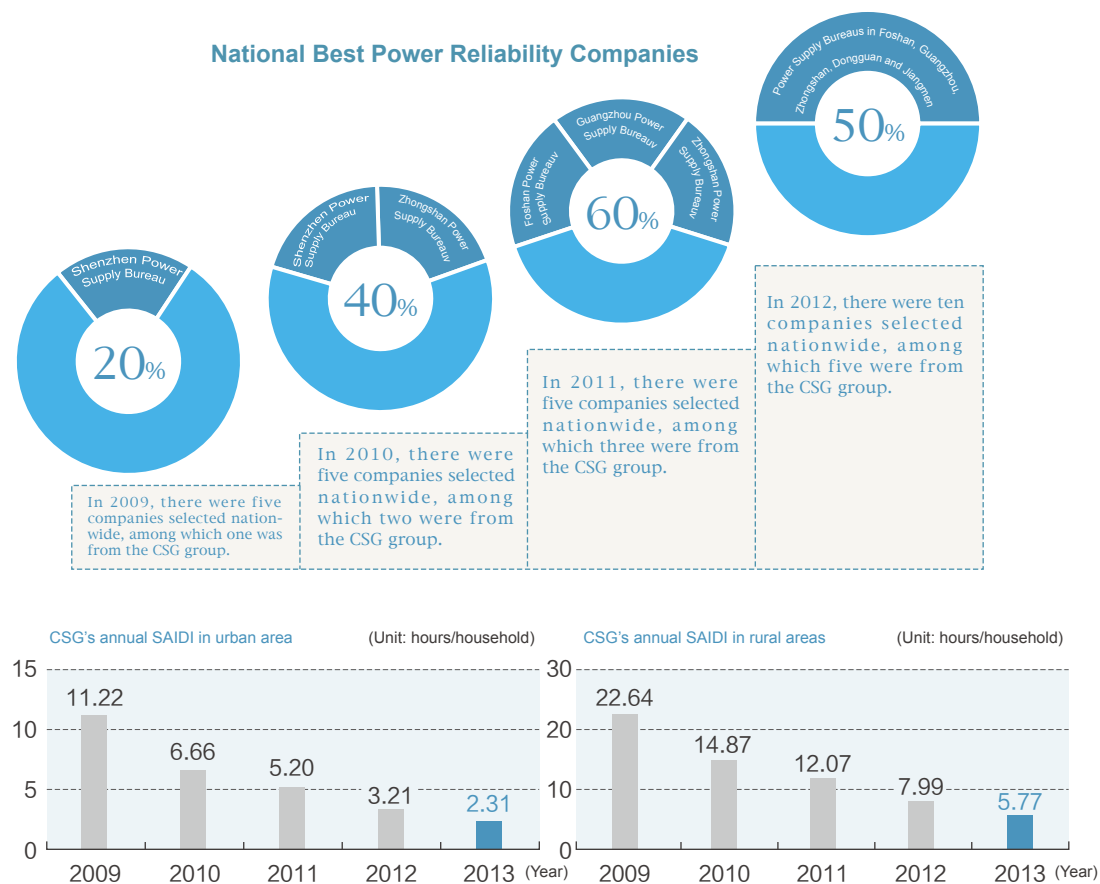
Measures

- Identification of the hidden dangers of accidents of the same type to prevent recurrence of similar accidents
- Management improvement of externally commissioned projects and strict examination and verification of power construction contractor's ability in safety management and construction organization; contractors who with a bidding with the record of contract breaches ing will be un disqualified from or future bidding opportunities.
- Enhanced safety supervision of construction sites; intensive training on safety regulations for on-site workers and staff in charge of the projects
- Application of Safe Production and Risk Management systems, improving risk management and heightened controls to achieve safer production

Enhanced Power Supply Reliability

Reducing the System Average Interruption Duration Index (SAIDI) is the core competency of CSG. We have tried our best to reduce the SAIDI ratios by formulating strategies scientifically designed to ensure reliable power supply and improve management to maximize reliability of power delivery.

- In 2013, CSG's annual SAIDI in urban areas was 2.31 hours/household, decreasing by 28.04% year-to-year. In rural areas, SAIDI was 5.77 hours/household, decreasing by 27.79% year-to-year. Correspondingly, the reliability rating for service in urban areas (RS-1) was 99.9736%, while RS-1 in rural areas was 99.9341%.
- According to statistics released by the National Energy Administration and China Electricity Council in June, 2013, among the 2012 National Best Power Reliability Companies, Foshan Power Supply Bureau, Guangzhou Power Supply Bureau, Zhongshan Power Supply Bureau, Dongguan Power Supply Bureau and Jiangmen Power Supply Bureau were listed as Grade A, while Zhuhai Power Supply Bureau, Huizhou Power Supply Bureau and Zhanjiang Power Supply Bureau, were listed as Grade B.

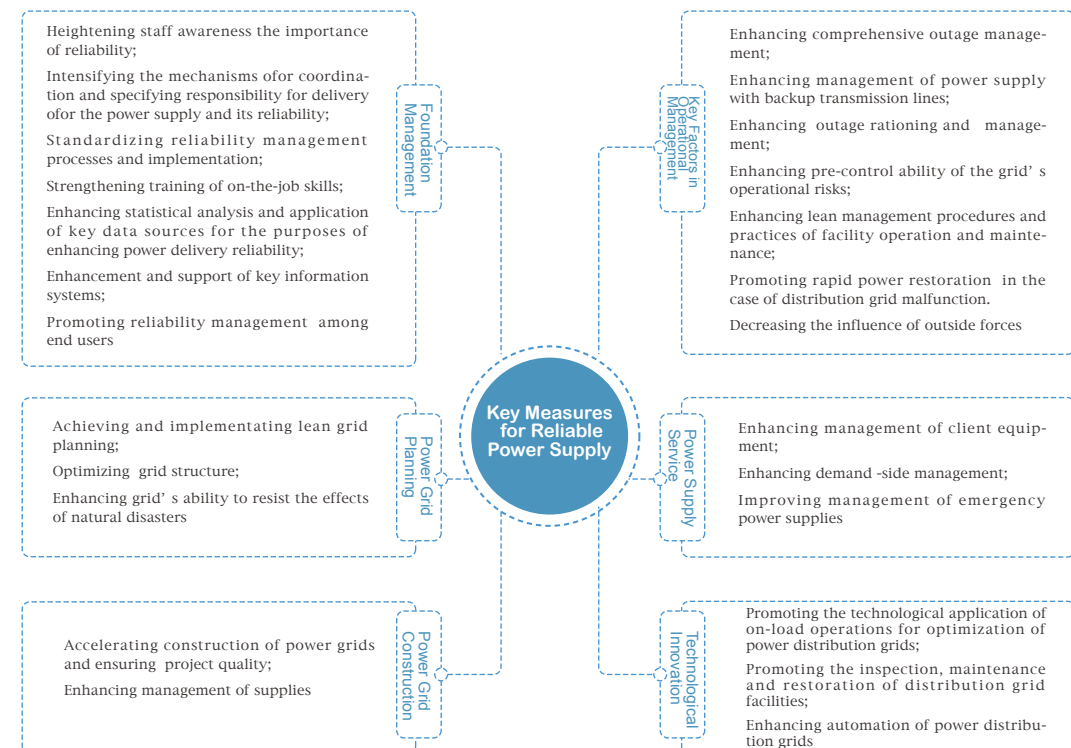


Note Due to the different foundation, investment levels and developmental phases of the power grids in different cities, SAIDI should only be analyzed based on the real situation and conditions. The statistics used in this page are from the parent company records. With further integration, CSG will gradually use statistics from the overall all assets. There are two sources of statistics. The reason is being that in the rural power sector reform, CSG has gradually taken over 225 county-level power supply companies whose power supply reliability was relatively low, making statistics from the overall assets appear apparently higher than that from those of the parent company. According to statistics from overall assets, SAIDI for urban clients was 3.52 hours/household, and for rural clients, the figure is 12.67 hours/household.

Strategies for Enhancing Power Supply Reliability

After years of efforts, the power supply reliability in a number of CSG's service areas has been close to, or reached, the international advanced level. There are major differences within the five provinces and regions in South China in terms of the mix of urban and rural areas and sectors. It is becoming more challenging to enhance power supply reliability through management and technical means. To some degree, higher levels of power supply reliability requires more investment in both management and hardware. CSG has balanced numerous restricting factors and formulated strategies for enhancing power supply reliability, with the aim of meeting the demand of local economic and social development and people's production and lives.

- Having learned from the experience of leading international power enterprises, CSG has summarized the successful practices of its units at grassroots levels and identified 25 key measures, in six aspects, designed to enhance power supply reliability.



- CSG has organized nine National Best Power Reliability Companies in the eastern region to communicate with fourteen Power Supply Bureaus in the western region. In 2013, SAIDI in the western region was 15.58 hours, decreasing by 24.71 hours year-on-year, down 61.33%, surpassing the eastern region for the first time.

- CSG has paid attention to client experience in outages. As the first enterprise to carry out management of power supply reliability for low voltage clients, too, CSG has included low voltage switches in SAIDI systems and calculations and has formulated the concept of *Evaluation Regulation of Power Supply Reliability for End Users*, providing a comprehensive reflecting of SAIDI for various types and categories of clients.



The Shenzhen Power Supply Bureau Has Established its Service Area as the Largest Demonstration Zone for High Power Supply Reliability in China.

Aiming to reach international standards, the Shenzhen Power Supply Bureau has built the largest demonstration zone for high power supply reliability with 93 square kilometers in four core areas (Nanshan, Futian, Luohu and Yantian) and including the Qianhai Development Zone, gradually rolling out the system to reach a city-wide level. SAIDI in the demonstration zone will be reduced to 27.6 minutes, reaching the international advanced level; SAIDI in Futian District will reach 8.6 minutes, ranking top internationally.



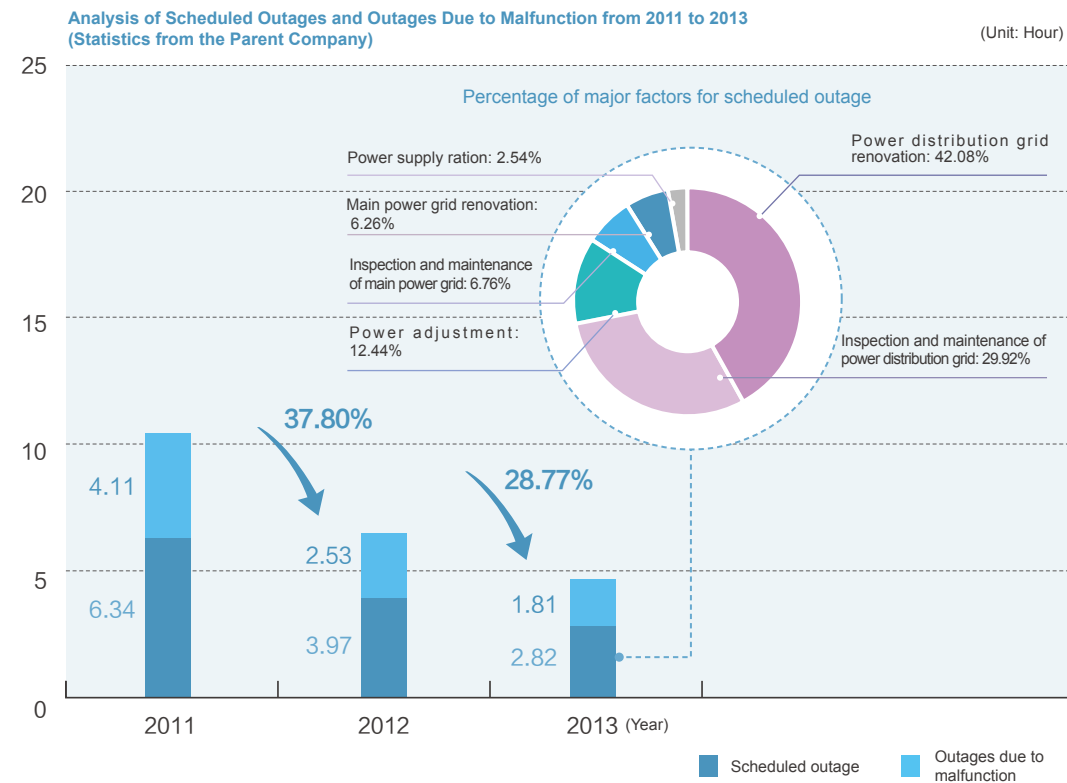
CBD Night View in Futian District, Shenzhen ▲

The international standard for outages excludes the following situations: outages caused by major events or power generation system failures, outages due to clients' fault, and outages/problems resolved within five minutes.



Comprehensive Outage Management

CSG has carried out comprehensive outage management analyses and program development, intensified statistical analysis of outages, and spotted major outage factors at the source, avoiding repeated, temporary and prolonged outages.



- CSG has carried out off-load inspection and maintenance when clients take a rest, without influencing their life and production.
- CSG has standardized compilation of the annual comprehensive outage plan, coordinated management of infrastructure construction, renovation, maintenance of the main power grid and revision of the power distribution grid to reduce repeated outages.
- CSG has strictly implemented the annual outage plan, and has carried out strict inspection and approval of temporary outages. Every measure has been taken to minimize temporary outages.
- CSG has enhanced analysis and evaluation of outages; carrying out a monthly statistical analysis of repeated, prolonged and temporary outages, fulfilling company social responsibilities and continuously improving outage management efficiency.



The Kaili Power Supply Bureau is carrying out inspection and maintenance late at night to minimize disruption of client services.



SAIDI of the Guizhou Power Supply Bureau Dropped by 22-odd Hours

Based on the analysis of reliability index, the Guizhou Power Supply Bureau has strengthened the process monitoring of comprehensive outages, attaching great importance to the monitoring of time, range and times of outages. It has established a regular tracking mechanism, publishes a monthly reliability index and monitors the situation of all units and analyzes operations time and links of major outages so as to improve actual delivery rates. The SAIDI from the overall assets was 12.64 hours, decreasing by 22.07 hours, with a reduction rate of 63.58%.

On-load Operation

Abiding by the principles of safety and reliability, CSG has made detailed plans according to specified management models and promoted on-load operations, step-by-step, continuously reducing SAIDI.

- In terms of on-load operation of transmission lines in the main power grid, CSG has improved the technical level and has carried out operations such as on-load altering of monolithic and insulator strings, on-load processing of overheated drainage boards and on-load inspection of faults.
- In terms of the on-load operation of the power distribution grid, CSG has carried out 36,730 on-load operations, representing a 48% increase and has reduced outages by about 2.8725 million hours/household, equivalent to a SAIDI measure of 2.54 hours.
- CSG has introduced advanced technology, methods and facilities, making breakthroughs in numerous facets of on-load operations.

| Subsidiary | On-load Operation in of the Distribution Grid (Time) | SAIDI Reduction (10,000 hours/household) |
|----------------------------------|------------------------------------------------------|------------------------------------------|
| Guangdong Power Grid Corporation | 14724 | 136.63 |
| Guangxi Power Grid Corporation | 1613 | 12.00 |
| Yunnan Power Grid Corporation | 6394 | 49.17 |
| Guizhou Power Grid Corporation | 4838 | 10.90 |
| Hainan Power Grid Corporation | 618 | 1.03 |
| Guangzhou Power Supply Bureau | 6928 | 69.06 |
| Shenzhen Power Supply Bureau | 1615 | 8.46 |
| Total | 36730 | 287.25 |

On-load Operation with Big Bypass Valve for Power Distribution Grid



On-load Operation through Helicopter at High Altitude



On-load Operation of 500kV Compact Transmission Lines



"Special Forces" on High Voltage

With a complicated occupational environment and threats to personal safety, on-line operations demand good skills, physical fitness and a sound psychological nature on the part of operators, and they are a team who are honored as "power special forces".

ZHENG Ruidong, leader of Operations Team Three for the On-load Operation Subsidiary of the Yunnan Power Grid Corporation, has been engaged in on-load operations for more than 20 years. He has successfully solved many emergencies involving high voltage transmission lines with his team ensuring successful operation of the "west-to-east" plan and "power transmission from Yunnan to Guangdong". He was honored as the "Walker on High Voltage" and "Special Doctor at High Places".



ZHENG Ruidong changing the insulator on 500kV high voltage transmission lines.



Voice



I am very proud of myself when I land safely after a successful on-load operation.



By ZHENG Ruidong
Winner of the 3rd "Touched by CSG" Award

● Rapid Power Supply Restoration

Abiding by the principles of “power supply restoration first, then quick repairs”, CSG will replace dysfunctional lines with backup power transmission lines. CSG has always made great efforts to repair lines and restore power supply within the shortest time possible.

- Rapid restoration enhancement at six linkage points: fault reporting, diagnosis of faults, fault location, fault disconnection, restoration of faults, and power restoration.
- CSG has promoted information integration and has built a pilot platform for monitoring of services and dispatching appropriate personnel, achieving visualized monitoring of the entire outage process and power restoration, and enhancing restoration efficiency.
- CSG has rolled out centralized monitoring of outages. CSG 95598 Customer Service Call Center is supported by power supply bureaus at the prefecture/municipal-level cities and carries out centralized monitoring of outages, delivers malfunction information, provides timely information to clients and organizes power supply restoration. The timely restoration rate of restoring service has been raised to 95.4% from 82.6%.

Voice



Every household will be worried when an outage occurs so we must always act with efficiency and speed!



By LIANG Weihai

award winning member/leader of the Inspection and Maintenance Team of the Qingxiu Power Supply Bureau

“Tailor-made” Toolbox Saves Time for Repair Work



Finding the right tools in a complex tool box can be tedious and time-consuming. To better serve clients, the Inspection and Maintenance Team of the Qingxiu Subsidiary of Nanning Power Supply Bureau tailor designed special toolboxes with drawers, making it easier for staff to check and find tools. This innovation has helped emergency teams save eight minutes in average on repair/restoration assignments.

Guangxi Power Grid Corporation uses this innovation as a case study and encourages staff, at all levels, to make suggestions and to take solid and innovative measures to reduce SAIDI.

Emergency Vehicles Before and After Renovation ▲

● Reliable Distribution Grid Construction

Because of the complexity and precision required in their design, the distribution grid has historically been short of investment. Urban and rural distribution grid construction needs to be strengthened. CSG has optimized the investment structure and attached greater importance to clients' consumption demand and to power supply reliability. Priority has been given to prominent problems influencing the distribution grid.

- CSG has invested RMB34.5 billion in construction of new distribution grids. In 2013, the company built, and put into operation, 35 kV-and-under transmission lines with a total length of more than 70,000 km and capacity of 7 million KVA.
- CSG has upgraded the distribution grid and has enhanced capacity of the grids. In 2013, the coverage rate of loop network in the distribution grid reached 57.4% and the rate of supplying power with backup transmission lines was 47.5%.

Kunming Power Supply Bureau Builds Reliable Distribution Grids in Main Urban Areas

The Kunming Power Supply Bureau has invested RMB 233 million to replace 108* 10kV overhead lines in major urban areas with underground cables, in two batches. The Bureau has built 185 new switching stations, installed underground cables spanning the equivalent of 119.42 km and has installed 36 new power distribution transformers. As a result, area SAIDI has been reduced by 1.57 hours.



Before Renovation ▲

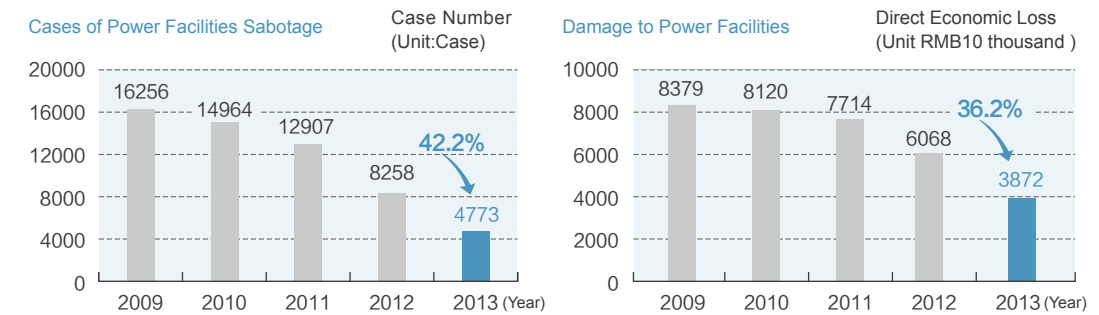


After Renovation ▲

● Protection of Power Facilities

Criminals frequently and maliciously steal and sabotage power facilities, posing threats to the safety and stability of power grids. CSG has cooperated with public security departments to establish an integrated prevention system. We have created and carried out a special campaign and have called for support of the public, firmly cracking down on power facility larceny and sabotage. The number of cases have been decreased year-by-year.

- In 2013, there were 4,773 cases of power facility larceny and sabotage, representing a year-on-year decrease of 42.2%. Still, this figure resulted in the direct economic loss of RMB 38.72 million despite achieving a 36.2% reduction. There were no cases involving 100kV-and-above power facilities.



● Ensuring the Power Supply for Major Events

By summarizing the experience of power supply for major events, CSG has improved the process, institutionalized procedures, developed and put into use standards and manuals, and established norms and specialized mechanisms for ensuring power supply for special events.



- CSG has used new facilities and mechanisms such as the magnetic flywheel UPS power generation vehicle and satellite communication vehicles to ensure power supply for major events.
- CSG has complied the *Power Supply Manual and Regulations of Risk Assessment of Power Supply for Major Venues*. Having made detailed plans for ensuring power supply, CSG has carried out on-site risk assessment for major venues and clients. Plans have been formulated to ensure power supply and standardization of the power supply management process.
- CSG has successfully fulfilled five special tasks such as ensuring power supply for summer peaks, the Hainan Boao Forum, the “two meetings and one festival” in Guangxi and the Chang’e-3rd mission as well as 17 first-class power supply tasks including the 9th Cross-Strait Economic, Trade, and Culture Forum achieving the target of “zero mistakes and zero complaints”.



Further Reading

The Maximum Penalty for Larceny and Sabotage of Power Facilities is a Death Sentence

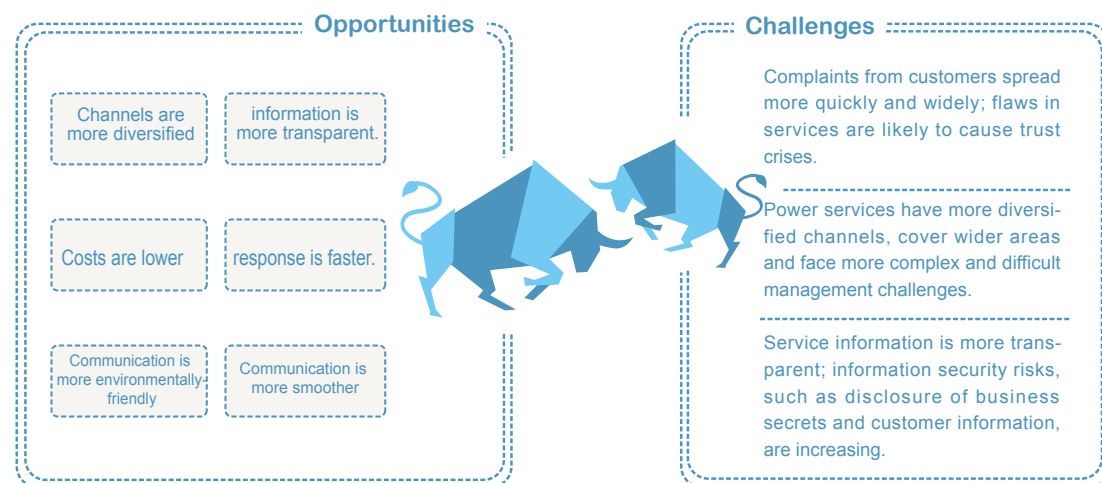
The *Criminal Law of the People's Republic of China* stipulates that whoever sabotages any power facility, but causing no serious consequences, shall be sentenced to a fixed-term of imprisonment of not less than three years but not more than 10 years; those causing serious consequences shall be sentenced to fixed-term imprisonment of not less than 10 years, life imprisonment or death



In the Global Village, We are Changing for You

In today's world the global mobile Internet business is booming. In 2013, the number of smart-phones owned by Chinese people reached 580 million, representing a year-on-year increase of 60%; the number of WeChat app users was over 500 million. According to the data released by People's Bank of China, the electronic payment had a 29% year-on-year increase in 2013 within China among which online payments rose by 28% and mobile payments by 300%. According to the data released by China Internet Network Information Center, average time Chinese netizens spend on the Internet has reached 21.7 hours per week with 79% of mobile users using their mobile phones to surf the Internet.

In 2013, the mobile Internet has entered the 4G era, with more information, faster transfer and wider application prominent features. Thanks to the new scientific technology, our life is easier and more convenient. We can have instant communication in this global village. Customers look forward to better power services: two-way interaction and point-to-point communication with power supply companies whenever and wherever possible; quick settlement of the electricity bills and clear and speedy information access. With the increasing influence of new *We Media* and other new media, every one of us is a "news agency" and therefore, power services are facing greater pressure from collective public opinions.



Facing various challenges such as disclosure and misuse of customer information in the Internet era, we have carried out customer information management and privacy protection programs to ensure information security.

We have attached greater importance to service innovation, strengthened efforts to expand remote service channels, and enhanced channel management. A service model with the feature of "informative, graphical, mobile and intelligence" has been established to provide a more convenient and better consumer experience as related to electricity consumption.



