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Dear readers, we hope the exquisite cover could illustrate CSG' s great development to you, as it did in previous editions. The cover is designed to deliver three levels of meaning under the philosophy of "Serve the community, maximize responsibility for better results".

Elegant leaves and branches refers to CSG' s appreciation of nature. CSG has remained dedicated to sustainable development of society and environment.

CSG has fully undertaken its social responsibility in four areas: serving customers, a caring staff, environmental protection and supporting social development.

The landmarks of the five provinces and region in CSG' s service area are designed as tree branches and leaves indicating a "smart, efficient, reliable and green" power grid platform. CSG optimizes resources to support regional economy development, upgrading and transformation.

Cover photos: Huizhou pumped storage power plant, city night scene, business hall and CSG staff is explaining electricity knowledge to ethnic minority customers.

2012

Corporate Social Responsibility Report

Interview with the Board Chairman

“We shall continue to pursue the low-carbon development model unswervingly and make greater contribution to regional ecological preservation and a beautiful China.”



Board Chairman Zhao Jianguo

CSG celebrated its 10th anniversary at the end of 2012. As the Board Chairman and a witness of the 10 years’ reform and development of CSG, how do you comment on the company’s development path in the last decade?

It has been a tough and glorious decade for CSG. We have grown up through integration. In the face of severe natural disasters and in the course of major events, CSG has proactively undertaken its social responsibility. CSG staff’ s spirit has won recognition from the central government, relevant ministries, the party committees and governments of the five provinces and region in CSG service area as well as the whole society. CSG itself has also made tremendous progress through our effort for scientific development of the region.

The last 10 years have seen CSG from a start-up, to its integration and great development. Our comprehensive strength has laid a solid foundation for our long-term development. We have been rated level-A in the assessment of state-owned enterprise executive’ s business performance by the State-owned Assets Supervision and Administrative Commission of the State Council (SASAC) for 7 consecutive years; our place in the Fortune 500 list has moved up remarkably–No.149 in year 2011. The last decade saw CSG over-came many difficulties, conquered multiple tests and fulfill a series of tasks: **The most unforgettable one**–conquering one of the worst ice and snow storms in South China’ s history in 2008; **the most noticeable one**–Finishing the world first ±800kV UHV DC project; **the most beneficial one**–formulating CSG Mid-to-Long-term Development Strategy.

What is equally significant is a fundamental change of mindset across the whole organization, i.e. **we have positioned CSG as a service provider**. We have completely changed the old tradition of “emphasizing power generation, overlooking supply and totally ignoring power use” and firmly established the customer-centered principle in CSG’ s whole operational process–planning, construction, operation, management and service, ensuring safe, reliable and uninterrupted power supply, largely reducing customers’ outage time and raising their satisfaction. **We have defined the three core CSG technologies**. Based on the transient balance feature of the power grid and CSG’ s business practicalities, our three core technologies are: The technology of safe and stable operation and control of power grid, the technology of power grid’ s economic operation and the technology of integrated application of system and facility. We have also clarified the direction of CSG’ s technological innovation, which is to accelerate the innovation of traditional power grid and improve our overall grid management capability through advanced computing, communication and control technologies. **We have identified CSG’ s progress roadmap**. Adhering to the guiding principle of “global perspective, practical path, sustainable effectiveness and continuous development” and management philosophy of “all-round service to customers, life-cycle management of assets, intensive management of resources”, CSG compared ourselves with internationally advanced peers and identified our shortcomings; based on which we encourage bold exploration and pilot projects and inspire all subsidiaries’ enthusiasm and creativity.

We notice that CSG has identified its core value as: CSG Lights Up Every Household in Southern China. Could you share with us your understanding of this core value?

The connotation of the core values “CSG Lights Up Every Household in Southern China” is the commitment to serve the customers, care about the staff and return the support of the society. CSG shall dedicate ourselves to lighting up thousands of homes and bring brightness and happiness to the society. This is an unyielding pursuit and practice of CSG in our fulfillment of social responsibility.

CSG has always placed safety as the top priority and ensured the safe and stable operation of a complex and large power grid for a long time. Despite the rapid expansion and increasingly complex structure of the power grid, there has been no grid stability accident or blackout by human error. Some of CSG’s achievements include: First, CSG actively met the challenge of acute imbalance between power supply and demand, made full use of the large platform for optimal grid resources allocation to realize fast and flexible power deployment and balance between electric power and electrical voltage; secondly, we coordinate the loads and resources to enable power dispatching adjustment between provinces; thirdly, CSG has focused on resolving the distribution problem of the power grid, ensuring effective distribution, connection and use of power; fourthly, the company commits itself to safeguarding the society, key areas and key customers and has set a successful example ensuring power supply and supporting productivity, providing strong energy support for the rapid GDP growth of 12% average per annum in the five provinces and region. CSG has also played a key role

in many critical events: With the principle of “shouldering responsibility in the face of disasters”, CSG has fulfilled its commitment of “restoring power to affected areas within the shortest time possible” in the event of ice storms, floods, typhoons, droughts and earthquakes in our service area; in undertaking the power supply task for major events such as the Guangzhou 2010 Asian Games and Shenzhen 2011 Universiade, CSG has ensured power supply from the source to the socket with “zero accident, zero mistake and zero complaint.” At the same time, CSG concentrates on improving power supply service for the general public and has realized “electricity to every household” within the service area. The company is committed to building an “intelligent, efficient, green and reliable” modern power grid and has significantly improved power supply reliability and minimized customers’ power outage. As a result, in the 20 gold medal winner companies of reliable power supply in China last year, six are CSG subsidiaries with three of them among the top five A-level companies, placing CSG in a leading position in China’s energy sector. All these achievements are made under the guidance of our core values.

We hope with CSG’s continuous effort, there will be a day when all power problems could be solved rapidly and people would even forget the existence of the power supplier. Only then, can we say we have done a great job and have truly realized our core values “CSG Lights Up Every Household in Southern China”. So the cause of fulfilling CSG’s social responsibility is an endless journey and we should not be complacent about our responsibility for a second.

The 18th National Congress of the Communist Party of China calls for the building of a “beautiful China”. What role does CSG want to play in this endeavor?

It is the objective of CSG to be a green force for building a beautiful China. In the power sector’ s supply chain, the energy conservation and emission reduction potential within the power grid companies is relatively small. However, we can take full advantage of our role as the bridge in the supply chain to promote low-carbon development in the upstream and downstream. There is a huge potential to develop low carbon at upstream and downstream. Therefore, CSG has been taking serious measures to implement “Green Action” to increase energy utilization efficiency at the power generation side, the grid side and the consumer side.

At the generation side, CSG has been actively promoting energy-saving dispatching to facilitate the development of clean power, especially hydropower, wind power, solar power and other renewable energies. In 2012, the installed capacity of non-fossil energy accounts for 44% and power generation from non-fossil energy accounts for 38% of CSG grid’ s total, higher than the national average 28% and 21% respectively. At the grid side, the company has been focusing on line loss reduction and efficiency improvement in both transmission and distribution. At the consumer side, CSG has taken the lead to establish CSG Synthesis Energy Corp. to bring our technological advantage to promote energy conservation and emission reduction in the whole society. Presently the fossil fuel consumption for each watt electricity supplied by CSG is 198 grams standard coal, 18.5% lower than national average. In the future, we shall continue to pursue the low-carbon development path to make further contribution to regional ecological preservation and a beautiful China.

CSG is running the To-Top campaign to be an internationally advanced power grid company. How will this objective influence CSG’s fulfillment of its social responsibility?

The initial motivation of the To-Top campaign is that we hope through our generation of power sector practitioners, China’s power industry will accumulate effective experience for its reform and development and there will be several internationally influential power companies in China. This goal plays a vital role in improving CSG’s management and its capability to fulfil responsibilities. The management of corporate social responsibility originated from the west, therefore we pay great attention to the practice of international power companies and have referred to universal standards such as the G3 Guidelines of the Global Reporting Initiative and the 10 Principles of the United Nations Global Compact to strengthen our CSR management to push forward a series of projects and disclose various indicators. CSG has disclosed 90% of the power supply indicators and the completeness of CSG’s delivery information is among the top in the world. On the other hand, CSG has taken into consideration China’s practical circumstances and the features of the SOE to actively undertake social responsibility and maintain effective communication between stakeholders, winning understanding and support from them. Therefore we can say that the To-Top initiative has driven CSG to better fulfill its social responsibility, and CSG has found a route that both conforms to international practice and has its own characteristics.

The Management

 <p>Zhao Jianguo Board Chairman</p>	 <p>Zhong Jun Board Director President</p>
 <p>Xiao Peng Board Director Vice President</p>	 <p>Wang Jiuling Board Director Vice President</p>
 <p>Qi Dacai Board Director Vice President</p>	 <p>Sun Xiaoyi Head of Discipline and Inspection</p>
 <p>Wang Liangyou Vice President</p>	 <p>Zhang Xiaodong Vice President</p>
 <p>He Xiqiang Vice President</p>	 <p>Li Wenzhong Chief Accountant</p>

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 the update on implementation of Mid-to-Long-Term Development Strategy; the CSR report has systematically disclosed CSG's practice of corporate social responsibility from power supply, environment protection, economic performance and social harmony; the Summary gives detailed account of the company's source of responsibility, responsibility management and outlook 2013.



Responsible Practice in the Past Decade

Feature Report on Responsibility

Power Grid Development Platform

In the past decade, CSG has reinforced scientific planning and power grid construction and strived to build a smart, efficient, reliable and green grid covering urban and rural areas. CSG has invested 524.1 billion RMB in grid construction and have instituted a “8AC, 5DC” pattern in the “west-to-east” plan. We put an end to the isolated operation of Hainan Power Grid and realized “electricity-to-every household”.

3 Milestone Projects

- In December, 2009, Yunnan-Guangdong ±800kV UHV DC Power Transmission Project was put into single-pole operation
- In June, 2009, 500kV Hainan Interconnection Project successfully went into operation and put an end to the isolated operation of Hainan Power Grid
- In December, 2011 Xiluodu and Nuozhadu DC Power Transmission Project started construction, representing another two power transmission “highway” in “west-to-east” plan.

Five Key Development Index



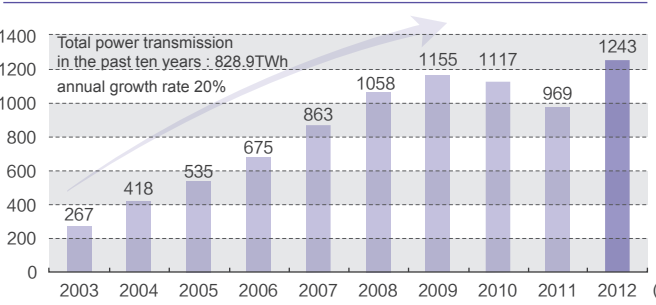
Our efforts in the past ten years equal to two added CSG capacity

Power Operation Platform

In the past ten years, CSG has been dedicated to delivering quality service to economic performance of the five provinces and region in South China, has given a full play to its role as a coordination platform and has vigorously implemented “west-to-east” plan. The “west-to-east” plan elevated pressing land shortage and pollution problems in the east of China and helped to boost the post industrialization process of the east region. The “west-to-east” plan created revenue stream for the west region and contributed to local employment and fiscal revenue.

CSG has established a safe production risk management system with independent intellectual property rights. Various controlling measures have been adopted. Our ability to harness and operate the complex DC power grid has been strengthened noticeably.

Completed “West-to-East” Power Transmission (unit:0.1TWh)



The “west-to-east” plan realized optimized resource allocation and coordinated regional development in the west and the east for a win-win situation.

Green Action Platform

In the past decade, CSG has played an active guiding role in the industry chain, and made effective efforts to practice the central government policy on energy conservation and emission reduction to facilitate green grid construction and an all-round coordinated development of business, society and environment. CSG has made concrete measures in Green Action and takes the initiative to launch energy saving in dispatching in China. The company supported the central government’ s policy on replacing inefficient coal-fired units, and has shut down inefficient units with the total capacity of 17830 MW. CSG has continuously reduced power loss in transmission and distribution process and has offered EMC and energy conservation diagnosis service. In total, CSG has delivered 28,000 energy conservation diagnosis service for corporate clients.

- 180** million tons of standard coal saved in energy conservation and emission reduction
- Equivalent to **480** million tons reduction of carbon dioxide
- Equivalent to **3.46** million tons reduction of sulfur dioxide
- In total, **653.8** TWh hydropower transmitted in the “west-to-east” plan
- Assisted clients achieved total power conservation of **7.4**TWh

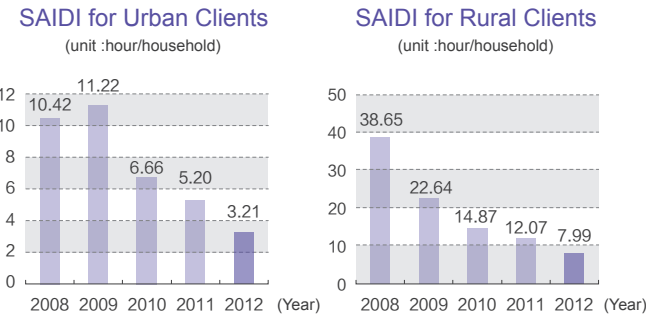
Deliver green service for a beautiful China

CSG was founded on 29th December, 2002 and was a pilot in power sector reform in China. In the past decade, the company has always adhered to the mission of “Taking initiative to shoulder social responsibility, Ensuring power supply” and its core values, namely: “CSG Lights Up Every Household in Southern China”. CSG’s guiding principle is “Global vision, practical pathfinding, perseverance and consistent improvement.” The company has given a full play to its role as grid development platform, grid operation platform, green action platform, all round customer service platform, talent development platform and emergency management platform. CSG has significantly boosted its development potential and value creation capacity.



All Round Customer Service Platform

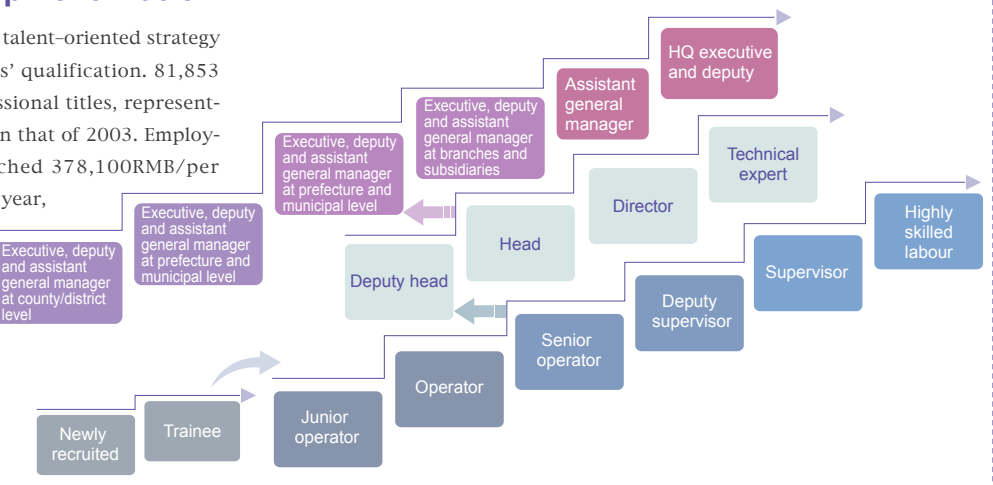
In the past ten years, the company has established a philosophy of “customer first, harmony and win-win” and has identified customer service improvement as the key development task. CSG’ s every effort is for reducing SAIDI and improving customer satisfaction. We have achieved significant reduction of SAIDI both for urban clients and rural clients. CSG’ s branches and subsidiaries have always ranked high in surveys made by local government agencies.



CSG is leveraging lean management to continuously raising the bar of professional customer service quality

Talent Development Platform

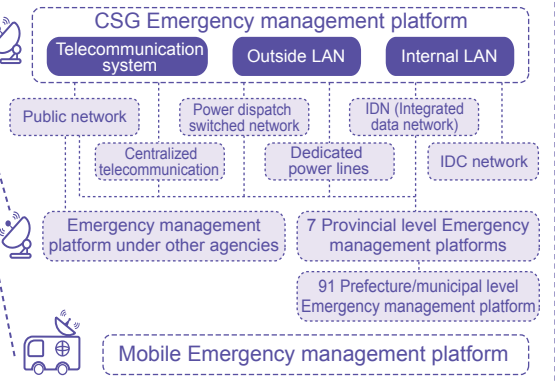
In the past decade, the talent-oriented strategy has boosted employees’ qualification. 81,853 employees have professional titles, representing 9.46% increase than that of 2003. Employees’ productivity reached 378,100RMB/per year from 216,000 per year, recording 6.42% annual growth rate.



To establish CSG with highest employee's satisfaction, the company executives should care about the employees and employees should care about the company

Emergency Management Platform

In the past ten years, CSG’ s service areas were hit by natural disasters and the sophisticated geological conditions posed stiff challenges for safe production and emergency management. Leveraging modern telecommunication system, CSG established a sound and effective emergency management platform covering its service area. Aided by the emergency management platform, the company confronted and defeated a number of extreme natural disasters, including snow and sleet in 2008, drought in 2010 in Yunnan, Guizhou and Guangxi, Typhoon Fanapi, torrential rainstorm in Hainan, and earthquakes in Yingjiang, and addressed a number of challenges arising from thermal power shortages and rising fuel prices. The emergency management platform has secured power grid’s safe and stable operation.



CSG has delivered its commitment: Shouldering responsibility in the face of disasters

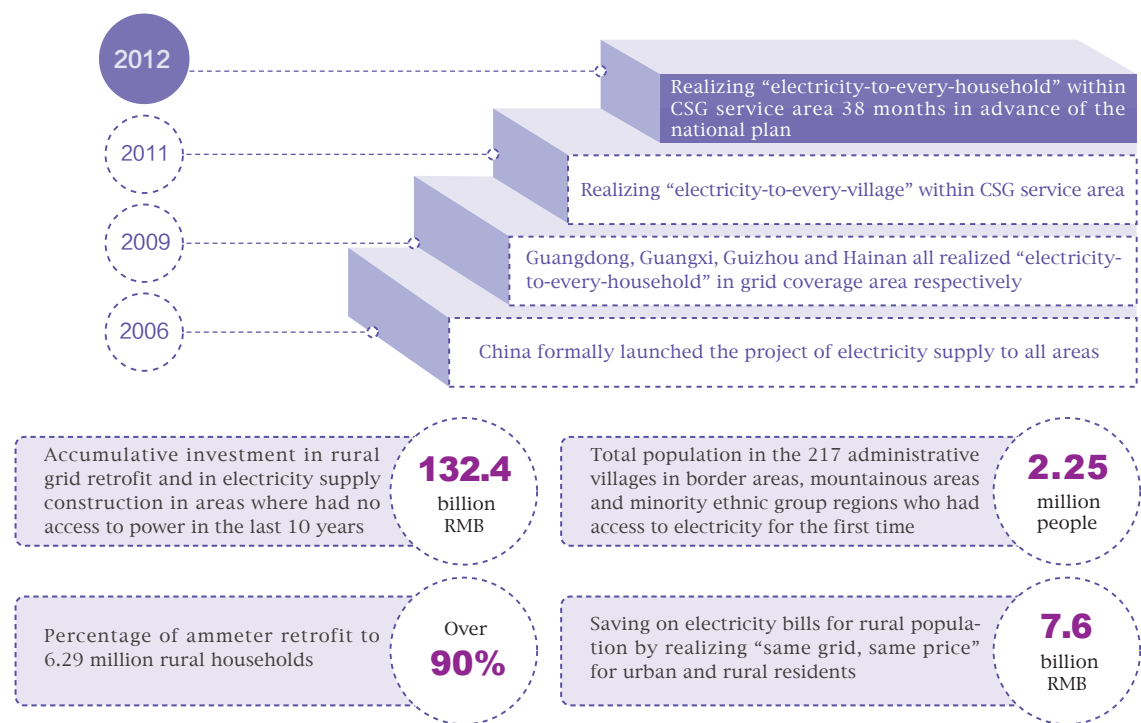
Lighting Up Thousands of Homes, No Matter How Far They are

Feature Report
on Responsibility

CSG: Lighting Up The Furthest Land

When most people have been enjoying modern convenience brought by electricity, there was a time when some people in the five provinces and region in South China did not have access to it but relied on kerosene lantern and pine tar for light. Modern civilization was far away from them. These people were mostly minority ethnic groups and their areas were only included in CSG service area since the power system reform in the rural area. For the interest of the country and society, CSG members upheld the corporate spirit of “dedicating themselves to the brightness of thousands of homes” and conquered great challenges of remote areas, mountainous and gorge geography, scattered villages and difficult transportation to bring reliable electricity supply to every household, contributing to the harmony between different ethnic groups, different regions and across the society.

Statistics of the “Electricity-to-every-household” Project



The retrofit and upgrade of rural power grid has significantly improved the grid structure, realized a coordinated development of the 110kV, 35kV and 10kV grids, and solved the problem of weak connection between 311 county grids and the main grid. Presently there is at least one 110kV power transformer substation in every county, which has remarkably increased power supply capability in rural areas.



Before Children studying at night by lamps



Now Villagers of Shanyao ethnic group hailed the first electricity bulb being lit in Longsang Village, Guichao Township, Funing County of Yunnan Province.

Accelerating Power Grid Development in Rural Area to Support the “New Countryside” Project



“CSG brothers” cross perilous mountains to serve returned overseas Chinese

“CSG Brothers” Guard the Power Supply in Shiwan Mountain for 13 Years

The “CSG brothers” are two brothers working in Guangxi Power Grid. With the dedicated spirit of “devoting myself to the brightness of thousands of households”, they have been guarding the hundred km² mountain forest to ensure power supply for 2,026 families of over 10,000 Chinese who returned from Vietnam. For 13 years, they ride on cragged mountain roads every day and have even scrapped 5 motorbikes. Wang Zhaoguo, the then member of CPC Central Committee Politbureau, Chairman of All China Federation of Trade Unions, has written about them that “Returned overseas Chinese brothers Huang Chunqiang and Huang Chunning have contributed to the country's development and set up a great example.”

2012: Critical Battle to Realize “Electricity-to-Every-Household”

By 2012, there remained the last 81,800 families who did not have access to electricity. They were all minority ethnicity groups and scattered in remote areas in Zhaotong, Lijiang and other parts of Yunnan Province. CSG was determined to bring electricity to these people.

- Challenge of the project.** These minority ethnic groups' habitations are scattered around perilous mountains and deep gorges where natural conditions are tough and landform complicated. There were no roads to these areas, making construction extremely difficult. Some ethnic groups move their homes from time to time, adding to the challenges to engineering progression.
- Project delivery.** CSG has altogether invested 1.93 billion RMB , i.e. over 20,000 RMB per household, and conquered various advert factors to successfully supply power to the last 81,800 households.



Most Shanyao ethnic villages did not have roads; CSG staff had to carry power poles across mountains;



A worker from Lijiang Power Supply Bureau of Yunnan Power Grid was repairing cable defects. At his back was the steep Yulong snow mountain;



During the last critical battle of electricity supply, climbing rocks and encountering danger were common situation for CSG employees.



Li Zefu, villager of Lisu ethnic group village Mazhiwu, Yongsheng County, Lijiang City, smiled happily on the news of electricity arriving at his home;



Electricians returned from Mazhiwu village in late night. On their one side was crag, on the other side was bottomless cliff;

In 10 years, 20 years, these remote areas still won't bring any economic profit to power companies, but such is the political commitment of a state-owned enterprise, such is a real social project.

Yang Zhongyi Deputy Director-General, Standing Committee of People's Congress, Lijiang



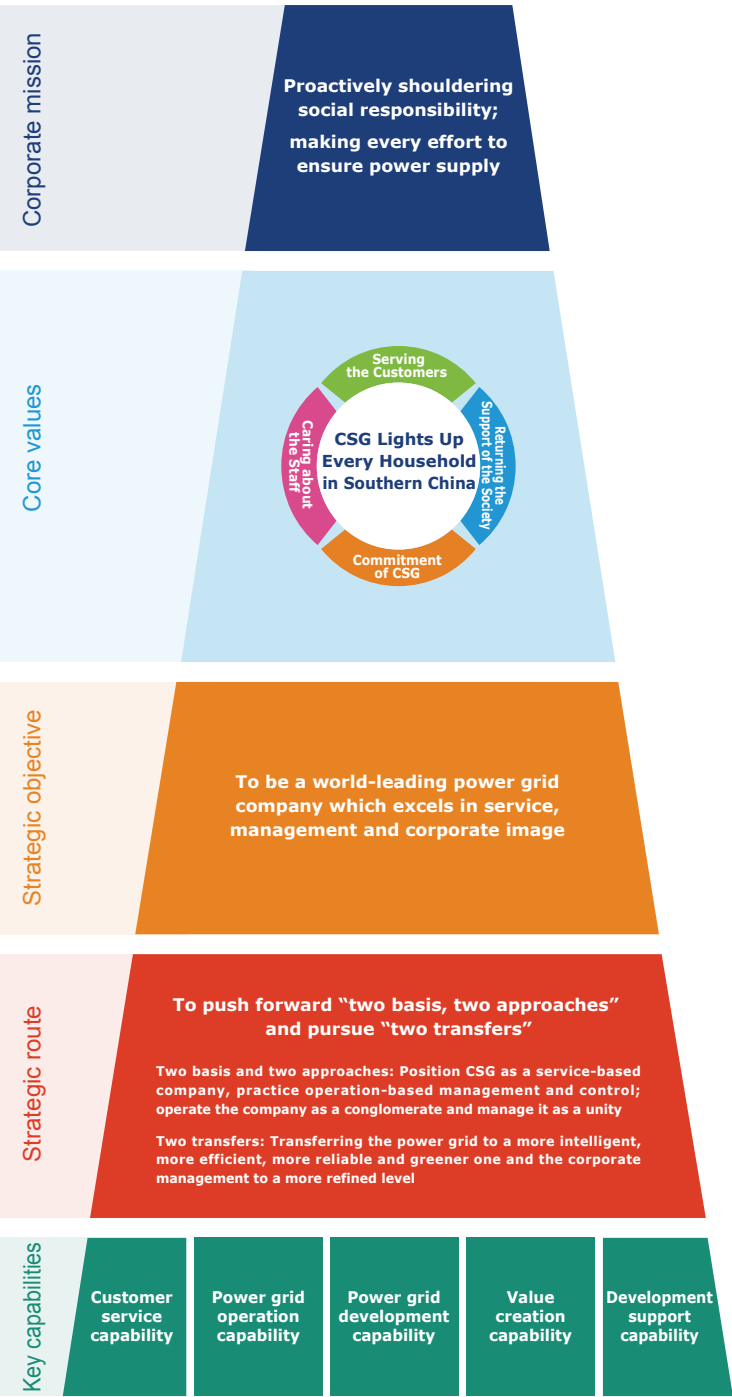
CSG members carrying power cable poles across Jinsha River by bamboo raft.