Achievements

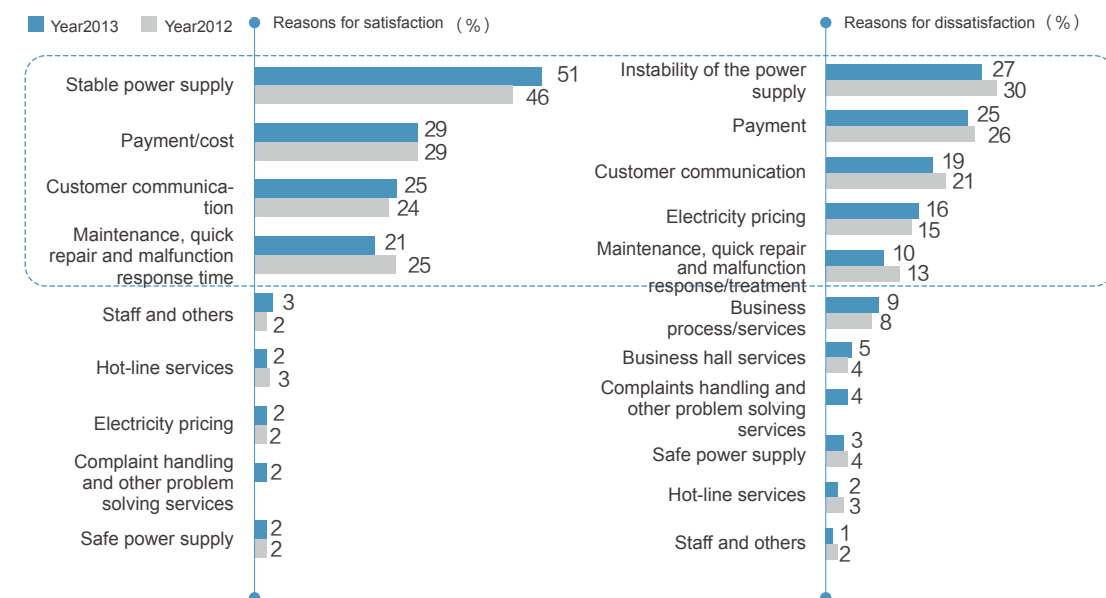
- The number of entity business halls has decreased from 4652 to 4531 in recent times.
- Remote services share has increased from 38% to 44%.
- Remote visits by customers has reached 6.20 million.
- The number of electricity bills paid by remote payment has reached 112,000.

Rapid Power Supply Restoration

Customer Complaint Management

SG has perfected customer opinion feedback mechanisms, collecting customers' opinions and suggestions via channels such as *hot-line 95598*, third-party satisfaction surveys, discussions with major customers and representative user/client surveys. CSG has carefully analyzed and solved the problems with which customers are faced most often and we work continuously to identify other points with which customers are not satisfied. In 2013, the number of complaints decreased to 25/million customers compared with that of 2012, with a count of 62/one million customers.

Analysis of Factors Influencing Customer Satisfaction

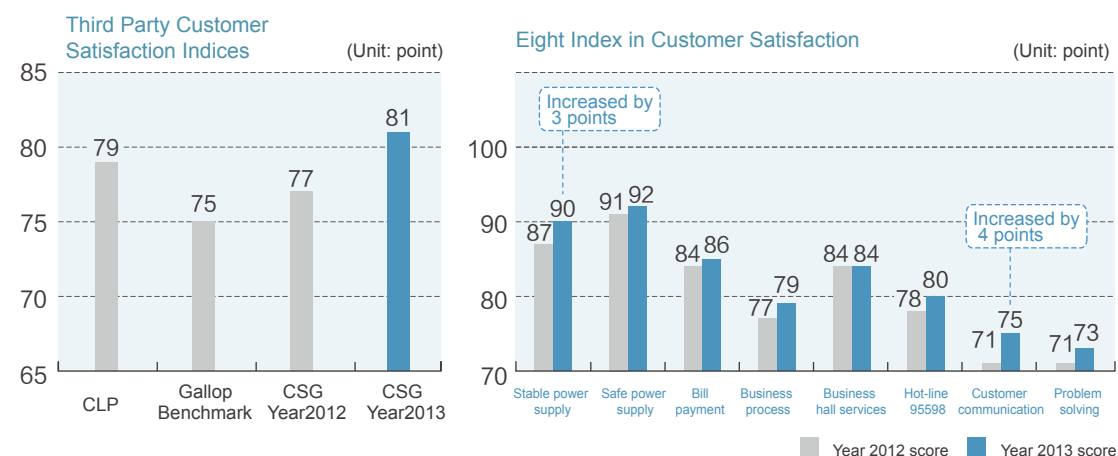


Note: Analysis data are based on the results of a 2013 Gallop customer satisfaction survey.

Customer Satisfaction Evaluation

CSG has collected customer satisfaction data from various channels and multiple perspectives so as to objectively and authentically understand service quality, analyze customer comments and address customer problems. In 2013 the third-party satisfaction index was 81 points, 4 points higher than that of 2012, and CSG's customer service is ranking top internationally.

- CSG has strengthened the diagnosis and analysis of customer satisfaction measures. It specifies satisfaction diagnosis from the perspectives of eight indices related to power services as well as four customer types; namely industry, commerce, residents and others, and analyzes and ranks customers' issues to establish response priorities.
- According to the priority of customers' issues, CSG maps out action plans for targeted rectification and improvement, and assigns responsibilities to specialized departments such as planning and construction, production and operation, as well as marketing and services, to ensure satisfactory levels of rectification.





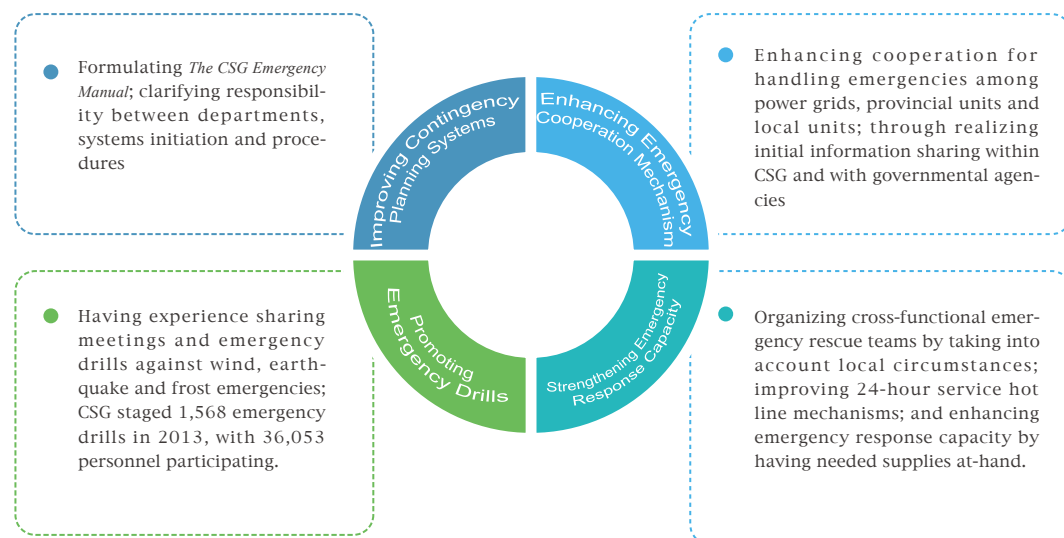
Emergency Management

Due to the complex population distribution and mixed environment and impact of the events of nature, these five provinces and regions in CSG's service area in South China (Guangdong, Guangxi, Yunnan, Guizhou and Hainan) are frequently struck by extreme weather and natural disasters. For example, high temperatures, drought, low temperatures, rain, snow, frost, rainstorms, typhoons and earthquakes ... all posing huge threats to people's lives and property safety...making the and safety and stability of the power grid critical as well.

Confronted with serious disasters and emergencies, CSG has given top priority to public safety and other consumer interests by enhancing the disaster prevention and emergency management capacity of the power grid through new technology, thus the company has minimized the damage resulting from natural disasters to both the power grid and the public.

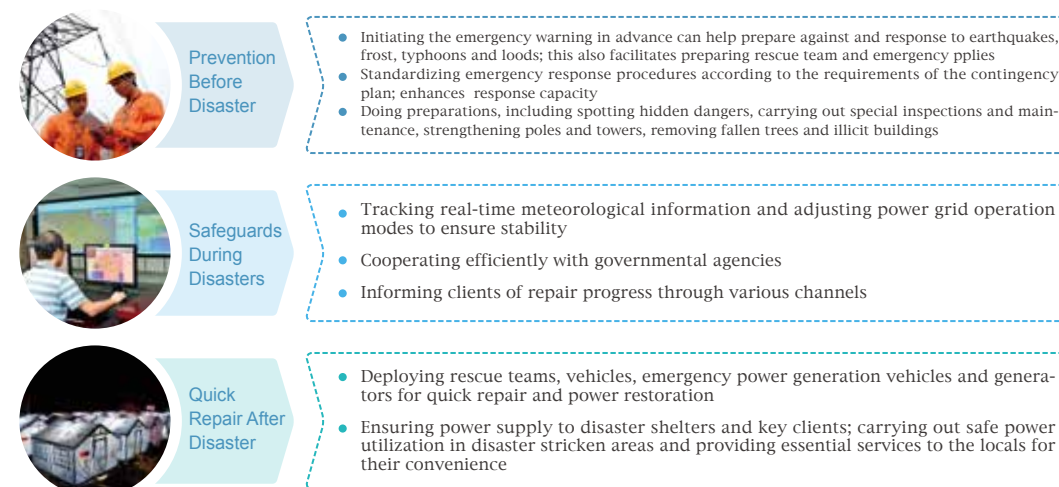
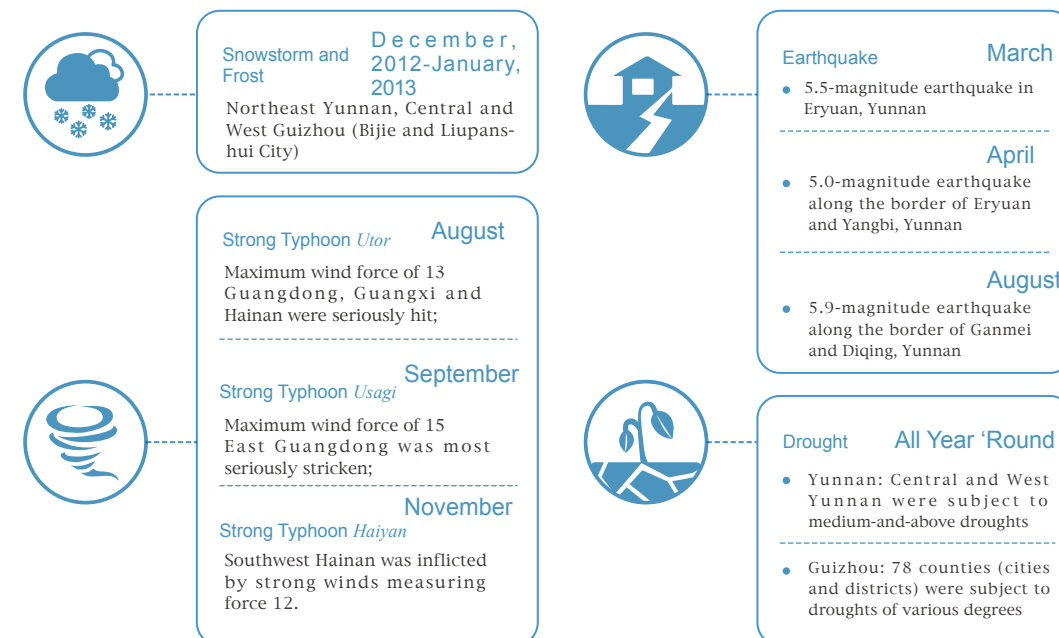
Comprehensive Emergency Management Improvement

On the basis of newly developed emergency management platforms within its service areas, CSG has ensured the efficient and orderly operation of emergency response mechanisms and continues enhancing its emergency management capacity.



Response to Natural Disasters

In response to snowstorms, sleet, an earthquake in Diqing, Yunnan, and strong typhoons such as *Usagi* and *Haiyan*, CSG was prepared in advance and issued warnings in time and simultaneously initiated emergency response measures to ensure power supply to key clients and places. CSG repaired facilities quickly and in a planned, orderly manner, restoring power supply to stricken areas.



Voice

The Governor of Guangdong spoke highly of the power supply restoration efforts of CSG during his inspection visit to Shanwei, a city stricken by typhoon *Usagi*.

"I thought it would be pitch-black. It turned out to be brightly lit" (link this to the next part of the comment that follows)

commented HU Chunhua

Member of Political Bureau of CPC Central Committee & Guangdong CPC Provincial Committee Secretary during his inspection visit to the city.

Tackling Typhoon Usagi in Guangdong

At 19:40 on September 22nd, 2013, a very strong typhoon, *Usagi*, struck Shanwei. It was the strongest one ever recorded and left a devastating trail across parts of China. It was the strongest one hitting East Guangdong over the past 40 years. It brought severe damage to the power grids in coastal areas, including Shanwei, Jieyang, Shantou and Huizhou in Guangdong. As many as 2.82 million clients lost power as a result of *Usagi*.

The Guangdong Power Grid Corporation set out to restore power supplies in an orderly way by taking the planned measures of "prevention before disaster, safeguard during disaster and repair after disaster". Power supplies were restored for over 80% of clients within 48 hours after the typhoon hit; while power supplies were restored for over 95% of clients within 72 hours. By September 30th, power supplies were restored for the whole of the impacted area.

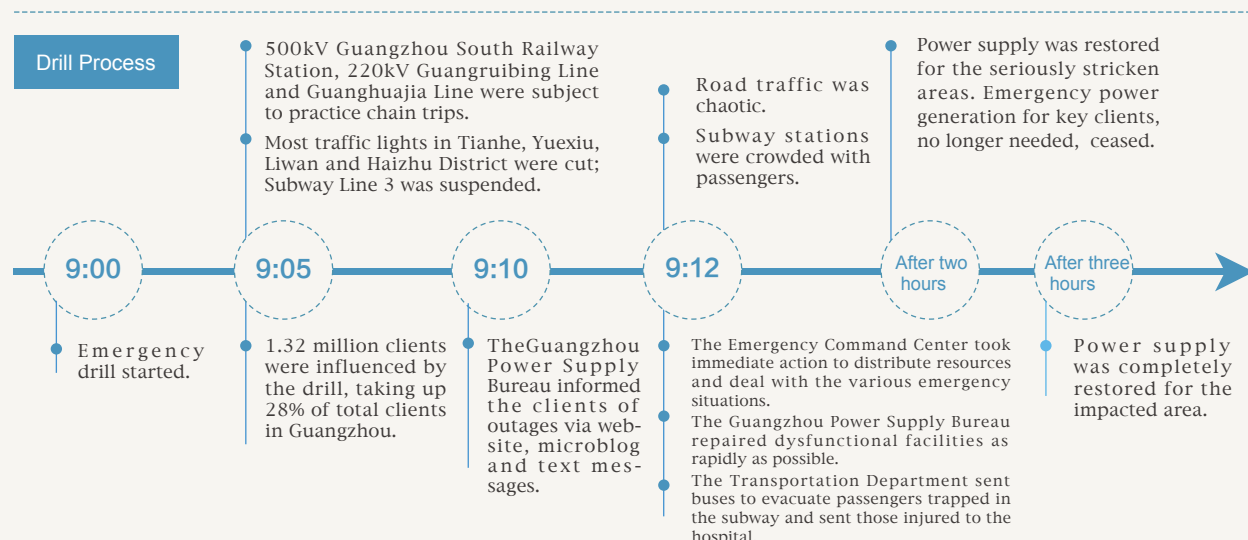


Rescue Vehicles Rushing to the Disaster Stricken Area

Guangzhou Power Supply Bureau Joins the First Large-Scale Outage Drill in Guangzhou

Learning from safety drills and assessment of the experiences of the U.S Department of Homeland Security, Guangzhou organized the first large-scale outage emergency drill in China on October 30th (YEAR?). All governmental agencies cooperated to restore social order and reduced simulated losses within the shortest possible time.

Such a drill had enhanced cooperation between CSG and governments at various levels in emergency response, improved the contingency planning system in Guangzhou and strengthened emergency response capacity to large-scaled outage.



Power Grid Construction

Power grid construction involves many issues and often problems related to land use, such as site selection and cable tunnels. CSG has engaged in communication with stakeholders in terms of construction project approval, land expropriation and compensation, and communication with communities. Power construction tasks have been fulfilled in ways designed to ensure power supply for production and life.

Power Grid Planning and Investment

According to the CSG Development Plan (2013-2020) formulated by The National Energy Administration, CSG has identified a "west-to-east" technological road-map and main grid frame scheme while taking into consideration sustainable development factors including power grid safety and optimal allocation of energy and environmental resources.

By 2013, CSG has implemented 21,496 projects with 45.51 million kVA of newly-increased transformer capacity, and installation of 11,814 km of transmission lines.

Key Project Construction

CSG has strengthened standardized management of power grid construction to ensure that projects are safe, high-quality and environmentally-friendly. In 2013, 12 key projects were put into operation on schedule.

2013 CSG's Award-winning and High-quality Projects

| Project | Award | Awarded by |
|----------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------|
| A 500kV Zhenzhou Power Transformer Substation Project in Guangdong | National Excellent Project | The Examination and Approval Committee for National Engineering Construction Quality Awards |
| | Excellent Project in the Power Sector | The China Electric Power Construction Association |
| A 500kV Liupanshui Power Transformer Substation Project in Guizhou | A National Excellent Project | Examination and Approval by The Committee for National Engineering Construction Quality Awards |
| | Excellent Project in the Power Sector | The China Electric Power Construction Association |
| A 220kV Nianhe Power Transformer Substation Project in Guangxi | Excellent Project in the Power Sector | The China Electric Power Construction Association |
| The 220kV Qinyun Power Transformer Substation Project in Zhuhai, Guangdong | Excellent Project of Power Sector | The China Electric Power Construction Association |
| The 220kV Ecun Power Transformer Substation Project in Foshan, Guangdong | Excellent Project in the Power Sector | The China Electric Power Construction Association |



Nuozhadu and Xiluodu DC Transmission Projects Completed Ahead of Schedule

On September 3rd, the first phase of the Nuozhadu DC Transmission Project was completed and put into operation well ahead of schedule. It spans three provinces, namely Yunnan, Guangxi and Guangdong, with transmission lines running 1,413km, and a transmission capacity of 5 million kW. It is CSG's second ultra-high voltage DC transmission line.

On October 12th, the Xiluodu DC Transmission Project was put into operation, also well ahead of schedule. It runs from Yunnan to Guangdong via Guizhou and Guangxi, with transmission lines running 2×1,251km, and a transmission capacity of 6.4 million kW. As a ±500kV Common-converter-station and Double-circuit DC Project, it boasts the largest capacity in the world, with a facilities automation rate of 100%.

The two projects shown in the accompanying photographs have transmitted clean power to the Pearl River Delta area from the Jinsha River basin and Lancang River Basin in Yunnan, playing an active role in optimal allocation of resources between West China and East China, thus easing power shortages in Guangdong Province.



Construction Workers Seizing every Opportunity to Construct the Nuozhadu DC Project



Our power transformer substations are in harmony with the environment.
Can you spot them?

For the answers, please refer to P.48



Communication with Stakeholders about Power Grid Construction

Power is indispensable to people's productivity and lives. However, many people have misunderstandings about power facilities, a number are unwilling to have transmission lines close to their houses. CSG has actively communicated with stakeholders in terms of problems in this regard, responding to their expectations and demands in the hope of winning their understanding and support.



Communication with Stakeholders about Construction of the 110kV Flower World Power Transformer Substation in Shenzhen

| Stakeholder | Expectation and Demand | Communication and Response | Result |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Citizens Living next to the Substation | There were fears that a substation might damage the natural landscape; possibly not being in harmony with the surroundings; it was also felt that the facility would have negative impacts on the environment. | We had door-to-door communication with the residents and have optimized the facilities' design to accommodate residents' interest. | Optimal design of the substation won recognition from the government and citizens. |
| Governmental Planning Departments | They expect the substation planning to be reasonable and save precious urban land resources. | Systematic survey of the area to be built has been done for site and transmission line selection completed. Wasteland and fertile land have been utilized whenever possible; we have tried our best to ensure that the substation is in harmony with the environment, minimizing negative impacts on the ambient environment. | |
| Social Groups | Groups may have many misunderstandings about power grid facilities, for instance, the substation may be felt to be dangerous in that it has high levels of radiation and will cause noise pollution. | On the basis of green power grid philosophy, we have highlighted energy conservation, environmental protection, high efficiency and harmony in planning and design. The substation was open to the citizens, media and other stakeholders, effectively giving reassurances to the stakeholders. | We have reassured commercial tenants of the safety of the substation. Citizens and visitors are impressed by the design of the substation. |



Is it necessary to build a power transformer substation in down town?
Is it possible to build it in remote areas and transmit power from there?



With the improvement of people's living standards, urban power demand is on the rise. Power from a 110kV transformer substation can only cover an area of 2 square kilometers. It is difficult to meet citizens' demand for power if substations are built on the periphery of the city. Those in urban load center ensure voltage quality, reduce investments from clients and better serve citizens in their life and work.



Have a free visit to the Shenzhen Power Supply Bureau CSR Demonstration Base, a 110kV Flower World Power Transformer Substation!

Address: Nantou Street, Nanshan District, Shenzhen; intersection of Shennan Avenue and Yueliangwan Avenue

Ambient Environment: Shenzhen Flower World

Commissioning Time: Year 2012

Contact: 0755-88938708



Further Reading

On The Electromagnetic Environment of Power Transmission and Transformation Facilities

Transformer substations and transmission lines exert influence on the ambient environment by their electromagnetic effect rather than by radiation. It has been proved that the environmental protection standard values of our on-site electromagnetic effect is much lower than recorded international and national values. It is up to the national and international standards of environmental protection.

For more information, please visit CSG website and click on *Electromagnetic Radiation under the Feature Report on Power Science* http://www.csg.cn/dlkgp/index_1111.html

Technological Innovation

CSG's power grid is of large scale and ultra-high voltage, covering long distances, with a mixed operation of AC and DC. Eight AC and seven DC cable tunnels of 500kV-and-above have been built for the "west-to-east" plan. The power grid spans nearly 2000 km from east to west, with the maximum transmission capacity of over 26.5 million kW. As the most complex of modern power grids it boasts various kinds of power, such as hydropower, thermal power (including coal, oil and natural gas), nuclear power, pumped storage power and wind power, very complex and thus difficult to harness. CSG has engaged in independent research to achieve the technological innovations needed to ensure the safety and stability of the grid and promote its transformation into a smart, efficient, reliable and green power grid. CSG was awarded the 3rd Session Technological Innovation SOE Prize in 2013.

Technological Innovation Achievements

CSG invested RMB 2.628 billion in R&D in 2013, taking up 0.59% of revenues gained from main business sources and representing a year-on-year increase of 51% in the area. Achievements with independent IPRs and patents are on the rise year-by-year, earning CSG the China Patent Award for three years running.

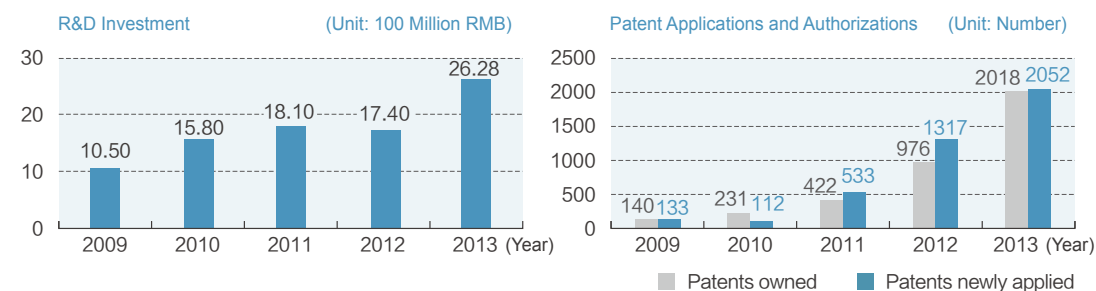
— The ± 800 kV Ultra-high Voltage DC Transmission Technology and Facilities Development and the Application Project won the 2013 China Power Technology Prize.

— The AC and DC Parallel Operation Key Technology R&D and Application Project won 2013 Guangdong Best Technological Innovation Prize.

— In 2013, CSG played the leading role in the National Key Smart Grid Project—The Wanshan Island New Energy Micro-grid Demonstration Project, with an aim to build the smart micro-grid for Guishan Island, Dong'ao Island and Dawanshan Island. The Project has coordinated various energy sources on the island, including wind, solar energy, firewood and storage power so as to build an integrated and self-contained smart micro-grid system that can meet the needs for power on the island. Island power sources are composed of power generation, transmission, transformation, distribution and usage.



Electricity-Generating Windmills Connected to Smart Micro-grid System on the Island ▲



Inauguration of the World's First Multi-End Flexible DC Transmission Project

On December 25th 2013, the first ± 160 kV Multi-End Flexible DC Transmission Demonstration Project in Nan'ao County was put into operation, a symbol of success for China, as we conquered a number of challenges such as control and protection of multi-end flexible DC transmissions and more. China is the first country in the world that has mastered this key technology and that has applied it commercially.

The system has linked multiple wind farms located on the sea and on isolated islands bringing the electricity generated to the continent. Such a DC transmission systems have enabled clean energy to be connected to the grid and improved its utilization efficiency. To achieve the project premise, that of savings on investment, reducing the consumption of marine resources and meeting the demand of the islands for power, surplus power is transmitted to the continent.