The Journey of a Power Cable Pole

Dashui village in Labo, Ninglang County, Lijiang, Yunnan Province is the last village to have power access in CSG's service area. There was no road here; even horses were not able to go in. In order to move power cable poles into the village, CSG staff first used power supply cart and “canon cart” (a canon-like carriage) to carry poles on narrow dirt trails, then dragged them on the Jinsha River by towboat and iron pontoon, then carried them onto mountains by ropeway before finally dragging them to the destination by winch. The cost of a 1,000 RMB cable pole, after one week's journey by water, land and air, has exceeded 8,000 RMB when arriving at the destination. Such is an epitome of the hardship in accomplishing the “electricity-to-every-household” project.

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

2012 was a critical year to implement CSG Mid-to-Long-term Strategy. In this year, CSG integrated its efforts in building a world-leading company, unification and management improvement, pushed forward the actualization of the strategy, steadily marched on the route of strategy implementation and preliminarily established a unified management framework, realizing the objective of the first step as part of CSG’s 3-step strategy.



Developing a Complete Strategy System

CSG has been pushing forward the development of a strategic system to fully establish a closed-loop management mechanism. In 2012, CSG launched the formulation and assessment of 11 functional strategies and 14 sub-strategies, and strengthened connection and coordination between policies of different levels to establish a complete strategic execution system. The subsidiaries in each province have also mapped out their functional plans respectively.

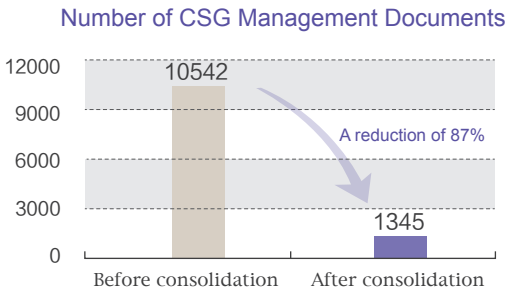
Establishing a Unified Management Framework

- Participation by four levels, seven business areas and 15 departments, CSG has successfully completed the interim assessment of unified management and the first top level design of corporate business management, established a scientific and systematic unified management framework, further standardized business management model, strengthened management foundation and developed a structural business prototype and management platform with CSG characteristics.
- This years also saw CSG systematically categorize 75 level one businesses, 237 level two businesses, 697 business items, 830 business procedures and 1,933 inter-business connections, develop an “accountability + guidance” management and control strategy and grid-wide unified standards, effectively preventing unification from becoming unitarianism, dogmatism or inflexibility.

Building a Unified Institutional Structure

In 2012, based on the design of unified management and the principle of being simple and efficient, CSG systematically formulated regulatory documents on management regime and business guidance which facilitate the implementation of management requirements and cover all CSG services, established linkage and adjustment mechanism between institution and business, developed a business standard-based unified system, providing strong support for the implementation of unified management.

Through thorough review, CSG has cut the number of management documents from 10,542 to 1,345, an 87% reduction; whereas the headquarters has increased the operation standard instructions for grass-root unit’s business need from 23 to 401, a 1,743% increase. The company has also consolidated the operation model of homogeneous services across the whole grid, significantly reducing the frontline team’s workload.



Measures to Enhance Management

CSG has organized extensive campaigns for management improvement, actively promoted management innovation and continued to enhance lean management.

- Guangzhou and Shenzhen Power Supply Bureaus implemented a scheme to be in line with world-leading power grid companies, to be the pilots and provide cases in point and successful examples for the whole organization’s management innovation;
- CSG created an economic value added of 3.05 billion RMB in 2012, exceeding the target set by SASAC.
- CSG has accelerated informationization led by management needs, steadily pushed forward the “6+1” project and launched large scale data quality review in marketing, production, human resources and financial management.
- Eight research projects of CSG, such as the “Innovation and practice of the integrated management model of E-capitals”, have won first-class award in the 2012 national power sector business management innovation contest.



CSG held the 3rd management forum to promote management innovation

In March, 2012, SASAC issued Guidance on Management Improvement Programme of State-Owned Enterprises, which announced that the SOEs would all launch management enhancement projects in the next two years and identified 13 areas, including social responsibility management, as the designated reform areas. It was also one of the nine key corporate management improvement areas being identified of CSG.



Power Supply

■ **From providing power accessibility to ensuring high quality power supply.** With economic development, social progress and living standard improvement, people’s dependence and expectation on power supply gets higher and higher. CSG always deems the safety and stability of power grid as the lifeline of the company. With a service philosophy of “customer first, achieving win-win in harmony”, CSG continues to enhance power supply stability, endeavors to provide world-class power services to customers and ensures safe, stable, reliable and quality power supply for the sustainable economic and social development.

>> Safe Production >> Reliable Power Supply >> Quality Service >> Emergency Management

Number of major and above major power safety accidents
Number of major and above major facility accidents

0

Average SAIDI for urban customers
3.21 hrs
Year-on-year reduction 38.72%

Investment in power grid construction
67.1 billion RMB
Year-on-year reduction 3.73%

>> Power Grid Construction >> Technological Innovation



±800kV Suidong converter station

Safe Production

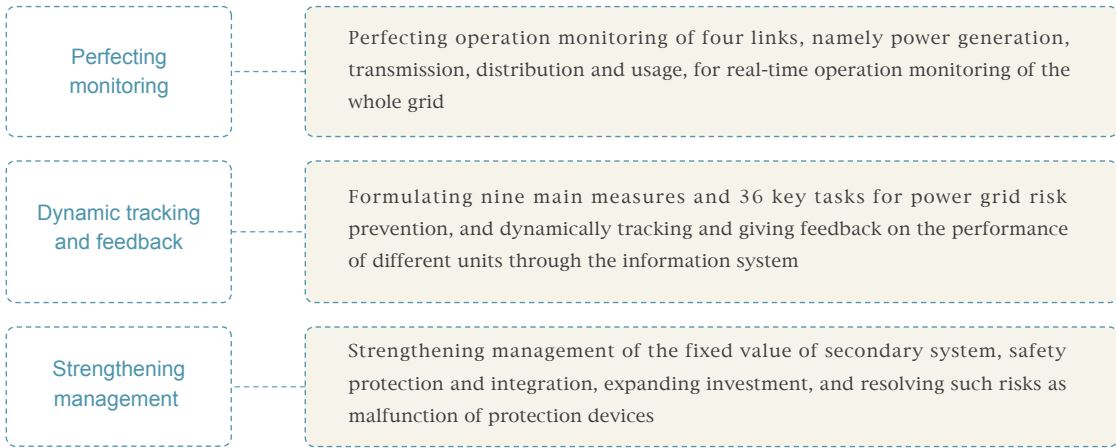
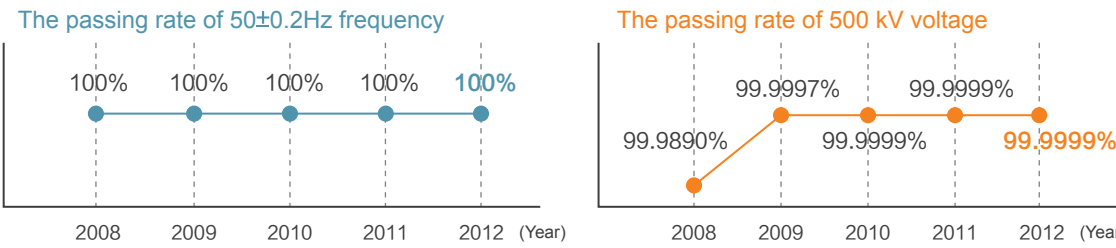
The “west-to-east” plan of CSG is of large scale, long distance and high voltage. The trans-provincial and regional power grid is operating in both AC and DC, resulting in complexity and difficulty to operation. thus difficult to operate. The vast coverage of the main grid, concentrated cable tunnels, harsh geographical environment along the cables, complex climate and high frequency of natural disasters, such as typhoon, thunderstorm, mountain fire, earthquake, ice damage, drought and flood, have posed great threats to the safety of the power grid.

We stick to a safe production guideline-- “safety first, prevention orientation” by giving safe production top priority, enhancing management of safe production, and effectively resolving various crises in production. 2012 witnessed no big or serious accidents related to power safety or equipment.

Stable Operation of the Power Grid

CSG has been improving the system operation control and management, and the dynamic closed-loop management and control of power grid operation risks to ensure stable and ordered operation.

The passing rate of 50±0.2Hz frequency and 500 KV voltage of the whole grid were 100% and 99.9999% respectively, ranking top in the country.



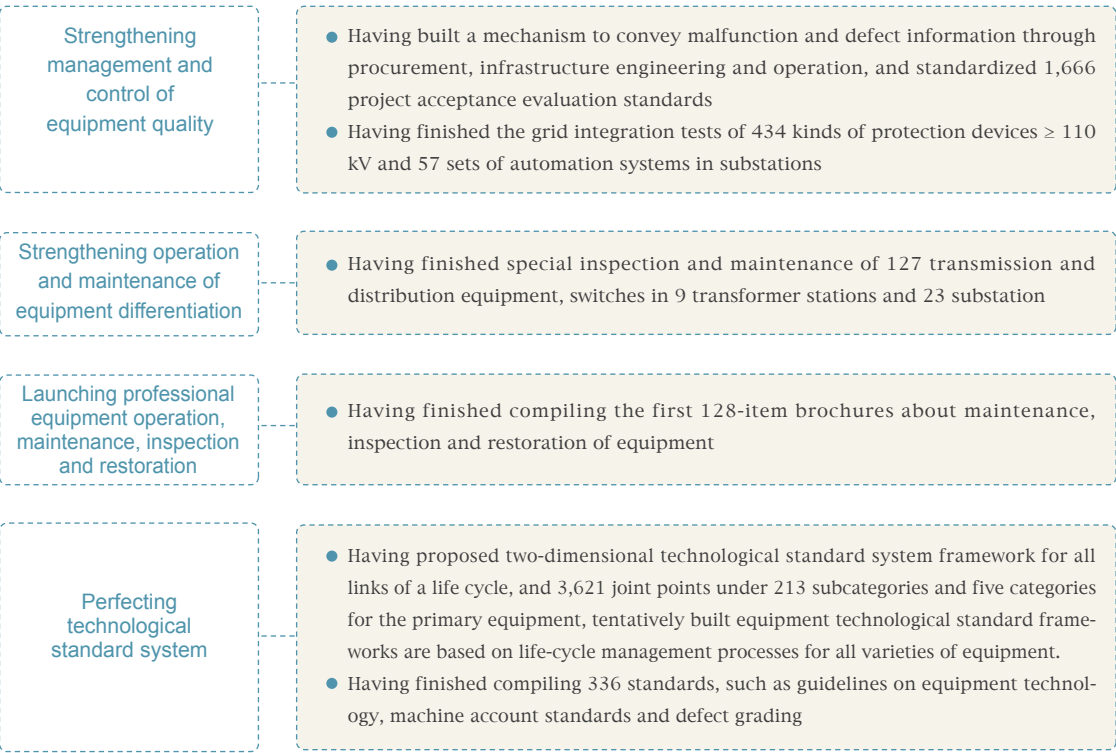
Sound Operation of Equipment

The equipment assets of CSG take up over 80% of its total assets. The management of equipment assets directly relates to safety, stability, operation performance, and sustainable development of the power grid.

CGS has been enhancing the sound operation of equipment by thoroughly spotting hidden equipment dangers, strengthening closed-loop management and control of equipment risks, with an investment of 17.651 billion RMB in overall restoration and technological upgrading of equipment.



Staff are examining switches of the second main generator transformer in 500 kV Maohu transformer substation.



Technology Monitoring and Data Analysis Platform of Yunnan Power Grid

Integrated Technology Monitoring and Data Analysis Platform independently developed by Yunnan Power Grid won the first Prize of Innovation in the Third China's Equipment Management in the Power Sector in 2011, which combines basic equipment information with experiment report, and information about the inspection, defects and online monitoring as well as environment, geography, extreme climate, and disasters, etc. By analyzing a gigantic amount of data in multi-dimensions, multi-layers and multi-fields, the Platform can monitor and warn of the operation, changes and trends of power equipment timely to exercise ex-ante warning instead of post mortem analysis.



Left: Staff on duty are testing the temperature of equipment in operation.

Right: Engineers in charge of operation and maintenance are carrying out null detection on porcelain insulator.

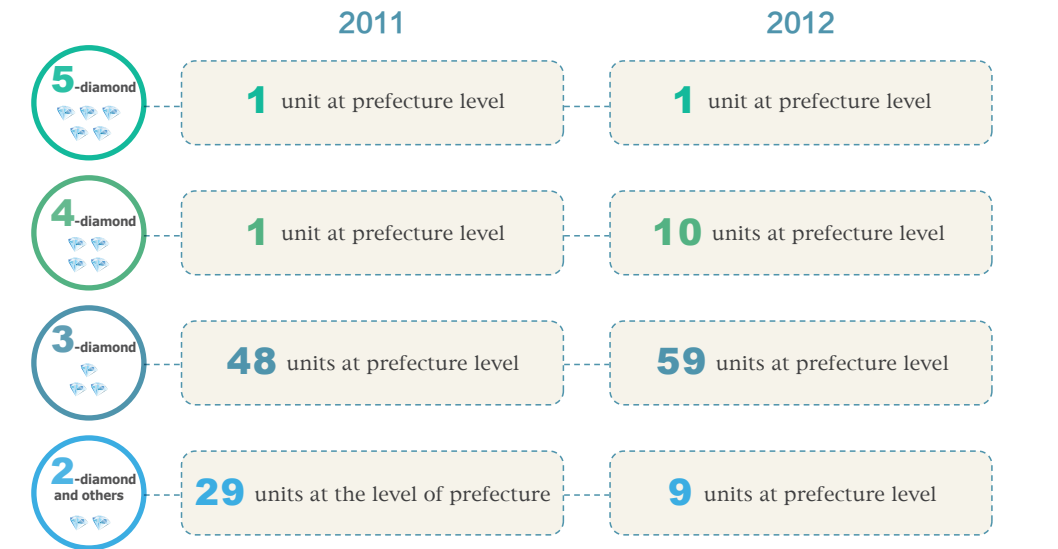
○ Standardization of Safe Production Management

CSG has been working on production standardization management by establishing three standard systems, namely management, technology and operation standards, enhancing the safe production and Risk Managing System, leading to the reduction of accidents and malfunction, and the improvement of safe production management.

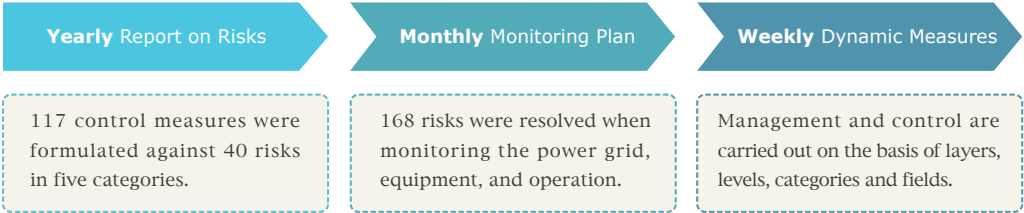
The Safe Production and Risk Management System draws lessons from internationally leading safety management philosophy, with CSG’s characteristics and independent intellectual property rights, providing a whole set of management expertise and methods in this regard.

The Safe Production and Risk Management System was awarded the First Prize of Scientific and Technological Achievements in Safe Production for the National Power Sector in 2012.

- The Safe Production and Risk Management System has been used in 79 units of CSG in prefecture-level cities, of which 70 have acquired effective three-diamond or above certification. Now this System has been expanded to power supply enterprises and infrastructure construction units at county level, resulting in steady improvement of CSG’s safe production and risk management.



- CSG has participated in the formulation of the Regulations of Safe Production Standardization and Rating Standards of Power Grid Enterprises . 43 suggestions that proposed by CSG were all accepted.
- Having organized business and management of safe production, CSG has established the normative document framework composed of 43 corporate rules, 25 rules for branches and subsidiaries, and 211 operation standards.
- CSG has practiced “Two Manual” mode, namely Work Manual for Integration of Production and Management and the Work Manual for Integration of Production Team and Group. CSG has promoted the implementation of regulations, procedures and standards in front-line teams and groups, thus laying a foundation for integrated management.
- Having established weekly, monthly and yearly monitoring mechanism for closed-loop management and control of risks, CSG has ensured the implementation of various risk control measures.



- Having compiled Detailed Regulation on Investigation and Management of Hidden Dangers for Safe Production, CSG has established a long-term and effective mechanism for investigation of hidden dangers, with 9,353 hidden dangers investigated in the whole grid, with a 92% correction rate.
- CSG has analyzed the risks and formulated countermeasures and contingency plans. Dispatching center issued 3,375 risk warnings at three levels (power grid-level, province-level and city-level).
- Having carried out in-depth safety inspection and daily safety inspection, CSG has supervised and handled misconducts against disciplines of command, operation, and labor. 13,761 cases of misconduct were investigated and penalized on the spot.



▲ The engineers are carefully examining the grading ring of ultra-high voltage experimental equipment.



The Alarm is Striking

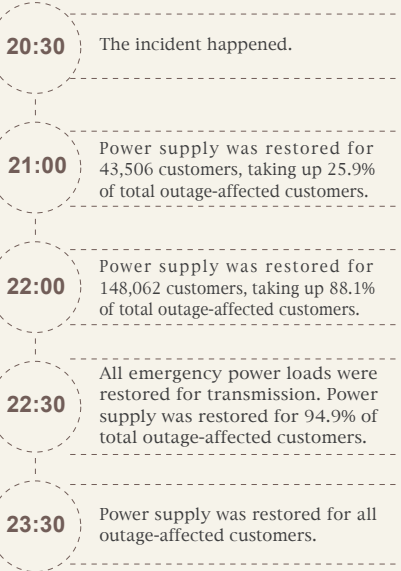
“4·10” Outage in Shenzhen

Incident occurrence: At 20:30 on April 10th, there was an outage in Shenzhen due to equipment malfunction. The outage lasted for 180 minutes in Luohu, Futian District, and some areas in Longgang District. 168,100 customers, taking up 6.5% of total customers, were affected.The outage led to a load loss of 760MW. Some commercial districts were forced to suspend their business; many traffic lights were out; traffic in some areas were paralyzed; 56 elevators stopped running with people trapped inside; 19 trains such as D7009 were delayed from 3 to 70 minutes.

Emergency management: No sooner the outage occurred, CSG then initiated emergency response for power grid accidents, dispatching 41 teams and 348 technicians to the outage-stricken area to repair equipments. In cooperation with departments of Shenzhen Municipal Government, CSG informed the open line of Shenzhen Municipal Government. The Customer Service Center launched contingency hot-line to explain the situation to customers. At 23:30, power supply in affected areas was restored, and the incident lasted for about 180 minutes.

Cause of incident: Before the incident, there was an inner fault in phase A circuit breaker of Shen-Qing Number 1 line in 500 kV Shenzhen transformer substation. To isolate this fault, staff in charge of operation went to switch the busbars. During this process, knife gate insulator was broken due to an innate quality defect, which led to the pressure loss of the transformer substation and the outage.

Follow-up measures: CSG carefully organized investigation and analysis of the outage, and drew lessons from it. The company has perfected emergency cooperation system with stakeholders including governmental departments, power customers and public units, and spared no effort in minimizing the economic and social effects of outages.



Being Mindful of Possible Dangers in Times of Peace

Typical Serious Blackout Around the Globe in 2012

In 2012, blackouts occurred in India, Cuba, Brazil, the U.S.A. and other countries one after another, which had serious impact on local economy and society. We always take safety and stability of the power grid as CSG’s lifeline, thoroughly analyze causes of all accidents, draw experience and lessons from the accidents, implement relevant measures to prevent serious blackouts in regions which we are responsible for.

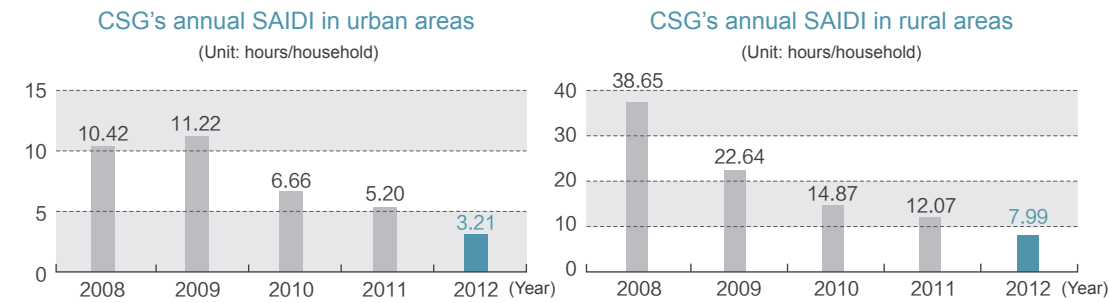


Note: According to the Regulation on the Emergency Responses to and Investigation and Handling of Electric Power Safety Accidents, the 599th Decree of the State Council, the outage in Shenzhen shall not be counted as a general accident.

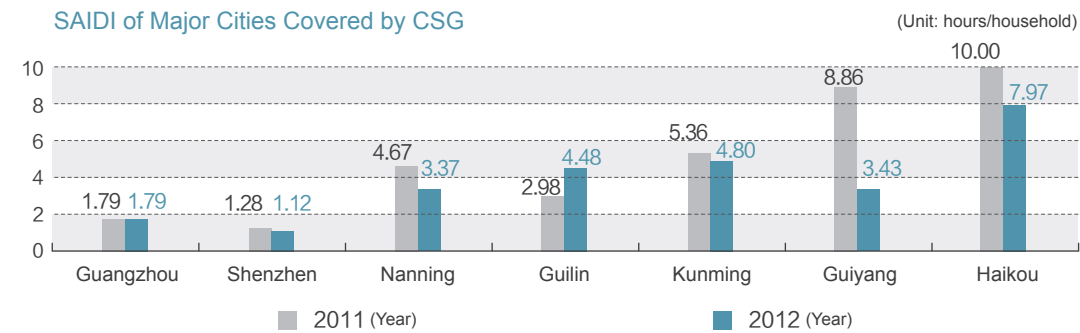
Reliable Power Supply

Reducing System Average Interruption Duration Index (SAIDI) is the core competency of CSG. With existing modern technology, CSG considers thoroughly the economy and efficiency of resources allocation, providing customers with the most secure, reliable, high-quality and efficient power, promptly solving the problems of power utilization and minimizing outages effects on customers.

- In 2012, CSG's annual SAIDI in urban areas was 3.21 hours/household, decreasing by 38.27%. In rural areas, SAIDI was 7.99 hours/household, decreasing by 33.75%. Correspondingly, the reliability on service in urban areas (RS-1) was 99.9635%, while RS-1 in rural areas was 99.909%.



- According to the statistics released by State Electricity Regulatory Commission (SERC) on June, 2012, among the top 20 2011 National Best Power Reliability Companies, Guangzhou Power Supply Bureau, Foshan Power Supply Bureau and Zhongshan Power Supply Bureau were listed as Grade A, while Dongguan Power Supply Bureau, Zhuhai Power Supply Bureau and Jiangmen Power Supply Bureau, Grade B.

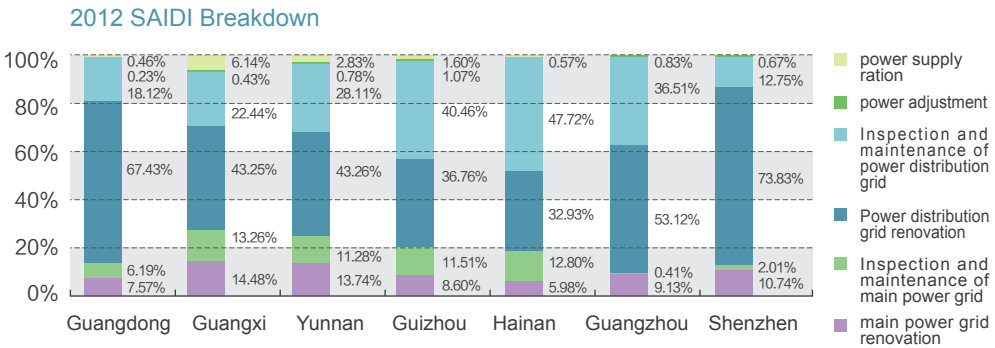


▲ Corporate representatives being awarded on the stage



What Factors Affect SAIDI?

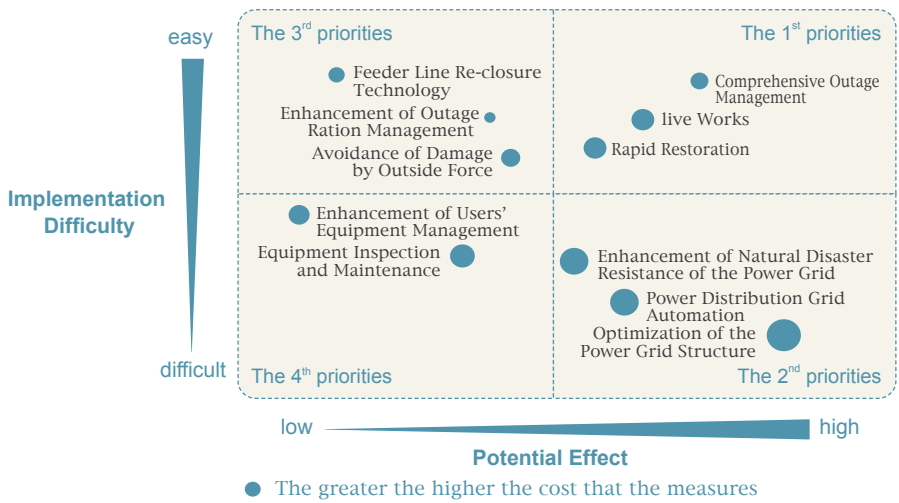
On the basis of our systematic analysis of outages in 2012, conclusions have been drawn : main power grid renovation, inspection and maintenance of main power grid equipment, power distribution grid renovation, inspection and maintenance of power distribution grid equipment, power adjustment and power supply ration, etc are the main factors leading to outages. Power distribution, grid renovation, inspection and maintenance of power distribution grid equipment are the two biggest factors.



Note: Power adjustment refers to the short outage in supplying power with backup transmission lines.

Strategies for Enhancing Power Supply Reliability

- In light of the reasons for outages, the actual situation of CSG, the difficulty, effect and cost of measuring and implementation, we have formulated scientifically the strategies for enhancing the power supply reliability. Thanks to such main measures as management of power supply with backup transmission lines, comprehensive outage management, on-load operation and rapid restoration, SAIDI has been reduced effectively.



- BY analyzing the outage factors and the actual economic and technical conditions , we have identified the priority of measures in enhancing power supply reliability.



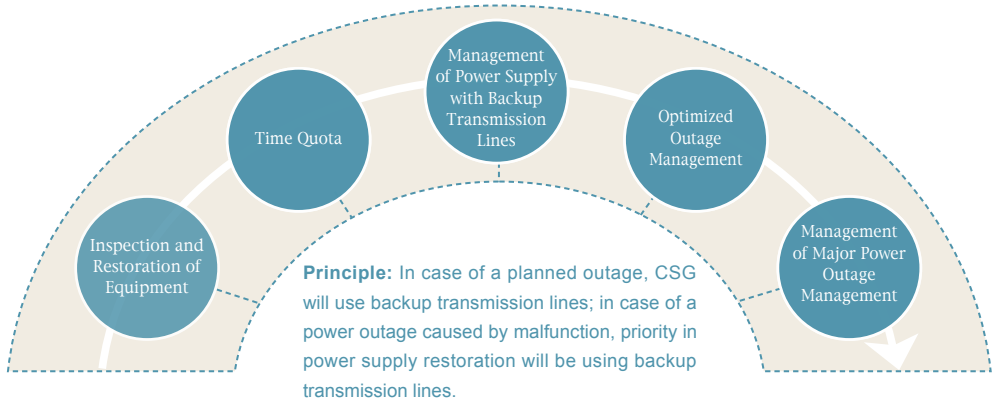
Challenges

Enhancing reliability in power supply is a systematic project. There are big differences within the five provinces and region in South China in terms of regions, urban and rural areas and industries. It is getting harder to enhance power supply reliability through management and technical means. To some degree, higher level of power supply reliability requires more resources input.

Comprehensive Outage Management

CSG has transformed itself from Equipment Operation Orientation to Customer-first by adhering to the following principle: In case of a planned outage, CSG will use backup transmission lines; in case of a power outage caused by malfunction, priority in power supply restoration will be using backup transmission lines. The company has enhanced management of comprehensive outage management, reducing repeated inspection, restoration and outage, prolonged outage and temporary outage so as to minimize SAIDI.

- With the support from and cooperation with departments, such as distribution, infrastructure construction and marketing departments, CSG has optimized the annual comprehensive outage plan and enhanced its efficiency.



- Exercise outage quota management. CSG has formulated standards on outage quota for typical inspection and restoration of power transmission grid and distribution grid with an aim to minimize outages.
- Strengthening analysis and control of outages. CSG has optimized operation plans in cases of outage lasting for over 500 hours/households so as to reduce SAIDI and outage frequencies.
- Sparing no efforts to publicize information about the outages. CSG has strived to inform 100% of its key customers, major customers in the planned outage areas.

Live Works

Live works is an important means to enhance power supply reliability. CSG attaches priority to it and promotes live works so as to minimize SAIDI.

- Promoting five kinds of live works to expand the scope of on-load operations.
- Capacity building: We have standardized on-load operation procedures ranging from management, technology, equipment to personnel training.

Organization	On-load Operation (Times)	Outage Reduced (10,000 hours/household)
Guangdong Power Grid	10547	91.83
Guangxi Power Grid	1330	11.57
Yunnan Power Grid	4407	33.66
Guizhou Power Grid	1825	8.28
Hainan Power Grid	587	2.12
Guangzhou Power Supply Bureau	5267	42.94
Shenzhen Power Supply Bureau	718	5.13



Guangzhou Power Supply Bureau Promoting Live Works

Guangzhou Power Supply Bureau has set up a Power Distribution Grid Live Works Center, the management mechanism consisting of three tiers, namely management, research & development and implementation, so as to promote Live Works. Over the past four years, Live Works on distribution power grid have been growing at over 30% annually. 2012 witnessed 5,267 times of operation in this regard, reducing annual SAIDI by 6.69 hours/household.



Quick Power Supply Restoration

In the principle of giving top priority to power supply restoration and quick repair, power supply of disfunctional lines will be replaced by backup power transmission lines, at the same time, CSG makes great efforts to restore power supply with quick repair. Under the circumstances that back up power supply and quick restoration are not possible within a short period of time, emergency power vehicles and power generators will be supplied in time to ensure power supply for our customers.

- CSG has established quick response mechanism among the Customer Service Center, distribution teams and restoration teams, and strengthened the inspection and control of such key links as spot arrival, fault locating and disconnecting power supply restoration for normal lines, and restoration of faults, for optimal fault restoration process.
- CSG has optimized and integrated restoration supplies by enhancing distribution efficiency to ensure fast delivery.
- Guangdong Power Grid, Guangzhou Power Supply Bureau and Shenzhen Power Supply Bureau and other organizations have made use of information technology to enhance restoration greatly.



Informing the public of outage duration while making great efforts to restore power supply

Reliable Distribution Grid Construction

CSG has made great efforts in construction of distribution grid, planning to build an urban one featuring reasonable structure, reliable, economical, advanced technology and good communication. Emphasis has been laid on replacing and compatibilizing overloaded lines and distribution transformers to ensure steady power supply.

- CSG has invested 41.93 billion RMB on construction of distribution grid. The company has built and put into operation of 35 KV- and-under transmission lines with the total length of 27,663 kilometers and capacity of 2.24 million KVA.
- CSG has enhanced distribution grid inspection and restoration enabled by modern information technology on data collection. With structure and geology information, the company will be able to reduce the impact of equipment regular preventive outage trials on the customers.
- Guangxi Power Grid has publicized and implemented Standards on the Construction of Power Supply and Distribution Equipment in the Residential Areas, solving such problems as low power quality, insufficient distribution capacity and difficult complaint handling.



Staff from Guiping Power Supply Bureau of Guangxi Power Grid are renovating the transformer compatibility.



“The faster power supply is restored, the happier our customers are.” said Shen Youqiang, Delegate of the 18th National Congress of CPC and Director of Power Supply Restoration Center, Urban Power Supply Sub-bureau, Zunyi Power Supply Bureau.

One evening in May, Shen Youqiang was about to go to bed when he got a call from Zunyi Medical University for quick restoration of a line fault. It was rather urgent then as one patient was undergoing an operation. Shen Youqiang and his colleagues rushed to the hospital, connected emergency power and repaired the equipment, which had saved the life of the patient. “I felt strongly at the time that our work was very meaningful.” said Shen Youqiang.

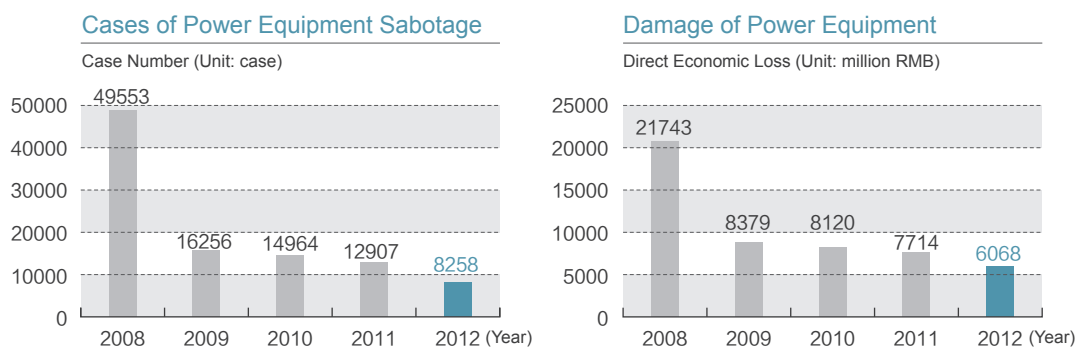


Challenge

The safety of power equipment has a bearing on tens of thousands of households. Power equipment larceny happens from time to time, generating adverse effects on safety and stability of the power grid, normal production of companies and domestic power consumption, and social stability.

Protection of Power Equipment

CSG has carried out a special campaign against the crime of power equipment sabotage. A long-term cooperation mechanism between police and CSG has been built. Beside, protection of power equipment has been made known to the public, encouraging more stakeholders to take action. In 2012, there were 8258 cases of power equipment larceny and sabotage, down by 36.02% compared with the same period of the previous year, resulting in the direct economic loss of 60.68 million RMB, a decrease of 21.34% compared with the same period of the previous year.



Launching a special campaign against the crime of power equipment sabotage

In cooperation with the public security departments in Five Provinces, we solved 583 cases in this campaign, with 13.62 million RMB involved. Besides, 78 criminal gangs have been wiped out and 599 suspects were captured.

Cracking down on crimes related to power supply in cooperation with Power, Telecommunications and Broadcasting Office

In cooperation with Power, Telecommunications and Broadcasting Office, CSG has supervised the cases-affected regions and major cases, thus solving three cases.

Building a long-term cooperation mechanism between police and CSG

Guangdong Power Grid, Guangzhou Power Supply Bureau and regional public security department joined hands in founding a center for preventing and cracking down on crimes related to power supply.

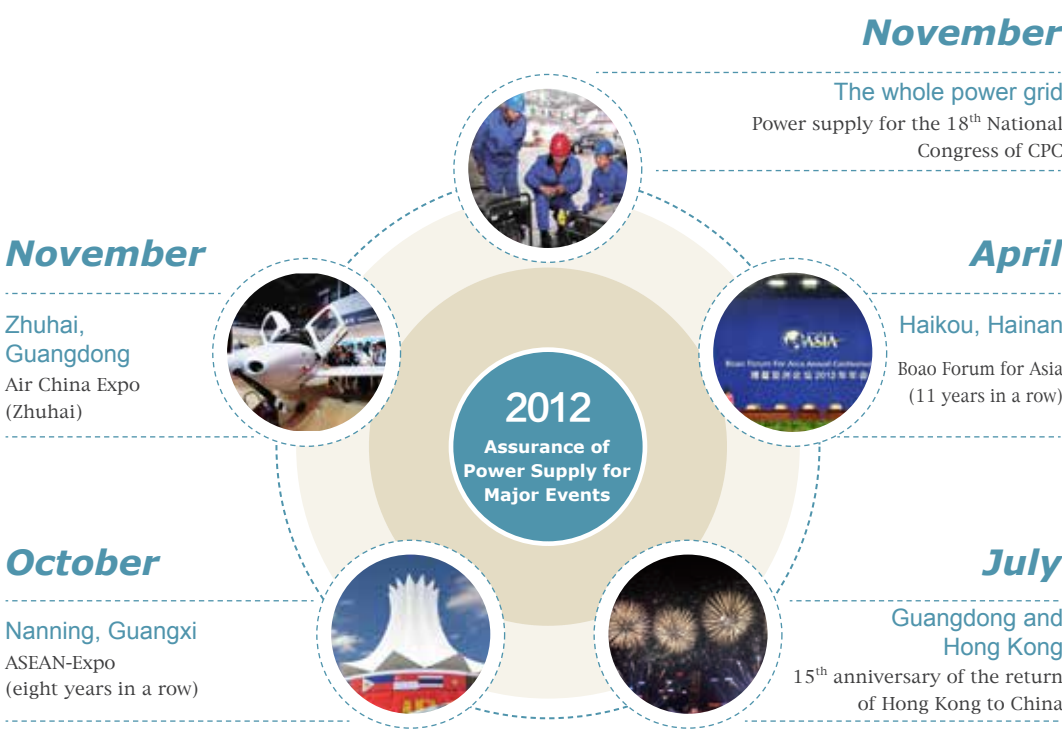
Encouraging stakeholders to join in the protection of power equipment

37.9 thousand banners of slogans and pictures have been hung and posted. Besides, over 80 campaigns were launched, and over 650 thousand pamphlets have been distributed to the public.

Ensuring Power Supply for Major Events

By summarizing experience of power supply for major events, CSG has improved the Power Supply Manual in terms of applicability, comprehensiveness and systematization. From the perspective of responsibility, brand and customer service, the manual highlighted experiences on ensuring power supply for major events. 2012 witnessed no accidents in power supply equipment, key customer complaint or information security.

- **Formulation of work plans in advance of power supply.** Leaders team were formed in CSG while institutions were built in various units to ensure power supply. Work plans were formulated to ensure that every step of power supply is carried out efficiently.
- **Promotion of power supply standardization.** CSG has summarized experience over the years and has enhanced the standardization management of contingency plan and measures on standard working mechanism of power supply.
- **Enhancing emergency response.** Staff in the office of the CSG leaders team and the emergency power supply vehicles were on duty, while emergency teams were set up to stand by. Supplies departments at provincial and municipal levels operate a 24-hour hot-line for emergency calls.



Successful Power Supply for the 18th National Congress of the Communist Party of China (CPC)

Guangzhou Baiyun District Power Supply Bureau Working with Police and Cracking down on Criminal Gangs Stealing Power Cable

Baiyun District Power Supply Bureau, together with Baiyun District Public Security Department, arrested a gang who stole high voltage cable. A total of 18 suspects were arrested. They involved in five similar cases in the past and there are over ten cases to be investigated. The cables stolen are worth nearly one million RMB. It was the biggest case in relation to power, telecommunications and broadcasting equipment larceny recorded by Guangzhou Police in 2012.

Right: Guangzhou Power Supply Bureau, together with Guangzhou Public Security Bureau established a center for preventing and cracking down on crimes related to power supply.

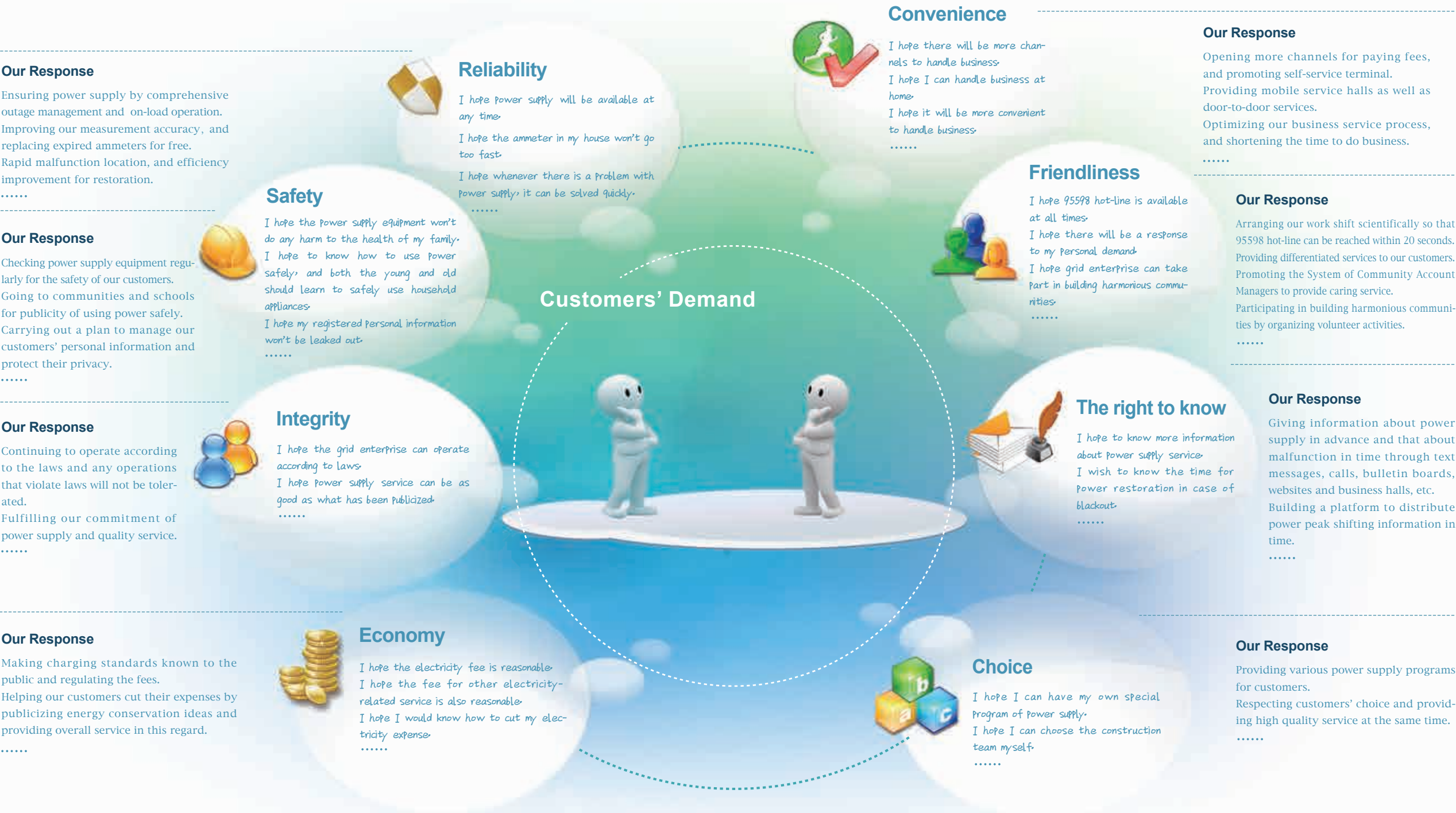


Left: Liuzhou Power Supply Bureau of Guangxi Power Grid has successfully supplied power to the International Aquatic-speed competition (IAC) F1 Powerboat World Championship (FIH20)

Right: Staff from Guizhou Power Grid provided 24-hour service to the College Entrance Exam venues.

Quality Service

Applying the customer service attitude, CSG has been striving to meet customer. An all-around customer service platform has been built for the growth of both CSG and the customers.



Delivered CSG Power Supply Service Pledge



Power Supply Pledge

- 99.9% reliability on service in urban areas, 98% voltage passing rate on urban residents' side, 99.5% reliability on service in rural areas, 92% voltage passing rate at rural residents' side.
- Advanced notice/announcement for planned outages and power rationing.
- No random outage to residents' domestic power.
- Once outage occurs, power supply emergency repair team shall arrive on scene within 45 minutes in urban areas, 90 minutes in rural areas and two hours in remote areas. Power shall be restored within four hours in urban areas and five hours in rural areas after arrival of the repair team.
- Power supply program response: Response should be made in no more than three working days, seven working days, 15 working days and 30 working days to residents, low voltage clients, high voltage single power, and high voltage dual power clients. Ammeter and power connection: Ammeter shall be installed and power should be supplied in no more than three working days, five working days, seven working days to residents, low voltage clients and high voltage clients.
- Power supply should be resumed to arrears clients once bills have been settled.
- Clients waiting in CSG business hall should be no more than 15 minutes.
- 90% of phone calls to power supply hot-line 95598 shall be put through within 20 seconds.
- 100 power saving service training programs to 1,000 key clients shall be held annually.
- Power supply service hot-line 95598 takes clients consultancy, default handling and complaints on 24 hours basis.

Power Supply Standard	National power supply standard	CSG power supply pledge	CSG performance in 2012	Compared to that of 2011
Reliability on service in urban areas shall be no lower than (%)	99	99.9	99.9635	0.0229% improvement
Voltage passing rate at urban residents' end should be no lower than (%)	95	98	99.724	0.244% improvement
Power supply emergency repair team shall arrive on scene in urban areas in no more than(minutes) in outage cases	60	45	33	3 minutes ahead
Power supply emergency repair team shall arrive on scene in rural areas in no more than (hours) in outage cases	120	90	76	13 minutes behind
Power supply emergency repair team shall arrive on scene in remote areas in no more than (hours) in outage cases	4	2	1.5	The same performance
Power supply program response shall be made in no more than (working days) to low voltage clients	8	7	6	1 working days behind
Power supply program response shall be made in no more than (working days) to high voltage single power clients	20	15	12.5	0.5 working days behind
Power supply program response shall be made in no more than (working days) to high voltage dual power clients	45	30	26.7	5.7 working days behind



Shenzhen Power Supply Bureau Co.Ltd Established Customer Committee

Shenzhen Power Supply Bureau Co.Ltd established Customer Committee as a communication platform to talk to government officials, corporate leaders, opinion leaders and community leaders. The committee enables customers to put forward their requirements, comments, advice, and complaints and drives the bureau to improve its customer service quality.



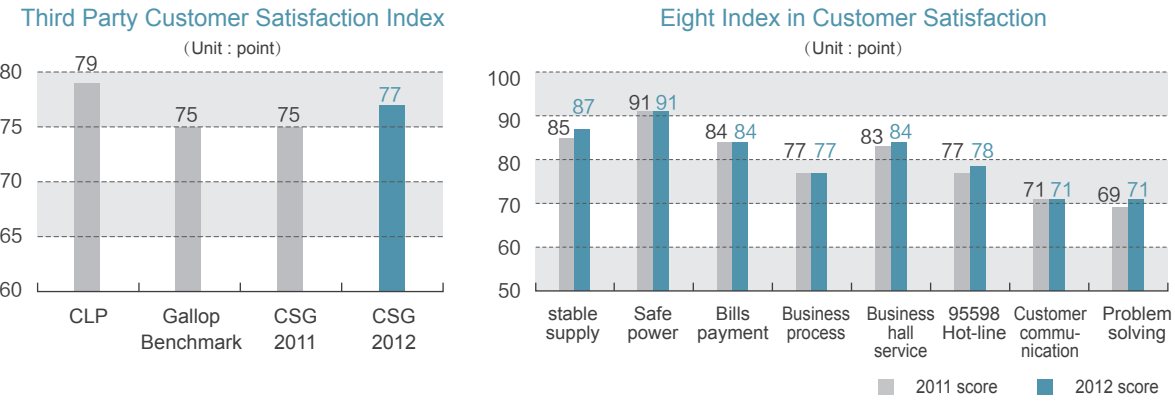
95598 Customer Service Center

CSG 95598 Customer Service Calling Center is information-enabled and operates under the principle of professionalism, standardization and lean management. The call center provides 24/7 service to answer customers' inquiry, business application, complaints, breakdown repair requirements. The call center enable customers to supervise CSG service and is a dedicated trouble-shooting center.



Customer Satisfaction Evaluation

Customer satisfaction is 99.7%, the third-party customer satisfaction index is 77 points, 2 points higher than that of 2011. In terms of complaints received, 79% reduction achieved. We maintained a sound customer relationship.



- The power supply service of Guangdong Power Grid has ranked number one in satisfaction among top ten service sectors for seven consecutive years.
- Guangzhou Power Supply Bureau has ranked top for 12 consecutive years in customer satisfaction survey in Guangzhou public utility service.

Emergency Management

Challenge

Due to the complex environment of the five provinces and region in South China (Guangdong, Guangxi, Yunnan, Guizhou, Hainan), these areas are frequently struck by earthquake, typhoon, frost, drought, rain-storm, and hail, bringing about great challenges to CSG's safe production and emergency management.

Improving Comprehensive Emergency Management

CSG has been strengthening its ability to deal with emergencies by combination of prevention and management, thus minimizing the damage brought by natural disasters to power grids and customers.

- Enhancing emergency management system.** CSG has compiled Guidelines for Dealing with Emergencies, with focus on coordination in management. We have printed and delivered plans on how to deal with ice damage, earthquake, and typhoon on the spot, standardizing the compilation of plans for on-spot management, emergency supplies management and quota, and equipment management as well. We also carried out pilot projects for improving the standardized management of emergency rescue teams in Guangdong Power Grid, Yunnan Power Grid and Guizhou Power Grid.
- Implementing technical measures for disaster prevention.** CSG has systematically analyzed disaster trends in southern areas, compiled "three maps" for the ice area, wind area, and thunder area, issued technical guidelines for protecting power transmission lines against thunder, ice and wind, and raised protection standards for some major lines.
- Improving the overall disaster-resisting capability.** CSG has improved its ability to fight against disasters through better planning and construction as well as research and application of disaster prevention technologies and equipment for power grid, We have also improved our ability to prevent disasters for power grid from customers' side, effectively combining precaution methods and emergency management.
- Enhancing emergency management.** In 2012, 1806 emergency drills were carried out with 21,340 participants; we have also established a coalition system for emergency cases involving governments, power supervision departments, power generation enterprises as well as our customers.



Responding to Natural Disasters

CSG has improved its emergency management system and operation mechanism. With full preparation and quick response, we have successfully handled various types of incidents and more than 20 natural disasters, including ice storms in Yunnan and Guizhou, earthquakes in Zhaotong and Lijiang, Yunnan Province, strong typhoons in coastal areas as well as severe mountain torrents in Lijiang, Yunnan.



CSG has responded quickly, and sent rescue staff to the disaster-stricken area for restoration of power supply immediately.

—Wen Jiaobao, the then Prime Minister

Left: Guizhou Power Grid workers carrying out ice-melting drills.
Right: Liuzhi Power Supply Bureau of Guizhou Power Grid was rescuing the drowned lines in Bojitian Village.



Staff from Guangxi Power Grid Repairing Lines Hit by Typhoon "KAI-TAK".