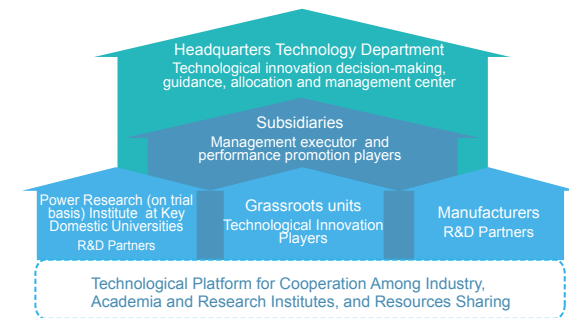


Multi-End Flexible DC Transmission System Converter Valve ▲

Technological Innovation System

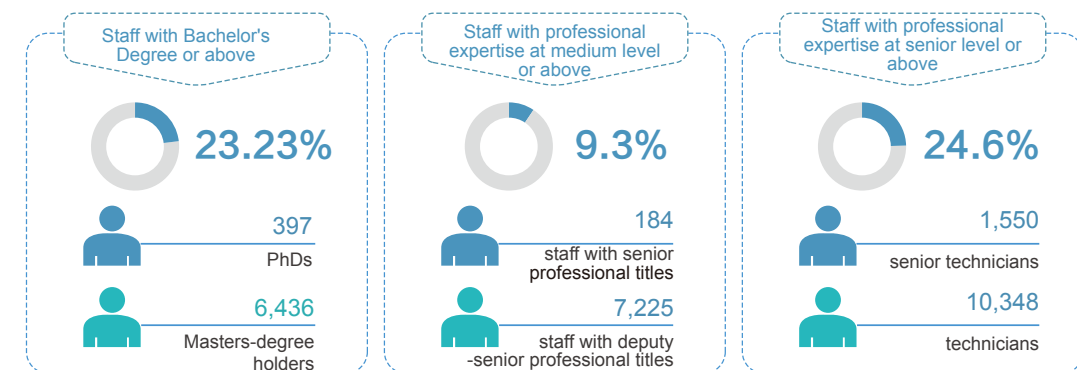
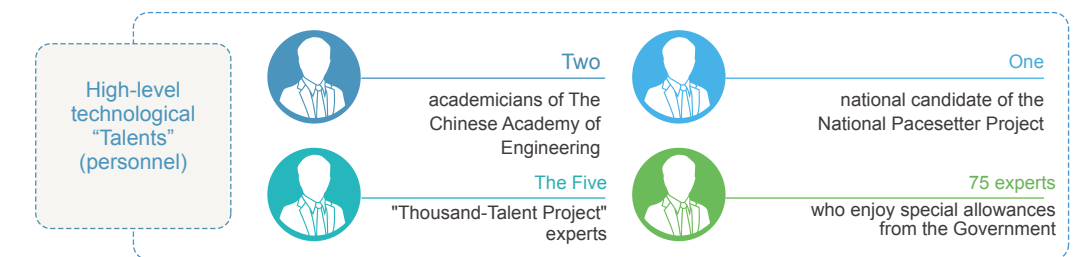
CSG have established and applied an innovative technological management and R&D system composed of CSG research institutions, power science (on a trial basis) research centers in different provinces, and professional technological departments. CSG works closely with famous universities, research institutions and industrial groups in China so as to enhance technological innovation capacity in an all-round way.

— A staff technological innovation system has been built as part of CSG. On the basis of such a system and with the support of special funds, staff are encouraged to engage in technological innovation by means of QC teams and staff technological innovation communities.



Technological Innovation Team

CSG focuses on talent development boasting a team of talented experts consisting of academicians and other similarly qualified experts enjoying national allowances and other full-time researchers.



Islanded Operation Mode of the First Ultra-high Voltage DC Transmission Line in the World

On September 11th, 2013 the first ultra-high voltage DC transmission line, the ± 800 kV Yunnan-Guangdong DC Transmission Line, was switched to the "islanded operation mode" for the first time, symbolizing that Chinese power technology and management has reached new heights.

Under the islanded operation mode, power can be transmitted from the generating side to the customer side through a DC system, effectively reducing the influence of the system on the main grid, thus enhancing the safety and stability of the power grid. Meanwhile, this methodology has enabled Yunnan to improve its power transmission capacity by 700 thousand kW, making a great contribution to the absorption and use of local hydropower.



Successful Full-Load Trial of The Yunnan-Guangdong DC Transmission Line under Islanded Operation Mode ▲



Green Energy

Contribution to "A Beautiful China"



CSG has contributed to National ecological preservation through green power programs. We have dedicated ourselves to energy conservation and emission reductions by taking responsibility for both the power generation side and customer side of the process. Energy conservation publicity, green development promotion, circular and low-carbon development are the means used to measure our effort toward building a Beautiful China.

Clean Power Comes for You ! ▲

- Energy Conservation and Emissions Reduction on the Power Generation Side
- Energy Conservation and Emissions Reduction on the Power Grid Side
- Energy Conservation and Emissions Reduction on the Customer Side
- Golden Bee 2020
- Overall Energy Conservation and Emissions Reduction Performance

Fossil fuel consumption per unit power sold was
215 g standard coal/kWh
18.3% lower than the National average.

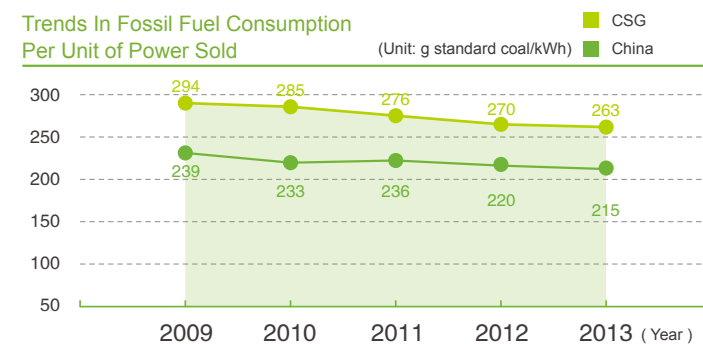
"West-to-East" hydropower reached
92 billion kWh,
representing a year-on-year increase of 4.7%.

Energy-efficient power generation and dispatching saved
5.61 million tons
of standard coal, representing a year-on-year savings increase of 9.4%.



Environmental Performance of Each Kilowatt Hour/Unit

Fossil fuels are non-renewable. With the aim of minimizing fossil fuel consumption per unit of power generated and sold, we have devoted ourselves to ensuring a green power supply. In 2013 CSG's fossil fuel consumption per unit power sold was equal to 215 grams of standard coal and 572 grams of CO₂, lower than the National average of 263 grams and 700 grams respectively.



Exterior View of the Huizhou Pumped Storage Power Station ▲



The Shenzhen Power Supply Bureau's Ring Main Unit Retrofit Integration into the Urban Environment Energy Conservation Publicity ▲



Energy Conservation Education for Children ▲

Climate Change

We care about climate change in the hope that the earth will be our shared home well into the future.

Global climate change has triggered increasingly severe extreme weather globally. According to the *World Bank 2013 Report*, extreme weather change, over the past decade, has led to annual economic losses of USD 200 billion, and the trend is continuing to grow.



Blizzards hit many European countries, resulting in traffic tie-ups and claimed over 260 lives.

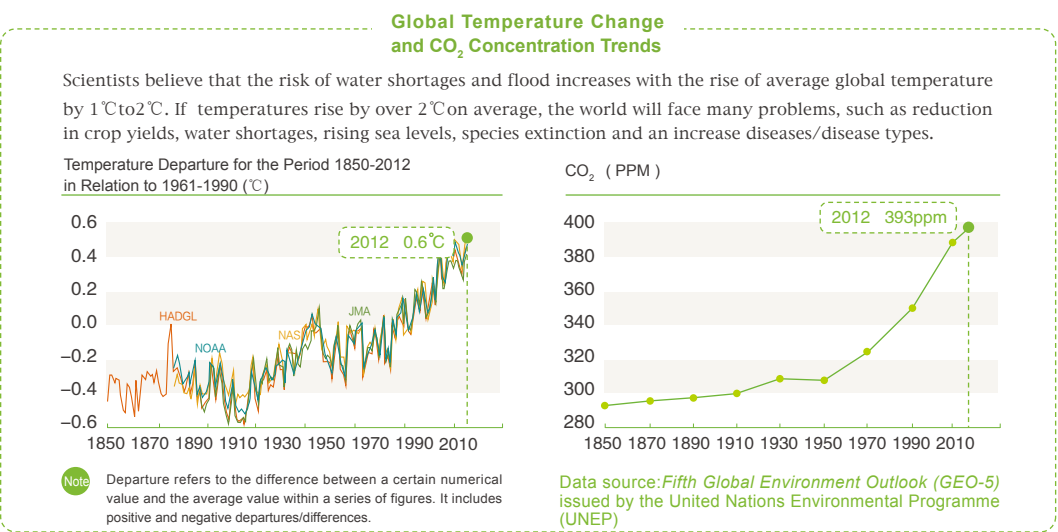


Typhoon "Haiyan" inflicted heavy casualties with over 6,000 lives lost and loss of about 10 billion USD in the Philippines alone.



Summer saw unprecedented high temperatures and drought in many places in South China, causing the loss of over RMB 48 billion.

According to the IPCC Fifth Assessment Report:Climate Change 2013 (AR5) issued on September 27th 2013, global warming is an undeniable fact. Since the beginning of the 20th Century, global temperatures have risen by 0.85℃. Human activities are the major cause for global warming. Greenhouse gases emitted from the burning of fossil fuels have reached record highs.

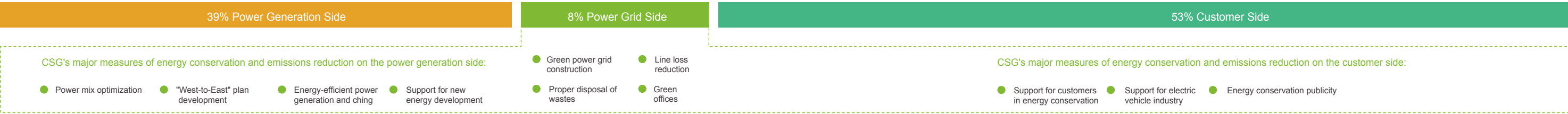


China's energy consumption per unit/GDP is 2.5 times of the world average.

CSG Takes Action

China is at the lower end of the industrial chain in terms of economic globalization. It has consumed massive resources and provided quality products at reasonable prices to the world, which has caused life-threatening air, soil and water pollution and threatened people's health, both mental and physical. The Central Government attaches great importance to climate change by virtue of reducing carbon emissions through such measures as industrial restructuring, promotion of independent innovation, optimization of energy utilization and improvements in energy efficiency

It is estimated that, from power generation to consumption in the five provinces and regions in CSG's service area, the energy conservation and emission reduction potential ... on the power grid side ... takes up a total of 8% overall; on the power generation side, 39%; and on the customer side, 53%. (Note: these % are NOT expressed in a way that makes sense) As an important platform for optimal regional energy allocation, CSG has not only fulfilled its responsibility in energy conservation and emissions reduction, but also contributed to reductions on the power generation and customer sides as well.



Smog

We are concerned about emissions and smoggy weather; we hope that soon, we can all breathe freely.

Wide-spread smog is attracting increasing attention from the public. According to the 2013 China Climate Bulletin issued by The China Meteorological Administration, there were 36 days of inclement weather inflicted by smog in 2013 ... on average; 27 days more than in previous years, reaching an historic high surpassing all measures in the past 52 years. PM_{2.5} can be inhaled through the respiratory system and deposits damaging materials in the human pulmonary alveoli. Long-term exposure in smog will damage people's health.



Statistics issued by The China Meteorological Administration revealed that Smog prevailed in 25 provinces and 100+ small-and-medium-sized cities in December of 2013. Visibility in some areas was less than 10 meters. PM_{2.5} in many cities was seriously excessive. PM_{2.5} of Shijiazhuang was as much as 653 mcg/m³ and air quality fell into the category of "serious pollution".

(Reference: PM_{2.5} less than 10 mcg/m³ can be counted as safe according to The World Health Organization. The daily average of PM_{2.5} concentration in the U.S. is 35mcg/m³, China, 75mcg/m³.)

“The furthest distance in the world is that where I cannot see your face when I take you by the hand.”
Posted by netizens who complained about smog

On the one hand, each and every one of us is the victim of smog. On the other hand, due to the present production and consumption patterns, we are also smog producers . It takes time and concerted efforts from society to effectively deal with the problem and to achieve an approach to solving the problems.

The Central Government attaches great importance to smog ,, it is a National concern. The Government has announced that it intends to "wage war against smog" in the *Report on the Work of the Government 2013*. In September, 2013, the State Council printed and distributed the *Air Pollution Prevention and Control Action Plan*, where goals and measures were put forward.

CSG has implemented The National Energy Conservation and Emissions Reduction Policies by playing the guiding role among the upstream and downstream firms in the industrial chain, promoting green power grid construction, coordinated development of companies, development of goals for society and the environment in order to contribute to the ecological and environmental improvement in the five provinces and region in CSG's service area.

Sustainable Development

“Sustainable development is defined as a development plan/process which meets the needs of current generations without compromising the ability of future generations to meet their own needs” .

Quote from Gro Harlem Brundtland, (former Prime Minister of Norway and Chairman of the World Commission on Environment and Development)

“
Outdoor air pollution causes 350,000 to 500,000 people in China to die prematurely annually.

“
Statistics by CHEN Zhu
Academician of The Chinese Academy of Sciences
Published in Lancet, an internationally authoritative medical magazine

“
“We will make great efforts to tackle air pollution with effective measures, which is the common concern of the general public . We will get rid of this devil.”

“
Quoted by LI Keqiang
Premier of the State Council

Energy Conservation and Emissions Reduction on the Power Generation Side

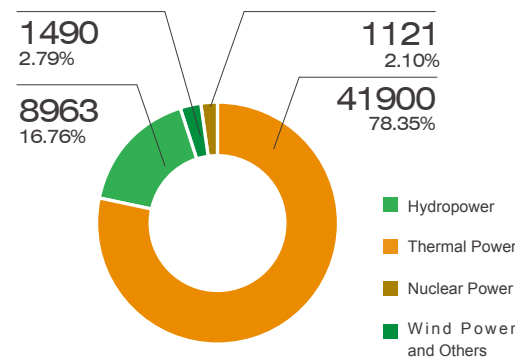
Power generation plays an important role in energy conservation and emissions reduction in China. By enhancing power generation efficiency and increasing the clean energy sources employed by our power plants, we can effectively reduce the emission of greenhouse gases and air pollutants.

Power grid operates stably

Five provinces and regions in CSG's service area boast abundant hydropower resources, with huge development potential existing for new energy ... and considering the relative scarcity of coal ... on which CSG has based plans to optimize its energy portfolio, CSG can increase use of clean energy for power generation and grid connections ... for example, increased use of hydropower, nuclear power and new energy. As of 2013, CSG's installed capacity of non-fossil energy use has accounted for 46.5% of the total newly installed capacity, 30.9% higher than the National average.

2013 National Power Generation Constitution (Unit: 100 Million kWh)

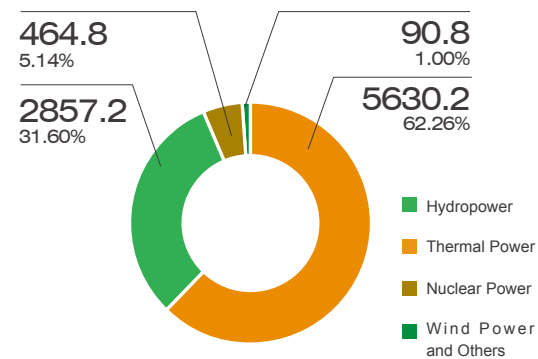
Power generated reached 5.3474 trillion kWh.
Power generated from non-fossil energy accounted for 21.65%.



Note: Data in the tables are preliminary statistics.

2013 CSG Power Generation Constitution (Unit: 100 Million kWh)

Power generated reached 904.3 billion kWh.
Power generated from non-fossil energy accounted for 37.74%.

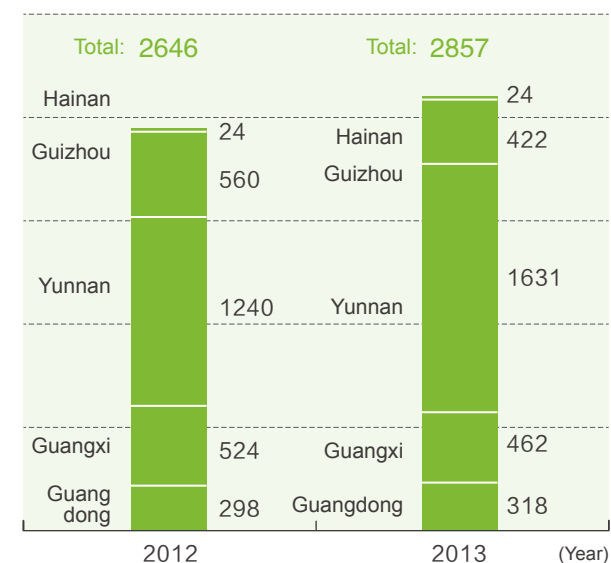


"West-to-East" Plan Development

West-to-East power transmission has enabled energy in West China to complement that produced by the east, all of which is significant for regionally coordinated development, stable power supplies and ecological preservation.

In 2013, The Nuozhadu DC Transmission Project and The Xiluodu DC Transmission Projects were completed ... in advance of schedule termination dates ... for power generation in advance, greatly enhancing CSG's capacity to transmit power from west to east. Previously "West-to-East" power stood at 92 billion kWh for the whole year, resulting in an equivalent to a reduction of 27.79 million tons of standard coal, 73.91 million tons of CO₂ and 540 thousand tons of SO₂.

Hydropower Generated in CSG's Service Area (Unit: 100 Million kWh)

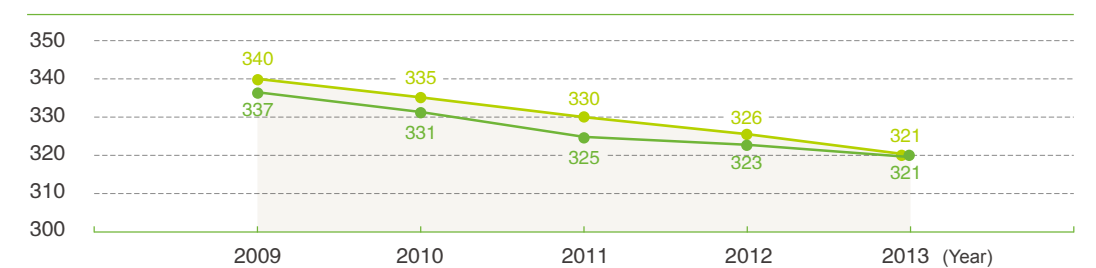


Power grid operates stably

Production and consumption of coal in manufacturing and power generation are main causes for environmental pollution and greenhouse gases thus the resource mix of China has resulted in the fact that coal will be the major fuel for power generation for a long time into the future. CSG has promoted the rapid development of clean coal-fired power for a reduction of greenhouse gases and pollutants. 2013 saw CSG's thermal power unit desulfurization of 5.118 million tons, representing a year-on-year reduction of -19%.

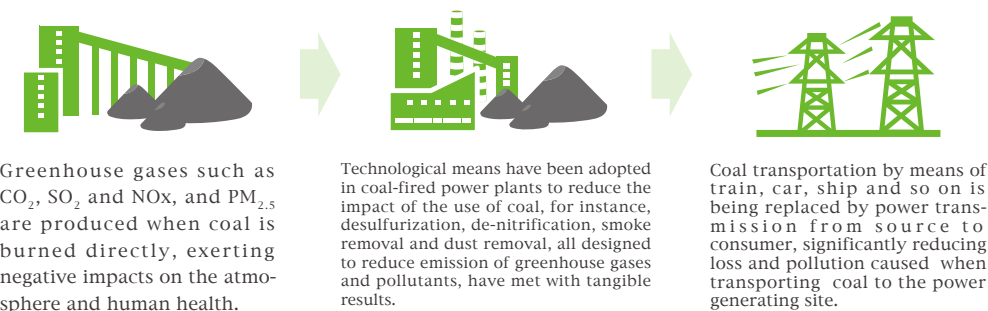
- Thermal power plants will also be connected to an on-line supervision system to track desulfurization and coal consumption as planned.
- CSG has been helping thermal power units in its service area to reduce coal consumption to 301g/kWh, representing a 1g/kWh year-on-year reduction.
- CSG has been urging power plants in Guangdong, Guangxi, Guizhou and other areas to conserve energy by building efficient power consumption management systems and upgrading to energy-efficient technologies including vacuum pump systems and big cold-end technologies.

Coal Consumption for Power Supply (Unit: 100 Million kWh)



Note: Data for 2013 are preliminary statistics.

Coal-fired Power Generation, an Important Means of Clean and Efficient Utilization of Coal



Nuclear Power Connected to the Grid

After the Fukushima nuclear accident in Japan, the international community is paying increasing attention to nuclear power safety. China has become more strict and prudent in the development and use of nuclear power. Newly-built nuclear power units in China must meet third generation safety standards and all new nuclear power projects have to meet the highest global safety standards.

CSG has provided grid-connecting services for the qualified and newly-constructed nuclear power projects. In 2013, nuclear power generated in CSG's service area reached 46.44 billion kWh, accounting for 41.45% of the National total.



In June, 2013, the 500kV Nuclear Power Transmission and Grid-connecting Project in Taishan was completed and connected to the grid.



In March, 2013, the 500kV Fangcheng Port Nuclear Power Plant Transmission Project in Guangxi was initiated.

CSG' s average Fossil Fuel Consumption per coal-fired unit in 2013 was

215g / k W h ,

Equivalent to the CO2 emission of

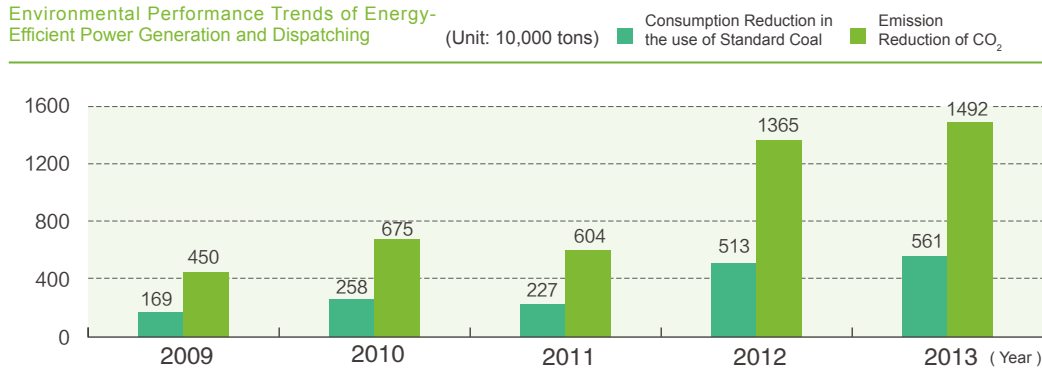
572g

18.3% lower than the national average consumption

● Energy-Efficient Power Generation and Dispatching

CSG has been dedicated to energy-efficient power generation and dispatching for three years, giving priority to renewable energy, nuclear power and efficient thermal power in power generation, through which CSG tries its best to supply power for the economic and social development of Chinas' citizens with minimum consumption of primary energy and with lowest emissions of harmful residues.

Thanks to the completion of the *smart technological system for energy-efficient power generation and dispatching* in 2013, CSG decreased fossil fuel consumption by an equivalent of 5.61 million tons of standard coal, or an emissions reduction of 14.92 million tons of CO₂ and 110 thousand tons of SO₂.



Q: In 2013, five provinces and regions in CSG's service area reduced redundant power by 19 billion kWh. How did CSG deal with such an amount of hydropower?

A: The year 2013 witnessed the declining growth of power demand and commissioning of large hydropower stations. Therefore, hydropower supplies will exceed power grid demand and, during the flood season, the situation will be worse. In early 2013, we predicted that the redundant hydropower in Yunnan would reach 20 billion kWh based on the hydrological forecast and digestion capacity of the power grid. CSG has made full use of the "west-to-east" platform under the framework agreement, and has taken different factors into account , such as the supply- and- demand balance

in the five provinces and regions, cable transmission capacity and water supply forecasts. In addition, CSG has adopted such measures as "west-to-east" power increments, DC project commissioning acceleration, river basin terrace optimization and optimal hydropower and thermal power dispatching. In this way, CSG has made great efforts to maximize transmission of redundant hydropower from Yunnan insofar as is possible. The year 2013 witnessed the a reduction of 19 billion kWh of redundant power from Yunnan, an equivalent of saving 7.6 million tons of standard coal, or a reduction of ing118.93 million tons of CO₂ reduced.

● Support for New Energy Source Development

CSG has supported the development and utilization of new energy sources by increasing new energy and renewable energy in installed capacity locations. With the construction of supporting projects, power generated from new energy, and connected to the grid, has been secured. The installed capacity of new energy in 2013 reached 5.81 million kW, making up 2.86% of the total.