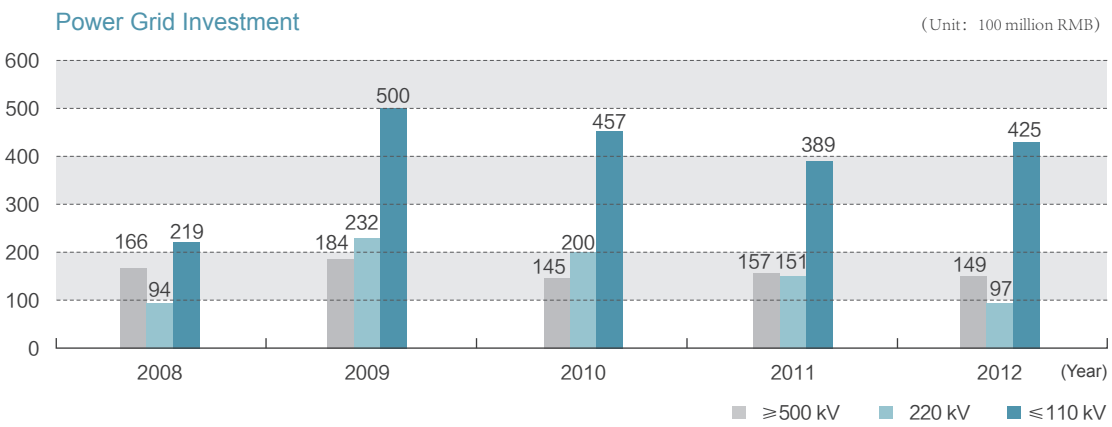
Left: Rescue staff repairing lines at dusk.
Right: Rescue staff repairing lines on rainy nights.

Power Grid Construction

During the construction of power grid, problems including lack of construction land for power transmission lines and substations, soaring price of construction materials cost; and prolonged construction period,etc., became more and more significant. CSG has strengthened communication with governments at all levels and other stakeholders, formulating scientific plans for power grid and promoting standardized design, with focus on construction of key projects. We have built a smart, efficient, reliable and green modern power gird with “3C” technologies, namely computer, communications and control technologies.

Power Grid Planning and Investment

- Improving and refining medium and long-term plans for grid network and the 12th Five Year Plan for Power Grid Construction, to develop a clear mid-to-long-term plan for power and a prospective main grid network structure.
- CSG has invested 67.1 billion RMB in grid construction, building 5,717 kilometer ≥220kV power transmission lines, and 24.9 million KVA transformation capacities.



▲ The construction site of 500kV Tongbao series capacitor compensation stations



▲ Staff installing current equalizer at Suidong converter station for the ±800 kV UHVDC Yunnan-Guangdong project.

Construction of Key Projects

- By the end of 2012, we have completed half of Nuozhadu DC transmission project and Xiluodu DC transmission project. More than 40,000 construction workers overcame various difficulties such as blackouts, rains, and complex terrain, sticking to the construction plan and ensuring the progress of projects.
- From Shanwei in the east to Huizhou in the west, the 500kV Hui-Mao Transmission Line Project runs 108 kilometers. This project aimed to renovate the towers on the 15-year-old lines. The time schedule was tight and the engineering extremely challenging. Still, CSG successfully completed the project in advance, significantly easing the power shortage in Guangdong province and facilitating the power transmission from eastern Guangdong to other places.

Key Projects Constructed and Put into Operation in 2012

Number	Project	Commissioning Time
1	500kV Shiyang-Wuyi Transmission Line Project	January, 2012
2	220kV Dongfang-Longbei Power Transmission and Transformation Project	March, 2012
3	500kV Hui-Mao Transformation Project	April, 2012
4	Nuozhadu 500 kV AC Transmission Project	June, 2012
5	500kV Vanguard Hezhou Power Station~Hezhou I、II Circuit Lines Project	June, 2012
6	No. 3 Generator Transformer Expansion Project in the 500kV Xingshi Power Station	September, 2012
7	500kV Yucheng Power Transmission and Transformation Project in Zhaoqing	September, 2012
8	500kV Harbor Transformer Substation Expansion Project	October, 2012
9	220kV Bangpu (in the north) Power Transmission and Transformation Project	December, 2012
10	500kV Kunpeng Transformer Substation Expansion Project in Shenzhen	December, 2012
11	220kV Yuchong Power Transmission and Transformation Project in Yangpu	December, 2012

Excellent Projects

Project	Award	Awarded by
Yunnan-Guangdong ±800kV Ultra High Voltage DC Transmission Demonstration Project	Golden Prize for 2011-2012 National Excellent Project	Examination and Approval Committee for National Engineering Construction Quality Award
	Excellent Project of Power Industry	China Electric Power Construction Association
Shenzhen 500kV Zijing Transformer Substation Project	Silver Prize for 2011-2012 National Excellent Project	Examination and Approval Committee for National Engineering Construction Quality Award
	Excellent Project of Power Industry	China Electric Power Construction Association
Guangdong 500kV Kuwan Transformer Substation Project	Silver Prize for 2011-2012 National Excellent Project	Examination and Approval Committee for National Engineering Construction Quality Award
	Excellent Project of Power Industry	China Electric Power Construction Association
Yunnan 500kV Tongbao Power Transmission and Transformation Project	Excellent Project of Power Industry	China Electric Power Construction Association



Yunnan-Guangdong DC Project was award Golden Prize for National Excellent Project, the first time for CSG.



“Gold Dot Award” Improving the Design of Substations

CSG organized the first “Gold Dot Award” competition for the design of substations in 2012. With the theme of “collecting golden ideas, setting up standards”, this competition collected a lot of ideas from the public, some of which would be applied to the construction of green substations step by step. 886 works in total were received, among which 12 were awarded the Golden Creativity Prize, and another 12 the Golden Design Prize. Those awarded works were incorporated into the standard design system and procurement list of CSG.



500kV Hui-Mao Upgrading Project Completed 65 Days in Advance

The 500kV Hui-Mao Upgrading Project was to ease power shortage in Guangdong. CSG successfully completed the project in five and a half months while such projects would normally take 2 to 3 years of construction. Wang Yang, the then Secretary of Guangdong Provincial CPC Committee, when reading the Report on Putting 500kV Hui-Mao Line Upgrading Project into Operation in Advance, has especially written “well done”.

Technological Innovation

CSG has enhanced the core competence in grid operation and major projects construction, bringing three core technologies, namely grid safety, stability and control technology, grid economic operation and system integration and application technology. In addition, we have obtained internationally leading achievements, patents, and standards with independent intellectual property rights, effectively ensuring the safe and stable operation of the whole grid.

Achievements of Technological Innovation

Patents

- 1317 new application for patents, up by 147% compared with the same period of the previous year
- 554 authorized patents, up by 190% compared with the same period of the previous year

Awards

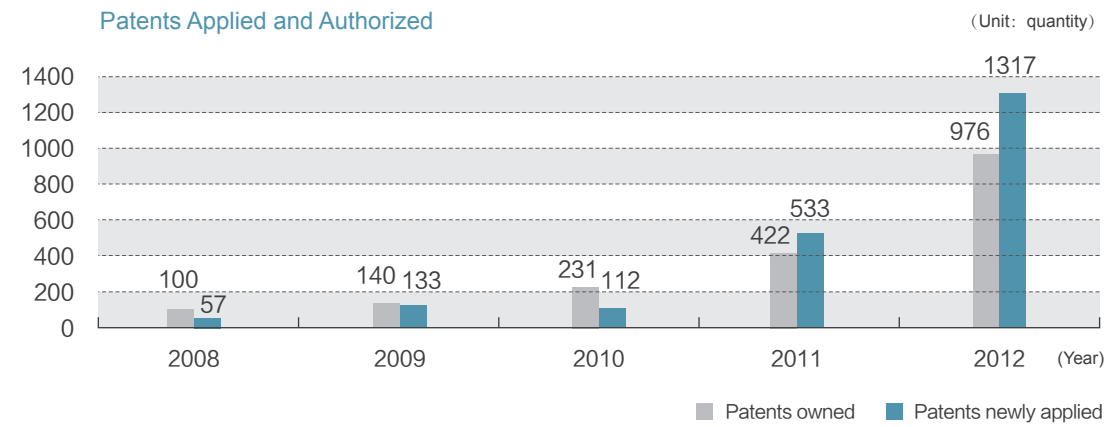
- 9 achievements were awarded China Power Technology Prize
- 14 achievements were awarded Progress Prize in Science and Technology of National Energy

Projects

- We completed 21 projects included in the 11th Five-year Plan for national technology, and these projects have passed evaluation and approval of the Ministry of Science and Technology.
- We were responsible for 16 projects included in the 12th Five-year Plan for national technology, among which 13 were 863 Plan major projects, one was 863 Plan thematic project, and two were projects included in the technology-supported plan.

Platforms

- We have built two National Technological Innovation Platforms, five Postdoctoral Research Centers, two national technological centers and some key laboratories for enterprises.



Research on Technology and Equipment for ±800 kV Ultra High Voltage DC (UHV DC for Short) Transmission and Its Application in Projects

We solved several worldwide technical problems with regard to ±800 kV UHV DC transmission, mainly in the major structure of the system, control and protection system, over-voltage and insulation coordination, extra insulation configuration in high altitude, as well as research on key equipment. We also made innovative achievements in technological development, research on equipment and application in projects, with the world's first ±800 kV UHV DC transmission project in operation, enabling China's DC transmission technology in line with international standard. Our project has facilitated several successful EHV DC transmission projects at home and abroad, representing a milestone in the history of world power technology. CSG has also enhanced its capability in manufacturing power equipment by leaps and bounds, securing China's leading position in DC transmission around the world as well as enhancing our international competence. Our project has significantly contributed to the "west-to-east" plan and has achieved significant social and economic impacts.

Innovation System

We have established an open innovation system based on CSG research institutions, power science (on trial) research centers in different provinces and areas, and professional technological departments. CSG works closely with famous universities, research institutions and equipment manufacturers in China.

Technological Innovation Team

High-level technological talents

two

academicians of Chinese Academy of Engineering

one

national candidate of the National Pacesetter Project

three

"Thousand-Talent-Project" experts

67

experts who enjoy special allowances from the government

Staff with Bachelor's Degree or above

20%

329 PhDs

5756 master-degree holders

Staff with professional expertise at medium level or above

8.4%

166 staff with senior professional title

6421 staff with deputy-senior professional title

Staff with professional expertise at senior level or above

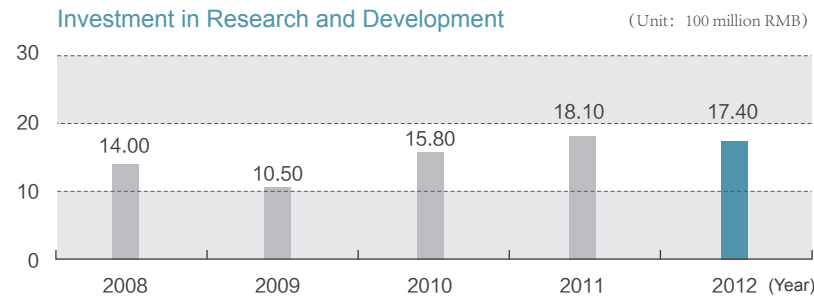
21%

1190 senior technicians

8654 technicians

Investment in Research and Development

We invested 1.74 billion RMB in research and development in 2012, taking up 0.43% of the revenue from our main business.



Research on STATCOM Key Technology and its Application

Static Synchronous Compensator (STATCOM for short) is one of the most state-of-art technologies in power compensation area. It is a typical installation of Flexible AC Transmission Systems (FACTS), with self-commutated and semi-conductor bridge converter to realize dynamic reactive power compensation. With quick adjustment of voltage, STATCOM can serve as a voltage regulator, speeding up restoration after malfunction of the power grid, thus ensuring the safety of power supply. CSG completed its study on STATCOM key technologies in 2012. We built and put ±200 megavar STATCOM device into operation at 500 kV Dongguan Power Station. Short-circuit test and trial operation both showed that the device can respond quickly when there was malfunction, so it could support dynamic reactive power and improve system stability. This achievement has been listed as one of the 2013 priority promotion projects in technological achievements, and it will be applied in the Pearl River Delta grid on a large scale.

Green Energy

■ **Contributing to developing A Beautiful China.** CSG has realized that environmental-friendly power supply is essential to ecological preservation, while behaving well in energy conservation and emission reduction, CSG has also taken up its responsibility for power supply and customers in this regard, aiming to improve energy efficiency. As a result, CSG has promoted clean and efficient energy, improved energy-efficient power generation and distribution, and helped customers improve energy efficiency, promoting a balanced and sustainable development of the company, the society and the environment.

- >> **Energy Conservation and Emission Reduction on the Power Generation Side**
- >> **Energy Conservation and Emission Reduction on the Power Grid Side**
- >> **Energy Conservation and Emission Reduction on the Customer Side**

Fossil fuel consumption for unit power generation reaches

198 g standard coal/kWh, 18.5% lower than national average level.

Hydropower from West to East has reached

87.9 TWh, increasing by 60% year-on-year.

Energy-efficient power generation and distribution has saved

5.13 million tons standard coal, increasing by 126% year-on-year.

- >> **Golden Bee 2020**
- >> **Energy Conservation and Emission Reduction Performance**



Lower reservoir of Guangzhou Pumped Storage Power Station

The global economic loss caused by natural disasters in 2012 reached

992 billion RMB.

Data source: Estimated by Munich Re, the amount of RMB was converted from US dollar at an exchange rate of 6.2:1.

Global

extreme climates such as high temperature, drought, rainstorm, snowstorm, and hurricane have become more frequent, posing a great threat to the safety of people's life and their property. Problems like air, water, soil pollution and energy shortage have been haunting a lot of countries and affecting people's life and work. Research has shown that human activities, such as the use of fossil energy is the main cause of climate change and environmental pollution. It has become a global consensus to respond to climate change, protect ecological environment and save energy.



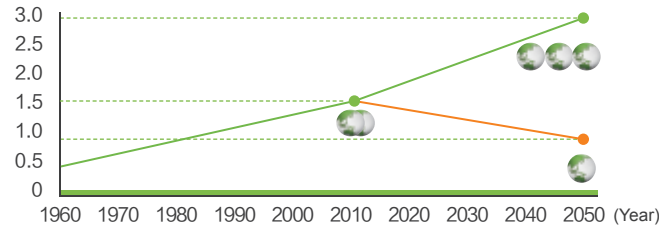
America was hit by hurricane Sandy. **113** people died, and economic loss was up to **50** billion US dollars.



Glacier in Greenland is melting. Melted glacier reaches about **200** billion tons each year.



Some cities in China suffer from severe dust-haze. The highest PM 2.5 concentration reaches **1,000** microgram/cubic meter.



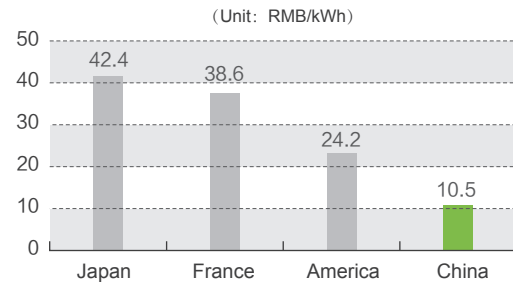
Human beings are consuming an equivalent of 1.5 earths' resources to maintain our way of life.

Data source: Living Planet Report 2012 delivered by the World Wildlife Fund (WWF)

China

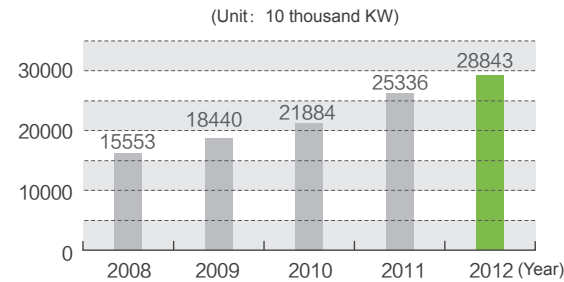
China is facing a great challenge from climate change and environmental pollution. Rainstorm, drought, typhoon and high temperature have become more frequent and air pollution such as dust-haze and acid rain are getting more and more severe, affecting people's life and health greatly. Chinese government attaches great importance to and actively deals with climate change and environmental problem, incorporating energy conservation, CO₂ emission reduction and environmental protection indicators into the mid-to-long-term 12th Five-Year Plan. Besides, the Report to the 18th National Congress of Communist Party of China has pointed out the importance of promoting ecological preservation. Through reducing emission in all fields, China has led the world in the scale of energy conservation and emission reduction, and in the growth rate of the utilization of renewable energy.

GDP Generated by Unit Power Consumption in China and Other Main Countries



Data source: National Bureau of Statistics, IndexMundi (a comprehensive data portal of all countries' facts and statistics). GDP data of foreign countries were converted into RMB.

China's Installed Capacity of Renewable Energy

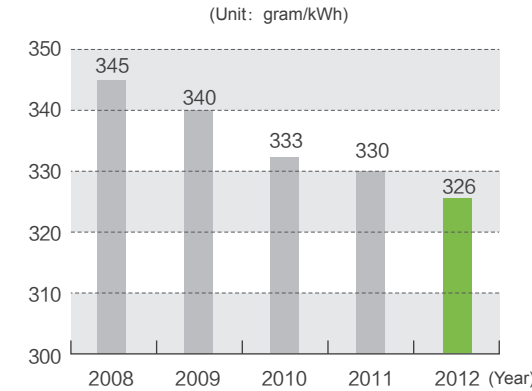


China's installed capacity of renewable energy ranks first in the world

The power industry

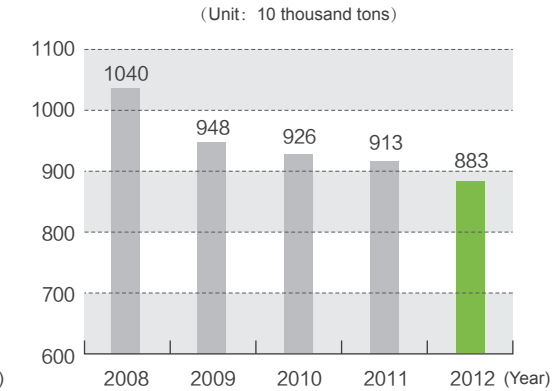
plays an important role in dealing with climate change and protecting the environment. The consumption of coal of power industry in China takes up 50% of its national total consumption and the SO₂ emission from power generation accounts for 54% of the national total emission. Due to the relatively low cost of coal-fired power and the abundant coal resources in China, the coal power-dominant energy structure will exist for a long time. Therefore, with regard to the future development of power industry, the focus will be developing clean and efficient coal power while promoting non-fossil energy like hydropower, nuclear power, wind power and solar power. By adopting measures such as reducing coal consumption for unit power generation, lowering auxiliary power consumption rate of power plant, strictly implementing desulfation, denitrification and de-dusting, coal-fired power plants can reduce the emission of greenhouse gas and atmospheric pollutants significantly.

Standard Coal Consumption for Power Supply in China



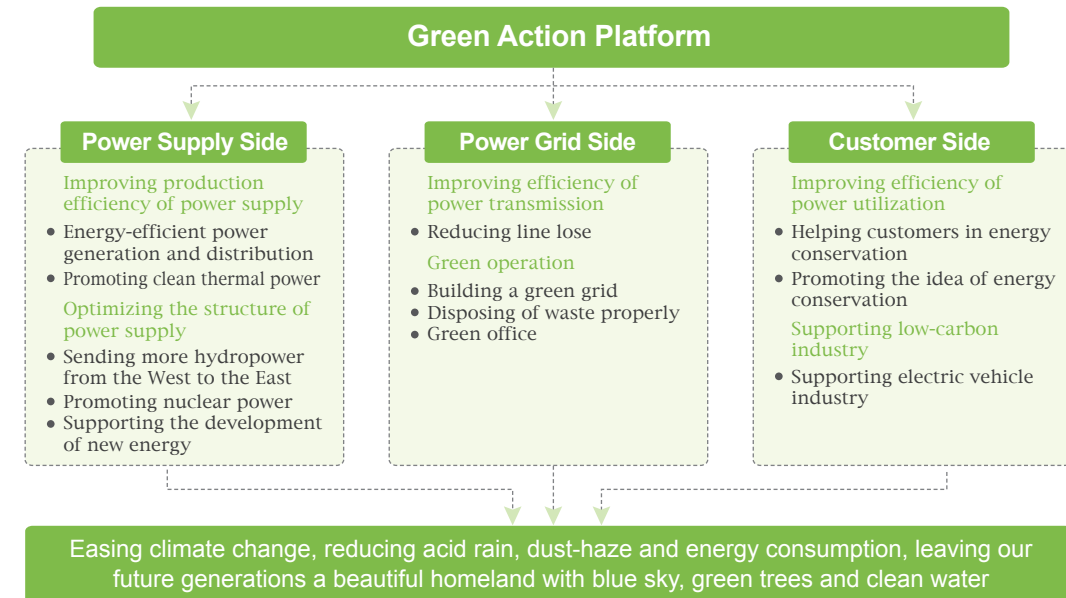
Data source: China Electricity Council (www.cec.org.cn)

Annual Emission of SO₂ by Power Plants in China



CSG

attaches great importance to dealing with climate change and protecting ecological environment for the balanced and sustainable development of the society, taking improvement of energy efficiency as a key measure to promote energy conservation and emission reduction in both upstream and downstream industries. Having carried out the "Green Action", CSG has developed an intelligent, efficient, reliable and green platform for the power grid, creating a favorable work and living environment for regional economy and society with joint efforts from the public.



Among the 10 most polluted cities in the

world, **seven** are from China.

Data source: Toward an Environmentally Sustainable Future: Country Environmental Analysis for the People's Republic of China by the Asian Development Bank (ADB) and Tsinghua University.



It takes millions of years to form a ton of coal, yet it takes no more than a minute to burn them in the boiler of a thermal power plant. Therefore, we need to improve energy efficiency to maximize the value of each gram of coal.

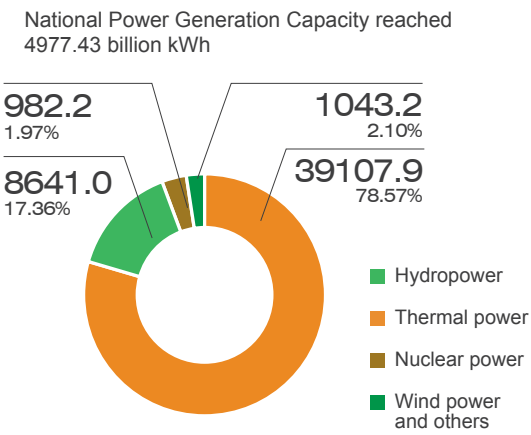
Energy Conservation and Emission Reduction on the Power Generation Side

The power supply side plays an important role in energy conservation and emission reduction in China. By enhancing power generation efficiency and increasing the proportion of clean power generation in power plants, we can effectively reduce the emission of greenhouse gas and air pollutants. CSG has made full use of its optimal allocation of grid resources by optimizing the structure of power source and actively promoting energy-efficient power generation and distribution to supply more clean power for the social and economic development in CSG’s service area.

Optimizing the Structure of Power Source

CSG helps power plants to increase the proportion of such clean energy as hydropower and new energy in power generation, supporting the proposal in the 12th Five-Year Plan on increasing the proportion of non-fossil energy and reducing the emission of carbon dioxide per unit GDP. By the end of 2012, CSG’s installed capacity of non-fossil energy has accounted for 44% of the total installed capacity, 28% higher than the national average. CSG’s non-fossil energy generation capacity accounted for 38% of the company’s total generation capacity in 2012, higher than the national average level of 21%.

2012 National Power Generation Constitution (Unit: 0.1 billion kWh)

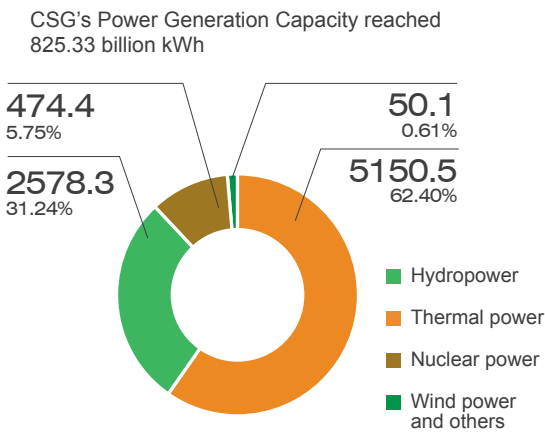


Push Forward West-to-East Power Transimission Project

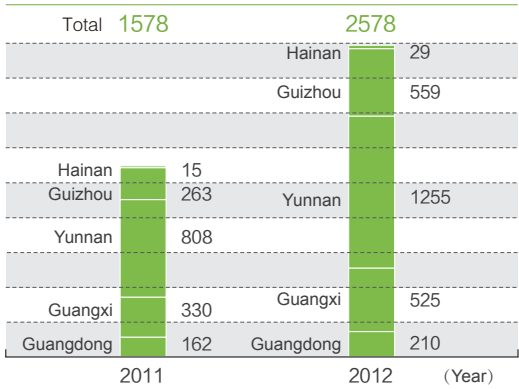
CSG has been pushing forward the construction of west-to-east transmission channel and enhancing the transmission capacity for optimum resources allocation between east and west China and balanced development between regions with mutual benefit and win-win results. CSG has given priority to the distribution and usage of hydropower within the region. CSG’ s average service time of hydropower unit increased by 474 hours in 2012, effectively decreasing the fossil energy consumption per unit power.

Type	Power (Unit: 0.1 billion kWh)	Reduction of Standard Coal Equivalent (Unit: 10 thousand tons)	CO ₂ Reduction (Unit: 10 thousand tons)	SO ₂ Reduction (Unit: 10 thousand tons)
“West-to-east”plan	879	2655	7062	52
CSG’s Regional Hydro- power Generation	2578	7786	20711	149

2012 CSG’s Power Generation Constitution (Unit: 0.1 billion kWh)



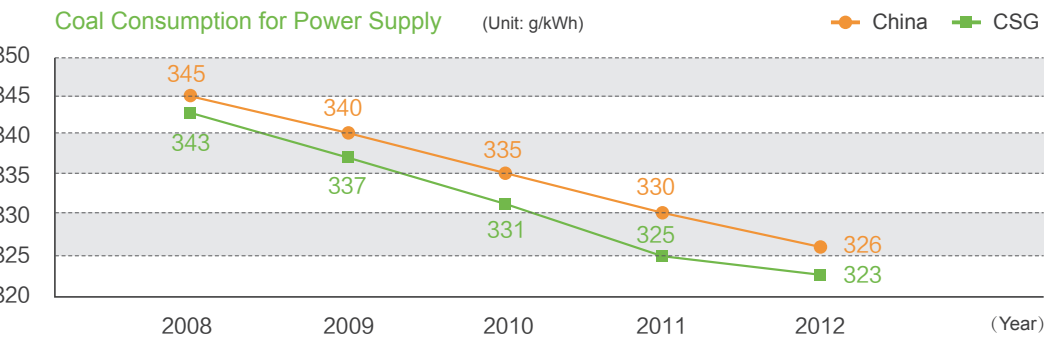
Volume of Hydropower Generated in CSG Business Area (Unit: 0.1 billion kWh)



Promoting Clean Thermal Power Development

In 2012, coal power occupied 79% of the national total power generation. In the future, the proportion of coal power will see a slow decline while total coal consumption in power generation will still increase year by year. CSG supports the effective development of clean thermal power by enhancing power generation efficiency in thermal power plants to reduce the fossil energy consumption for per unit power.

- CSG has been helping thermal power plants in its business area to reduce the coal consumption, reaching a 3g/KWH average year-on-year decrease per unit, 2 g/KWH less than the national average.
- CSG has been reducing the auxiliary power consumption rate of the power plant by impelling 10 plants to employ the auxiliary power efficiency management system in 2012.
- CSG has been implementing the national power tariff policy in favor of desulfurizing coal-fired unit to encourage the desulfurization of coal-fired unit. In 2012, the average operation rate of desulfurizers in CSG business area grew to 98.26% with an average desulfurization efficiency of 95.48% and a total removal of 4.6426 million tons of sulfur.



Supporting Nuclear Power Development

After the Fukushima nuclear accident in Japan, China has become more strict and prudent in the development of nuclear power. Based on the comprehensive safety inspection of the nuclear power units in operation and those under construction, China has formulated and adopted the National Nuclear Safety Plan (2011~2020) and National Mid-to-Long-Term Nuclear Power Development Plan (2011-2020), allowing only a small number of fully-evaluated nuclear power projects in coastal area built according to the highest safety standard in the world.

CSG is helping nuclear power plants to develop according to the national plan by actively prioritizing the distribution of nuclear power and cooperating with them in scientific and rational dispatching of nuclear power units, providing grid-connecting service for the qualified newly-constructed nuclear power projects.

Supporting the Coastal Nuclear Power Stations to Connect to CSG Power Grid

Yangjiang Nuclear Power Plant

On December 26th, 2012, the 500 kV Yangjiang-Wuyi nuclear power transmission line was put into operation, ensuring the power generated by Yangjiang Nuclear Power Plant be connected to the power grid of CSG.

Taishan Nuclear Power Plant

The 500 kV Taishan Nuclear Power Transmission Project has progressed successfully and will connect Taishan Nuclear Power Plant with Guangdong Power Grid with the lines running 66 km. It will be completed in June, 2013.

Changjiang Nuclear Power Plant in Hainan

On August 3rd, 2012, 220 kV Power Transmission and Transformation Project in Dacheng, Danzhou, a key project of Hainan Power Grid, was completed and put into operation, ensuring the power generated by Changjiang Nuclear Power Plant in Hainan be connected to the power grid of CSG.

CSG’ s average coal consumption per coal-fired unit was

302
g/kWh in 2012.

In 2012, nuclear power generated in CSG business area was

47.4
billion kWh, accounting for 48.3% of the national total.

CSG’ s installed capacity of non-fossil energy accounts for

44%
of the total installed capacity.

Hydropower generated by the “west-to-east” project increased by

60%
year-on-year.

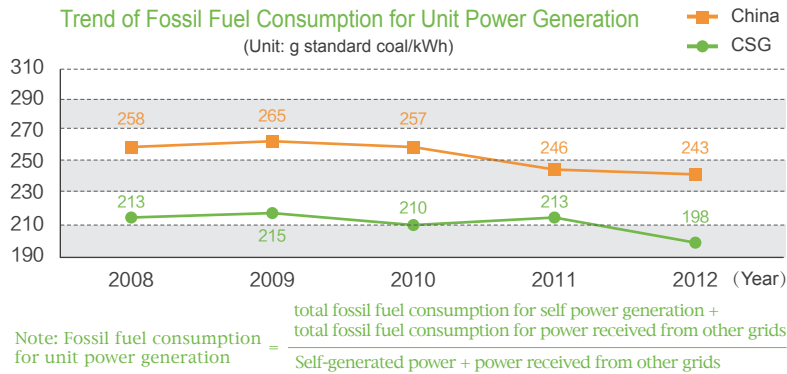
The fossil fuel consumption for unit power generation in CSG business area was

198 g/kWh.

○ Energy-efficient Dispatching

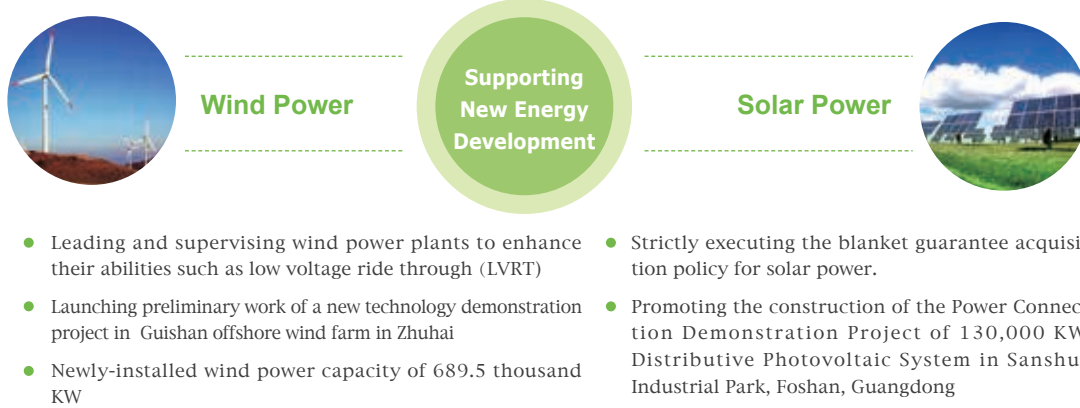
CSG has been leading China in promoting energy-efficient dispatching, giving priority to power generated by renewable energy, nuclear power and efficient thermal power in power distribution, through which CSG tries its best to supply power for the economic and social development with minimum consumption of primary energy and lowest emission. In 2012, CSG's fossil fuel consumption for unit power generation was 198g/KWH, 18.5% less than the national average.

- By giving preference to hydropower and ranking thermal power according to their energy consumption, CSG's decreased fossil fuel consumption was equivalent to 5.13 million tons of standard coal, or equivalent to an emission reduction of 13.65million tons of CO₂ and 98 thousand tons of SO₂.
- CSG has been promoting energy efficient power generation and distribution, decreasing fossil fuel consumption equivalent to 14.4 million tons of standard coal, or equivalent to an emission reduction of 37.68 million tons of CO₂ and 278 thousand tons of SO₂.



○ Supporting New Energy Development

CSG supports the development of new energy and takes it as the important direction for the sustainable development of power industry by improving its power generation capacity by new energy and ensuring the connection of such power to CSG's power grid. In 2012, CSG studied the 12th Five-Year Plan on CSG New Energy Development which adhered to the principle of Energy Diversity, Rational Distribution and Orderly Development and facilitated the coordinated development between new energy and power grid.



What Changes has the Energy-efficient Power Dispatching Brought?

Unlike the traditional balanced plan, energy-efficient power dispatching has changed the service time of each power unit, facilitating the rational interest distribution among power plants and encouraging the development of efficient power plants. CSG has been promoting energy-efficient dispatching by publishing power distribution information and assuring its fairness in accordance with the law and meeting the requirements of the competent authorities. CSG has established power generation planning system, on-line monitoring systems for flue gas desulfurization, coal consumption and thermal load, and information disclosure system, ensuring the scientific and efficient development of energy-efficient power dispatching.

Energy Conservation and Emission Reduction on the Power Grid Side

Power Grid has limited potential for energy conservation and emission reduction while transmitting power traditionally. However, we have been committed ourselves to reducing power loss in transmission and providing green and environmentally-friendly power.

○ Green Power Grid Construction

When planning the construction of power grid, CSG takes into full consideration of its impact on community and environment, and applies new energy saving and environmentally friendly technologies extensively for the harmony between the power grid construction and natural environment.

In 2012, 100% of the power grid construction projects passed the environmental assessment. All the projects put into operation were subject to environmental protection assessment upon completion by competent authorities, with the passing rate of 100%. CSG saw no breach of laws and regulations regarding environmental protection throughout the year.



CSG's First Green Substation Completed and Put into Operation

On 26th November, CSG's first green substation, Guangzhou 110 kV Jianfeng Substation was completed and put into operation. The substation has adopted green philosophy in energy conservation, noise reduction, land and materials conservation, etc.

Energy conservation: Such energy saving equipment as LED lights and inverter air conditioners have been applied, reducing the loss within the substation by 338 thousand KWH annually.

Noise reduction: CSG has made use of ventilation, interior design, shapes of doors and windows, and noise reduction equipment, which has helped a noise reduction of by 10 decibels compared with traditional substations.

Land conservation: With optimal electric lines, equipment and display, 3% of the land has been saved. Thanks to the advanced technology, corridor occupied by the overhead lines was reduced by 50-75%.

Materials conservation: Industrial design has led to the reduction of decoration materials in the substation. Overhead lines have adopted high strength materials, saving 6-8% of steel.

○ Energy Conservation and Environmental Protection Practice

Line Loss Reduction

Reducing line loss is key to energy conservation and emission reduction for the power grid enterprises. CSG has enhanced the management of both technical and managerial line loss by monitoring the indicators and process, so as to reduce line loss.

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

6.06 %.



Why Do We Try to Reduce Line Loss As Much As We Can?

Line loss is inevitable in power transmission. But reducing line loss is significant as even 0.01% reduction of line loss equals to the conservation of over 75 million kWh power, equivalent to saving 22,650 tons of standard coal, and reducing the CO2 emission of 58,890 tons.

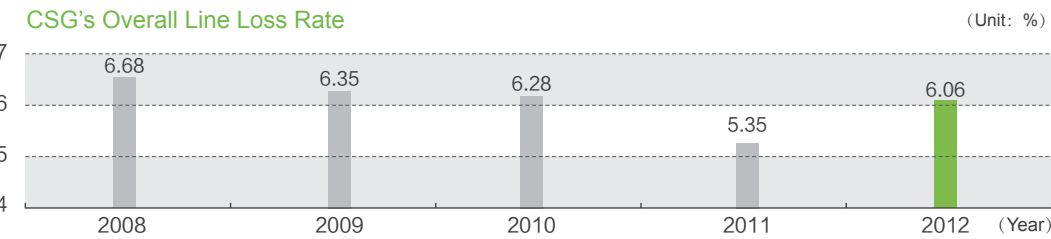
Reducing Technical Line Loss

- Ascertaining the optimal place for the load center to avoid exceeding the power supply radius
- Optimizing the load factors to balance the reactive power
- Adjusting the number and capacity of transformers for transmission and distribution for their better utilization; promoting energy-efficient amorphous transformers
- Selecting the cross-sectional area of the transmission lines based on the density of economy current

Reducing Managerial Line Loss

- Managing the line loss on the basis of district, voltage, line and zone supplied by one transformer
- Carrying out overall management of line loss statistics and pilots at the same time
- Optimizing the process of reading the ammeters and carrying out campaigns against power larceny
- Managing, analyzing and controlling line loss of power supply enterprises at the county level

Countermeasures against Line Loss



Note: Overall line loss rate rise was due to abundant rainfall in the western provinces in China in 2012 and the increase of power supply from the west to the east. The increase of cross-provincial long distance power transmission led to the rise of overall line loss compared with the same period of the previous year.

Disposing of Waste Properly

The philosophy of circular economy has been adopted in the operation of power grid. CSG disposes of waste generated from the operation of the power grid by recovering and reusing waste energy.

- Controlling the emission of waste according to the national standards so as to reduce environmental pollution.
- Recovering and recycling waste oil from transformers, with the rate close to 100%.
- Commissioning qualified companies to completely recover and recycle SF₆ gas.

Recovery Rate of SF₆

100 %.

○ Green Office

CSG attaches great importance to energy conservation and emission reduction in the offices, strengthening green office publicity, improving the systems, advocating water, power and resources conservation among the staff, so as to raise their awareness on green development.



CSG has revised the Management Methods for Energy-efficient Office for better management in this regard.



The company has implemented the standards strictly that the temperature of the air conditioners in summer shall not below 26 C, while it shall not be above 20 C in winter. Lights in the offices were replaced with LED lights. 2012 saw the conservation of 9.77 million kWh power in the offices.



CSG has promoted water saving utensils, examined regularly the water pipelines and replaced the old ones to avoid water leakage. The company has made full use of rain water and reclaimed water up to the water quality for green land and landscape irrigation.



CSG has controlled the purchase of high emission vehicles. Vehicles to be purchased by organizations within CSG will be subject to inspection and approval based on their emissions so as to control fuel consumption.



CSG has saved office supplies by standardizing the purchase of stationeries and equipment, making full use of office automation system to reduce printing paper files.



CSG has advocated TV and telephone conferences to reduce emissions by such transportation as planes. In 2012, the headquarters of CSG held 58 video conferences, taking up 38% of all the meetings, translated into the the reduction of 200 thousand kilometers air miles and 21,634 tons of CO₂.



Impact of "West-to-east" Plan on the Overall Line Loss Rate of CSG

Due to the physical properties of power transmission and transformation equipment, power transmission of large scale and long distance will result in increasing line loss. In 2012, because of abundant rainfall in the west of China, power supply in the "west-to-east" plan increased by 28%, causing increasing line loss. However, 70% of the power supply increment was renewable hydropower, even when the power causing line loss was deducted, it can still be translated into the reduction of power generated from fossil fuel by 65 billion KWH, 12.5 times of power causing line loss, achieving significant effect in energy conservation and emission reduction.

Impact on CSG's Overall Line Loss Rate due to the company's taking over Rural Power Supply Enterprises

In 2012, the overall line loss for the whole grid (statistics from the parent company) was 6.06%, while the rate based on the statistics from the overall assets was 7.24%. The two figures are different for the reason that, in the rural power enterprises reform, local power supply enterprises are being taken over by CSG. Taking into account the high line loss rate of those power supply enterprises at the county level, the rate for the overall grid is conspicuously higher than that for the parent company.

Note: When collecting statistics, overall assets include subsidiaries at the county level or those in the prefecture-level cities.



Left: Customer Service Center of Guangzhou Power Supply Bureau and Yuexiu District Power Supply Bureau have renovated their office buildings with energy-efficient lights, saving about 400 thousand kWh power annually.

Right: Hezhou Power Supply Bureau of Guangxi Power Grid recovers 220 kV power cables abandoned by Xindu Substation due to its technological upgrading. The recovered cables are used to make cable joints in training programs.

Energy Conservation and Emission Reduction on the Customer Side

In the process of power generation to power consumption, customers have the most potential in energy conservation and emission reduction. CSG has made great efforts in this regard, making known the philosophy that the energy saved is genuinely green, providing energy-efficient services in an all-round manner, so that an increasingly number of customers are fully aware of energy conservation.

As a Power Seller, Why Do We Need to Help Our Customers in Power Conservation?

Natural resources can meet the basic needs of human beings, but not our greed. CSG cares about not only the economic value of power, but also the impact on the whole society and environment. It is our responsibility and also the need of the society for sustainable development to save power for our customers by enhancing the efficiency of power utilization and making full use of the power.

Support for the Customers in Energy Conservation in an All Around Way

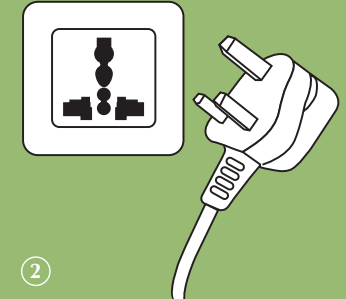
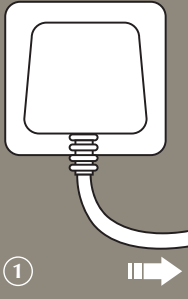
Such energy-efficient service platforms as CSG synthesis Energy Corp. and power-saving centers at various levels have integrated energy-efficient technologies and managed energy on the basis of contracts, providing energy-efficient services to customers in an all around way, which also creates value for them and enhances energy efficiency. In 2012, CSG synthesis Energy Company implemented contract-based energy management projects for 33 enterprises, with 40% average power saving rate.

Energy Conservation Consultation and Diagnosis	Given consultation to and made diagnosis of 3,179 customers in Five Provinces and regions, selecting 500 potential customers in energy conservation, with the average energy conservation potential of 39.5%.
Building Energy Conservation	Establishing an on-line building efficiency monitoring system for Yucca Hotel in Jiangmen, Guangdong, which can monitor the energy consumption of equipment with terminal interface, providing scientific evidence for energy conservation renovation.
Comprehensive Utilization of Energy	Reaching agreement with Shougang Guiyang Special Steel Co., Ltd on comprehensive utilization of flue heat and gas, with estimated power saving of 275 million kWh annually, equivalent to 97 thousand tons of standard coal reduction, and 268 thousand tons of CO ₂ emission reduction.
Industrial Energy Conservation	Carrying out 13 contract-based energy management projects in generator energy conservation, reactive power compensation and electro-magnetic cookers promotion.
Lighting Energy Conservation	Renovating 106 thousand street lights and 200 thousand interior lights, 150 thousand of the latter accomplished, with 70% power saving rate and 20% illuminance improvement.



Pulling out the Plug to Reduce Power Consumption

Do you know that even if you have turned off the TV or air conditioners at home, as long as they still have access to the power, they are on stand-by, consuming 10% of the on-mode power generally. Survey shows that in an ordinary urban family appliances on stand-by mode consumes 0.36 kWh power per day, while for some families with a large number of appliances, this figure can rocket to 4 kWh. Calculated at the present power tariff, you can save 80 to 800 RMB if you pull out the plugs to reduce power consumed by appliances on stand-by mode.



Stand-by mode is consuming power



Search

Energy Conservation Publicity

CSG has publicized energy conservation to the public through such channels as media, internet, seminar, energy conservation exhibition hall and business hall, in the hope of heightening the energy conservation awareness of each enterprise, child and ordinary people with effective publicity. In 2012, CSG's energy conservation public announcements were played for 1,270 times on CCTV, 70 times on Phoenix Satellite Television, effectively sharing our philosophy with about 200 million people.

Energy Conservation Promotion Conference

Over 60 energy conservation promotion conferences, seminars and forums were held in 2012, with over 5,000 participants.

China International Green Innovative Products & Technologies Show

China International Green Innovative Products & Technologies Show is a leading exhibition of green and low carbon technologies, products and services, where CSG has publicized the energy conservation philosophy and achievements internationally.

Energy Conservation Competition

CSG held Middle School Energy Conservation Pioneers Competition with the theme of "i Energy Conservation; i Future" to impart knowledge on energy-efficient power consumption, environmental protection and low carbon to students.

Support for Electric Vehicle Industry

CSG has actively supported the electric vehicle industry in adherence to the principle of "giving priority to battery replacement, a combination of battery replacement and charging stations". The company has facilitated the national technical standards and operation standards, and has built smart service network for replacing and charging batteries of electric vehicles.

CSG has facilitated the development of smart service network for replacing and charging batteries of electric vehicles through cooperation with the local governments and has conducted research on relevant technologies, standards and rules for electric vehicles, in order to make due contribution to the advent of electric vehicle era. By 2012, CSG has built 18 charging stations and 3,229 charging poles, charging and replacing the batteries of 120 thousand vehicles, with the power charged of 4.53 million kWh.



Providing charging service to electric vehicles



Implementation of Tiered Electricity Tariff for Residents

CSG has actively supported the national tiered electricity tariff for residents and has implemented the policy in the five provinces and region since July 1st, 2012.

The tiered electricity tariff scheme takes into account of the affordability of residents with different income, and ensure stable tariff for 80% residents. CSG hopes to reflect reasonable power supply cost. The purpose of this policy is to build tiered tariff mechanism, with basic principle of "the more you use, the more you pay", so that customers, in particular, residents who consume much power, will change their power utilization habits, thus reaching a social consensus of reasonable power utilization, power conservation and emission reduction for a resources-saving and environmentally friendly society.

Golden Bee 2020

Bees have been living in harmony with the environment and society on this planet for 120 million years. They collect honey and spread pollen at the same time, doing good to both themselves and others, and serving as an excellent example of harmony with the nature.

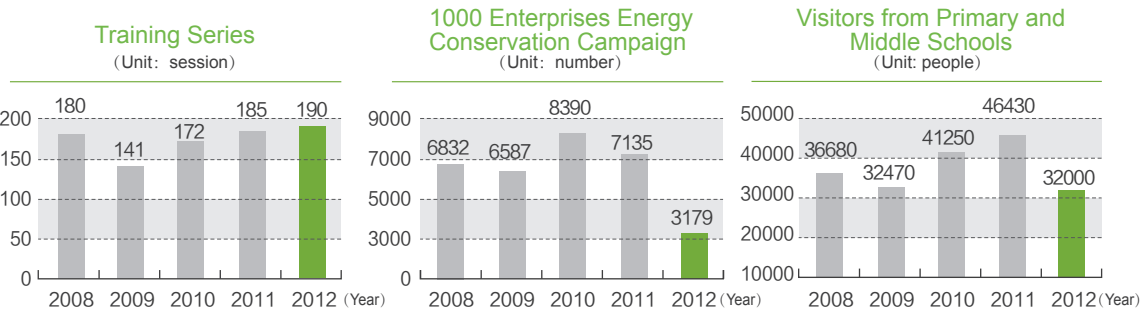
Golden Bee 2020 was born in China as a visionary sustainable action plan encouraging vision and inspiring spirit. CSG, as a “Golden Bee Enterprise” with the spirit of bees, launched the Golden Bee 2020 Initiative with China WTO Tribune in June, 2011; as a Chairman company of the “Low Carbon and Efficiency Management” Special Committee, CSG has actively promoted the cross-industrial cooperation in this regard, so that an increasing number of stakeholders will take part in energy conservation and emission reduction for the common development of low carbon industry.

Diversity of services. CSG provides diverse services including but not limited to energy conservation, supporting services for electric vehicles, building and lighting energy conservation, offshore wind power development, new energy and energy utilization.

Innovation of low carbon management research. CSG, on the basis of development trend for internationally leading enterprises, carries out research on innovative low carbon management, exploring new low carbon business mode and promoting the development of power grid into a green and low carbon one.

Diversity of partners. CSG cooperates with various partners from different fields, such as governments, power plants, research institutes, customers, electric vehicle manufacturers and suppliers for the development of low carbon economy.

Significant value. CSG has supported the pilots development in the five provinces and region for the development of regional clean and highly efficient energy, electric vehicle industry and efficiency service market.



In June, 2012, CSG, together with China WTO Tribune held the panel discussion on Cross-industrial Cooperation for Low Carbon Responsibility and Competitiveness at the Seventh International CSR Forum, with the theme on facilitating in-depth green development. At this forum, experts, stakeholders and media present spoke highly of CSG and called CSG a pioneer in green development.



CSG representatives participated in panel discussion on Cross-industrial Cooperation for Low Carbon Responsibility and Competitiveness.

Energy Conservation and Emission Reduction Performance

CSG’s Energy Conservation and Emission Reduction Performance with Up-stream and Down-stream Firms in 2012

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	773	2334	6210	45
Replacing the non-efficient Generator with efficient Ones	–	41	108	0.8
Energy-efficient Power Generation and Distribution	–	513	1365	9.8
Power Grid Loss Reduction	16	49	131	0.9
Energy Conservation of the Customers	8.12	26	70	0.5
Total	–	2965	7883	57

CSG’s Total Energy Conservation and Emission Reduction Performance with Up-stream and Down-stream 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	4519	14343	38152	275
Replacing the non-efficient Generator with efficient Ones	–	1169	3062	22
Energy-efficient Power Generation and Distribution	–	1440	3768	28
Power Grid Loss Reduction	281	882	2345	17
Energy Conservation of the Customers	74	247	375	3
Total	–	18080	47702	346

Note: Data of power increment generated by non-fossil energy and power grid loss reduction in the 10th Five-year Plan come from 2002, while in the 11th Five-year Plan, from 2005, in 12th Five-year Plan, from 2010.



Let’s join hands to promote energy conservation and emission reduction for blue sky, green trees and clear water.

Economic Performance

■ **CSG has ensured the maintenance and appreciation of state-owned assets.** Confronted with changing economic landscape, CSG has taken the initiative to deal with the risks by implementing national power tariff policies to the letter, and tapping the potential of cost reduction and efficiency improvement. The company is dedicated to promoting economic and social development with steady and reliable power supply, thus creating much more value for stakeholders.

>> Operation Performance >> Law Compliance >> Assets Management >> Cost Reduction and Efficiency Improvement

Power sales reached
701 TWh,
Representing 5.13%
increase compared with the same
period of the previous year.

Revenue from main business stood at
419.2 billion RMB,
Representing
7.65% increase compared with the
same period of the previous year.

Total pre-tax profits amounted to
38.2 billion RMB,
Representing
13.35% increase compared with the
same period of the previous year.