- Guiding principles, service manuals, detailed rules and standards have been issued to support new energy development. Additionally, tariffs of power generated from renewable energy have been strictly applied. Convenient and efficient grid-connecting service has been provided for new energy sources, distributive photovoltaic power, in particular, has been a focus of this effort
- 2013 saw the newly-installed photovoltaic (solar) power capacity of 300 thousand kW, and the newly-installed wind power capacity of 1.1 million kW.
- The first citizen-invested distributive photovoltaic project in Guilin, Guangxi,was successfully connected to the grid and generated power for the community.
- The CSG Synthesis Energy Corp ... —a 35 MW Roof Photovoltaic (solar) Demonstration Project at the Shunde Midea Refrigeration Plant, the biggest one of its kind in Asia, was successfully connected to the grid and put into operation. The power generated is mainly consumed by the plant itself, while a small amount of surplus is transmitted to the CSG power grid.

○ Energy Conservation and Emissions Reduction on the Power Grid Side

As a platform for optimal allocation of regional energy, CSG has done its utmost to reduce power transmission loss, conserve energy and reduce emissions to ensure the power supplied is environmentally-friendly.

● 3C Green Power Grid Construction

CSG has made great efforts to build 3C (Computer, Communication, Control) green grid programs. Systems, technological R&D and other factors are taken seriously to work toward the most-efficient, resource-saving and environmentally-friendly power grid possible.

- Green power grid construction standards have been formulated based on the issuance of *The Power Grid Standard Design and Typical Construction Costing V1.0*.
- The Green Power Grid Construction Guiding Principles and Action Guidelines* have been formulated and are being implemented.
- 74 projects and 345 models have been selected for demonstration.

We have maintained sincere and close relations with resident consumers. Environmental impact assessments on facilities, including power transformer substations, have been carried out before construction.

The First "3C" Power Transformer Substation Built in Guizhou

The first "3C" power transformer substation in Guizhou, a 110 kV Qingshan Substation, was put into operation ... with optimal internal layout of facilities ... and it is of the enclosed type, covering an area 37% less than other transformer substations of its kind. It has employed heat insulating materials, environmentally-friendly tubes, rain recovery devices, Gas Insulated Switchgears (of low consumption) and, additionally, noise reduction facilities. The perceived noise of the main transformers has been reduced by 20%.

The 110 kV Qingshan Power Transformer Substation ▲

● Protection of Biodiversity

CSG has adhered to the principle of environmental protection in power grid construction by adopting various measures to preserve biodiversity, including along transmission lines, to preserve the harmony between power grid construction and ecology.

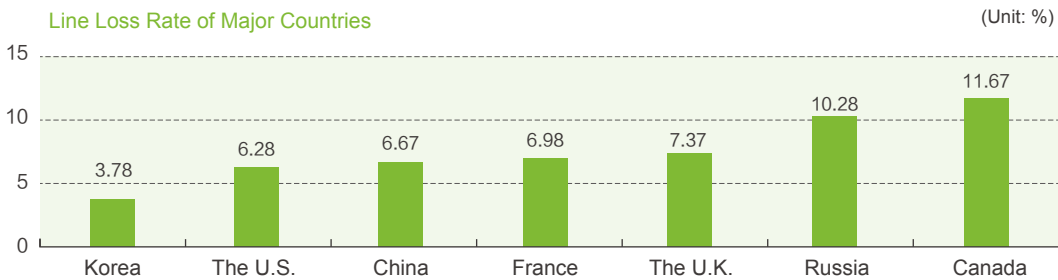


● Energy-Efficient and Environmentally-Friendly Operations

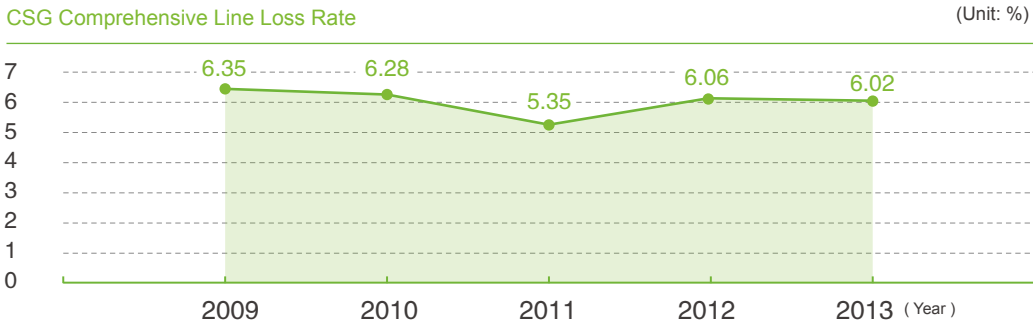
○ Line Loss Reduction

CSG has strengthened lean management of line loss from the perspectives of planning, management, and technology to operations.

- The number of power supply enterprises at the county-level, with a line loss rate of over 10%, has been reduced by 25.
- A total of 14 power supply bureaus at the prefecture/municipal level have passed the line loss evaluation test.
- With measurement of the automation system, CSG has equipped all its direct supply areas and direct management areas with power plants, distribution transformers and user-invested transformers.
- 2013 witnessed the procurement of 20,796 amorphous distribution transformers, making up 65.8% of the total installed.
- Thanks to optimal operation, energy storage loss was lowered by 390 million kWh, and line losses in the "west-to-east" plan, by 200 million kWh.



Note Line loss of China, in the data tables, was based on the data from a 2013 survey, while other countries used data from 2010.
Data source: The China Electricity Council



- Note
1. The years 2012 and 2013 saw a notable increase of "west-to-east" power transmission and inter-provincial transmissions gave rise to an increase of comprehensive line loss compared with the previous year.
 2. In 2013, the overall line loss for the parent company was 6.02%, representing a year-on-year decrease of 0.04%, while the rate based on the statistics of the overall assets was 7.20%, representing a year-on-year decrease of 0.05%. The two figures are different for the reason that, in the rural power sector reform, 255 power supply enterprises at the county-level were being taken over by CSG, whose line loss rates are higher, consequently, when the rates for subsidiaries are taken into consideration, the rate for the overall assets is conspicuously higher than that for the parent company.
 3. With the furtherance of CSG's integration, we will adopt sole statistics from the overall assets of the major entity in future calculations of line loss.

○ Proper Disposal of Waste

In line with the principle of circular economy, CSG has abided by national standards and has properly disposed of, recovered and re-used waste to the maximum extent possible.

- CSG's waste emission is strictly limited to/by National Standards so as to reduce environmental pollution.
- Nearly 100% of waste oil from transformers is recovered and reused.
- 100% of SF6 gas is recovered and reused.

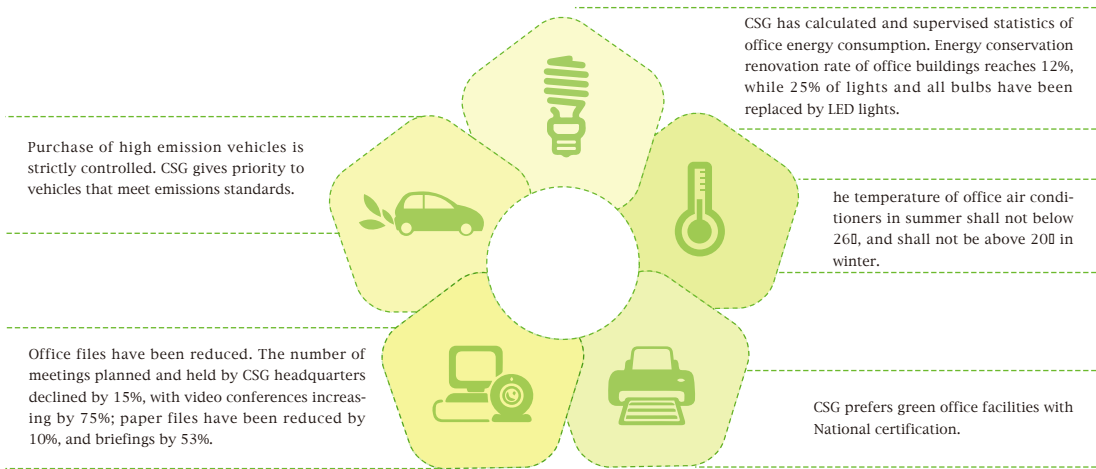
The overall line loss rate for the whole grid (statistics from the parent company) was **6.02%.**

Further Reading

Transformer oil is the product of distilled oil, mainly composed of alkanes and aromatic hydrocarbons, with the functions of insulation, heat dissipation and arc suppression. It will cause serious soil and water pollution if it is handled without care. Waste oil can be reused by the transformers after recovery and treatment, all conducive to resources conservation and environmental protection.

● Green Office

CSG has taken solid measures to save energy and reduce emissions



○ Application of "Energy Monitor TM" is Used For Building Energy-Efficient Supervision Analysis Systems for the CSG Headquarters Building

Apart from energy conservation/ renovation, CSG has applied the "Energy Monitor TM" Building Energy Efficiency Supervision Analysis System developed earlier by CSG Synthesis Energy Corp. to its headquarters building for scientific power utilization management. The result has been a savings of 23% in terms of power consumption ... of 2.776.3 million kWh, or a sum equal to 1,111 tons of standard coal and a CO₂ emissions reduction of 2,768 tons.



Energy Conservation Verification at the Headquarters Building



Carbon Emission Reduction at the Headquarters Building

| Index Express | |
|---------------------------------------------------------------------------------------|------------------------------------------------------------|
| Index | Accomplishment |
| Percentage of Suppliers with ISO-14000 Environmental Management Systems Certification | 74.0% |
| Energy Saved from Business Trip Reduction | Equal to CO ₂ Emission Reduction of 37,875 Tons |
| Percentage of New Projects Subject to Environmental and Social Impact Assessment | 100% |

Energy Conservation and Emission Reduction on the Customer Side

Energy conservation potential on the customer side occupies 50% of the life cycle of power. CSG has taken the initiative to raise the energy conservation awareness of customers, provided comprehensive services so as to help them save energy expenses and enhance energy efficiency efforts.

Support for the Customers in Energy Conservation in an All-around-Way

Energy-efficient service platforms, such as those of the CSG synthesis Energy Corp. and power-saving centers at various levels, have integrated advanced energy-efficient technologies from home and abroad, carried out emission reduction projects and spared no effort to provide services to customers. In 2013, CSG provided energy conservation diagnoses to 1,473 enterprises and visited over 200 major customers.



Energy Conservation Consultancy Diagnosis

In-depth diagnosis has been provided to the food and beverage sector and household appliance sector. Energy conservation services have been provided to many famous companies such as Swire, Coca-Cola Co. Ltd and others in Guangzhou.



Comprehensive Utilization of Energy

CSG has worked with The Jiangtian Cement Company in Bijie, Guizhou, on its power generation needs along with investigations of the residual industrial heat and pressure. CSG has applied an installed capacity of six MW and annual power supplied of 31.80 million kWh.



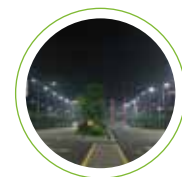
Industrial Energy Conservation

CSG has upgraded 99 injection molding machines for Midea, reaching savings of 50% in power use, saving over 7 million kWh annually.



Building Energy Conservation

CSG carried out R&D projects focused on a new generation of "Energy Monitor TMs" Building Energy Efficiency Supervision Analysis System, which has been applied successfully to energy conservation demonstration projects including CSG's headquarters building as well as a big hotel in Jiangmen.



Lighting Energy Conservation

CSG has renovated 200 thousand LED street lights and 1.5 million LED lamps.



Energy Efficiency Management

CSG has undertaken the Foshan Power Demand Management Project to realize digital, on-line and visual power management experience for future use.



The Energy Conservation Agreement with Shaoguan Iron & Steel Co. Ltd of Baosteel

In August, 2013, CSG Synthesis Energy Corp entered into a framework agreement on an energy conservation project implementation with The Shaoguan Iron & Steel Co. Ltd so as to build the latter into an exemplary company in the sector. The project combined other aims with that of saving 100 million kWh and reducing energy consumption by 10%.

Support For The Electric Vehicle Industry

In response to the governmental policy, CSG has actively supported the development of electric vehicles.

As of 2013, CSG has built and operated 18 charging stations locations and battery replacement ing stations, one experience center, and 3,256 charging posts, all serving over 750 thousand vehicles, with a the power charged value of 23.40 million kWh and a mileage count of 94.40 million km, saving a total of 9.44 million tons of standard oil and reducing 15 thousand tons of atmospheric CO₂.

Energy Conservation Publicity

CSG has publicized various energy conservation policies to the public through such channels as media, internet, microblogs, WeChat, seminars, energy conservation exhibition halls and business halls. In 2013, CSG's "A Beautiful China" a public service announcement that was broadcast 881 times on CCTV, sharing our philosophy and ideas with about 134 million people.



Spreading the Concept of a Green Philosophy

Shenzhen Power Supply Bureau billboards dotted bus stops with 3,000 environmentally-friendly reminders. The promotion was interactive and once citizens took away all of the temporary materials posted, a screen of "For A Blue Sky" would be unveiled, spreading the CSG energy conservation philosophy and calling on citizens to save power.



Promotional Tips For Family Energy Conservation

The Zhongshan Power Supply Bureau initiated the Family Energy Conservation Tips Campaign, where humorous and lively Kungfu postures were employed to explain/demonstrate energy-saving tips in the hope that each family would find energy conservation interesting.

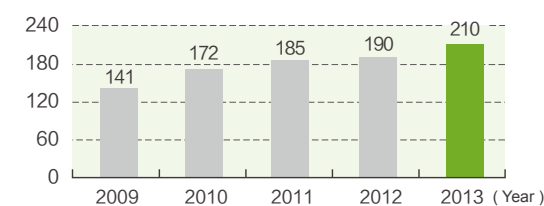


Promoting Energy-Saving Technology

The CSG Synthesis Energy Corp. had advanced green and low-carbon technologies, products and services on display and it was felt that putting these together with over 400 companies from more than 10 countries at the China International Green Innovative Products & Technologies Show that some wide-ranging ideas for energy promotion might arise.

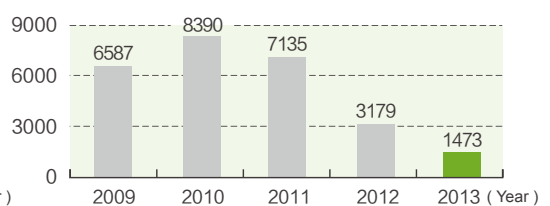
Training Series

(Unit: Session)



1000 Enterprises Energy Conservation Campaign

(Unit: Number)



A Win-Win Solution for Clients and Companies

CSG has built nandudu.com, a one-stop and comprehensive energy conservation service website, dedicated to providing information and services to the industry and the public in entertaining and informative ways. The services include: energy-saving technologies and product promotion, product certification and training. Optimal solutions are provided to power-consuming clients, promoting mutually-beneficial cooperation with energy-saving companies and, as of 2013, there were 220 registered members and 102 contractual members.

Nandudu Energy Saving Service Website
www.nandudu.com



The more power we save, the greener and more beautiful the world will be!

An idea from Nandudu.com



Golden Bee 2020

Bees have been living in harmony with the environment and society on the earth for 120 million years. They collect honey and spread pollen, serving as an excellent example of harmony with nature. The *Golden Bee 2020* concept was born in China as a visionary and sustainable action plan encouraging the development of a vision based on the concept of the labor of the Golden Bee and the inspiring spirit of the benefits the example of this type of collaboration could bring to our community.

Q:

Why CSG joined Golden Bee 2020? What are the benefits for CSG's energy conservation and emissions reduction? How to they relate to the concept? What benefits might they bring to society?



A:

It is the common aspiration of the *Golden Bee 2020* program that scale effect can be realized with the same responsibility and innovative action, which promotes CSR awareness of *Chinese companies* and enables an increasingly number of them to be "Golden Bee Enterprises" all aiming for a sustainable earth and for the enlightenment and benefit of human beings.

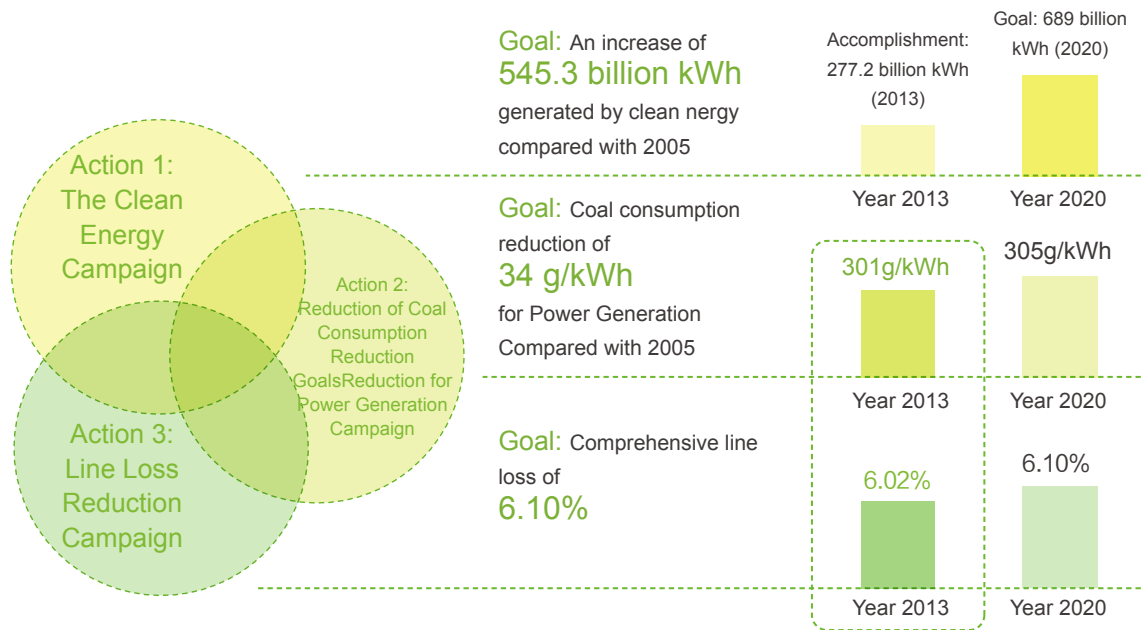
CSG, as a "Golden Bee Enterprise" with the spirit of bees, launched the Golden Bee 2020 Initiative along with the *China WTO Tribune* in June, 2011; as the Chairman of the Company noted when speaking to the "Low Carbon and Efficiency Management" Special Committee, CSG has actively promote the cross-sector cooperation in this regard.

Since we joined the initiative, we have worked with upstream and downstream companies for a green industrial chain, a low-carbon society, green life, sustainable future and green and efficient development models.

In June, 2013, CSG and China WTO Tribune co-organized a panel discussion on Green Forces for A Beautiful China at the Eighth International CSR Forum . The forum offered an arena for in-depth discussions on green and sustainable development, and practical approaches for "A Beautiful China".

Accomplishments of Golden Bee 2020

Based on the development and goals of CSG, we have made a list of concrete actions related to the power generation side, power grid side and customer side. We have spared no effort to realize the goal of Golden Bee 2020 with a number of measures, including optimal resource allocations, development of green service quality practices and standards, providing assistance to companies in development of their green production policies and projects and cooperation with them in both joint and independent low-carbon industrial program development.



Surpassed the goal of 2020

Energy Conservation and Emission Reduction Performance

CSG's Energy Conservation and Emission Reduction Performance with Upstream and Downstream Firms in 2013

| Item | Power (100 million kWh) | Standard Coal (10 thousand tons) | CO ₂ (10 thousand tons) | SO ₂ (10 thousand tons) |
|-----------------------------------------------------------|----------------------------|-------------------------------------|---------------------------------------|---------------------------------------|
| Power Increment Generated by Non-fossil Energy | 1134 | 3413 | 9079 | 66 |
| Replacing the non-efficient Generator with efficient Ones | — | 27 | 71 | 0.5 |
| Energy-efficient Power Generation and Distribution | — | 561 | 1492 | 11 |
| Power Grid Loss Reduction | 20 | 61 | 163 | 1 |
| Energy Conservation of the Customers | 9.3 | 30 | 80 | 0.6 |
| Total | — | 4092 | 10885 | 79.1 |

Overview of CSG' s Total Energy Conservation and Emission Reduction Performance with Upstream and Downstream Firms

| Item | Power (100 million kWh) | Standard Coal (10 thousand tons) | CO ₂ (10 thousand tons) | SO ₂ (10 thousand tons) |
|-----------------------------------------------------------|----------------------------|-------------------------------------|---------------------------------------|---------------------------------------|
| Power Increment Generated by Non-fossil Energy | 5653 | 17756 | 47231 | 341 |
| Replacing the non-efficient Generator with efficient Ones | — | 1196 | 3134 | 23 |
| Energy-efficient Power Generation and Distribution | — | 2001 | 5312 | 38 |
| Power Grid Loss Reduction | 302 | 943 | 2508 | 18 |
| Energy Conservation of the Customers | 83.6 | 277 | 694 | 5 |
| Total | — | 22173 | 58879 | 425 |

Note Data have been collected since 2002. Data on incremental power generated by non-fossil energy combined with power grid loss reductions in the 10th Five-year Plan Period used 2002 as a benchmark. Whereas data of power increments generated by non-fossil energy and power grid loss reduction in the 11th Five-year Plan Period used the year 2005 as a benchmark, and data of power increment generated by non-fossil energy and power grid loss reduction in the 12th Five-year Plan Period used the year2010 as a benchmark.



I've got it!





Economic Performance

CSG has ensured a totally professional focus on the maintenance and appreciation of State-Owned assets.

In adherence to all legal compliance standards outlined and provided for our operation, including reflection of all cost reduction and efficient improvements of assets invested/used, we have striven to make steady progress for the maintenance and appreciation of assets designed to assure steady and sound development in our responsible areas and to create more value for stakeholders at all levels.

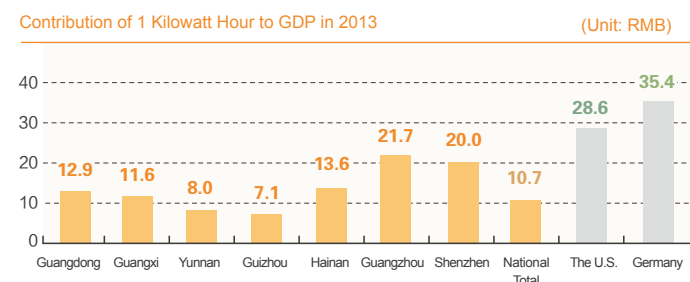
- Operation Performance
- Law Compliance
- Cost Reduction and Efficiency Improvement
- Power Market Development Promotion
- Regional Economic and Social Development Promotion

Power Lights Up the City—Glittering Huangchen Square in Guangzhou ▲



Economic Value of 1 Kilowatt Hour

Electricity is seen as the foundation for economic and social development, while power consumption is the "barometer" of regional economic and social development/growth. Each kilowatt hour in the five provinces and regions in CSG's service area contributed to RMB 11.2 of GDP output in 2013. Compared with similar data of developed countries, the contribution of each CSG kilowatt hour to GDP is relatively low, for the reason that our regional economy is located at the lower end of the global industrial chain. To create more economic value with each kilowatt hour, we must rely on economic restructuring and innovation in attracting new users to our, now, innovative and attractively priced facilities positioned to help them grow via new 'win/win' concepts.



Note 1. GDP of 2013 was calculated from preliminary data.
2. The American data on ratio of output value of unit electric energy consumption were calculated on the exchange rate of USD/\$1 to RMB 6.2, the German data, 1 Euro/RMB 8.5.

Power Sales of
7433 (unit: hundred million kWh)
Up by 6.03% Compared with 2012

Business Revenue of RMB
4482 (unit: hundred million)
Up by 6.46% Compared with 2012

Total Pre-tax Profits of RMB
40.7 Billion
(unit: hundred million)
Up by 6.54% Compared with 2012



Abundant Power Enables and Secures Industrial Development ▲



Quality Power Secures Economic and Social Development ▲

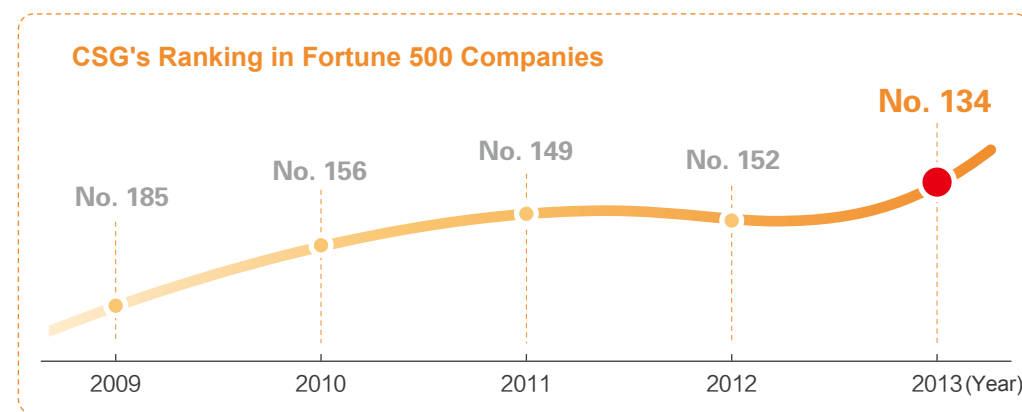


Reliable Power Supply Facilitates Inward Business Investment Attraction for/in Guangzhou ▲

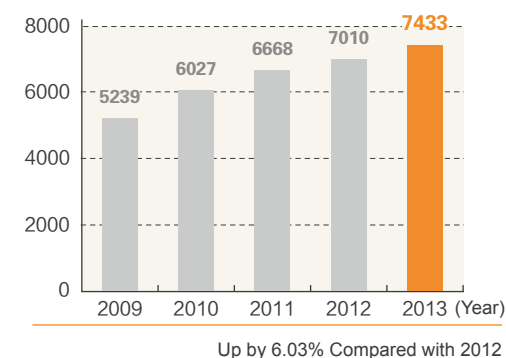
CSG has been rated
“Grade A” in
operations performance
evaluations by SASAC
for seven years in a row.