>> Power Market Development Promotion >> Regional Economic and Social Development Promotion



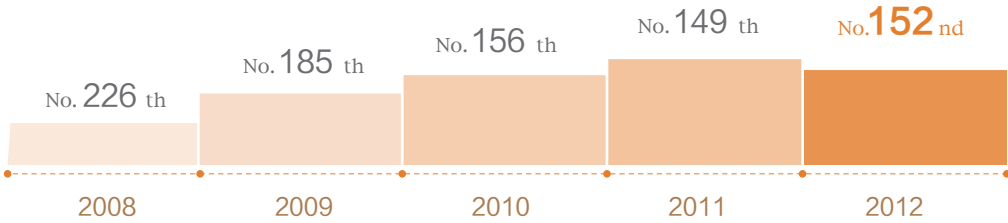
CSG has provided reliable quality power supply to automatic assembly line production

Grade **A** in operation performance evaluation for seven years in a row

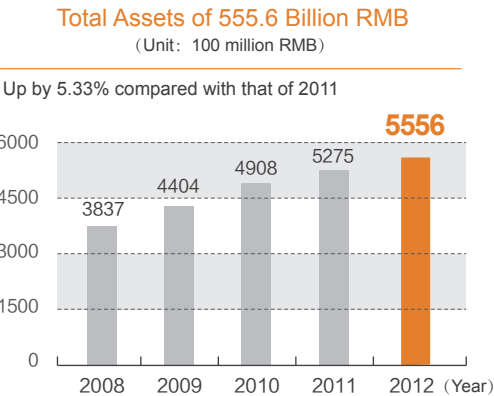
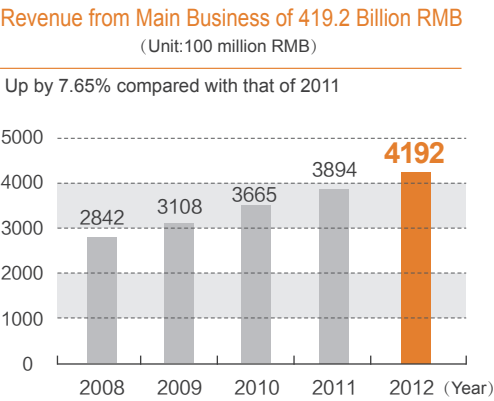
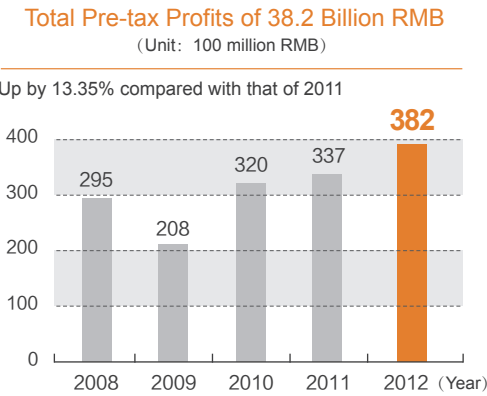
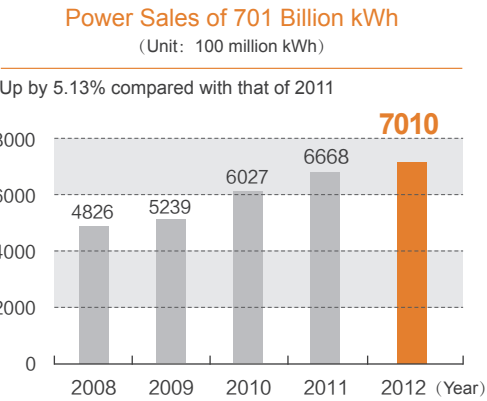
Operation Performance

In 2012, CSG made steady progress in cost reduction and efficiency improvement by lean management, ensuring maintenance and appreciation of state-own assets, and shouldering the basic responsibility of common development with stakeholders. The company passed all the evaluation of operation performance indexes with full marks carried out by the State-owned Assets Supervision and Administration Commission of (SASAC)the State Council. The company is proud as it has been awarded Grade A by SASAC seven years in a row, and listed as a Fortune 500 Companies for eight consecutive years. Year 2012 witnessed no loss of state-owned assets.

CSG's ranking in Fortune 500 Companies



Note: In 2012, due to such factors as the separation of main and supporting power grid, CSG was downgraded in the ranking of Fortune 500 Companies. If such a factor was excluded, CSG would rank the 141th place.



Law Compliance

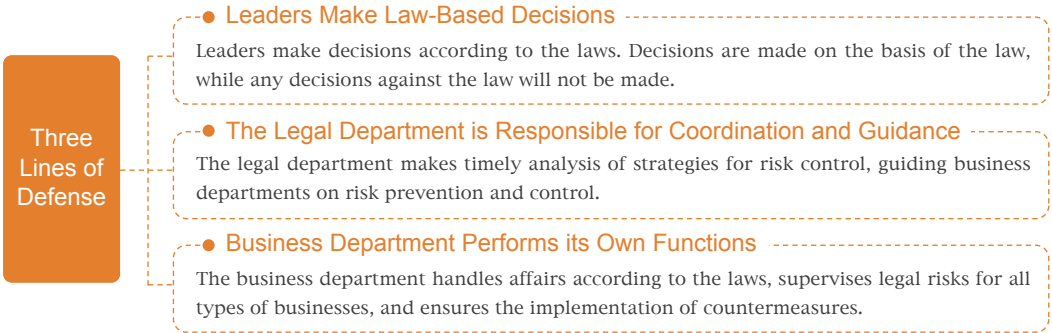
CSG has been operating in accordance with the laws and regulations, and has taken the initiative to maintain the power market order. We enhance prevention and control of legal risks, intensify operation controls within the company, improve transparency in operation and receive supervision from the stakeholders, which help us prevent commercial bribe and corruption. The long-term credit rating for CSG was AAA+ in 2012. There were no major incidences of misconduct nor tax evasion.

Legal Risk Management

CSG has strengthened prevention and control of legal risks. We have effectively controlled legal risks by providing customized legal services and promoting the integration of legal work and operation management. The cases in which CSG was liable for dropped by 7% compared with the previous year, with economic losses dropping 26%.

Improvement of Prevention Mechanism Against Legal Risks

CSG has prevented legal risks with three methods, namely due diligence investigation of the legal risks for major operation decisions, improvement of the legal consultancy system for important projects, recruitment of legal personnel as members of major projects, providing full services for our projects and ensuring the legal implementation of major projects.



Proper Settlement of Legal Disputes

We properly solved cases left over by history through the following measures: leaders taking charge of cases, signing commitment letters, organizing experts to analyze major cases, and adopting specific strategies for each case. There were no new major legal disputes caused by breach of law and regulations in 2012.

Legal Clinics

CSG has set up “legal clinics” to improve the legal performance at the grassroots level. By the end of 2012, we have set up 26 “legal clinics” company-wide, providing a comprehensive platform for legal risk management, legal consultant services, training of legal knowledge and solving legal problems at grassroots level.



Carried out prevention and control of legal risks, reducing economic loss by

1.46
billion RMB.

Contract performance rate was

100%

Rectified
1.929
billion RMB illegal
funds.

○ Enhancement of Auditing within CSG

CSG has made full use of auditing's supervision and service function, with an aim to boost strategic development. We completed 5364 auditing projects in 2012, adding revenue and saving expenses of 234 million RMB and proposing 6283 pieces of advice related to management. Through an overall auditing project, the audited asset has covered 80% of CSG's total. And we were also awarded the title of Leading State-owned Enterprise in Auditing.

○ A Clean, Corruption-Free and Self-disciplined CSG

CSG has made concrete measures to implement Clean Campaign, and has perfected Clean Code of Practice and supervision mechanism.



○ Efficiency Supervision

According to the system of "3Is & 1L" (the management of important events, important cadres' appointment and dismissal, important project arrangement and large amount funds), CSG has supervised the efficiency in such major fields and crucial links as fixed asset investment and construction, supplies procurement bidding, cost reduction and efficiency improvement in enterprise production management. CSG has approved 560 projects and put forward 1697 supervisory proposals throughout the year, achieving economic benefits of 180 million RMB.

- CSG has assigned ombudsmen for a further efficiency supervision on some key projects of fixed asset investment and construction, promoting standardized administration of major projects.
- Two CSG's efficiency supervision projects in engineering construction and fixed asset investment have been listed in 2009-2012 Central Enterprises Demonstration Projects of Efficiency Supervision by SASAC(State-owned Assets Supervision and Administration Commission).

○ Cracking Down on Power Larceny

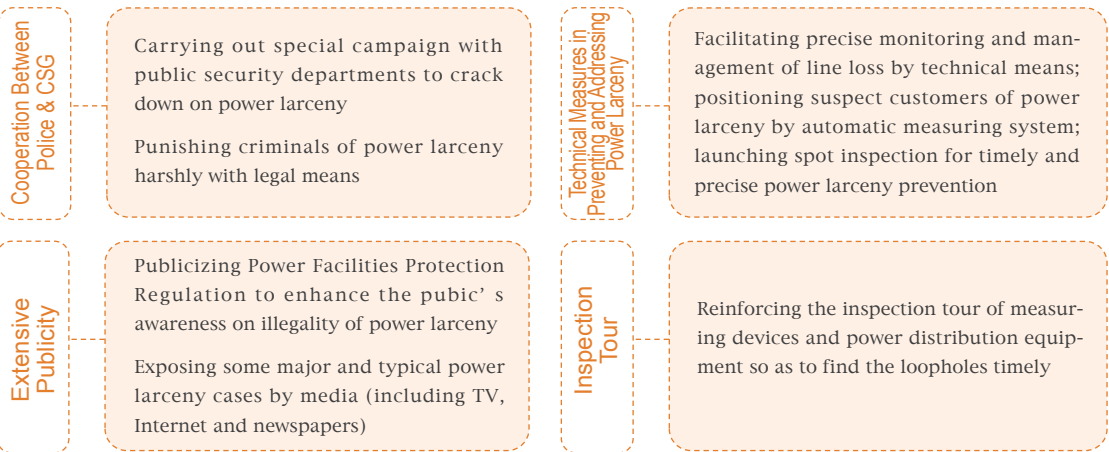
At present, power larceny has not yet been eliminated. There are still some people, driven by their own interests, running the risk of stealing power. Power larceny not only results in the direct loss of state-owned assets and impairment of users' benefits, but also many hidden dangers which will possibly cause widespread blackouts or even endanger the surrounding residents. In recent years, power larceny is increasingly characterized by network, large-scale crimes and professional skills, which poses a great challenge to security and benefits of the power grid and social equality.



What should we do to better prevent power larceny?

Preventing power larceny is a long and arduous journey. It needs all-round cooperation among governments, corporations, police and the general public, together with the media, and the awareness of integrity in electric utilization and illegality in power larceny. Only by pooling the wisdom and efforts of everyone and taking effective measures can we eventually succeed in preventing power larceny.

● Countermeasures against Power Larceny



CSG Leadership Workshop on Integrity

Right after the Chinese New Year holiday, CSG held a Workshop on Integrity specially designed for leaders in key positions, with an aim to foster leaders with healthy value and integrity.

"For me, this two-day workshop is enlightening. Cadres' development has benefited from company's cultivation for years. If you earn some petty profits at the cost of a job or even a happy family, it is not worth the candle. No fluke mind for us!" Xie Bin, Manager of Marketing Department said.



▲ CSG is holding the Leadership Workshop on Integrity



Left: Remote control devices for power larceny used in a market of Shenzhen

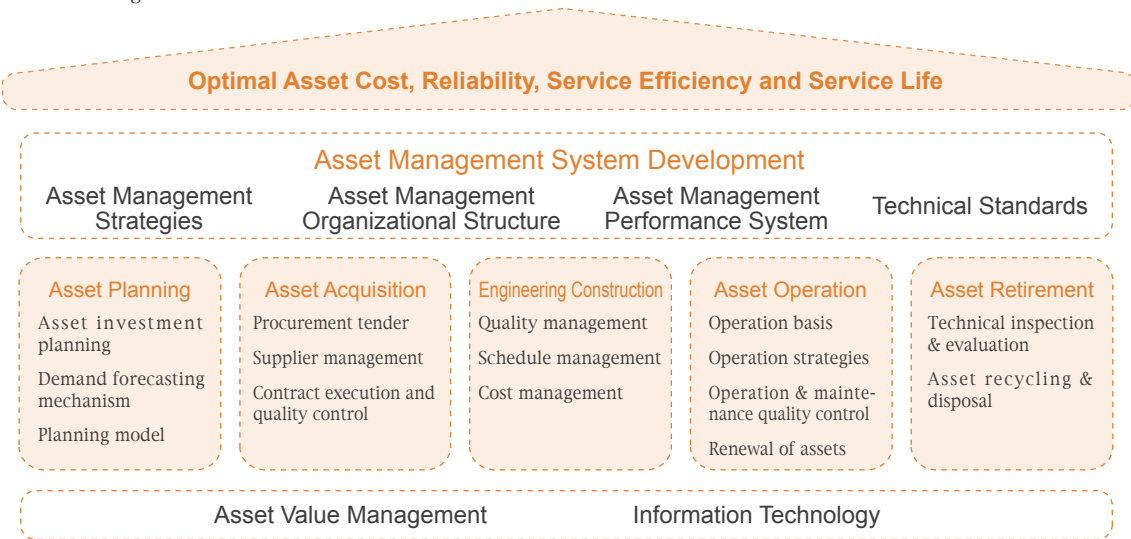
Right: In Shenzhen, the wire joint for power larceny was connected brazenly to the public lines. Electrician on-duty noticed fire caused by the power larceny

Assets Management

Challenges confronted by CSG include asset management, operation & maintenance cost and asset efficiency. The company introduced Asset Lifecycle Management to ensure appreciation of state-owned assets.

Asset Management Approaches

Guided by asset management strategies, CSG has focused on five links, asset planning, asset acquisition, engineering construction, asset operation and asset retirement by means of asset performance analysis. CSG has established the asset management system based on asset value management and information technologies for better management of assets.



Capacity Building in Asset Management

By integrating the existing operation mechanism and technical standards, CSG has improved the procurement quality from preferred suppliers and adopted efficiency analysis in assets operation, maintenance and retirement with an aim to enhance the assets management.

- CSG has centralized infrastructure and technological upgrading investment to avoid repeated construction. By eliminating differences among all kind of standards, CSG has put forward a more demanding requirement in power properties and materials, for the purposes of establishing a scientific supplier evaluation system and enhancing the management of supplies.
- In terms of assets operation, CSG has worked with the manufacturers to formulate equipment maintenance and inspection manual, incorporating manufacturers' requirements with on-the-spot operating experiences to enhance the reliability of equipment and carry out its subsequent expenditure research. In terms of assets retirement, CSG has set up the indicator of net assets retirement value to make full use of the assets.



What is Asset Management?

The core of asset management is to balance asset performance, risks and costs. CSG manages the assets of the whole grid, ranging from planning, design, procurement, construction, operation to retirement. CSG has made meticulous care in all expenditures of both the investment and procurement of equipment and services. Based on the acceptable risks, CSG aims to strike a balance between safety and efficiency, for maximum efficiency and minimum investment cost of each link.

Cost Reduction and Efficiency Improvement

Confronted by complex economic situations at home and abroad and the sluggish power consumption growth in the five provinces and region, CSG steadily carries out the policy of cost reduction and efficiency improvement. By bringing into full play the advantages of centralized capital management, the company has controlled the costs and improved performance.

The cost saved reached **6.7** billion yuan RMB for the whole year.



Power Market Development Promotion

Strictly conforming to the rules and maintaining the order of the power market, CSG has seriously implemented the national measures to promote the sound, sustainable and harmonious development of the power market by ensuring open, fair, impartial and efficient transactions.

- CSG lays more emphasis on relationships among governments, power plants and customers. CSG pays close attention to not only its own economic performance, but also the rights and interests of the power plants and customers for their understanding and support.
- CSG has actively implemented the 12 Five-Year Plan Agreement of the "west-to-east" plan. Confronted with the shortage of rainfall and coal in the first quarter, CSG has effectively optimized the power resources distribution, by taking advantages of the flood season to ensure an orderly power supply.
- CSG understands and responds to the demands of power generation enterprises and continuously enhances power trading service quality.



△ The warehouse before renovation



△ The warehouse after renovation



Optimization and Integration of Warehouses

Guided by "large warehouses, large distribution", CSG has actively optimized and integrated the warehouses, and achieved significant savings of land and rent expenses. The number of warehouses has decreased from 3,172 to 399, saving 48 million RMB of rent expenses per year.

Regional Economic and Social Development Promotion

As the five provinces and region and two cities in CSG's service area have distinct strategic positioning, CSG customizes development strategy to balance regional difference and synergy to better serve local economic and social development.

Guangdong

Assist implementation of local government's transformation and relocation strategy

Guangdong Power Grid constantly reinforces power grid construction to ensure reliable power supply, to better service and support Guangdong's effort in industry transformation and moving up the industry chain. In 2012, Guangdong Power Grid invested 17.111 billion RMB on power grid construction and sold 371.9 TWh electricity.



Guangxi

Deliver a comprehensive service to the development of Northern Bay Economic Zone and Xijiang River Economic Belt

Guangxi Power Grid customizes its service strategy based on customer requirements and demands in Northern Bay Economic Zone and Xijiang River Economic Belt. The company has taken specific measures to implement Strategic Cooperation Framework Agreement with Guangxi Province to facilitate key power source project and support local government's mission of "building multi-billion dollar industry".

Guizhou

Deliver a comprehensive service to Guizhou's sustainable development

Guizhou Power Grid takes concrete measures to implement State Council's Opinions on Facilitating Fast and Sound Social and Economic Development of Guizhou and pays serious attention to Guizhou's development requirements. Guizhou Power Grid enhances the capacity of "west-to-east" plan to support the steady growth of local coal and electricity industry. In 2012, Guizhou Power Grid sold 86.97 TWh electricity and completed 34.985 TWh power transmission in the "west-to-east" plan, and therefore, has made active contribution to local GDP growth. The province ranked No.2 in terms of GDP growth in the country.

Guangzhou

Deliver a comprehensive service to Guangzhou's mission of building the city as a national central city

Guangzhou Power Supply Bureau is dedicated to Guangzhou's mission of building the city as the national central city. Guangzhou has identified its strategic objectives as an international business and trade center and world renowned culture city. To support local government's mission, Guangzhou Power Supply Bureau has taken vigorous steps to facilitate power grid infrastructure construction and uses international leading power companies to benchmark its service. The bureau is committed to delivering a world class power supply network and service.

Yunnan

Facilitate Yunnan's development as a bridgehead

Yunnan Power Grid works closely with the local government to build Yunnan as a "Green economy, a province with distinct ethnic culture and a bridgehead opening to Southeast Asia". The company facilitates development and utilization of renewable energy to improve ethnic minorities living quality, supports hydropower dispatching in dry seasons with an aim to deliver energy support for economic and social development for Yunnan.

Hainan

Facilitate Hainan's development as an International Tourism Island

Hainan Power Grid constantly improves city power distribution grid automatization level and power supply reliability to provide power support to facilitate Hainan's development as an International Tourism Island. Hainan Power Grid signed Strategic Cooperation Framework Agreement on Haikou Power Grid with Haikou city government, and speeds up retrofiting of power distribution grid.

Shenzhen

Support local government's mission: build Shenzhen as a modern international city

Shenzhen Power Supply Bureau has taken solid steps to serve the local government's efforts in economic transformation and upgrading. The bureau speeds up power grid construction based on a step-by-step approach with an aim to deliver an orderly and quality power supply service. In 2012, the bureau supplied 70 TWh electricity to the city and therefore helped Shenzhen to achieve 10% GDP growth.

Enhance Cooperation with Hong Kong and Macau

- CSG hosted the 2nd CSG,CLP & CEM Power Industry Summit in 2012. The summit is held to enhance cooperation and deliver power support to the social and economic development of Guangdong, Hong Kong and Macau.
- CSG hosted the 17th CSG, CLP & CEM Seminar on Power Service with the theme of "Great service for the social era." The seminar provided a platform of discussion on meeting increasing customer demand and delivering better service for economic development to Guangdong Province, Hong Kong and Macau.
- Unscheduled four generator outage in Castle Peak A Power Plant led to CLP's power supply shortages in July, 2012. CSG actively supplied power to CLP and it was the first time for CSG to supply power to Hong Kong in the past 30 years' power grid interconnection.
- In 2011, CSG supplied 3.586TWh power to Macau, representing 90% of Macau's total electricity consumption.



▲ The 2nd CSG,CLP&CEM Power Industry Summit

Boost GMS (Greater Mekong Sub-region) Cooperation

CSG plays an active role as the nation's executive agent in the GMS Power Cooperation Framework. Under the principle of "Sticking to main business and cooperating with neighboring countries", CSG communicates and cooperates with GMS countries on power grid connection, and has enhanced cooperation with GMS member countries (Vietnam, Laos, Myanmar, and Thailand, etc) to facilitate optimized resource allocation and common development.

Myanmar

CSG imported 1.935 TWh electricity from Myanmar



Laos

CSG signed a MOU on Investment on Construction of National Power Grid Project with the Government of Laos.



CSG signed agreement with Laos National Power Grid on Construction of 230kV Power Grid in Northern Laos. The project is implemented in EPC model.

Vietnam

CSG signed GGU and BOT with Vietnam on the Vinh Tan I coal-fired power plant.



The first Sino-Vietnam hydropower investment project-Xiaozhonghe Hydropower Station realized power generation and connection to the main grid.

CSG supplied 2.697TWh electricity to Vietnam in 2012.

Thailand

CSG signed Framework Agreement on Enhancing Cooperation and Communication with EGAT and has established a high-level visit mechanism.



CSG restarted Sino-Thailand 500kV power connection project to facilitate regional power grid connection and sub-region power trading market.



▲ CSG International signed BOT contract with Department of Industry and Commerce, Vietnam



Constructing a New Micro-Power Grid

On 28th August, China's southernmost power supply bureau -Sansha Power Supply Bureau, Hainan Power Grid was officially founded in Yongxing Island, Xisha. Sansha Power Supply Bureau's mission is to build a smart micro-grid with the feature of "smart, efficient, reliable and green" to ensure power supply to the city and assist the city to establish itself as an island with unique charm. Li Guoliang, Vice governor of Hainan Province, remarked: "CSG took the initiative to take the formidable challenge of infrastructure investment against the backdrop of starting from scratch. We are impressed by CSG's accountability and responsibility."



▲ Sansha Power Supply Bureau, Hainan Power Grid officially founded



▲ Night view of Macau



CSG's Accumulated Power Supply to Macau Exceeded 20TWh

Zhuhai Power Supply Bureau started power supply to Macau since 1st July, 1984 and its accumulated power supply to Macau has exceeded 20 TWh in the past 29 years. Qinlian Power transmission line (Zhuhai-Macau) was put into operation in June, 2012. CSG has established a robust power supply network consisting of 5 *220kV lines as main supply and 4*110kV lines as backup. The total transmission capacity to Macau has reached 0.9MW. CSG has played a positive role in supporting Macau's economic prosperity.

Social Harmony

■ **CSG joins hands with the stakeholders for a harmonious and win-win situation.** CSG provides power services for harmonious urban and rural development. By putting people first, CSG strives to build a company with happy atmosphere for common development of both the staff and the company itself. CSG has responded to the partners' demand so as to seek mutual benefits and win-win situation, and brought brightness and happiness to the society by lightening lights in tens of thousands of families with sincerity.

CSG has invested

24.2 billion RMB

in the construction and renovation of power grid in rural areas.

96 %

of staff have been trained.

Over **58** thousand staff

have participated in volunteer activities.

- >> Support for the Farmers, Rural Areas and Agricultural Production
- >> Public Welfare
- >> Cooperation and Win-Win
- >> Staff Development



Apart from power supply, CSG staff help the elderly to irrigate their banana plantation

Support for the Farmers, Rural Areas, and Agricultural Production

CSG accelerates regional development of power supply in rural areas and increases its investment in improvement and upgrading of rural power grid to satisfy the demands of economic development and for better life of local residents in the rural areas. CSG supports the development of new rural areas by universal service and “Electricity-to-Every-Household”.

Increasing Investment in Rural Power Grid

In 2012, CSG invested 24.2 billion RMB in the improvement and upgrading project of rural power grid, replaced 1.43 million ammeters and overloaded distribution transformers with smarter ones, which effectively eased such problems as low voltage and unsteady power supply by the power distribution grid in rural areas, and ensured power supply to the development of new rural areas.

Newly Built and Improved Power Equipment in Rural Areas

Voltage Class	Length of Lines (kilometers)
110 kV	1979
35 kV	2171
10 kV	30734
Low voltage lines	68623

Type	Number
110 kV substation	100
35 kV substation	203
Distribution region	30442



Eight staff were on their way to the village for construction, carrying to a 400 kg transformer. The country road was next to the bottomless cliff.

Improvement of Power Services in Rural Areas

CSG actively carries forward the integration of power supply services in urban and rural areas, providing special services to meet power demands in rural areas and narrow the gap in power supply between these two areas, enhancing power management system there by promoting standardization of power supply enterprises at the county level and improving power management and services there.



Toll House at the Local Train Station

Dong Dengshu, a meter reader in Zhuchang Power Supply Sub-bureau in Guiyang Power Supply Bureau of Guizhou Power Grid, is responsible for collecting power fees from over 3,000 rural families. Taking villagers' daily routine into consideration, he collected fees at places where villages always visit. His fee collection arrangement saved the villagers' troubles of paying the bills at local power supply sub-bureaus.

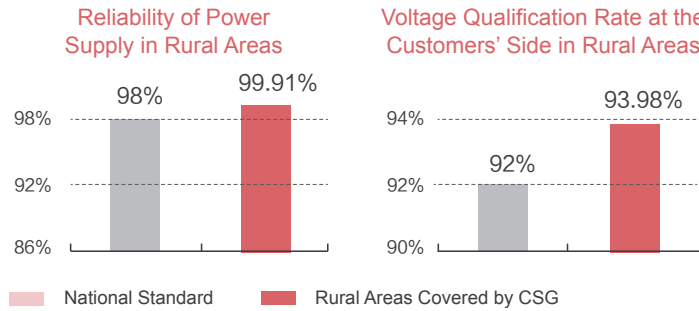


Door-to-Door Power Supply Services for the Spring Ploughing

Kaili Power Supply Sub-bureau of Guizhou Power Grid founded a team to provide door-to-door services to the villages for their spring ploughing. Visiting villages, team members got to know their power demands for the spring ploughing and preparation, examined and maintained the power equipment and explained to them the policies on power usage and knowledge about safe usage. They spared no effort to ensure villagers' production with safe and satisfactory power.

Quality Improvement of Power Supplied to the Rural Areas

CSG has improved the power supply ability and the quality of the power, reducing the SAIDI in rural areas by 4.08 hours compared with the same period of the previous year, and the overall line loss rate to less than 12%. Both the reliability and voltage at the customers' side in rural areas are higher than the national standards.



Basic Management Enhancement for Rural Power Enterprises

CSG has innovated the mode of rural power development by adopting “the subsidiary system and branch management”, and evaluating management of power supply enterprises at the county level. The company provides classified guidance to rural power enterprises which are of different scales and in the different development phases to bring them in line with professional management.