Operational Performance

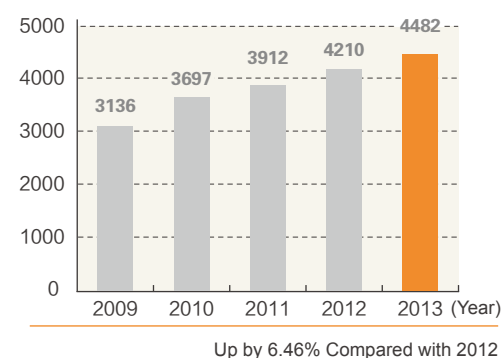
Against the backdrop of a declining economic growth rate and power consumption, CSG has accelerated economic development mode transformation and ensured growth with meticulous operation and management, and the company has passed the annual operation performance evaluation by SASAC. Year 2013 witnessed CSG's EVA of RMB 4.14 billion, and debt asset ratio of 65.6%. It is important to note that the company has been listed in the Internationally recognized Fortune 500 list for the past 9 years in a row.



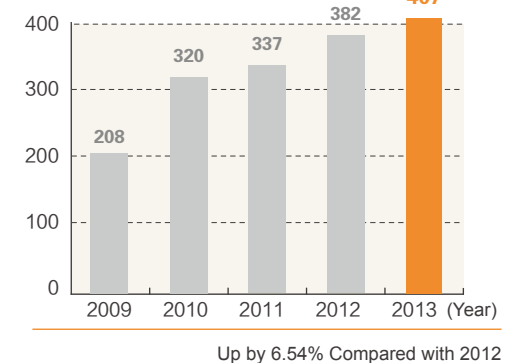
Power Sales of 743.3 Billion kWh
(Unit: 100 Million kWh)



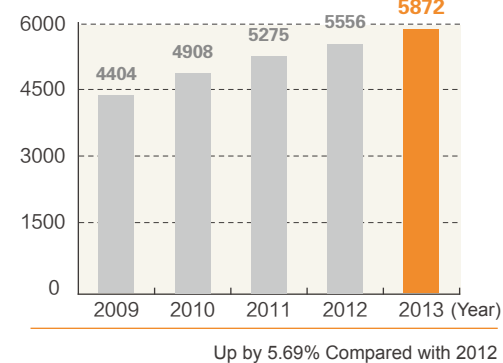
Business Revenues of 448.2 Billion RMB
(Unit: 100 Million RMB)



Total Pre-tax Profits of 40.7 Billion RMB
(Unit: 100 Million RMB)



Total Assets of 587.2 Billion RMB
(Unit: 100 Million RMB)



Legal Compliance

CSG has been operating in accordance with relevant laws and regulations, promoting the integration of legal work and business operations and management. We have set up an “overall auditing” system, pressed ahead with an anti-corruption philosophy, monitoring system and a clean operations action plan, carried out efficient supervision in all areas and have received responses, supervision and support from stake-holders. CSG has received the highest credit rating AAA+ for four consecutive years and there has been no major incidence of misconduct, tax evasion or other allegations of misconduct in 2012.

Legal Risk Management

CSG has established and continually improves its’ long-term legal risk prevention system by identifying legal vulnerabilities in key areas. Making use of “legal clinics” to ‘project’ possible problem areas, we have provided innovative legal evaluations and services and have enhanced our legal risk evaluation and prevention capabilities.

Improvements to the Legal Risk Prevention System

| | |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Integration into key business links | Carrying out legal risk examinations in all areas ... especially key ones; aligning legal risk prevention with the key links in business process and integrating legal risk prevention into business operation |
| Integration of a consciousness of the “legal-risk” concept into job responsibilities | Identifying business areas with high legal risks; formulating legal risk awareness, prevention, counseling and creating a control handbook for 41 posts designed to provide information, raise aware and improve legal risk management system |
| Integration into contract management | Development and implementation of stringent contract management to exercise <i>whole-process</i> contract legal risk assessment and management |
| Integration into the grassroots work | Strengthening the brand, building of “legal clinics” , carrying out legal consultancy tours of the legal clinics and solving the major legal issues at grassroots levels by informative and participative means. |
| Integration into the Corporate culture building process | Launching the inclusion of practical legal culture construction campaigns to promote the legal culture of “acquiring sound legal knowledge and acting by law” ; providing training to 61,814 people in 2013 |

Proper Settlement of Legal Disputes

CSG has made significant efforts such as signing commitment letters and adopting a specific strategy for each case and successfully has reduced the number of legal disputes in which it was held responsible by 25.52%. New major cases of legal dispute caused by breach of laws or regulations have been brought under effective control.



The Chaozhou Power Supply Bureau of CSG held a moot court practice session to spread legal knowledge

Improved Internal Auditing

In accordance with the principle of auditing and rectifying at the same time, CSG has adopted an innovative auditing concept and made full use of auditing’ s supervision, guidance and service functions to enhance standardized management and business efficiency. We completed 3,575 auditing projects in 2013, proposing 5,829 pieces of management advice, and, in the process, rectifying misused capital of RMB 120 million while adding revenue and saving expenses of RMB 140 million.

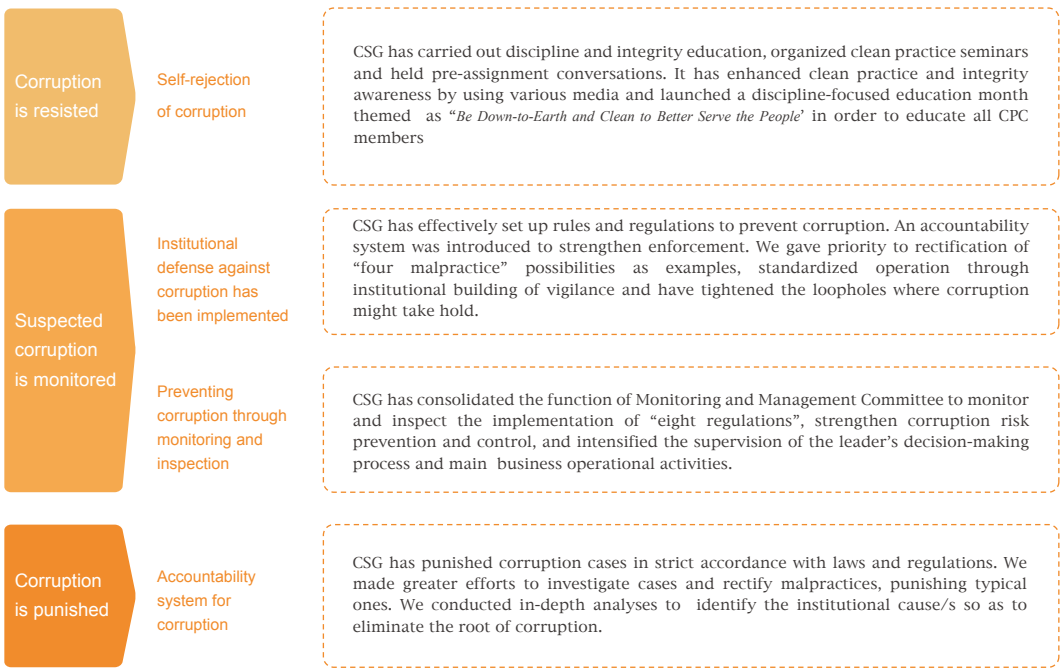


Further Reading

“Legal Clinic” is a platform for legal risk management, solving major legal issues, legal consultancy services and provision of/training in legal matters to assure knowledge at grassroots levels. The clinic aims at enhancing legal performance at grassroots levels through regionalized management, professional division of responsibility and networked service.

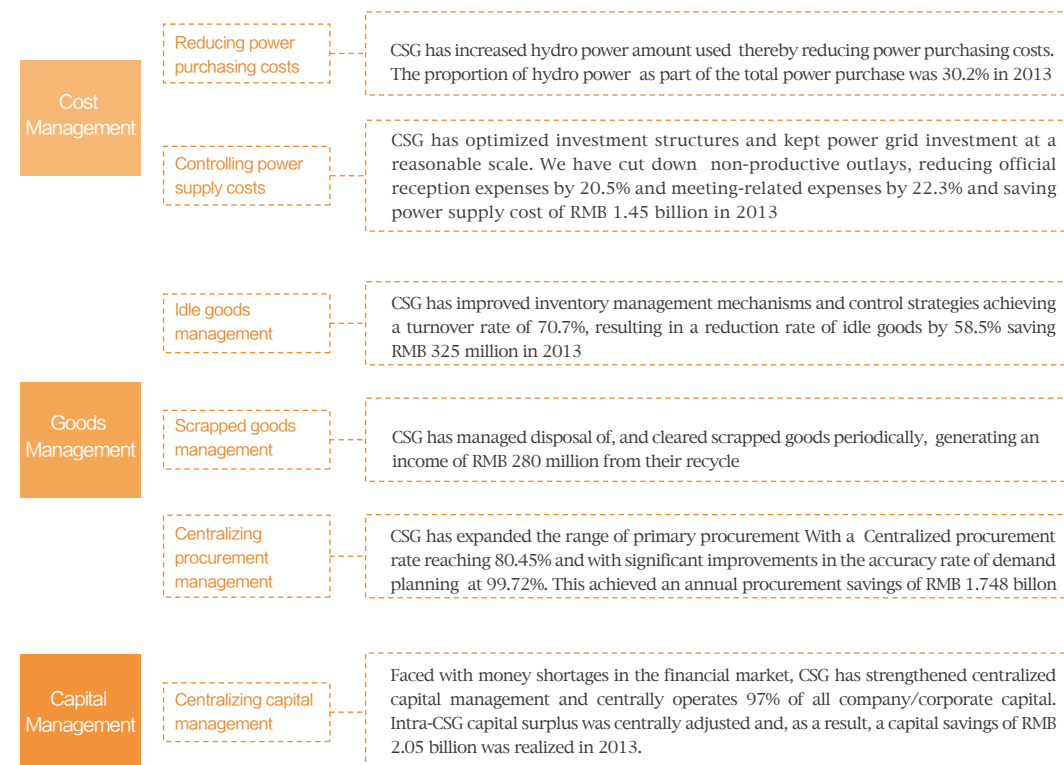
A Clean, Corruption Free and Self-disciplined CSG

The Central Committee of the Communist Party of China has attached great importance to clean practice and inclusion of integrity in the construction of programs and entities; too, it has deepened the presence of anti-corruption and clean practice work ethics. Following the “eight regulations” put forward by the Central Committee of CPC, CSG carried out education campaigns among CPC members and improved the rules and regulations on clean practice and integrity. It has also set up a long-term anti-corruption mechanism to prevent and deal with corruption at the source.



Cost Reduction and Efficiency Improvement

Confronted with complicated economic situations at home and abroad, as well as sluggish power consumption growth in the five provinces and regions, CSG has adopted the intensive growth pattern and carried out steady steps to cut down on costs and improve efficiency. We have focused on cost efficiency and management, preventing waste from the outset and enhancing operation efficiency.



Q: How does CSG establish an efficient logistics management system to cut costs and improve efficiency?

A: We have cancelled the practice of using secondary warehouses and transformed the hierarchy of “primary and secondary warehouses+first aid kit” to “regional logistics platform warehouse cluster+first aid kit” to coordinate the operation of all warehouses. We carried out the pilot program of replenishment procurement and set up “fixed storage and dynamic replenishment mechanisms” and supplies accounting systems to enhance management efficiency of supplies.



The First Warehouse Built According to New Standards Was Put into Operation

In March of 2013, the first primary warehouse designed and built according to “Warehouse Construction and Equipment Standards of CSG” was put into operation by the Zhuhai Power Supply Bureau. Based on a supermarket-type management mode, it introduced bar code scanning for stock location and stock in and out to achieve visualized monitoring and IT-enabled storage. The role of the warehouse has been transformed from inventory keeping to logistics operation. With goods collection time shortened to eight minutes, the goods operation efficiency was greatly enhanced.



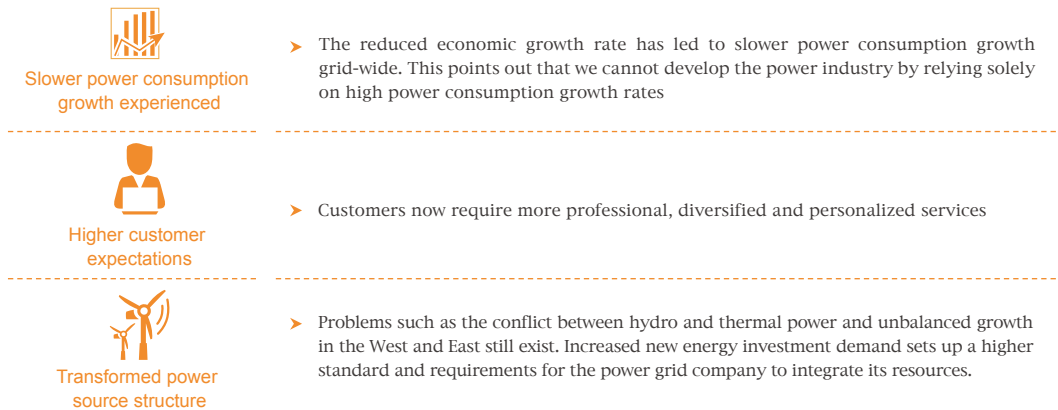
Further Reading

The *first-aid kit* is an important part of CSG’s “big warehouse and big distribution” logistics system. Borrowed from the medical concept, it refers to small warehouses where the emergency repair and maintenance goods are stored. It provides 24-hour goods collection and return service. The design of each *kit* is different in each of the logistics distribution systems and aims to satisfy the actual needs.

Power Market Development Promotion

Maintaining the power market order, CSG has conducted an in-depth analysis into unstable factors in the power market, has ensured open, fair and just trade practices and constructed healthy business relationship to promote a sustainable and harmonious power market development.

Our Challenges



Stakeholders

Our Actions



Index Express

| Index | Performance | Index | Performance |
|---------------------------------------------------|------------------|-----------------------------------------------|-------------|
| Economic Contract Fulfillment Rate | 100% | Efficiency Auditing Items | 601 |
| Economic Contract Legal Review Rate | 100% | Legal Review Rate of Major Business Decisions | 100% |
| Legal Review Rate of Bidding Documents | 100% | Legal Review Rate of Rules and Regulations | 100% |
| Integrity and Clean Practice Education for Cadres | Over 8000 people | Net Value Rate of Retired Assets | 15.5% |

Regional Economic and Social Development Promotion

In line with the strategic positioning of each region where CSG branches and subsidiaries are located, CSG has made full use of its' resource allocation platform to coordinate power supply in the East and the West and to provide power support aiding the economic and social growth of the five provinces and regions.



Assist Guangdong to become the first "one trillion US dollars" regional economy

The Guangdong Power Grid has constantly reinforced power infrastructure facilities to provide safer, steadier, better and cleaner power. It offered support to Guangdong' s strategy of industrial and labor force transfer, making contributions to its growth as the first regional economy in China with an economic size of over one trillion US dollars. The Guangdong Power Grid' s fixed asset investment totaled RMB 23.74 billion and power supply was 409.79 tWh in 2013.



Support Guangxi to develop the Northern Bay and Xijiang River Economic Belt

According to the features of important areas like the Northern Bay Economic Zone and the Xijiang River Economic Belt, and the inclusive numbers of important customers, the Guangxi Power Grid customized its service strategy for each market segment. It has promoted the diversification of power source structures and reasonable power structures in Guangxi and has built reliable green power grids covering the urban the rural areas in the region by coordinating with various parties. The annual power supply topped at 96.34 tWh.



Facilitate Yunnan's development as a bridgehead

Carrying out the strategy of "going global" , the Yunnan Power Grid has facilitated Yunnan' s growth as a "green economy; a province with distinct ethnic culture and a bridgehead opening to Southeast Asia" . It properly handled power shortages in dry seasons and power surpluses during the rainy seasons and helped with Yunnan' s project of "Prospering border area and benefiting people" to build the open economic zone in the border area. The power supply totaled 172.06 tWh in 2013.



Promote the rapid economic and social growth of Guizhou

The Guizhou Power Grid strengthened the construction of West-to-East energy passage to support the steady growth of coal and electricity industries in the province so that Guizhou' s resource advantages can be translated into economic benefits. In 2013, the Guizhou Power Grid sold 133.2 tWh electricity and completed 32.42 tWh power transmissions in the West-to-East project, making active contributions to local economic growth. Guizhou ranked No. 1 in terms of its' economic growth rate in the country and attained its objective in the 12th Five-Year plan a full two years ahead of schedule.



Facilitate Hainan's Development as an International Tourism Island

The Hainan Power Grid sped up urban and rural power grid upgrading and transformation and enhanced power supply reliability to satisfy the Province' s demand for power to support its' position as an international tourism island. It made a fixed assets investment of RMB 3.12 billion and sold 18.86 tWh of electricity in 2013, thus facilitating the Province to attain its strategic objective of "green rise through scientific development" .



Deliver service to Guangzhou's mission of building itself into a national central city

The Guangzhou Power Supply Bureau has been dedicated to Guangzhou' s mission of building the city into a national central city featuring a low-carbon economy, the image of a smart city and a high living quality. It accelerated power grid infrastructure construction and constantly improved and innovated power supply services. It delivered a world-class power supply network and services to assist Guangzhou' s transformation and upgrading. The annual power supply delivered was 67.26 tWh in 2013.



Support of Shenzhen's effort to become a modern international city

Centering on Shenzhen' s mission of becoming a modern international city, the Shenzhen Power Supply Bureau has taken steps to speed up power grid construction area-by-area in the city. It enhanced the power supply service quality to become an "outstanding power grid operator for an internationally advanced city" . It delivered service to accelerate Shenzhen' s economic transformation and upgrading so as to guarantee the "Shenzhen quality" . Its power supply was 71.3 tWh in 2013.

Enhancing Cooperation with Hong Kong and Macao

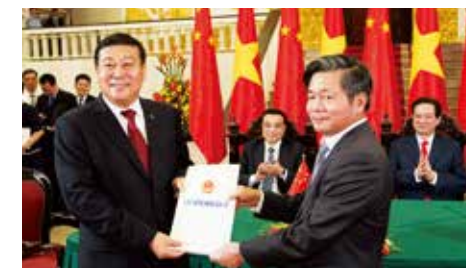
CSG has set up deep-level cooperation mechanisms with Hong Kong and Macao for exchange of visits among senior executives, for personnel training and for technological exchanges and cooperation.

- CSG set up power industry summit mechanisms across the Mainland, Hong Kong and Macao and participated in the 3rd CSG, CLP & CEM Power Industry Summit to jointly discuss efficient, reliable, green and low-carbon power supply means.
- CSG attended the 18th Canton, Hongkong and Macau Power Service Workshop, and exchanged ideas on E Channel, New Experience on Customer Service and Energy Saving Service.
- CSG has worked with the Macao Government to set plans for advancement of its' power grid structure and to improve services.

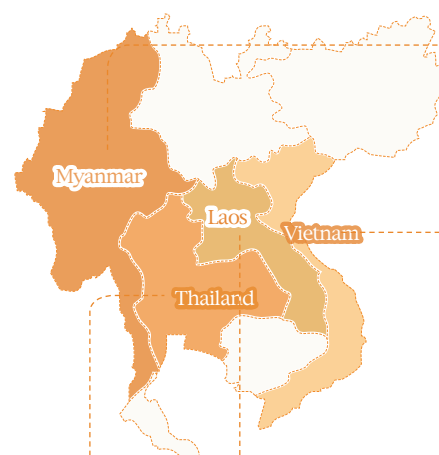
Promotion of GMS (Greater Mekong Sub-Region) Power Cooperation

CSG has played an active role as one of China's executive parties in the GMS cooperation. By taking part in various works of the GMS Power Trade Coordination Committee, we intensified the power grid interconnectivity with GMS countries and optimized the electricity resources in a greater area.

- In line with the status quo of power cooperation in GMS, CSG completed a "Study on Problems Related to Power Cooperation in GMS". Some of our proposals were adopted by the relevant departments in charge
- CGS carried out the application process for Kunming to be the permanent office location of the GMS Regional Power Coordination Centre (RPCC)



Vietnamese Minister of Planning and Investment Bui Quang Vinh presented the investment license for the first phase BOT project of Vinh Tan coal-fired power plant to ZHAO Jianguo, Board Chairman of CSG.



- CSG traded 1.89 tWh electricity with Myanmar in 2013
- CSG provided assistance to the CPC Central Committee External Liaison Department in hosting Sino-Myanmar People-to-People Communication Roundtable Forum in Kunming to boost economic and trade cooperation between the two countries, laying a solid foundation for the cooperation in the power sector

- CSG set up regular communications mechanisms with Vietnam and has accumulatively exported a total of 3.27 tWh power to the country
- The Vietnamese government issued investment licenses to the first phase BOT project of Vinh Tan coal-fired power plant (the first overseas BOT cooperation project of CSG)
- CSG signed strategic cooperation agreement with Vietnam Power Group

- CSG signed a Memorandum of Understanding on a Power Purchase Project with the Thai National Power Generation Bureau in Kunming
- With CSG's efforts, the Sino-Thailand 500 KV Power Connection Project was listed as a prioritized project within the GMS 2012-2022 investment framework

- CSG supplied 204 gWh of electricity to Laos in 2013, a year-on-year growth of 100%
- The stone-laying ceremony for the Nam Tha 1 hydro-power project was held



Voice



In last year, the Yunnan Power Grid delivered services to Yunnan to support its growth. I highly commend its efforts to ensure power supply and accelerate power grid development.



—QIN Guangrong
Secretary of the CPC Yunnan Committee



Voice



Whenever there is a power failure, the employees of China Power will come to make the repair immediately, even during the night. It is really convenient to use "Chinese electricity" .



—Meng Yan
Factory manager in Myanmar



Social Harmony

Creation of Win-Win by Joining Hands with Stakeholders



我想长大以后
当一名电力工
程师蔡诺



CSG is responsible for delivering ubiquitous power services with an aim of boosting the coordinated development of both urban and rural areas. We pay close attention to every cooperator and build an equal, coordinated and mutually beneficial platform for such cooperation. By putting people first, we take care of every staff member and try to make the company a happy place for them. CSG has cooperated with all stakeholders to realize our “Chinese Dream” and bring light and happiness to our society.

Public Welfare Cooperation and Win-Win Staff Development

The Dongguan Power Supply Bureau of the Guangdong Power Grid, carried out a volunteer activity “Caring for left-behind children of migrant workers” . After watching power emergency repair and experiencing meter readings, a child named Cai Nuo made up his mind to become an electricity engineer when he was grown up.

50,029

staff members have participated in volunteer activities

96%

of staff have been trained

100%

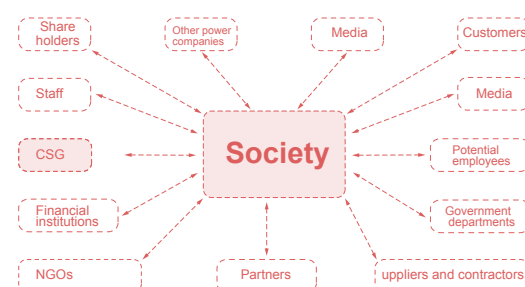
of the workers of contractors have received safety training



Social Harmony Mirrored in One KWh Electricity

The whole journey of every watt of power, from production to consumption, would be impossible without the sincere cooperation and hard work of all stakeholders. As enterprises are cells of society, CSG is bonded with other social sectors by electricity. We utilize the resources allocation function of power grid and build an electricity ecosystem in which such stakeholders as staff, clients, supply chain providers, community, and media, as well as government, conduct cross-sector cooperation, share values and coexist harmoniously. We do our utmost to send every watt of electricity to thousands of households, thus winning the awareness, recognition and support from our stakeholders and contributing more to social harmony.

CSG' s Ecological Model for Stakeholders



The Yixing Power Supply Bureau of the Guizhou Power Grid held a donation activity at the Dalu Primary School, Pomei Town, Ceheng County.



Safety lectures were delivered at construction site to improve contractor' s on-site operational safety practices



Experienced employees are coaching newcomers

The Annual Donation amounted to **RMB 47.9 million** in 2013

Public Welfare

The power grid has linked CSG to thousands of households. With a sense of responsibility, we consider it our priority to improve people’s living standards. By visiting communities, rural areas, schools, hospitals, enterprises and low-income families, we try our best to repay society for its support of us and our efforts.

Poverty Alleviation

CSG has widely taken part in economic and social reconstruction of impoverished areas by focusing on poverty alleviation, partner assistance and the combination of development and collaboration. Additionally, we work to enhance the utilization rate of poverty alleviation goods and constantly help recipient areas to enhance their self-developing ability.

- CSG attended the Second China Charity Fair (CCF), displaying the achievements in “Electricity to Every Households” project, in ensuring power supply for disaster relief and poverty alleviation and made exchanges on charity innovation and ecological welfare.
- CSG provided 15 KWh free electricity to 1.38 million disadvantaged families in rural areas and low-income households in urban areas, repairing circuits and fitting lights for low-income families free of charge. In 2013 we supplied 2.48 TWh electricity for free.