Ensuring Power Supply to Rural Areas in the Spring Festival

The basic features of power usage in rural areas supplied by CSG is of low power load at ordinary times. Festivals and holidays are peak times for power consumption. CSG launches a project on power usage optimization in rural areas, which prevents distribution transformers from burning in the Spring Festival. Before the Spring Festival of 2013, CSG finished the compatibility improvement of 14,339 overloaded distribution transformers to improve power supply ability of rural power distribution grid and distribution transformer. The company also completed load forecast of over 180,000 common transformers, and provided enough fuse wires and low voltage switches to ensure the availability of spare parts. CSG have prevented accidents by arranging special inspection and maintenance of overloaded distribution transformers.



At the New Year' s Eve, some Zhuang ethnic minorities dressed up and had their family reunion dinner around an electro-magnetic oven powered by stable voltage, in a small courtyard of the farm house in Zining District, Nanning, Guangxi.

Public Welfare

Returning the support of the society is one of CSG’s commitments. The company has standardized the company’s charity and donation, and explored new form of cultural welfare by earnestly complying with “On Strengthening the Financial Administration of the Donations Made by Enterprises” formulated by the State-owned Assets Supervision and Administration Commission of the State Council. In 2012, CSG’s donation reached 30.93 million RMB in total. There was no major community complaint throughout the year.

Poverty Alleviation

- CSG encouraged its staff to participate in the Eliminating Infant Anemia Campaign on Children’s Day, donating “Loving and Nutritious Package” valued at 4.8472 million RMB to 48 thousand infants in Guizhou Province and won the Outstanding Contribution Award of China Children’s Charity Award.
- CSG supplied 15 KWH power for free per month to 2.23 million five guarantee families in rural areas and low-income families in urban areas.
- CSG visited needy families and disadvantaged groups to alleviate their poverty, offering help to Shanyao people in Yunnan Province. The company set up a “CSG Shanyao Class”, in total, 98 Shanyao students were financially supported till their college graduation.



Chen Zhili, the then Vice-Chairman of the Standing Committee of the National People’s Congress distributed the “Loving and Nutritious Package” donated by CSG to infants suffering from anemia.

Volunteer Activities

CSG advocates that staff participate in volunteer activities. There are 58 thousand staff in total participated in activities such as “combating droughts to ensure power supply”, “helping immigrant workers’ children” and “workshops on safe power use”.

Disasters Relief

- Confronted with natural disasters like earthquake, typhoon, and severe drought, CSG spares no effort to deal with emergency and restore power supply to meet the needs of the disaster-stricken areas, and donate money and materials for the reconstruction.
- CSG has donated 4.0159 million RMB to earthquake-stricken area in Yiliang, Yunnan, and promoted “CSG Wells” mode to combat drought by spending two million RMB on building 500 water cellars, making drinking water available to Shanyao people.



Ling Weicai, a staff of Guangxi Power Grid, has led his cycling team named “Eagle” to five nursing homes over the past 12 years and became the “sons” of 50 lonely senior citizens.

Conservation of Culture in South China

To build Guangdong into a leading province in cultural development, CSG has invested 10 million RMB in the establishment of Guangdong Province Lingnan Culture and Art Promotion Fund. CSG has been working with another 13 companies, to facilitate south China cultural and art exchanges and the development of cultural industry in Guangdong.

Cooperation and Win-Win

CSG adheres to the principle of equality and mutual benefit to establish a harmonious and interactive relationship with partners; it also actively builds cooperation platforms and expands collaboration channels to seek joint development with them. In 2012 CSG was complaint-free from business partners.

Strengthening Cooperation with Power Plants

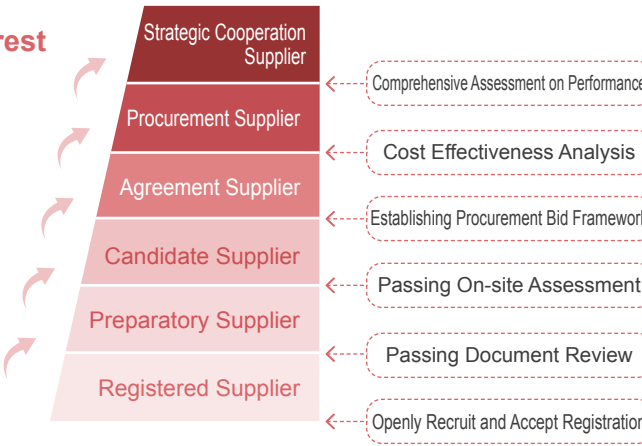
- First, CSG has taken the initiative to establish exchange platforms for power plants and power grid to deepen communication and ensured “open, fair and just” power dispatching to maintain a coordinated operation between power grid and power plants.
- Secondly, in 2012, CSG further strengthened its service to power plants and continued to enhance communication and coordination through briefing meetings and power plants/grid joint meetings; CSG also made full use of the dispatching information platform to release 776 pieces of dispatching information.
- Finally, through such effective communication between different levels, the provincial power grid companies, prefectural/municipal power supply bureaus and power source project companies have realized seamless connection.

Power plants’ satisfaction rate on power dispatching

94.39 %

Protecting Suppliers’ Interest

- CSG considers suppliers as important partners for development, builds procurement platform, strictly follows bidding procedure and has hence established a fairly competitive, standard and efficient bidding mechanism.
- CSG has developed a supplier creditability assessment system and established strategic cooperation relationship with them. There are 6 categories of suppliers based on an all-round assessment.



Enhancing Power Construction Contractor’s Accountability

- CSG has been strictly supervising the quality of construction projects, innovating measures for safe engineering, helping power construction contractors to increase safety management capability and strengthen accountability awareness and ability.
- Secondly, CSG has conducted assessment and annual examination on contractors, established profile on their qualification and creditability, introduced point-based management mechanism to incentivize them for better management.
- Thirdly, CSG launched a campaign to rectify subcontracting engineering projects. In 2012 CSG inspected 8,252 projects, completed rectification on 4,665 and punished 16 organizations for committing 5 forbidden practices.
- CSG has intensified the safety management of power construction contracted engineering to include death or personal injury accidents in contracted engineering project into its own safety performance assessment. It has also standardized the safety regulation exam for contractor company staff, ensuring they are all qualified.



“CSG Happy Kitchens” Benefit Rural Children

Using demonstration construction standards of “Happy Kitchens” in Guangdong, CSG has built “Happy Kitchens” in 11 primary schools in Lianyang regions in Qingyuan, enabling over 1000 primary school students in remote mountain areas to have access to hot rice and delicious dishes at noon every day.

Ten standards for “Happy Kitchens” are as follows: a set of electromagnetic oven, an electrical rice cooker, a microwave oven, a disinfection cabinet, a refrigerator, an electric water heater, a kitchen ventilator or an exhaust fan, a workstation, a set of dishware storage racks and a set of dining table and chair for students.

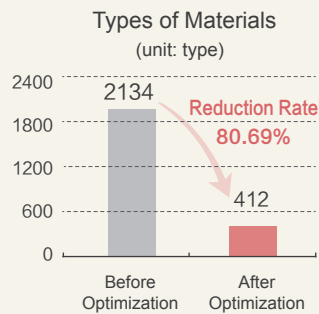


Optimization of Material Stock

As enormous materials involved in production and operation process, eliminate hidden dangers and waste are crucial. CSG conducted optimization of the categorization of 5 major categories, 27 kinds of equipments and streamlined 2,134 types to 412 and has laid a foundation for equipment standardization.

To suppliers: Reduce frequent adjustment on production lines, increase production efficiency and expand scale effect; encourage suppliers to improve the quality of equipment.

To CSG itself: Lower inventory and optimize equipment to save costs, to improve transportation and maintenance and reduce safety risks.



International Communication and Cooperation

CSG has been actively building international exchange platform, expanding external cooperation channels, establishing collaboration relationships with world-leading power companies and international organizations to improve its own management through comparison with advanced peers.

- Signed cooperation agreements with eRDF and China-US Clean Energy Forum, establishing international platform for the development of green power grid.
- Increased communication and exchange with organizations, actively participated in international conferences and activities, maintained dialogue with other power companies, greatly enhanced CSG's global influence.



Strengthening Cooperation between Universities and CSG

CSG has been strengthening cooperation with universities and jointly establishing platforms to promote innovations and mutual development by sharing resources. Over the last ten years, CSG has recruited 45,000 university graduates.

- CSG has signed cooperation framework agreement with Chinese University of Hong Kong to initiate collaboration in scientific research, talent education, business management and technology applications. It comes good news in the following four areas: Guangzhou Super Computing Centre, green and low-carbon campus and hospital project and smart grid demonstration.
- CSG has also collaborated with Harvard Kennedy School of Government on a 3-year training program for senior executives. Presently CSG is the only Chinese SOE holding training program with Harvard University.



CSG signing MoU with Kennedy School of Government, Harvard University

Main Organizations CSG Joined in

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

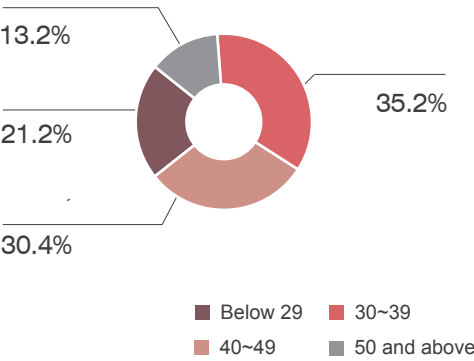
Staff Development

CSG has been actively helping staff shape their values and caring for employees' satisfaction. The company has secured safe working environment and offered competitive welfare to increase working efficiency and improve staff's physical and mental health.

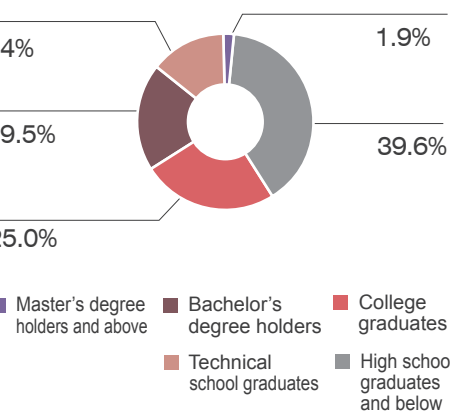


By the end of 2012, the total number of staff in CSG was 312,000 with 23% females.

Staff Age Pattern



Staff Education Level Pattern



KPI for Staff Personnel Development in 2012

Indicators	Performance	Indicators	Performance
Proportion of staff joining labors' union	100%	Supports to disadvantaged staff	48,028 million RMB
Staff turnover	1%	Proportion of staff receiving physical check	100%
Average annual paid holiday	Nine days	Number of staff joining mentoring program	70,341 person-time

○ Staff's Rights and Benefits

Complying with China Labor Contract Law and other relevant regulations, CSG has been signing employment contracts with staff, paying their social insurance, respecting human rights, forbidding forced labor and protecting staff's privacy. In 2012 there was no major labor dispute in CSG.

Position Management	Salary Management	Holiday, Annuity and Medical Insurance	Human Rights	Benefit of the Retired
Establishing position responsibility system to increase staff accountability Legalizing employment relationship, realizing 100% contract signing rate	Establishing a unified salary system Frontline staff's average salary growth reached 6.8% in 2012 Gradually realizing "equal salary for equal job" within the same organization	100% of staff have social insurance All staff are covered by supplementary medical allowance system Paid holiday is encouraged	All staff are treated equally regardless of their sex, age, race and religious belief Protecting female staff's rights and benefits Employing disabled persons and forbidding hiring minors as stipulated by Chinese laws	Improving the retirement allowance mechanism and paying allowance punctually Appropriating 1% of the total salary spent to support low-income retired members

○ Occupational Health & Safety

CSG pays great attention on occupational health and safety. It has built safe working environment, kept on safety training, equipped all staff with work protection outfit and actively prevented personal safety accidents and occupational hazardous accidents. There was no occupational disease case in CSG in 2012.

- Organizing regular health check and special physical check for certain employees, holding health and safety training;
- Unifying the types and functions of 18 protective equipments and outfits, equipping all staff with regular protective gear;
- Promoting safety measures at grass-root levels, establishing "family working station" and "harmonious transformer substation", building every class and team into a safe production base and a harmonious family.

○ Democratic Management

CSG ensures staff participation in corporate management and supervision through the staff representative conference and other platforms.

- In 2012, labors' unions at various levels organized 735 meetings, including staff representative meetings, committee meetings and joint meetings where representatives reviewed and passed 523 major items and collected 1,623 proposals from staff.
- Great promotion on management information disclosure, ensuring staff's right to know and supervision. The overall satisfaction rate for management transparency was 99%.
- Establishing the representatives inspection mechanism to inspect 12 CSG organizations. The representatives talked to 119 frontline workers and collected feedbacks. These feedbacks have promoted settlement of problems in practice.

○ Management of the Executive

CSG has been further reforming personnel selection and appointment systems, optimizing the leadership structure at all levels, innovating the mechanism of young executive training, improving the leadership assessment mechanism, with the focus on developing competitive compound executive executives.

- Optimizing the executive structure: balancing senior, middle-aged and young persons in the management teams at various levels; establishing centrally managed Talent-Bank for all levels.
- Improving assessment system: building talent selection and appointment standards valuing both on morality and ability; setting up a performance-led, differentiated assessment system; making full use of assessment system's supervision and stimulation function by promoting the outcomes of assessment.
- Developing all-round executives: strengthening training mechanism to develop managers' all-round knowledge, providing more timely and relevant training. Last year we organized training programs for middle-aged and young managers and cooperated leadership program for senior executives with Harvard University to broaden their horizons and develop their leadership skills. The average satisfaction rate for training was 90.4% in 2012.

○ Staff Training

CSG continues to develop capability-based training and assessment system, improve the facilities of training center, and provide more relevant and timely training programs to raise staff's capability.

Development of training center

CSG's Hongfeng training center in Guiyang has been certified by the Ministry of Foreign Affairs and Ministry of Education as the first China-ASEAN education and training center in electric technologies.

Training for cell leaders

Delivered company-level training program for cell leaders for the first time as a demonstration and guidance; in 2012, 1,969 training courses were held for cell leaders, 150,000 cumulative sessions were implemented.

Number of training sessions offered

1.35 million

○ Career Development

Adopting people-oriented philosophy, CSG established a fair and broad career development platform and environment for members displaying their capabilities, to realize joint development for both the staff and company.

- Optimizing personnel structure through an open, fair and just recruit mechanism; 9,410 talents in various fields were recruited in 2012.
- Establishing three career development paths – management, professional field and skills to support future development of staff.
- Issuing Management Regulation of CSG Expert Technicians and setting up technician levels including assistant technician, level-3, level-2 and level-1 technicians, senior technician and specialist. The first review appointed 251 expert technicians.



Family Wishes on Helmets

"Dad, you are the one we care most." This message is from a CSG member's daughter, who works for Zhuhai Power Supply Bureau of Guangdong Power Grid. His daughter posted this message on his safety helmet. To raise the awareness of safety, the substation of Zhuhai Power Supply Bureau operated "Safety reminder on helmet" activity and invited staff's family members to post their care messages on staff's helmets, reminding them the importance of safety at all time.



Haozhen Workshop

Guangzhou Power Supply Bureau has set up Haozhen Studio named after the electric power cable expert Lu Haozhen. Mr Lu is the tutor of the studio where he imparts all his experience to young technicians helping them improve their skills rapidly. By the end of 2012, CSG has set up seven tutor studios in transmission and operation, examination and repair, power relay protection and other fields, where the experienced tutors shared their skills, technical experiences and professionalism with the younger generation.



▲ Lu Haozhen examining power cables with his apprentices

Caring about the Staff

CSG considers staff as the most important asset. We care about people and are creative in the ways to support staff.

- Established a Support Center for Disadvantaged Staff, with priority on single-parent families;
- Carried out staff mentoring program, giving psychological guidance and care to frontline staff, assisting staff to cultivate a positive attitude;
- Caring for retired staff and holding the 3rd “Day of The Elderly”;
- Set up 352 recreational venues such as staff bookstore, dancing room and 499 cultural activities areas; operating a series of cultural and sports events to enrich staff life.



Staff bookstore of Guangxi Power Grid of CSG

CSG's support to disadvantaged staff in 2012

Organization	Activity	Person-time receiving support	Value of donated goods (ten thousand RMB)
CSG headquarters	Visiting and helping disadvantaged staff, model workers and frontline staff	1080	47.20
Guangdong Power Grid	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	73407	3064.07
Guangxi Power Grid	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	1687	322.00
Yunnan Power Grid	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	21639	428.55
Guizhou Power Grid	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	11886	406.00
Hainan Power Grid	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	554	46.30
Guangzhou Power Supply Bureau	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	2754	188.55
Shenzhen Power Supply Bureau	Visiting and helping disadvantaged staff, model workers, retired staff and frontline staff; funding the education of children from low-income family	14346	209.10

Honors rewarded to CSG staff in 2012

Honor	Number	Awarding organization
National Model Worker	8	State Council
Outstanding Technician of State-Owned Enterprise	9	SASAC
National 1 st May Labor Medal, 1 st May Labor Certificate, Pioneer Worker's Team	39	All China Federation of Trade Unions
Outstanding organization, winner company and winner team in the national "Safety Cup" contest	27	All China Federation of Trade Unions, State Administration of Work Safety
National 8 th March Outstanding Woman	1	All China Women's Federation
Model Worker, Pioneer Worker's Team, Expert Technician, Outstanding Female Team and Woman of Exploits	157	CSG



Group Wedding – Happiness x 20

On 13 Sep. 2012, a group wedding was held in Hezhou Power Supply Bureau, Guangxi Power Grid for 20 couples. The group wedding was simple but warm, making all newlyweds feel at home. A couple said: “The group wedding let us feel love from CSG and from the society. My happiness and the kind wishes I received are multiplied by many times.”



Source of Responsibility



Corporate core values are the long-term and fundamental beliefs of a company; they are the touchstone of a company's decisions and action. CSG has identified the core value as "CSB Lights Up Every Household in Southern China", which conveys the company's commitment to serve the customers, care about the staff, protect the environment and support social development, the nature of our value is to treat all stakeholders responsibly - the government, customers, staff, business partners, the environment, the community and the public.

For last decade, CSG’s corporate culture has played a pivotal role in company operation and development. CSG has developed a corporate culture that emphasizes safety, service and responsibility, under which a 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 belief becomes the origin of CSG responsibility, guiding CSG to conquer various difficulties and to create value for stakeholders continuously.

CSG Corporate Creeds

Mission	Actively shouldering social responsibility; making every effort to ensure power supply
Core Value	CSG Lights Up Every Household in Southern China
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	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; jointly build a happy CSG



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

Responsibility Management

To enhance sustainable development abilities, CSG has enhanced its operation through management, earnestly implemented the Action Plan for the Harmonious Development of State-owned Enterprise during the 12th Five-year Plan Period, strengthened management, integration, performance, communication and research of responsibilities, taken social responsibilities in the company’ s daily operation in cooperation with staff and external partners in a down-to-earth manner. CSG’ s image as a responsible company has been widely recognized.



Responsibility Management

CSG has incorporated CSR into its operation management by amending CSR regulations and enhancing the CSR management system. An integrated three-tier CSR system covering the headquarters, subsidiaries and grass-root power supply enterprises has been built. Departments in charge of CSR in subsidiaries and power supply enterprises have been specified, which are equipped with part-time and full-time persons in charge of CSR and liaison.

Responsibility Performance

In September, 2011, the State-owned Assets Supervision and Administration Commission of the State Council (SASAC for short) promulgated Guideline for the Implementation of 12th Five-year Harmonious Development Strategy of State-owned Enterprises, proposing that we shall give top priority to gaining insights into the Strategy and implementation of the Strategy for sustainable development, harmonious development of state-owned enterprises, society and environment, and for building strong, excellent and world-class enterprises by encouraging them to take their CSR. CSG, as one of the ten key companies appointed by the SASAC in implementing the Strategy, has formulated strategy implementation scheme on the basis of the company’s Mid-to-Long-Term Development Strategy and 12th Five-year Plan of different subsidiaries.

CSG has carried out activities for enhancing CSR management. CSG Scheme for CSR Management Enhancement Activities has been printed and distributed so as to provide guidance to the affiliated organizations for enhancing their CSR management and promoting CSR activities on the grass-root level.

Key contents of the Action Plan for the Harmonious Development of State-owned Enterprise during the 12 th Five-year Plan Period	CSG has implemented the working plan
<p>One core: sustainable development</p>	CSG realizes sustainable development
<p>Three main goals:</p> <ul style="list-style-type: none">Enhancing greatly the ability to create economic, social and environmental valueImproving greatly social communication ability and operation transparencyEnhancing greatly brand reputation and influence	<p>Quality Service — Sound Management — Good Image</p>
<p>Striving to be a state-owned enterprises with five features:</p> <p>Honesty, Green, Responsibility, Safety, Vigor</p>	<p>CSG has identified ten key areas to implement the Action Plan, for the five features the company is striving for, namely reliable power supply, quality service, energy conservation and emission reduction, technological renovation, support for the farmers, rural areas and agriculture production, supply chain management, law compliance, staff’ s rights and interests, charity and political responsibilities.</p> <p>Honesty, Green, Responsibility, Safety, Vigor</p>
CSG has identified 20 specific measures	25 key aspects have been identified for harmonious development and the five features that CSG has been striving.

Communication with Stakeholders

- In May, 2012, before the UN Conference on Sustainable Development, Mr. Zhao Jianguo, Board Chairman of CSG, was interviewed by the United Nations Global Compact (UNGC for short). Zhao elaborated on the company’ s philosophy of social responsibilities, and the company’s support for the special practice of UNGC.
- At the invitation of Rio+20 Corporate Sustainability Forum, CSG took part in the discussion on global sustainable development with 2,000 representatives from the United Nations, industrial sectors, investment sectors, governments, local agencies and civil organizations from around the world.
- CSG held campaigns in 15 major cities such as Guangzhou and Shenzhen with the theme of Enhancing Management and Ensuring Reliable Power Supply, communicating face to face with over 40,000 people, leading to better communication with and understanding of all the sectors in the society.
- CSG took part in the Sino-Swedish Sustainability Report Seminar and delivered a key-note talk as the representative of Chinese companies. CSG systematically introduced the company’ s specific measures and experience in strategy implementation and management improvement by taking the Report as a tool in managing sustainable development.
- CSG has taken part in the China Industrial Sector Social Responsibility Report Press Conference for three consecutive years. The 2011 press conference was held by China Federation of Industrial Economics at the Great Hall of the People, Beijing. CSG’ s Report has claimed extensive attention from enterprises and representatives present.
- CSG, together with China WTO Tribune held the workshop on Cross-industrial Cooperation for Low Carbon Responsibility and Competitiveness at the Seventh International CSR Forum. The workshop provided an arena to discuss green development and approaches of sustainable development for Chinese enterprises.
- Invited by MBA Class of China Academy of Social Sciences, CSG elaborated on the company’s philosophy and practice of social responsibilities to senior corporate managers.
- CSG companies at provincial level and Power Supply Bureaus in Guangzhou and Shenzhen have released their Annual Report on Social Responsibility Practice, introducing their CSR efforts in 2011 for understanding and support from local stakeholders.



▲ Zhao Jianguo, CSG Chairman, is being interviewed.



▲ Hui ethnic group are reading the CSG's Corporate Social Responsibility Report.



▲ Zunyi Power Supply Bureau is demonstrating on-load operation process to the citizens.



Stakeholders	Expectations and Requirements	Communication and Response Approaches	Practice
 Government	Law compliance Taxation in accordance with the law Safe power supply Maintenance and appreciation of the state-owned assets Continuous and steady reward	Compliance management and active taxation; National energy policy execution; Promotion of own grid construction with governments; Daily management enhancement; Be subject to supervision and inspection; Work report and suggestions acceptance; Management structure improvement	Kunming Municipal Government and Yunnan Power Grid had a discussion on power supply reliability of Kunming metro. Yunnan Power Grid spared no effort to accelerate the construction of transmission lines and ensure power supply for the metro to put into operation.
 Staff	Salary and welfare guarantee 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; Enhancement of staff's access to management; Healthy working environment provision; Assurance of health and safety training and physical examination; Fair promotion mechanism establishment; Support for the poor staff; Staff-counseling scheme; Happy atmosphere creation; Special protection to female staff	CSG has published Guidance on Building A Happy CSG, formulated and carried out Assignment Breakdown Chart of Building A Happy CSG and put forward 2,588 measures and 141 regulations on 43 specific tasks and implementation plans formulated by public sectors at different levels
 Customers	Reduction of outages High quality power supply Convenient service Guidance on energy conservation	Reliable power supply; Management of customers' satisfaction; Construction and improvement of power grid; technology and management innovation; Discussions and customers visit; Energy conservation publicity	Guizhou Power Grid has put forward "Convenient Counter" to collect power fees in rural areas, which eased customers' difficulty. The company has also offered "Bilingual" Service" to senior citizens and children of ethnic minorities.
 Partners	Delivery on promise Open, fair and just procurement Experience sharing	Procurement information publicity; Acceptance of feedbacks; Negotiation and communication; Project and strategic cooperation and responsible procurement	CSG has signed a strategic cooperation agreement with China Development Bank for comprehensive strategic cooperation in various fields, such as power planning, "west-to-east" plan, power grid improvement, bill issuance, and "going-global".
 Environment	Energy conservation and emission reduction Resources conservation Climate changes response Eco-protection	Energy-efficient power generation and distribution; Environment information publicity; Environmental Impact Assessment; Environmental protection technology innovation; Low-carbon and energy efficiency management initiative; Green office; Support for the electric vehicles industry	CSG Energy Company has built an open and energy-efficient service platform for contract-based energy management, and promotion and application of LED lighting in Guangzhou, for building Guangzhou into a green and low-carbon city.
 Communities and the Public	Public service development in communities Poverty alleviation Communication and exchange in communities	Survey of communities' demands; Education and publicity in communities; Discussions and exchange; construction of official website; Public welfare activities such as like "Getting to Know CSG"	The company encouraged all the staff to take part in Eliminating Infant Anemia Campaign on Children's Day. And the donation has reached 4.8472 million RMB.

Innovation on Responsibility

- CSG has studied the Corporate Social Responsibility Reports of internationally leading enterprises and their carbon information disclosure, so as to catch up with them, learning from their advanced experience and enhancing the company's international influence on social responsibility.
- In the Fifth International Seminar on Social Responsibility Report of Chinese Enterprises, the company's research finding, Responsibility Report of Advanced European Enterprises and Views on Cross Culture-A Comparison from CSG's Perspective, was well received by professionals of social responsibility at home and abroad.