Volunteer Activities

CSG set up a young volunteer team which has carried out themed volunteer activities to pass awareness of our care and love to society. Altogether 50,029 staff members have participated in volunteer activities and we have provided service up to 153,423 volunteer hours in 2013.

Electricity Tour visiting communities and on campus



For many years, volunteers have regularly helped Granny LI, who lives in financial difficulty

Children signed on the proposal of “Using electricity safely and economically, building harmonious campus together”

Support for Disaster-Stricken Areas

Facing such catastrophes as drought and earthquake and other unexpected emergencies, CSG tries its best to repair and restore electricity, give donations and help with the reconstruction of disaster-affected areas.

- When the Ya’ an earthquake occurred on April 20th, 2013, we called on all our staff to make donations and the total donation was up to RMB 7.41 million.
- After the Yushu earthquake on April 14th, 2013, we donated RMB 5 million to establish the second ethnic middle school in Yushu County, Yushu Tibetan autonomous prefecture to help resume education for 2,700 students.



Spreading Our Love to Every Corner—CSG’s Sends Envoys to a Leprosy Village

At the mention of leprosy, many people might feel scared and try to avoid the patients like avoiding a plague. However, staff from the Xindian Power Supply Station and the Xingyipuan Power Supply Bureau of the Guizhou Power Grid have insisted on helping with the 39 patients in Xindian’s leprosy village for over a decade. Every week they pay a visit to the senior citizens in this village and provide help by checking circuits, changing light bulbs, raising funds to establish a “CSG pool” and have set up a care fund. Villagers call them “the envoys of CSG” in appreciation.



Voice

“

“In the past few years, electricians have visited our village frequently. They never cold-shoulder us and they do help us with a lot of work. Before they came, we didn’t know what a birthday celebration was. They care about us like our own families.”

”

LIU Shiguo

Resident in a leprosy village

Cooperation and Win-win

Sticking to the principle of equality and mutual benefit, CSG actively builds up platforms for cooperation, broadens cooperative channels, achieves common development and creates value together with our partners. There was no complaint from our partners during all the past year.

Intensifying Cooperation with Power Plants

We conduct deep and pragmatic cooperation via our power plants by implementing “open, fair and just” dispatching. We continuously improve dispatching information disclosure and ensure the safe and stable operation of related power systems. The satisfaction rate of “open, fair and just” dispatching was 94.8% in 2013.

Urging Contractors to Enhance Management Levels

We work to strengthen contractors’ safety management and control. The “5S” management model was introduced into the construction of power grids, encouraging contractors to enhance the ability of their staff to better manage the construction site, improve the level of safe on-site operation, perfect the engineering quality of their work and reduce the negative impact of construction on the surrounding communities.



Protection of Supplier Interests

CSG strictly observes all the laws and regulations on bidding. We put in-place a transparent purchasing platform and established a market bidding mechanism facilitating fair competition, standardization and efficiency, all designed to help suppliers strengthen their core competitiveness.

- We have gradually adopted a random expert selection system for major project bidding, providing technical guarantees for all-around assurances of equal and just bidding evaluation.
- We carry out credibility evaluations and set up a dynamic blacklist of suppliers to improve management at various stages, including bid invitation, purchase, along with contract signing and fulfillment to enhance suppliers’ awareness on the importance of credibility.
- We have set up a stringent quality assurance system throughout the project/products’ life cycle for all suppliers. By coordinating the monitoring process with them, we develop core technologies, equipment and skills. Too, we strive to enhance suppliers’ quality assurance levels to promote the localization of core electricity equipment.



Finding Good Equipment, Collecting Golden Ideas

CSG organized the second “Gold Dot Award” competition with the theme of “finding good equipment/collecting golden ideas”. This competition was passed to suppliers to communicate the message “good suppliers manufacture good equipment”. The program drove them to enhance their innovation so as to improve the quality of grid equipment. Among all the works, 40 were awarded the Golden Idea Prize, two the Special Prize for Good Equipment and another 15 the Good Equipment Prize. Those awarded works were likely to be some favorable consideration in future bidding.



Further Reading

The “5S” management model includes arrangements (seiri in Japanese), rectification (seiton), sweeping (seiso), cleaning (setketsu) and quality (shit-suk), all aiming at reducing the construction projects consumption of materials and energy with zero waste; application of smooth engineering processes with zero delay; preventing toxicant leakage with zero incidents; and standardizing construction practice with zero misconduct.

● International Communication and Cooperation

CSG has been actively building its' international exchange platform, establishing collaborative relationships with world-leading power companies and international organizations to enhance technological communication, working to achieve information sharing and to improve CSG' s global influence and soft power.



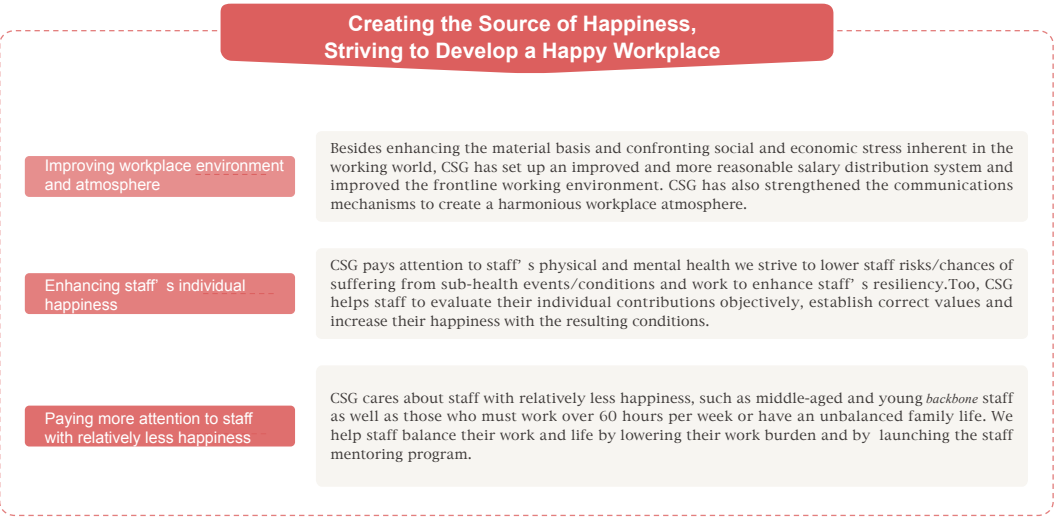
Main Organizations in Which CSG Holds Membership

| Organization | Qualification | Organization | Qualification |
|--------------------------------------------------------|-----------------------------------------|--------------------------------------------|---------------|
| China Electricity Council | Member at Deputy Director-General Level | AESIEAP | Member |
| Power Sector Branch, China Institute of Internal Audit | Member at Vice Chair Level | | |
| Boao Forum for Asia | Diamond Member | National Committee of China Labor Security | Member |

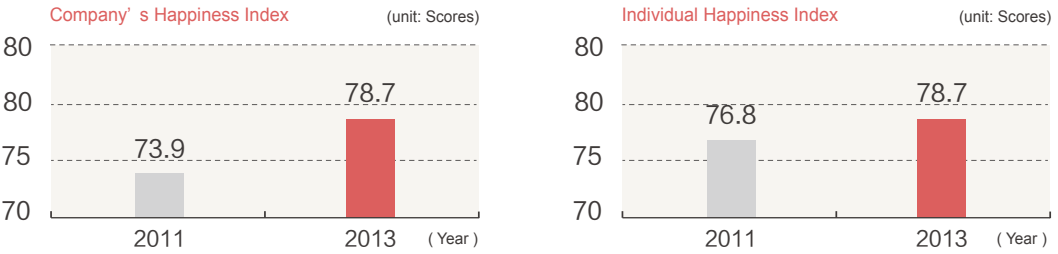
● Staff Development

CSG considers staff to be the most important asset. They light up every household and create value for stakeholders through their hard work. CSG values every staff member: Offering them clear development options and channels, we work to help balance their work and life, and to endeavour to enhance their happiness and sense of belonging.

CSG considers “establishing a happy CSG, increasing staff’ s happiness and creating an atmosphere of mutual caring between leaders and staff” a priority effort. CSG conducts research and assessments on the the happiness of Company employees so as to develop a happy workplace.

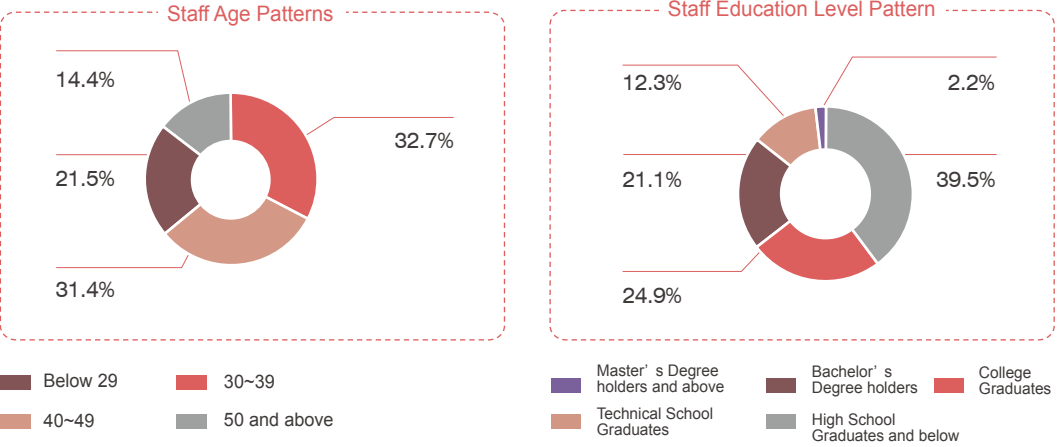


In 2013, CSG conducted the second “Happy CSG” evaluation. According to the results, the company’ s happiness index and individual happiness index, respectively, increased 5 points and 2 points compared with those of 2011, showcasing the initial positive result of the “Happy CSG” measures.



● Staff Structure

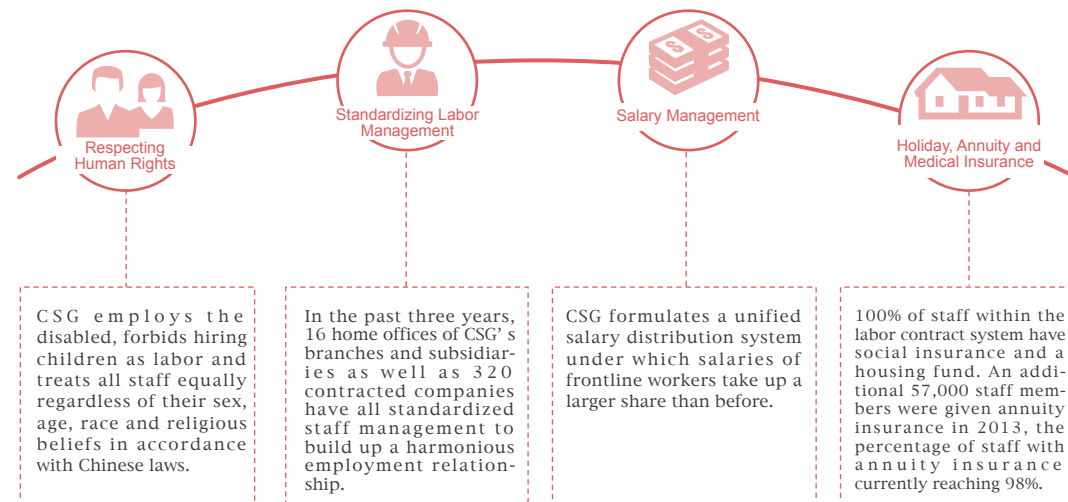
By the end of 2013, the total number of staff in CSG was 316,000, among which 24.1% were females, showing a more reasonable staff gender structure.



• Staff Rights and Benefits

Complying with China Labor Contract Law and other relevant regulations, CSG always respects human rights, encourages diversity, offers staff clear channels to express their opinions and concerns, and protects staff's privacy, rights and benefits. In 2013, there were no major labor dispute within CSG.

- Focusing more on frontline, continuing to improve employment management in rural areas, and standardizing both business and employment management.



• Occupational Health & Safety

CSG pays great attention to occupational health and safety and the establishment of a unique safety culture, having provided a safe and healthy work environment and actively working to prevent personal safety accidents and occupational hazardous accidents. There were no occupational disease cases reported to CSG in 2013.

- Enhancing performance of the safety risk system, innovating safety training methods, hosting safety skills competitions, and building a safety culture of "risk awareness, whole staff participation, sharing, mutual help and continuous improvement". In 2013, 157,000 staff were trained in safety skills.
- Organization of regular staff health checks, setting up staff health archives and strengthening the emergency response mechanisms for serious diseases of employees has been implemented.

• Democratic Management

CSG holds staff representative conferences regularly to pursue transparency of company affairs as well as to assure democratic management and to protect staff's rights to make decisions, manage and to supervise corporate affairs. Staff are encouraged to play an active role in the company's affairs.

- Holding staff representative joint meetings and approving three management systems...including the CSG Labor Management Method...has been accomplished.
- Establishing the system of Trade Union liaising with staff representatives and Trade Union leaders liaising with grassroots units, setting up the Trade Union President's mailbox and establishing an effective staff communication platform and mechanism to respond to staff requests on time has been effected.



CSG was awarded "the National Advanced Unit for Open and Democratic Management"



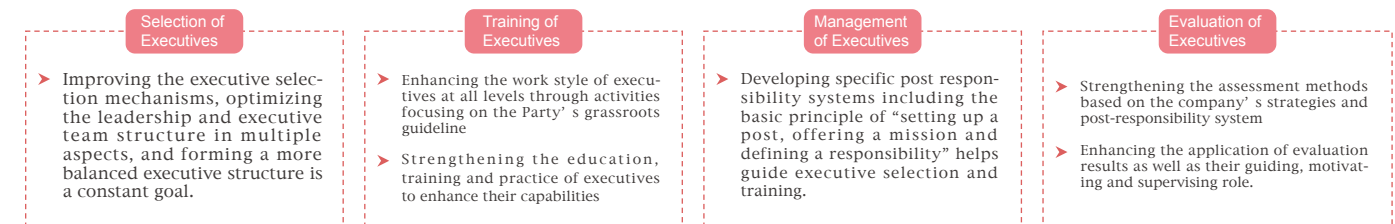
Somatosensory Training for Operational Safety

The Guangzhou Power Supply Bureau has established the first national operations safety somatosensory room to enhance staff's safety awareness. Staff can experience electric shock, electrified wire-cutting, flash burn and other 6 training situations in the room. This simulation environment was built in accordance with international, industrial and company safety standards. The somatosensory training experiences not only strengthens staff's self-protection abilities, but has also lowered the accident rate.



• Management of Executives

CSG has been strengthening the leadership and executive structure at all levels, selecting and training "outstanding executives", and improving the leadership assessment mechanisms to support the implementation of the company's strategies and its scientific development.



• Staff Training

Based on the competence of employees, CSG makes great efforts to develop training and assessment systems, improve the facilities of training centers all designed to unleash the potential of employees. In 2013, 644,700 staff received training, including 6,112 team leaders at grassroots level.



• Career Development

CSG has set up an enabling environment for career development of its employees, guiding them and helping to match their career development plans with their own strengths and personal interests. CSG emphasizes non-material incentives to staff and recognizes staff value.

- CSG has broadened development channels for technical staff. We largely modified the Technical Experts Management Rules and improved the recruitment and administration mechanisms for technical and skilled staff. In 2013, eight employees were appointed as senior technicians, six as senior skilled staff with 95 model worker workshops and QC teams were established.
- CSG organized "To-Top Cup" skills competitions which are aimed at enhancing the skills and job performance of employees through learning and training. During each competition, 15 staff are selected as CSG's staff of outstanding skills, and nine of them are awarded the title of "Outstanding Technicians of Central Enterprises"
- CSG has honored outstanding employees by carrying out "Moving CSG" selection campaigns for three consecutive years.



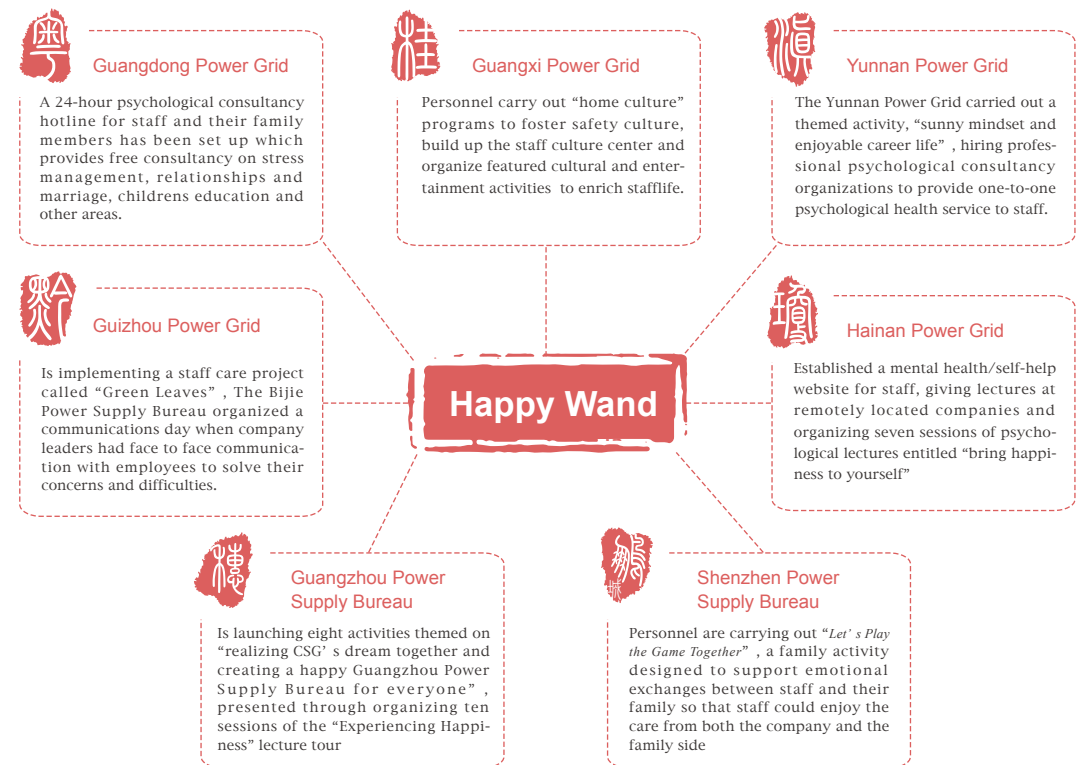
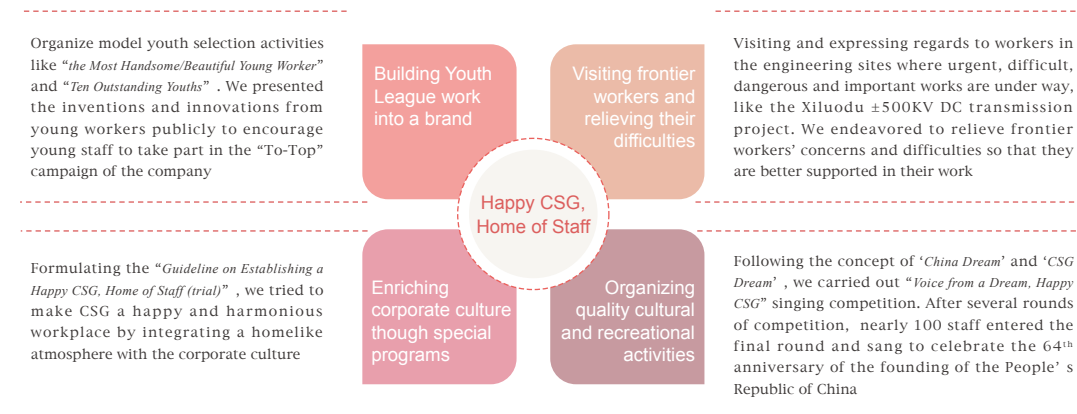
Career Development Plans

The Dongguan Power Supply Bureau adopts the "three trees" model for career development planning. The plan specifies the nature and requirement of three development paths: administration, technology and skills. It maps out five steps in career development: deciding career development path, drawing job-specific development map, filling in a career development guiding card, drawing the blueprint of staff development and integrating all elements with training and assessment systems.



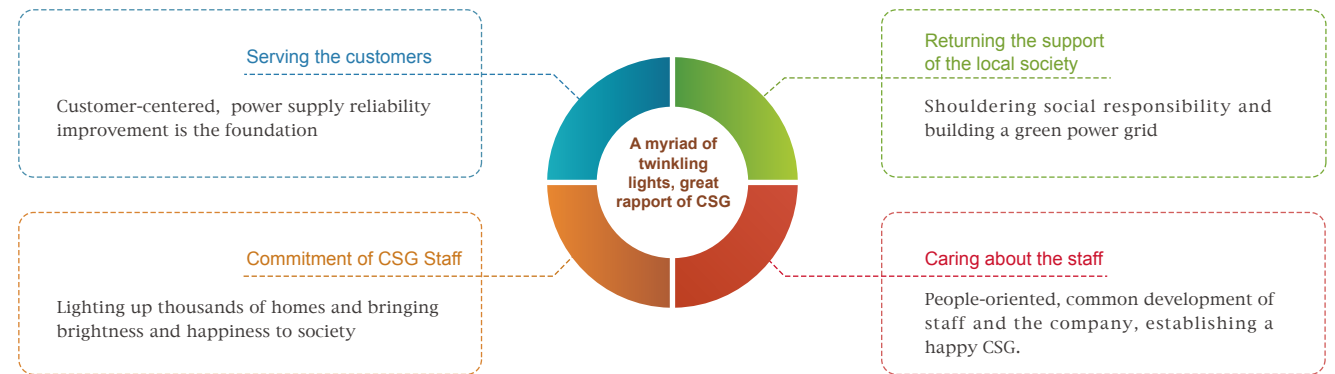
• Caring about the Staff

CSG cares about its staff, carrying out staff mentoring programs and organizing regular activities to promote their physical and mental health. We endeavor to establish a “Happy CSG, Home of Staff”.



| Index Express | | | |
|-----------------------------------------------------|-------------|----------------------------------------------------|------------------|
| Index | Performance | Index | Performance |
| Percentage of employees joining the Labor Union | 100% | Financial aid for disadvantaged staff | RMB14.15 million |
| Staff turnover | 1% | Physical examination rate | 100% |
| Average annual paid leave per capita | 9 Days | Social welfare coverage | 100% |
| Labor contract signing rate | 100% | Dealing of employees' complaints/number of letters | 307 letters |
| Satisfaction rate of company information disclosure | 99% | Number of Model Workers of Central Enterprises | 20 people |

Origin of responsibility



Corporate core values are the long-term and fundamental belief of a company; they are the touchstone of a company’ s decisions and actions. CSG has identified the core values as; “A myriad of twinkling lights, great rapport of CSG” . This concept which conveys the company’ s commitment to serve the customers, care about the staff, protect the environment and return the support of the society, is also meant to communicate the nature of our intention to treat all stakeholders responsibly – including the government, customers, staff, business partners, environmental agencies, our various communities and the public.

CSG’ s corporate culture has played a pivotal role in the integration and development of the company. CSG has developed a corporate culture that emphasizes safety, service and responsibility. This is done under a process in which a staff team with a commitment of “devoting myself to the brightness of thousands of homes” , is formed and an environment of actively fulfilling social responsibility is created. This then becomes the origin of CSG responsibility and guides CSG to conquer various difficulties and to continuously create value for stakeholders.

CSG corporate culture

| | |
|----------------------------|-----------------------------------------------------------------------------------------------------|
| Mission | Actively shouldering social responsibility; making every effort to ensure a dependable power supply |
| Core value | A myriad of twinkling lights, the great rapport of CSG |
| Strategic objective | To be a world-leading power grid company that excels in service, management and corporate image |
| CSG spirit | Devoting myself to the brightness of thousands of homes |
| Corporate lifeline | The safety and stability of power grid |
| Safety principle | Any accident is preventable |
| Operation principle | Social benefit is the priority; business benefit is the focus |
| Service principle | The customer comes first; achieving win-win in harmony |
| Behavior principle | Be an honest person and do appropriate things |
| Team principle | Insist on principle and value friendship; build a happy CSG |



For details of CSG corporate culture, please log on <http://www.csg.cn/qywh/nwwhIn>

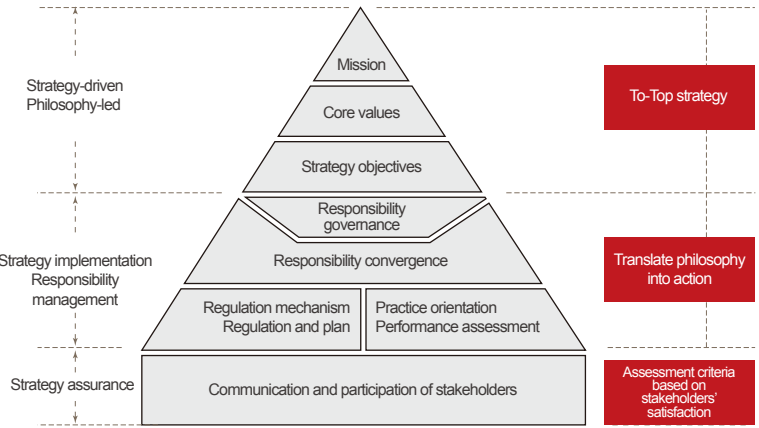
Responsibility Management

CSG practices social responsibility using a strategic management approach. It formulates a social responsibility work plan and management regulation, implements responsibility, responsibility practice, responsibility convergence, responsibility communication and responsibility research. Its social responsibility assists and complements its regulation management and assessment. The closed-loop approach effectively facilitates corporate responsibility practice and boosts the company's reputation and soft power.

“CSG incorporates social responsibility practice with its specific business operation, and advances its social responsibility practice in a comprehensive manner. CSG's practice is worth learning.”

— PENG Huagang
Director of Research Bureau,
SASAC, State Council

CSG strategy-driven social responsibility execution path



Responsibility Governance

Social responsibility governance is based on a three-tier linkage mechanism. The CSG headquarters leads Social Responsibility Steering Committee; the Strategy Department sets up a Social Responsibility Execution Division; CSG branches and subsidiaries have established their own Social Responsibility Sub-Steering Committees and Social Responsibility Execution Sections, and power supply bureaus have appointed a social responsibility coordinator.

CSG has formulated *Execution Working Plan for Harmonious Development Strategy Guidelines for Central Enterprises in the 12th Five-Year-Plan Period* and the *Working Plan for Social Responsibility Management Enhancement* to advance social responsibility practice in a systematic manner.

Honors and awards



The CSG 2012 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd. was rated five stars by the rating panel for three consecutive years. The 2012 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd. Was awarded the *Special Memorial Award for Corporate Social Responsibility Reports* and ranked number one among 1,084 reports by the 2013 White Paper for Chinese Enterprises' Corporate Social Responsibility Report .

According to the 2013 Blue Paper for Corporate Social Responsibility Report released by The Chinese Academy of Social Sciences, CSG ranked second in the Top 100 Corporate Social Responsibility ratings, moving up one place compared to that of 2012.



CSG was awarded The Innovation Award for Responsibility Communication, Top 50 Chinese Enterprises in Public Transparency at the Corporate Sustainable Competitiveness Annual Meeting and the 2013 Rating Reports Release Conference for the Top 50 Chinese Enterprises in Public Transparency.

The Social responsibility report by The Guizhou Power Grid Co.Ltd and The Shenzhen Power Supply Co. Ltd were awarded 2013 Golden Bee Social Responsibility Special Awards for Outstanding Enterprises.



The 2013 Central Enterprise Corporate Social Responsibility Conference released the 2013 Top 50 list for Social Responsibility Practice of Central Enterprises. Two practice projects of CSG (the Strategy-driven social responsibility management and Putting public interest ahead of our own, Facilitating harmony by Party branch cooperation) won the Top 50. Strategy-driven social responsibility management was selected as the best of Top 10 Best Practice.

Responsibility Convergence

CSG takes concrete measures to implement the *Harmonious Development Strategy Guidelines for Central Enterprises in the 12th Five-Year-Plan Period* to enhance social responsibility management and promote grassroots execution. CSG branches and subsidiaries have carried out their own distinctive social responsibility practice with focuses on ten priority areas including reliable power supply, quality service, energy conservation and emission reduction.

Hand-In-Hand campaign, Guangdong Power Grid



The Hand-In-Hand Campaign, by Guangdong Power Grid, enabled the company to identify partners and deliver timely assistance to stakeholders with an aim to deliver better services. The campaign helps the Guangdong Power Grid to strengthen cooperation with the government, media, community, industry and consumers.

Party branch cooperation by Guangxi Power Grid



The Guangxi Power Grid carries out an assistance campaign and has signed *Party Branch Cooperation Agreements* with 215 villages in the region. The company has invested RMB 6 million in poverty alleviation and has introduced nearly 200 projects for the partners.

Lighting up the Dulong River by The Yunnan Power Grid



The Yunnan Power Grid made painstaking efforts to build a physically-independent power grid for Dulong township and has established the Dulong Power Supply Office to light up this snow-capped and remote place inhabited by ethnic minorities.

Joint Development by The Guizhou Power Grid



The Guizhou Power Grid has launched the Joint Development Campaign in remote villages. The company sets up service centers with the assistance of local village party branches. The service centers deliver speedy and quality services to local people.

Social responsibility practice with CSG characteristics

Guard the Remote Corner of the Country Campaign by The Hainan Power Grid



The *Guard the Remote Corner of the Country* Campaign by The Sansha Power Supply Bureau, Hainan Power Grid, aims to deliver quality services to local communities on the island. The bureau has set up a 7/24 hotline to answer inquiries and address pressing issues of the local community. Consumers gave a 100% applause rate for their services.

The Shenzhen-Hong Kong Charity Event by The Shenzhen Power Supply Bureau



The Shenzhen Power Supply Bureau works with CLP (HK) to carry out charity events for The Yantian Nursing Home. The company's volunteers have made long-term service plans for the campaign, including free hair cuts, quarterly birthday parties and festive parties for senior citizens in the nursing home.

Energy Saving Steward by The CSG Synthesis Energy Corporation



The CSG Synthesis Energy Corporation (CSG Energy) gives full play to its technological expertise and adopts ECM to help its clients to cut power bills. They introduced a number of leading energy saving technologies including Energy Watching, Green Building Energy Efficiency, On-line Monitoring Analysis Systems. For the past three years, the CSG Synthesis Energy Corporation (CSG Energy) offered energy saving diagnosis services to 5000+ companies in CSG's service area.

Responsible communications

CSG's first Social Responsibility Week, with the theme of Responsibility Relay, is the largest campaign since the founding of the company. A Responsibility Survey gives the public a panoramic view of CSG, from its reliable power supply, to its quality services, environmental protection programs to activities promoting social harmony. The company makes use of video clips, mass media, microblog articles and comments and other message formats to improve operational transparency.

Theme: Responsibility Relay

The CSG First Social Responsibility Week

2013.5.15–2013.5.21

15 May: The Guangdong Power Grid Leg



Guangdong Power Grid held an Electricity Photo Exhibition and used a Mobile Business Office to offer on-site business applications and processing.

16 May: The Guangxi Power Grid Leg



A Green Power Grid lights up the Future Campaign and was held at 11 Power Supply Bureaus, including Nanjing, Liuzhou and Guilin.

17 May: The Yunnan Power Grid Leg



Customer Service Campaigns were held at Kunming, Qujing and Honghe, with the company leveraging the opportunity to raise the general public's awareness on economical and safe power consumption.

15 May: CSG headquarters



CSG headquarters released The 2012 CSG Corporate Social Responsibility Report and launched first Social Responsibility Week.

18 May: The Guizhou Power Grid Leg



The Power Consumption Publicity Campaign and "Love Children and the Future" Campaigns were held at Guiyang, Zunyi and Duyun.

21 May: May: The Shenzhen Power Supply Bureau



A Social Responsibility Communication Conference was held in Shenzhen and Campus Cooperation projects were activated on-site by live connection.

20 May: The Guangzhou Power Supply Bureau



The 2013 Social Responsibility Relay Flag Presentation and the 7th Smart Power Consumption Pioneer Launch Ceremony were held by The Guangzhou Power Supply Bureau. The event was aimed at educating migrant workers' children on safe power consumption and protection of power facilities.

19 May: The Hainan Power Grid Leg



The company organized an Open Day to invite citizen observers to visit the Power Dispatching Center and EV Charging Stations in Haikou. Communications Campaigns were held at Power Supply Bureaus in the province.

Communication with Stakeholders

| Stakeholders | Expectations and Requirements | Communication and Response Approaches | Practice |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Government | Pay taxation in accordance with the law. Safe power supply. Maintenance and appreciation of the State-Owned assets value. Continuous and steady return on investment. | Compliance management and active submission of taxes ; National energy and electricity tariff policy execution; Promotion of grid construction with governments; Daily management enhancement; Be subject to supervision and inspection; Be open to suggestions ; Management structure improvements. | The Guangdong Power Grid signed the 12th Five-Year-Plan Power Grid Construction Strategic Cooperation Agreement and the Strategic Cooperation on Renewable Energy Project Construction with the Zhuhai Municipal Government. The two agreements secure the construction of the Zhuhai Power Grid and assures power supplies to the city. |
|  Employees | Salary and welfare guarantees. Staff's health and safety. Equal opportunities for promotion and development. Love for the staff. | Timely and sufficient payrolls and social security for the staff. Staff involvement in the management process; Provision of a healthy working environment; Assurance of health and safety training and physical examinations; Fair promotion mechanisms; Support for staff in needs; Staff-counseling schemes; Create and maintain a happy atmosphere; Special protection of female staff. | The Shenzhen Power Supply Bureau implements a motivational program to reward outstanding staff performance. Staff shall receive badges from the company for their outstanding performance on customer service, and power grid construction. Staff can redeem the badge(s) in exchange for 12 benefits including free film tickets, paid leave and a free tea set. |
|  Customers | Reduction of outages. High quality power supply. Convenient service. Guidance on energy conservation. | A reliable power supply; Management of services to achieve customer satisfaction; Develop service innovations to enhance customers' experience; Construction and improvement of the power grid; technology and management innovations; Discussions and customer visits; Energy conservation publicity. | The Foshan Power Supply Bureau initiated tariff guarantee measures. The company signed a three-party agreement with enterprises and banks. Under the circumstances that enterprises fail to pay power tariffs on-time, banks will issue advance payments. Enterprises will pay capital and interest to the bank. |
|  Partners | Commitment Open, fair and just procurement. Experience sharing. | Open procurement information ; Open to feedback. Negotiation and communication; Cooperation on projects; Strategic cooperation and accountable procurement | The Guizhou Power Grid works with local universities and research institutes to establish the Guizhou Smart Grid Industry Technology Innovation Strategic Alliance. The alliance shall formulate smart grid industry development plans, launch pilot programs on key equipment R&D and promote industrialization. The alliance is charged with the mission to develop a smart grid able to combine with a comprehensive industry chain, and work toward an impressive innovation capacity. |
|  Environment | Energy conservation and emission reduction Resources conservation Response to climate change Eco-protection | Open procurement information ; Open to feedback. Negotiation and communication; Cooperation on projects; Strategic cooperation and accountable procurement | The company gives top priority to environmental protection efforts, and sticks to eco-friendly construction in The Huizhou Pumped Storage Hydro Station, and will continue to make every effort to remediate vegetation in nature reserve parks. |
|  Community and the general public | Utility service development in communities. Poverty alleviation. Communication in communities. | Survey of communities' needs and demands; Education and publicity in communities; Discussions and workshops; Construction of an official website; Effective communication with the public during the construction of power grid facilities; Public welfare activities. | The Guangxi Power Grid invested RMB 34.22 million in poverty alleviation programs in Donglan County. The funding provided has helped the local community to upgrade rural power grid and train peasants' in productive skills. |

About us

Corporate Governance

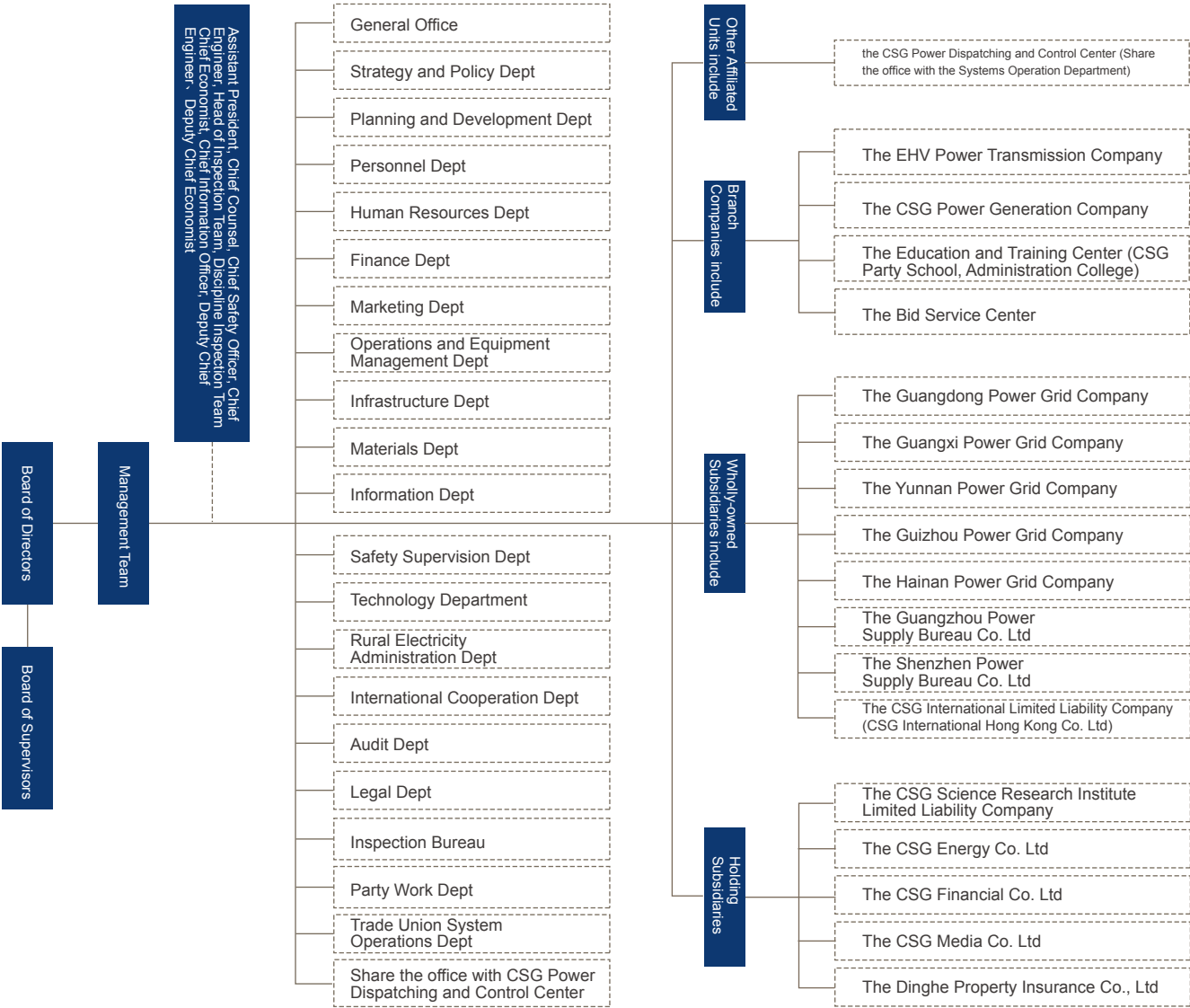
CSG is a *State-Owned Backbone Company*. In accordance with *Company Laws* and the requirements of the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC), CSG has established a modern corporate Governance structure consisting of a board of directors, a supervisory board and an operations management team. The board of directors plays a key role in corporate governance. The board of directors exercises administration authority in accordance with the *Articles of Association*.

CSG’ s strategic orientation is: To be service-oriented, operations-based; conglomeration-type operations, and an integrated management approach. CSG specifies decision-making power and procedures, and maintains a sound system of checks and balances. CSG has always practiced a stringent adherence to regulations, procedures and operations. CSG is dedicated to providing a highly effective operational mode to assure State-Owned asset appreciation.

To establish a sound legal-person form of governance, CSG has established a board of directors and appointed a board of supervisors at the Guangdong Power Grid, the Guangxi Power Grid, the Yunnan Power Grid, the Guizhou Power Grid and the Hainan Power Grid and has formulated specific rules on board structure and responsibility.

Organizational structure

CSG headquarters has 21 departments, one institution and four branches, namely the Bidding Service Center; Education Training Center; CSG EHV Power Transmission Company; and the CSG Power Generation Company. Too CSG has eight wholly-owned subsidiaries; namely the Guangdong Power Grid Company, the Guangxi Power Grid Company, the Yunnan Power Grid Company, the Guizhou Power Grid Company, the Hainan Power Grid Company, the Guangzhou Power Supply Bureau Co. Ltd, the Shenzhen Power Supply Bureau Co. Ltd, and the CSG International Company. Additionally, CSG is the controlling shareholder of the CSG Financial Company, the CSG Research Institute, the CSG Synthesis Energy Corporation, the Dinghe Property Insurance Co., Ltd, and CSG Media.



Overview: CSG and its Secondary Units

China Southern Power Grid Co., Ltd. (hereinafter referred to as CSG) was established in 2002. CSG invests, constructs and operates power networks in Guangdong, Guangxi, Yunnan, Guizhou and Hainan provinces and region. The service area is of one million square kilometers, with a population of 230 million. The Company is headquartered in Guangzhou.

| Secondary units | Main business | Asset (unit: RMB 100 million) | Turnover (unit: RMB 100 million) | Number of staff | Number of customers (unit: 10,000 house holds) | Official website | Company address | Contact |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|--------------------|---------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------|
| Guangdong Power Grid Company | Responsibilities include: investment, construction, operations, maintainance of power grids in its service area. Other main business scope includes: power trading, power dispatching, power resources optimization, power marketing, power equipment sales,commissioning, testing. Guangxi Power Grid, Yunan Power Grid, and Guizhou Power Grid are responsible for “West-to-east” power transmission plan project. | 2023.10 | 2448.78 | 102628 | 2750 | http://www.gd.csg.cn | No.757, Dongfengdong Road, Guangzhou, Guangdong | 020-85121906 |
| Guangxi Power Grid Company | | 550.29 | 502.37 | 49987 | 967 | http://www.gx.csg.cn | No.6, Minzhu Road, Nanjing, Guangxi | 0771-5692222 |
| Yunnan Power Grid Company | | 960.22 | 701.39 | 71255 | 1150 | http://www.yn.csg.cn | No.73, Tuodong Road, Kunming, Yunnan | 0871-63165908 |
| Guizhou Power Grid Company | | 634.50 | 595.89 | 54008 | 1151.64 | http://www.gz.csg.cn | No.17, Binhe Road, Guiyang, Guizhou | 0851-5592222 |
| Hainan Power Grid Company | | 175.66 | 111.20 | 11633 | 215 | http://www.hn.csg.cn | Haifu Road, Haikou, Hainan | 0898-65317992 |
| Guangzhou Power Supply Bureau Co.Ltd | The company is responsible for construction, operation and management of inter-provincial main networks and important connection lines of the China Southern Power Grid. It is a key enterprise to implement the nation’ s “west-to-east” plan. | 414.72 | 437.50 | 11360 | 483.20 | http://www.guangzhou.csg.cn | No2, Tianhenaner Road, Guangzhou, Guangdong | 020-87514281 |
| Shenzhen Power Supply Bureau Co.Ltd | | 360.80 | 488.70 | 5366 | 256.02 | http://www.sz.csg.cn | No.4020, Shennandong Road, Shenzhen, Guangdong | 0755-88938000 |
| CSG Extra High Voltage Power Transmission Company | | 550.79 | 432.09 | 4872 | - | http://www.ehv.csg.cn | No.116,Tianhe Road, Guangzhou, Guangdong | 020-38126666 |
| CSG Power Generation Company | | 188.39 | 31.70 | 1695 | - | http://www.pgc.csg.cn | No.32, Longkoudong Road, Tianhe District, Guangzhou | 020-38128001 |
| CSG International Co., Ltd. | | 6.62 | 5.88 | 64 | - | http://csgi.csg.cn | 42nd Floor, R&F Yinglong Plaza,No. 76, Huangpuadao,Tianhe District, Guangzhou | 020-85121088 |
| CSG Science Research Institute | It is in charge of technical support to planning and construction, research development and implementation of key science and technology projects, new technology development on power grids, research and development of new products.It is the publisher of <i>CSG Technology</i> . | 3.20 | 3.68 | 234 | - | http://www.sepri.csg.cn | 13-20 Floor, West Tower, Yuedian Building, No6, Shuijungang, Dongfengdong Road, Yuexiu District, Guangzhou | 020-38120516 |
| CSG Grid Synthesis Energy Co., Ltd | Its business scope covers: lighting, green building, coal mine gas, waste heat recovery and re-utilization, distributed energy, offshore wind power, development of industry zones and PV panels in building, EV charging stations. | 9.26 | 1.66 | 266 | - | http://ny.csg.cn | Yueneng Building, No.45, Tianhe Road, Yuexiu District,Guangzhou | 020-38122715 |
| CSG Financial Company | Its main business covers deposits, settlement, loans, and entrusted loans, its financial services cover securities investment and equity investment with financial institutions. | 251.31 | 15.40 | 130 | - | http://fc.csg.cn | 42nd Floor, R&F Yinglong Plaza,No. 76, Huangpuadao,Tianhe District, Guangzhou | 020-85121875 |
| CSG Media Co Ltd | Its business scope covers: investment, management and operations within the media industry, design, and production, publication of advertisements, advertising agent business, corporate image planning, film and television programming and production. | 1.42 | 1.57 | 160 | - | http://cm.csg.cn | No.846, Dongfengdong Road, Yuexiu District, Guangzhou | 020-38120932 |
| Dinghe Property Insurance Co., Ltd. | Its main business covers property insurance, liability insurance, credit insurance, guarantee insurance, short-term health insurance and accident insurance, etc. | 34.61 | 19.99 | 1430 | - | http://www.dh.csg.cn | 13-14 Floor, Building 1,Excellence Century Center,No.2030, Futian District, Shenzhen, Guangdong | 0755-82522688 |

About this Report

Dear readers, the Report reflects CSG's CSR performance during the year 2013. We hope it will help you to better understand our commitment to our tasks and goals and win your support for our future development.

This *Report* is the seventh in a series of *Social Responsibility Annual Reports* issued by The China Southern Power Grid Co., Ltd. The *Year 2012 CSR Report* was released on 15th May, 2013 and the *Year 2014 CSR Report* will be published in May of 2015. All reports were originally written in Chinese and translated to English. Adhering to the principles of “objective, standard, transparent, and comprehensive”, the *Report* discloses the company's safe and quality power supply, and its performance in ways relevant to the economic, environmental and societal responsibilities of CSG. The Chinese version will be considered as the final/authentic version and, should discrepancies occur between the Chinese and English versions, the Chinese version is the authoritative one.

► Time Frame

The time frame of the Report is from January 1st, 2013 to December 31st, 2013. Part of the content extends to other years' performance reporting data designed to enhance comparability and to support the forward looking objectives of the *Report*.

► Report cover Range

“China Southern Power Grid Co., Ltd.” is the principle part of the business mix presented in this *Report*, including its subsidiaries, branches and affiliated institutes.

► Compilation Basis

CSG Social Responsibility Index ⅡCSG-CSR 1.00

► References

SASAC's “Guidelines---About Central Enterprises' Implementation of Social Responsibility”;(No1, 2008, Research of SASAC)
CASS-CSR 3.0 of Chinese Academy of Social Sciences;
Global Reporting Initiative's Guidelines; GRI Version4
“China Industrial Enterprise and Industrial Association Social Responsibility Guidelines” , China Federation of Industrial Economics’
“Recommendations Standards on Social Responsibility of Chinese Enterprises and the Implementation Guide”, China Business Council for Sustainable Development.

► Sources

Report are based on the officially published documents, statistics reports and other published data and information sources.

► Reliability

CSG guarantees there is no false record, misleading statement or substantial omissions in the *Report*.

► Title Description

In the *Report*, “China Southern Power Grid Co., Ltd.” is also referred to as “CSG”, “the company”, or “we”.

► Improvements compared to previous reports

- A How-to-Read Guide
- Expand coverage of index for better substantiveness ► The Value of 1Kwh acts as a clue ► Highlight key performance
- Disclose hot topics including mobile internet and haze weather
- Stakeholders' comments in standardized style ► Further readings suggested ► New glossary index

► Further reading

Should you wish to know more about social responsibility of CSG, please visit the official website at: www.csg.cn, and please refer to the *Social Responsibility Report* published by Guangdong Power Grid, Guangxi Power Grid, Yunnan Power Grid, Guizhou Power Grid, Hainan Power Grid, Guangzhou Power Supply Co., Ltd and Shenzhen Power Supply Co., Ltd in 2013.

► How to get a hard copy

You can download an electronic copy from our official website. Should you have any inquires, or should you need a hardcopy, please send email to csr@csg.cn, or call us at (020) 38121917.

2014 Outlook

Power consumption in South China will grow relatively slowly in the foreseeable future, compliance in resource development and environmental protection will be more stringent, the power market will confront many uncertainties in 2014 and beyond and, still, the company will develop steadily, constantly boosting its core competencies to make a greater contribution to the economic development and social harmony in its service area.

On the strategic management front, the company will advance the To-Top Program and give full play to the function of the eight Comprehensive Management Committee. The company will speed up the development of advanced management systems, standardized operational systems, and IT systems.

On the power supply front, the company will constantly improve power supply reliability and strive to reduce the 8% SAIDI grid-wide and the 10% SAIDI costs in the western region . Investment in power grid construction will also be enhanced with a budget of RMB 84.6 billion. The company will also enhance risk controls, optimize contingency plans, and will develop and install better communications and connections with emergency command platforms of governments at all levels. The company will actively advance both technology and service innovation.

On the environmental protection front, CSG will leverage its green platform role of optimizing regional energy distribution and facilitate sustainable development of power supply source. The company shall achieve 161.3 billion Kwh “west-to-east” power transmission and 22.7% growth rate. The company will promote client-side energy conservation and strive to achieve a line loss rate of 7.43% (based on the statistics about the total assets). CSG will take solid measures to meet evaluation objectives and make its contribution to regional ecological protection and a beautiful China.

On the economic performance front, the company will vigorously explore the power market in order to achieve power sales, aiming at 780.9 billion Kwh, with main business revenues at RMB 463.9 billion , and EVA at RMB 4.72 billion. CSG is committed to long-term sound development and will boost asset management to realize a 16.6% net worth ratio of retiring assets and 66% debt/asset ratio.

On the social harmony front, the company will practice delivery of electricity as its' universal service, strengthen rural power grid upgrading to meet the power demand driven by rural economy development and living quality improvement. CSG will continue its core talents development scheme and create promotional opportunities for professionals at all levels. CSG shall improve its communication with stakeholders, expand cooperation channels for a win-win situation.



Report rating



Rating report on 2013 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd.

Entrusted by CSG, the Corporate Social Responsibility Research Center of the Chinese Academy of Social Sciences, Economics Department and selected experts from the China Corporate Social Responsibility Report Rating Panel will sit on the “Rating Panel of 2013 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd.” to assess and rate the *CSG 2012 CSR Report*.

Rating Basis

CASS-CSR 3.0 and Rating Standards on Corporate Social Responsibility of Chinese Enterprises(2014)

Rating procedure

1. Rating panel interviewed departments responsible for CSG social responsibility.
2. Rating panel had an on-site review of relevant documents cited in CSG and its branches/subsidiaries.
3. Rating panel made comments on the management process of corporate social responsibility report.
4. Rating panel commented on content disclosed in the report.

Rating conclusions

Process-oriented (★★★★★)

CSG’s Strategy and Policy Department coordinated the writing process. CSG’s management team participated and were involved in the process. The writing team identified the stakeholders and did an in-depth analysis on key issues based on results generated from interviews, workshops and seminars. The *Report* was planned to be released at the CSG Responsibility Week and was presented in diversified forms including hard copies, electronic versions, 2D links and in different languages.

Substantiveness (★★★★★)

The *Report* covers substantive topics including “Ensuring power supply”; “Ensuring power use in rural and remote areas”; “Comprehensive outage management”; “Facilities Management”; “Improvement of power transmission efficiency” and “System and measures of green power supply”. The *Report* gives a detailed, substantive and well-versed analysis of CSG’s performance in the power supply sector.

Completeness (★★★★☆)

The *Report* disclosed that 84.5% of core indicators in power supply sectors and demonstrated high-levels of completeness. Core indicators include: responsibility management, strategy management, power supply, economic performance assessments, green and environmental/social harmony measures.

Balance (★★★★★)

The *Report* discloses a number of negative points relative to information involving topics on: major power safety accidents and equipment accidents, and presents all in a detailed manner; correction measures on regional casualty are put forward in a positive manner. The *Report* is an outstanding and well-balanced one in terms of disclosing both positive and negative information.

Comparability (★★★★★)

The *Report* disclosed 45 key performance indicators covering 5 years of past consecutive data and demonstrated high-levels of comparability; the *Report* disclosed and compared indicators including SAIDI and line loss rate with domestic and international levels and, therefore, demonstrated excellent horizontal comparability.

Readability (★★★★★)

The *Report* is well structured, fluent, and concise. The *Report* is very well supported by a number of visual data presentations including tables and flow charts; in terms of layout, the Report is exquisite. The *Report* offered special columns on Further Reading and Report Glossary Index. The *Report* performed very well in terms of readability for clarity of communication.

Innovation (★★★★☆)

The feature report on responsibility elaborates on priorities of power sectors. The *Report* explains its innovation in compilations. It is, all-in-all, a very innovative report.

Overall Rating (★★★★★)

The 2013 Corporate Social Responsibility Report of The China Southern Power Grid Co., Ltd. was rated at the five-star level by the panel. The materials submitted should be regarded as an outstanding example of corporate social responsibility reports.

Suggestions

The *Report* should further disclose Key Performance Indices (KPI) to extend its completeness.

Rating Panel

Panel leader: ZHONG Hongwu, Director of the Corporate Social Responsibility Research Center, Economics Department of the Chinese Academy of Social Sciences
Panel Member: WANG Zhixuan, Secretary General, China Electricity Council
CHENG Duosheng, Director of Innovation , China Electricity Council
ZHANG Haiyang

| | | |
|--------------------------|----------------------------------------------------------------------|---------------|
| Procedural rating panel: | Director of the Corporate Social Responsibility Research Center | ZHONG Hongwu |
| Procedural rating panel: | Rating Division, the Corporate Social Responsibility Research Center | FANG Xiaojing |



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

Chairman, Rating Panel
Executive Vice Consul, the Corporate
Social Responsibility Research Center,
Economics Department of Chinese
Academy of Social Sciences

Head , Rating Panel
Director of the Corporate Social
Responsibility Research Center

Endorsements from a third party

CHI Xuping

Deputy Director General of the Research Bureau of SASAC

CSG’ s 2013 Corporate Social Responsibility Report comprehensively presented its CSR practice to the stakeholders. What impressed me the most is the enormous amount of data, and the high quality of data presented; being both authentic and convincing.

Topics on CSG’ s core business

The *Report* has special topics on universal serviceand on its efforts to promote regional development and ethnic minority development. Special topics elaborated CSG’ s practice in addressing pressing issues emerging from power demand,and its commitment to universal service.

Communication on hot topics

The *Report* highlighted hot topics including climate change and smog, disclosed CSG’ s counter measures and demonstrated its dedication to low carbon development and quality service. The *Report* focused on changes driven by 4G era and systematically presented the measures taken and effects achieved .

Sincere communication with the stakeholders is outstanding.

Power equipment, hydro power and appreciation of State-Owned assets are topics of concern to the stakeholders . The Report highlighted the topics and presented CSG’ s practice of social responsibility. I wish, too, that future Reports might address other stakeholders’ concerns and I encourage CSG to continue its open and transparent approach to making greater contributions to social and economic development.

Endorsements from a third party

YIN Gefei

Deputy Director of China WTO Tribune, Director of Peiking University International Social Responsibility and Sustainable Development Research Center

CSG’s 2013 Corporate Social Responsibility Report is a high quality report as it is timely and relevant. Firstly, the Report disclosed its practice in incorporating and respecting human rights and staff management. The Report discussed priorities in the environmental protection sector (for example: smog and biological diversity) and demonstrated CSG’s commitments in diverse areas of environmental protection. The Report reflected CSG’s sincerity in its communication with its stakeholders. What impressed me most is the case study on 110Kv Huahui Substation. CSG had an equal, candid and effective communication with the stakeholders during the construction process and invited the stakeholders for site visits upon project completion. CSG adopted standardized process management in the Report writing process.

ZHANG Haiyang

Deputy Director of the Liaison Divison, China Electricity Council

Corporate Social Responsibility Reports reflect a company’s management capacity and demonstrate company commitment to society. CSG’s 2013 Corporate Social Responsibility Report gave a complete picture of its years of social responsibility practice and dedicated power supply service. The Report is well structured, well versed and is supported by a large number of accurate and convincing data. The Report responded to the community’s concerns by explaining its efforts in addressing smog and other weather challenges. The Report inherited its innovative legacy and introduced cartoon images and voices from a third party. All in all, this is a sincere and innovative report.

CHENG Duosheng

Director of Enterprise Innovation, The China Enterprise Federation.

CSG’s 2013 Corporate Social Responsibility Report built on its past success and made new breakthroughs and innovations. Special topics on universal service and the Central Government’s preferential policies on agriculture reflected Chinese characteristics and CSG’s business nature. Further readings on the value of 1Kwh act as a storyline to reflect the relationship between CSG’s operation and social responsibility. The Glossary Index is reader friendly, it helps readers to better understand electricity terms



UN The Global Compact

CSG has observed the Ten Principles in its decision making and operations process ever since its entry into UN Global Compact in 2010. The company actively participates and supports events held by the Global Compact in China

| Ten Principles | | In the chapters of the Report | Compliance and progress made in year 2013 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Human rights | Businesses should support and respect the protection of internationally proclaimed human rights | Staff’s Rights and interests Democratic management | Comply with laws and regulations, implement <i>Labor Law</i> and rules. Pay full respect to, and guarantee, staff’s right to know, right to participate, right to supervise and right to express |
| | Make sure that they are not complicit in human rights abuses | Staff’s Rights and interests Feature topic on responsibility | CSG phased in standardized staff management . Guangdong Power Grid, Guizhou Power Grid and Hainan Power Grid basically realized equal pay for equal position under the same jurisdiction. |
| Labor relations | Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining | Democratic management | CSG acts in strict compliance with the <i>Labor and Contract Laws of People’s Republic of China</i> , and sticks to fair employment and equal pay. Frontline staff receive preferential compensation packages. |
| | The elimination of all forms of forced and compulsory labor | Staff rights, occupational safety and health | Every plant eligible for trade union establishment has established a trade union. Every staff at grass roots level is a trade union member. Carry out staff mentoring programmes, and help staff alleviate psychological pressures and strike a balance between life and work. Staff’s average paid annual leave is 9 days |
| | The effective abolition of child labor | Staff rights | Improve management on staff representative meeting, and reinforce democratic management at four levels: grid , province, city and county. Staff representative meeting, taskforce meeting and joint meetings were held. Proposals made by staff representatives were collected. |
| | The elimination of discrimination in respect of employment and occupation | Staff rights | Absolute elimination of child labor and CSG acts as an equal opportunity employer, employ any qualified people regardless of his/her disability. |
| Environ-ment | Businesses are asked to support a precautionary approach to environmental challenges | Green and Environmental Protection | Fossil fuel consumption for unit power generation is 215 grams standard coal per kwh. West-to-east” power transmission hit 92Twh. |
| | Undertake initiatives to promote greater environmental responsibility | Green and Environmental Protection | 5.61 million tons of standard coal saving achieved by energy-saving power generation and dispatching. |
| | Encourage the development and diffusion of environmentally friendly technologies | Green energy Energy Efficient Operation | The average coal consumption of coal-fired power generation was 301 grams/KWh, representing 1 gram/KWh reduction than that of 2012. Grid-wide line loss rate was 6.026% in 2013. |
| Anti-corruption | Businesses should work against corruption in all its forms, including extortion and bribery. | Law Compliance | CSG actively facilitates <i>Ethical Central Enterprise Initiatives</i> and avoids legal risks and works with a focus on internal control enhancement, performance supervision, and puts supervision of important decision implementation in place. CSG is dedicated to establishing itself as a zero-corruption and clean company. CSG’s long term corporate credit rating is super AAA In 2013, no major law/regulation breaches happened. |

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Report Glossary Index

| Terminology | Meaning | Page Number |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Availability Coefficient of Power Transmission and Transformation Facility | A numerical reliability index of power transmission and transformation facility. The larger the coefficient, the better the facility’s reliability and operation. Facility Availability Coefficient = Available Hours + Planned Outage Hours + Unplanned Outage Hours | Page 13 |
| Transmission Line Patrols | Patrol of transmission lines and towers manually or with advanced equipment is constantly underway to see if area facilities are intact. In case of any damage, it shall be reported in time to the superior departments for quick repair so as to ensure safe and stable power transmission. | Page 14 |
| Preventive Trial | Discovery of facilities’ hidden dangers in operation to prevent accidents or damage. Facilities are subject to inspection, trials or supervision, including oil sampling or gas sampling, as one of the effective means to ensure safe operation of power facilities. | Page 14 |
| Major Repair and Technological Upgrading | Major Repair refers to the inspection and repair of facilities after they have been operated for a certain period of time. Technological Upgrading means the optimization and technological transformation of power devices or facilities to remove hidden dangers or enhance operations efficiency. | Page 14 |
| Power Safety Incidents | An “incident” is not deemed as serious as an accident, but incidents will have negative impacts on normal power supply, can threaten safety and stability of power systems and might trigger accidents or major social impacts. | Page 15 |
| Power Supply Reliability | Generally presented with the index of reliability on service (RS), corresponding to the index of SAIDI. RSD(1-customer average interruption duration/time period)100%. SAIDI emphasizes customers experience and orientation. | Page 19 |
| Scheduled Outage | Planned outage in certain places due to transmission line maintenance, peak load shifting, power rationing and other reasons to avoid unnecessary loss resulting from sudden outage | Page 21 |
| On-Load Operations | Electric facilities require frequent testing, inspection and repair during long-termed operation. On-load operation refers to the inspection, repair and testing of high-voltage electric facilities without cutting off the power, done as an effective means to ensure normal power supply. | Page 22 |
| Power Supply for Important Events | Safe and reliable power supply for important events or venues. | Page 24 |
| Ultra-high Voltage | Voltage grade in China for AC of 1000kV and above, and DC of ±800 and above | Page 33 |
| Pumped Storage Power | Water is pumped from downstream reservoirs to upstream reservoirs with off-peak power at night, which is released back to downstream reservoirs for power generation during the peak hours of power consumption, balancing power consumption and applying to power grid frequency modulation and reservation for accidents. | Page 36 |
| Redundant Hydro Power | Units driven by river water are lying idle or generate less power than capable of due to the lack of power demand or poor power transmission. | Page 41 |
| Energy-Efficient Power Generation and Dispatching | Based on the premise of reliable power supply, renewable resources of power generation are given top priority according to the principle of energy conservation and economy. Resources are put in the order of priority based on unit energy consumption and pollutant emission, serving as the basis for fossil energy selection for power generation so as to minimize energy and resource consumption and pollutant emission. | Page 41 |
| Green 3C Power Grid | Effective combination of modern information technologies including Computers, Communications and Control ... and traditional power technologies, all to enhance safety, stability, economic operation, customer service and energy conservation of the power grid so as to make it a smart, efficient, reliable and green one. | Page 42 |
| Line Loss | Power loss due to power conversion, resistance of power grid facilities and management during power transmission and distribution. | Page 43 |
| Ratio of Output Value of Unit Electric Energy Consumption | Output value of each kilowatt hour. Ratio of Output Value of Unit Electric Energy Consumption=the GDP of place where power grid is located/total local power consumption | Page 49 |
| Open Fair and Impartial Power Dispatching | Power Grid coordinates and communicates with power plants and dispatches power in accordance with the Open, Fair and Impartial principle. The principle enables reasonable power grid operation and secures a safe and reliable power system. | Page 62 |
| AC Frequency | A cycle of AC changes, i.e. a sinusoidal wave form. AC frequency refers to each second changes of AC. Countries in the world have adopted their own symbols of AC frequency so as to formulate standards for a certain kinds of electric devices. | — |

Feedback form

Dear readers:

Thank you for reading our *Report*. CSG will make every effort to improve the *Report* in the future. We would appreciate if you could let us know our comments.

Multiple choice questions: (please tick your choice)

- 1

You overall comments on the *Report* is:

☐ Excellent ☐ Very Good ☐ OK ☐ Poor ☐ Very Poor
- 2

You think the quality of the information disclosed is:

☐ Excellent ☐ Very Good ☐ OK ☐ Poor ☐ Very Poor
- 3

You think the structure of the *Report* is:

☐ Excellent ☐ Very Good ☐ OK ☐ Poor ☐ Very Poor
- 4

You think the layout design of the *Report* is:

☐ Excellent ☐ Very Good ☐ OK ☐ Poor ☐ Very Poor
- 5

The readability of the *Report* is:

☐ Excellent ☐ Very Good ☐ OK ☐ Poor ☐ Very Poor

Open-ended questions

- 1

In your opinion, what improvements should the *Report* make?
- 2

Please specify information you find useful.
- 3

What other social responsibility information should the *Report* disclose?
- 4

Any suggestions on CSG's social responsibility practice , please specify?

We would appreciate it if you could fax the completed feedback form to 020-38122187



Innovative report compilation model

Process management added value to the report

We adopted process management in the report compilation process. The *Report* helps disseminate philosophy, improve practice and enhance management capacity. CSG watches its own social responsibility practice and service closely, pursues timely understanding and responds to requirements and expectations of the stakeholders, strives to boost its services and to meet its' mission as a leading international power grid .

The report spans 3 calender years, namely 2012, 2013 and 2014, and three stages; namely planning, writing and release.



Key Corporate Social Responsibility Performance of CSG in 2013

230 million
Population in CSG's
service area

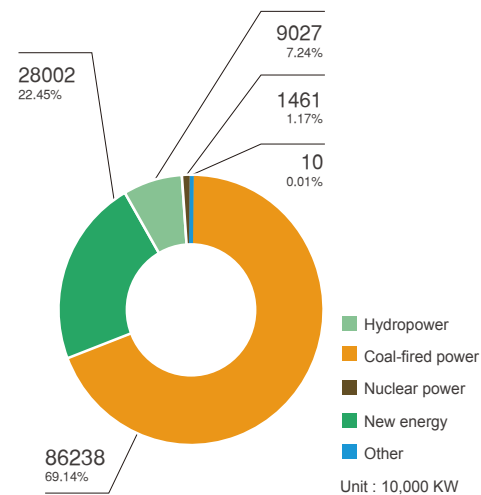
316,000
CSG staff

1,000,000
square kilometers

134ths
Ranking in
Fortune 500

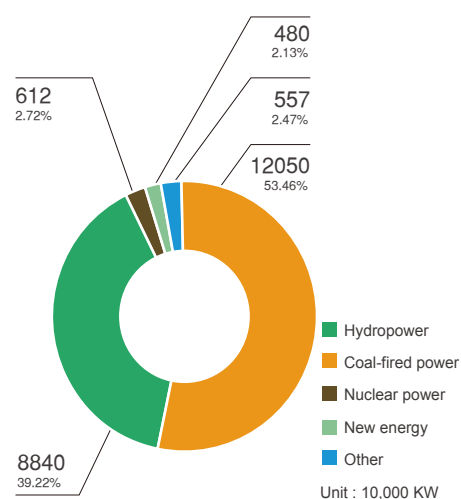
Power Generation Side

Year 2013 National power source structure



Installed power generation capacity in China : 1,247,380,000 KW

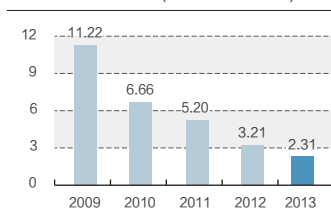
Year 2013 National power source structure



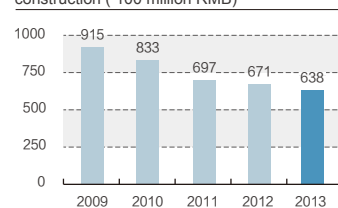
Installed power generation capacity for the five provinces and regions in CSG's service area: 225,390,000 KW

| CSG Main Business Data | 2009 | 2010 | 2011 | 2012 | 2013 |
|--------------------------------------------------------------------|--------|--------|--------|--------|--------|
| SAIDI of urban users (hours/ household) | 11.22 | 6.66 | 5.20 | 3.21 | 2.31 |
| Investment in power grid construction (100 million RMB) | 915 | 833 | 697 | 671 | 638 |
| Investment in R&D (100 million RMB) | 10.50 | 15.80 | 18.10 | 17.40 | 26.28 |
| Length of transmission lines of 110 KV and above (km) | 139286 | 151899 | 163404 | 165563 | 182181 |
| Capacity of transforming equipment of 110 KV or above (10,000 KVA) | 48513 | 57932 | 64389 | 68892 | 73099 |
| Maximum load of unified power generation management (10,000 KW) | 9590 | 10436 | 11323 | 11966 | 12891 |

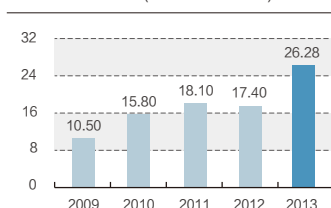
SAIDI of urban users (hours/ household)



Investment in power grid construction (100 million RMB)

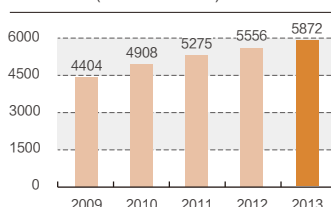


Investment in R&D (100 million RMB)

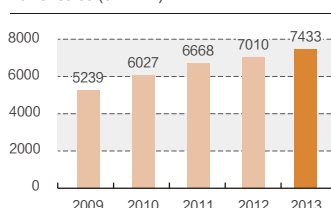


Power supply

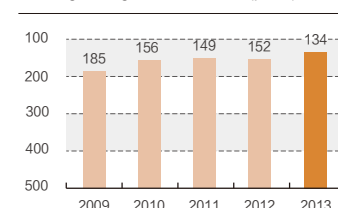
Total assets (100 million RMB)



Power sales (0.1TWh)



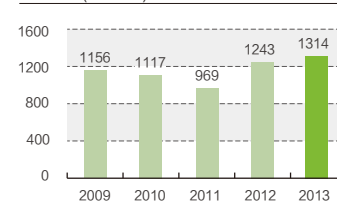
Ranking among the Fortune 500 (place)



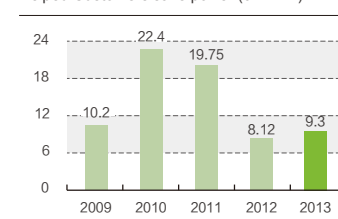
| CSG main business data | 2009 | 2010 | 2011 | 2012 | 2013 |
|---------------------------------------------|------|------|------|------|------|
| Total assets (100 million RMB) | 4404 | 4908 | 5275 | 5556 | 5872 |
| Power sales (0.1TWh) | 5239 | 6027 | 6668 | 7010 | 7433 |
| Ranking among the Fortune 500 (place) | 185 | 156 | 149 | 152 | 134 |
| Business revenue (100 million RMB) | 3136 | 3697 | 3912 | 4210 | 4482 |
| Total profit and taxation (100 million RMB) | 208 | 320 | 337 | 382 | 407 |

| CSG main business data | 2009 | 2010 | 2011 | 2012 | 2013 |
|--------------------------------------------------------------------------------------|------|------|-------|------|------|
| Electricity transmitted from the West-to-East of China (0.1TWh) | 1156 | 1117 | 969 | 1243 | 1314 |
| Helped Customers save power (0.1TWh) | 10.2 | 22.4 | 19.75 | 8.12 | 9.3 |
| Line loss rate (%) | 6.35 | 6.28 | 5.35 | 6.06 | 6.02 |
| Power saving through power generation and dispatching (10,000 tons of standard coal) | - | 258 | 227 | 513 | 561 |
| Power saving through line-loss reduction (0.1TWh) | 48.5 | 70.7 | 66.0 | 16 | 20 |

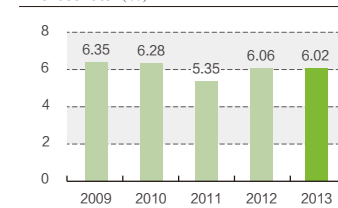
Electricity transmitted from the West-to-East of China (0.1TWh)



Helped Customers save power (0.1TWh)

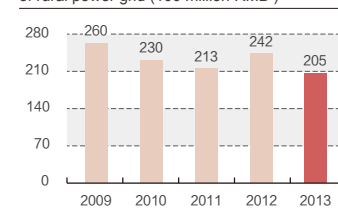


Line loss rate (%)

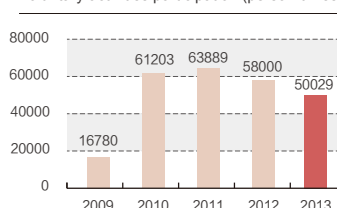


Environmental protection

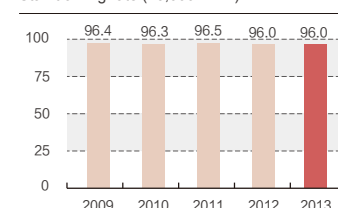
Investment in the construction and upgrading of rural power grid (100 million RMB)



Voluntary activities participation (person-times)



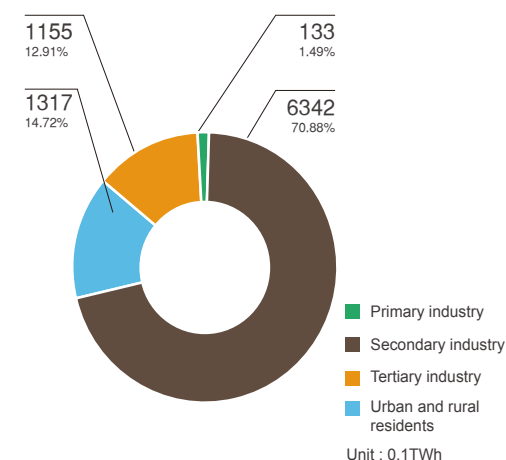
Staff training rate (10,000 RMB)



| CSG main business data | 2009 | 2010 | 2011 | 2012 | 2013 |
|-------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|
| Investment in the construction and upgrading of rural power grid (100 million RMB) | 260 | 230 | 213 | 242 | 205 |
| Voluntary activities participation (person-times) | 16780 | 61203 | 63889 | 58000 | 50029 |
| Staff training rate (%) | 96.4 | 96.3 | 96.5 | 96.0 | 96.0 |
| Staff training rate (RMB10,000) | 6712 | 23274 | 8280 | 3093 | 4790 |

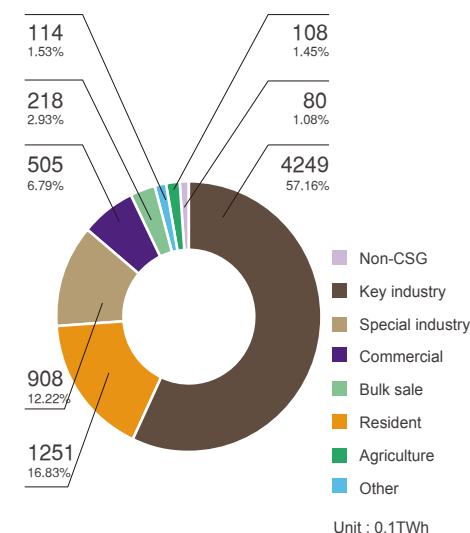
Customer side

Customer structure in year 2013



Total power consumption in the five provinces and region in South China: 8,947 KWh

Power consumption structure in year 2013



CSG power sales : 7,433 KWh