Honors



Outlook 2013

Due to uncertainties of the national economy, power consumption in the five provinces and region in south China will grow slowly in 2013. The company will develop steadily, predict operation risks, accelerate development transformation patterns to improve its performance and efficiency, and ensure power supply for a well-off society.

In strategic management, the company will improve management in an all-round way to lay a solid foundation for steady development. CSG will also enhance strategic and integrated management, perfect the framework of integrated management system by spotting short-board and bottleneck, and supporting “To-Top” campaign in pilot power supply bureaus. To launch the development of advanced management system, CSG will establish the Comprehensive Management Committee for the application of this system.

In power supply, the company will manage and control risks to ensure safe and steady operation of power grid with reliability over 99.958% and 99.889% in rural and urban areas respectively. The company will strengthen system operation and management by fully carrying out 39 main tasks against ten safety risks for better abilities in disasters prevention and relief, and emergency management as well. CSG will strengthen the management of equipment and staff's safety by building “Three Defense Lines” and strictly implementing “Two Tickets and Three Systems”. It will tighten control and management of three main risks, namely electric shock, pole falling and falling from high altitude. The company will also strengthen customer service management with an aim to reduce the number of complaints to 77 per one million customers, and steadily promote information integration in marketing. Investment in power grid construction will also be enhanced, with a budget of 55.2 billion RMB.

In green energy, the company will transform the development pattern of power grid for an intelligent, highly effective, reliable, green and modern power grid. The company will plan power grid construction ahead and launch development of automatic planning for power distribution grid in major cities. CSG will accelerate the construction of Xiluodu and Nuozhadu DC Project, and further implement the “west-to-east” plan for power supply increment of 4.9%, reaching 130.4 billion kWh. The company will promote the green development of power grid and strive to achieve a line loss rate of 7.35% (based on the statistics about the total assets). Manual on Construction of Green Power Grid will be formulated to specify the implementation of green substations and lines, and also vigorously dedicate to energy-efficient power distribution. CSG Energy Company and energy-efficient power utilization centers at all levels will play an important role to ensure two successful evaluation programs, “Two Third of Thousandths” and “Enterprises Low Carbon Efforts”.

In economic performance, the company will vigorously explore the power market in order to achieve power sales increase of 5.1% at 736.5 billion kWh, and achieve income increment of main business of 5.6% at 442.5 billion RMB, EVA at 4.07 billion RMB, and the power sales of ten thousand RMB fixed assets at 9,950 kWh. The company will closely follow economic situation to understand trend of power utilization in all industries, and accelerate ammeter installation for the customers to ensure their early access to power. CSG will also achieve a harmonious and win-win situation by putting customers' needs in the first place and establishing files for important and big customers.

In social harmony, the company will upgrade and improve the rural power grid, strengthen staff development, and create sound development atmosphere for the understanding, recognition and support from stakeholders. CSG will improve the investment efficiency of rural power grid construction, and effectively address problems in structure and power supply service. Assessment and evaluation of leadership groups and leaders at all levels will be strengthened. CSG will make full use of human resources both in and out of the company, and further the development of corporate culture. Communication with stakeholders will be given priority to operation transparency in order to meet the expectations of stakeholders, namely supply chain, counterparts, partners, media and the public.

Report Rating



Rating report on 2012 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd.

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

Rating Basis

CASS-CSR 2.0 and Rating Standards on Corporate Social Responsibility of Chinese Enterprises(2013) jointly released by the Corporate Social Responsibility Research Center of Chinese Academy of Social Sciences, Economics Department, China National Enterprise Federation, China Petrochemical Federation, China Light Industry Federation China Corporate Citizen Committee, Sino-German Trade and Sustainable Development and Corporate Social Responsibility Project, WTO Tribune, and the Corporate Social Responsibility Research Center of Chinese Academy of Social Sciences, Economics Department.

Rating Conclusion

Completeness(★★★★☆)

The Report disclosed 86.01% core indicators in power utilities and demonstrated a good completeness. Core indicators include: responsibility management, power supply, economic performances, green and environment and social harmony.

Substantiveness(★★★★★)

The Report covers substantive topics on “Ensure power supply” “Ensure power use in rural and remote areas” “Comprehensive outage management”, “Equipment management”, “Improvement of power transmission efficiency” and “System and measures of green power supply” are included. The Report includes a detailed, substantive and well-versed analysis on CSG's performance power supply sector.

Balance(★★★★★)

The Report disclosed a number of negative information involving accidents and equipment accidents, major power grid accidents, and staff turnover rate, explained and reviewed power outage in Shenzhen on 10th April, 2012 in a detailed manner, and put forward correction measures. The Report is an outstanding and a well balanced one in terms of disclosing positive and negative information.

Comparability(★★★★☆)

The Report disclosed 34 key performance indicators for the past 5 consecutive years, and demonstrated very good comparability; the Report disclosed indicators including power grid stable operation, customer satisfaction, and therefore, demonstrated excellent horizontal comparability.

Readability(★★★★★)

The Report is well structured, fluent, concise and with convincing case studies. The Report is very well supported by a number of visual forms, including tables and flow charts; in terms of layout, the Report is exquisite. The Report performed very well in readability.

Innovativeness(★★★★★)

The feature report on responsibility explains status quo and challenges confronted by domestic and overseas power sectors, and reviews CSG's CSR performance, with in-depth and unique discussions on its own development and breakthroughs. The Report actively shares environment protection with its readers. It is a very innovative report.

Overall rating(★★★★★)

The 2012 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd. was rated five stars by the panel. It should be regarded as an outstanding corporate social responsibility report.

Suggestions

The Report should further disclose Key Performance Index (KPI) to improve its completeness.

Rating Panel

Panel leader: ZHONG Hongwu, Director of the Corporate Social Responsibility Research Center, Economics Department of Chinese Academy of Social Sciences

Panel Member: MI Jianhua, Director of Power Reliability Management Center, SERC
SHA Yiqiang, Former Director of Research Office, China Electricity Council



Peng Huagang

Vice Chairman, Rating Panel

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

Zhong Hongwu

Head of Rating Panel

Director of the Corporate Social Responsibility Research Center, Economics Department of Chinese Academy of Social Sciences

The Endorsement from the Third Party

Chu Xuping Deputy Director General of Research Bureau in SASAC

CSG’ s 2012 Corporate Social Responsibility Report comprehensively presented its CSR practice to the stakeholders. What impressed me the most is the enormous and high quality data, which is convincing and authentic.

The data have showed the excellent sustainable development of CSG. In this information age, everything should be based on data. As indicated by the Report, in 2012, CSG’ s power sales grew to 701 billion kWh, increasing by 5.13%; operation revenue hit 419.2 billion RMB, increasing by 7.65 %; taxation of profit jumped to 38.2 billion RMB, increasing by 13.35%; power saved by the grid reached 1.6 billion kWh, among which power saved by the customers was 812 million kWh. These twinkling figures are not only the highlights of the Report, but also evidence of CSG’ s sustainable development and outstanding management. Rich data presented in a continuous and holistic manner are significant and can tell the truth. The data in the Report is of high quality in that it is continuous and relevant. From 2003 to 2012, CSG has presented the data of total assets, power sales, business revenue and “west-to-east” plan for 10 years in a row, the data of urban and rural SAIDI for 5 years, the data of voltage quality for 5 years, and the data of coal consumption and sulfur dioxide emissions for 5 years, which did express CSG as a responsible company, its excellent management and its steady path towards success.

CSG’ s data-based Report is worth learning. In this information age, social responsibility needs to be fulfilled by providing information, taking action and thus improving performance via mass data analysis. Be it government’ s development of a beautiful China, company’ s sustainable development or academic research, data analysis is the key to communication, decision-making and data-based social responsibility management.

I hope CSG will, as always, exert itself to make a greater contribution to the social and economic development of China.

The Endorsement from the Third Party

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

Based on the five-star reports of the past two years, CSG’ s 2012 Corporate Social Responsibility Report reached a higher level in terms of quality. Firstly, it is more read-friendly. By adhering to the principle of equal dialogue and open communication, the Report was presented with concise words and reader-friendly expression, realizing the equal communication with its shareholders. For example, in the whole Report, High Quality Service-related chapter is informative and convincing. Secondly, a stronger sense of social responsibility has been demonstrated. The Report emphasized the discussion and systematic analysis of problems, such as “what causes the outages?” , “ why we still help customers save the power since we are just the power seller” , which better revealed CSG’ s philosophy and practice of social responsibility. Thirdly, it is more internationalized. The Report has put the environment part in the front, which can meet the real needs for developing a beautiful China and align with the philosophy of international counterparts. The professional graphic design highlights data and attracts readers.

Mi Jianhua Director of Power Reliability Management Center of China Electricity Council

CSG’ s 2012 Corporate Social Responsibility Report has covered corporate strategy, culture and social responsibility practice. It is innovative as it has not only inherited the ideology of corporate culture and social responsibility, but also summarized the achievements in the past 10 years. The Report comprehensively unfolded CSG’ s performance in four areas, namely power supply, environmental protection, economic performance and social harmony, reflecting its top-down design and implementation of development strategies. The Report has made dramatic improvement in the chapter of Power Supply, making it more systematic and focused by using facts to reveal CSG’ s core values. CSG shoulders its responsibility and tasks in the process of its mission of establishing the company as an internationally leading company. The company attaches priority to the issues of farmers, rural areas and agriculture production. In terms of reliable power supply, CSG’ s provincial and municipal companies have ranked the top in reliability on service index, which should be given credit to. Meanwhile, the Report reflects the needs of customers by professionally answering main questions they concerned in such areas as factors leading to outages, quality service and demand management. CSG’ s candid and professional disclosure has won recognition and understanding of its social responsibility practices from governments, society, upstream and downstream firms and customers.

Sha Yiqiang Former Director of Research Office of China Electricity Council

In recent years, CSG’ s Corporate Social Responsibility Report has become better and better. There were innovations in 2012’ s Report. First, the content was comprehensive with comprehensive and accurate data. It unfolded CSG’ s performance in four areas, namely power supply, environmental protection, economic performance and social harmony, meeting the expectations of the stakeholders. Second, CSG had an equal communication with the stakeholders. Chapters illustrating analysis and prompt response to customers’ demand in High Quality Service, analysis and countermeasures of outage in Reliable Power Supply, and further reading on power consumption have met the needs of stakeholders and strengthened the affinity of the Report. Third, the Report has elaborated on the responsibilities and missions in four areas, illustrating CSG’s commitment and its responsibility.



Performance of the United Nations Global Compact

CSG has observed the Ten Principles in its decision making and operation 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. In 2012, CSG participated in a number of Global Compact events, including high-end interviews, best practice selections and training programs, to name just a few.

Ten Principles		Involved chapter of the Report	Compliance and progress made in year 2012
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights	Staff's Rights and interests Democratic management	<ul style="list-style-type: none">Comply with laws and regulations, implement Labor Law and rulesPay full respect to and guarantee staff's right to know, right to participate, right to supervise and right to express.Power supply to 81,800 households with the total population of 360,000 who had no access to power in the past and has achieved "electricity-to-every-household".CSG reviewed and refined contracts with 43,000 staff in rural electricity bureaus in Guangdong Power Grid, Guizhou Power Grid and Hainan Power Grid and phased in equal pay for equal position under the same jurisdiction.
	Make sure that they are not complicit in human rights abuses	Staff's Rights and Interests Serve Farmers, Rural Areas and Agriculture Production	
Labor Relations	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	Democratic management	<ul style="list-style-type: none">In strict compliance with the Labor and Contract Law of People's Republic of China, and sticks to fair employment and equal pay.Every plant eligible for trade union establishment has established trade union. Every staff at grass root level is a trade union member.Carry out staff mentoring program, and help staff to alleviate psychological pressure and strike a balance between life and work. Staff's average annual leave is 9 days.735 meetings including staff representative meeting, taskforce meeting and joint meetings were held. 1623 proposals made by staff representatives were collected.Absolute elimination of child labor and CSG acts as an equal opportunity employer, employ any qualified people regardless of his/her disability.
	The elimination of all forms of forced and compulsory labor	Staff's Rights and Interests Staff's occupational safety and health	
	effective abolition of child labor	Staff's Rights and Interests	
	The elimination of discrimination in respect of employment and occupation	Staff's Rights and Interests	
Environment	Businesses are asked to support a precautionary approach to environmental challenges	Green and Environmental Protection	<ul style="list-style-type: none">Fossil fuel consumption for unit power generation is 198 grams standard coal per kWh."West-to-east" power transmission hit 87.9TWh.5.13 million tons of standard coal saving achieved by energy-saving power dispatching.The average coal consumption of coal-fired power generation was 325 grams/kWh, representing 3 grams/kWh reduction than that of 2011.Grid-wide line loss rate was 6.06% in 2012.
	Undertake initiatives to promote greater environmental responsibility	Green and Environmental Protection	
	Encourage the development and diffusion of environmentally friendly technologies	Green energy Energy Efficient Operation	
Anti-corruption	Businesses should work against corruption in all its forms, including extortion and bribery	Law Compliance	<ul style="list-style-type: none">CSG actively facilitates Ethical Central Enterprise Initiative, and avoid legal risks, with focuses on internal control enhancement, performance supervision, and put 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 2012, no major law/regulation breach happened.

About Us

Corporate Governance

- CSG is a state-owned backbone company. In accordance with the Company Law and the requirements of the State-owned Assets Supervision and Administration Commission of the State Council, CSG has established a modern corporate Governance structure consisting of board of directors and operation management.
- Board of directors plays a core role in corporate governance. The board of directors exercises administration in accordance with Articles of Association and continuously perfects its operation mechanisms to guarantee the efficient, standard and orderly operation.
- Service-oriented, operation-based; conglomeration-operation, integrated management are the CSG's strategic orientation. CSG specifies decision making power and procedures, maintains a sound check and balance. CSG has always practiced a stringent regulation, procedures and operation. CSG is dedicated to a highly effective operation for state-owned asset safety and appreciation.
- To facilitate corporate strategic transformation and establish a sound legal person governance, CSG has established board of directors at Guangxi Power Grid, Guizhou Power Grid and Hainan Power Grid and has formulated specific rules on board structure and responsibility.

Organization Structure

- CSG headquarters has 20 departments, one institution and four branches, namely Bidding Service Center, Education Training Center, CSG EHV Power Transmission Company, CSG Power Generation Company; eight wholly-owned subsidiaries, namely Guangdong Power Grid Company, Guangxi Power Grid Company, Yunnan Power Grid Company, Guizhou Power Grid Company, Hainan Power Grid Company, Guangzhou Power Supply Bureau Co. Ltd, Shenzhen Power Supply Bureau Co. Ltd, and CSG International Company. Besides, CSG is the controlling shareholder of CSG Financial Company, CSG Research Institute, CSG Energy Company, 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	Assets (100 million RMB)	Business turnover (100 million RMB)	Number of staff (People)	Number of customers (10,000 household)	Official website	Address	Contact
Guangdong Power Grid Company	Responsibilities include: invest, construct, operate, maintain power grids in its service area. Other main business scope include: power trading, power dispatching, power resources optimization, power marketing, power equipment sales, commissioning, testing. Guangxi Power Grid, Yunnan Power Grid, and Guizhou Power Grid are responsible for “West-to-east” power transmission plan project.	2010.78	2321.40	102437	2734	http://www.gd.csg.cn	No.757, Dongfeng-dong Road, Guang-zhou, Guangdong	020-85121906
Guangxi Power Grid Company		516	482	51182	921	http://www.gx.csg.cn	No.6, Minzhu Road, Nanjing, Guangxi	0771-5692222
Yunan Power Grid Company		894.40	598.68	59567	1088	http://www.yn.csg.cn	No.73, Tuodong Road, Kunming, Yunan	0871-63165908
Guizhou Power Grid Company		634.50	563.51	54204	1073.2	http://www.gz.csg.cn	No.17, Binhe Road, Guiyang, Guizhou	0851-5592222
Hainan Power Grid Company		151.05	101.57	11175	213	http://www.hn.csg.cn	Haifu Road, Haikou, Hainan	0898-65317992
Guangzhou Power Supply Bureau Co., Ltd.		390.85	420.13	9270	470	http://www.gdgz.csg.cn	NO2, Tianhenaner Road, Guangzhou, Guangdong	020-87514281
Shenzhen Power Supply Bureau Co., Ltd.		367.29	501.2	5268	254.5	http://www.sz.csg.cn	No.4020, Shennan-dong Road,Shenzhen, Guangdong	0755-88938000
CSG Extra High Voltage Power Transmission Company	The company is responsible for construction, operation and management of inter-provincial main networks and the important connection lines of China Southern Power Grid. It is a key enterprise to implement the nation’ s “west-to-east” plan.	495.02	369	4747	-	http://www.ehv.csg.cn	No.1116, Tianhe Road, Guangzhou, Guangdong	020-38126666
CSG Power Generation Company	The CSG Power Generation Company is in charge of construction, operation and management of power plants for CSG.	188.39	31.7	1516	-	http://www.pgc.csg.cn	No.32, Longkoudong Road, Tianhe District, Guangzhou	020-38128001
CSG International Co., Ltd.	It is in charge of operation of transnational (cross-border) projects of power transmission and transformation; investment and management of offshore power projects and equity, offshore power projects contracts, labor services cooperation, external technical cooperation, and import/export of new technologies, international trade, and consulting and information service.	0.833	-	56	-	http://csgi.csg.cn	42nd Floor, R&F Yinglong Plaza,No. 76, Huangpuadao,Tianhe District, Guangzhou	020-85121088
CSG EPRI	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 CSG Technology.	2.2	3.5	210	-	http://www.sepri.csg.cn	13-20 Floor, West Tower, Yuedian Building, No6, Shuijungan, Dongfengdong Road, Yuexiu District, Guangzhou	020-38120516
CSG Synthesis Energy Co., Ltd.	Its business scope covers: lighting, green building, coal mine gas, waste heat recovery and reuse, distributed energy, offshore wind power, development of industry zone and PV panels in building, EV charging stations.	4.63	1.02	134	-	http://ny.csg.cn	Yueneng Building, No.45, Tianhe Road, Yuexiu District, Guangzhou	020-38122715
CSG Financial Company	Its main business covers deposits, settlement, loan, and entrusted loan, its financial services cover securities investment and equity investment to financial institutions.	212.06	13.09	121	-	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 operation of media industry, design, and production, publication of advertisement, advertising agent business, corporate image planning, film and television program production.	1.42	1.48	130	-	http://cm.csg.cn	No.846, Dongfeng-dong 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.	33.51	12.05	1197	-	http://www.dh.csg.cn	13-14 Floor, Building 1.,Excellence Century Center,No.2030, Futian District, Shenzhen, Guangdong	0755-82522688

About the Report

Dear readers, the Report covers CSG’s CSR performance in year 2012. We hope this Report will help you to better understand our commitment and win your support for our future development.

This Report is the sixth Social Responsibility Annual Report issued by China Southern Power Grid Co., Ltd.The CSR Report 2011 was released on 16th May, 2012 and the CSR Report 2013 will be published in May, 2014. It was written both in Chinese and English. Adhering to the principles of objective, standard, transparent, and comprehensive, the Report disclosed the company’s safe and qualified power supply, and its performance in economy, environment and society. The Chinese version will be the final version, should discrepancies occur between Chinese and English versions.

► Time Frame

The time frame of the Report is from January 1st, 2012 to December 31st, 2012. Part of the content extends to other years’ performance to enhance comparability and forward looking of the Report.

► Range of the Report

“China Southern Power Grid Co., Ltd.” is the principle part of the Report, including its subsidiaries, branches and affiliated institutes.

► Compilation Basis

CSG Social Responsibility Index （CSG-CSR 1.0）

► References

SASAC’s “Guidelines---About Central Enterprises’ Implementation of Social Responsibility”;(No1, 2008, Research of SASAC);
CASS-CSR 2.0 of Chinese Academy of Social Sciences;
Global Reporting Initiative’s Guidelines; （GRI Version 3.1）
“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

Data adopted in the Report are based on the company’s official documentations, statistics reports and other published information.

► Reliability

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

► Title Description

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

► Improvement Compared to Previous Reports

- A How-to-read Guide
- More informative table of contents
- A new style of chairman’s speech
- Disclosure of risks and analysis of challenges
- Expand coverage of index for better substantiveness
- Systematic analysis on reasons, impacts of Power Outage on 10th April, 2012 in Shenzhen, balanced views on CSG’s addressing measures and results.
- Stakeholders’ comments in standardized style
- Further reading suggested
- New glossary
- Response to panel members’ comments

► Further Reading

If 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 2012.

► Report Request

You can download 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.

Feedback Form

Dear readers:

Thank you for reading our Report. CSG will make every effort to improve the Report. We would appreciate your comments.

Multiple Choice Questions: (Please Tick Your Choice)

- 1

Overall comments on the Report:

☐ Very good

☐ Good

☐ Ok

☐ Poor

☐ Very poor
- 2

The quality of the information disclosed is:

☐ Very good

☐ Good

☐ Ok

☐ Poor

☐ Very poor
- 3

The structure of the Report is:

☐ Very good

☐ Good

☐ Ok

☐ Poor

☐ Very poor
- 4

The layout design of the Report is:

☐ Very good

☐ Good

☐ Ok

☐ Poor

☐ Very poor
- 5

The readability of the Report is:

☐ Very good

☐ Good

☐ Ok

☐ Poor

☐ Very poor

Open-ended questions:

- 1

Any improvements the Report should make?
- 2

What other social responsibility information should the Report disclose?
- 3

Any suggestions on CSG’s social responsibility work , please specify:

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

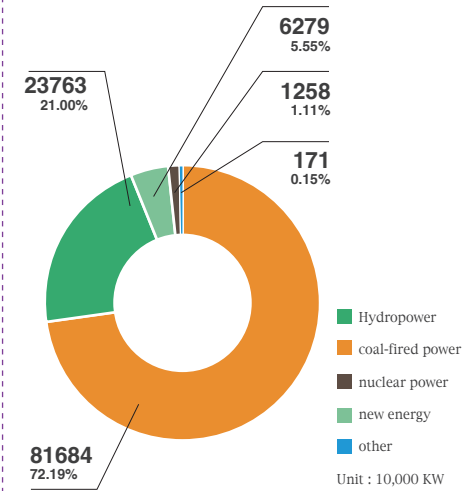
Report Index

Report Directory	GRI Benchmarking	CASS-CSR Benchmarking
Front Cover	2.1	
Interview with the Board Chairman	1.1/1.2	P2.1/P2.2
The Management	4.2/4.3	P4.6
Guid to Read		P3.1/G1.2
Feature Report on Responsibility/Responsible practice in the past decade	EN5/EN18	
Feature Report on Responsibility /Lighting Up Thousands of Homes, No Matter How Far They are	EC8/SO5	ESM2.14/ESS2.9
Implementation of GSG Mid-to-Long-Term Development Strategy	2.10	
Power Supply		ESS3.11
Power Supply/Safe Production	4.11	S3.1/S3.2/S3.3/S3.4/S3.5/ESS3.7/ESS3.8/ESS3.10/S3.12
Power Supply/Reliable Power Supply	4.11/EC8/PR2	ESM2.7/ESM2.16/ESM2.17/ESM2.18/ESM2.19/ESM2.21/ESM2.22
Power Supply/Quality Service	EC8/PR1/PR5/PR8	M2.1/M2.2/M2.3/M2.5/M2.6/M2.8/S4.1
Power Supply/Emergency Management	4.11	S3.2
Power Supply/ Power Grid Construction	EC8	
Power Supply/Technological Innovation		M2.9/M2.11/M2.13
Green Energy	EC2/EN5/EN18	E1.1/E3.1
Green Energy/Energy Conservation and Emission Reduction on the Power Generation Side	EN5/EN16/EN17/EN18	ESE2.2/ESE2.3/ESE2.4/ESE2.5
Green Energy/Energy Conservation and Emission Reduction on the Power Grid Side	EN5/EN6/EN12/EN14/EN18/EN26/EN28/SO1/SO10	E1.2/E1.5/ESE1.6/E1.8/ESE1.9/E1.12/E2.1/ESE2.6/ESE2.7/E2.12/E2.13/E2.14/E3.3/E3.4/E3.5
Green Energy/Energy Conservation and Emission Reduction on the Customer Side		E1.7/E1.11/ESE2.8/ESE2.9/E2.15
Green Energy/Golden Bee 2020	EN5/EN6/EN18	E1.3
Green Energy/Energy Conservation and Emission Reduction Performance	EN18	ESE2.10/E3.2
	EN7/EN16/EN17	
Economic Performance		
Economic Performance/Operation Performance	2.8/EC1	P4.4/M1.2/M1.3/M1.4/M1.5/S1.6
Economic Performance/Law Compliance	SO3/SO4/SO8	M3.6/M3.7/M3.8/M3.9/M3.10/S1.1/S1.2/S1.3/S1.4/S1.7
Economic Performance/Assets Management		
Economic Performance/Cost Reduction and Efficiency Improvement		
Economic Performance/Power Market Development Promotion		ESE2.11
Economic Performance/Regional Economic and Social Development Promotion	2.5/SO5/EC9	M3.2/S1.8/S4.2
Social Harmony		
Social Harmony/Support for the Farmers, Rural Areas and Agricultural Production	SO5	ESM2.15/S1.5/ESS4.3
Social Harmony/Public Welfare	EC1/SO6/SO9	S4.4/S4.10/S4.11/S4.12/S4.13/S4.15
Social Harmony/Cooperation and Win-Win	4.13/EC6	G3.3/M3.1/M3.3/M3.5/M3.11
Social Harmony/Staff Development	EC3/EC5/LA1/LA2/LA4/LA5/LA7/LA8/LA9/LA11/LA13/HR4/HR6/HR7	S1.9/S2.1/S2.2/S2.3/S2.4/S2.5/S2.6/S2.7/ESS2.8/S2.10/S2.11/S2.12/S2.13/S2.14/S2.15/S2.16/S2.17/S2.18/S2.19/S2.20/S2.21/S2.22/S2.23/S2.24/S2.25/S2.26/S2.27/S2.28/S2.29/S2.30/S2.31
Source of Responsibility	4.8	G1.1
Responsibility Management/Responsibility Governance		G2.1/G2.2/G2.3/G5.2
Responsibility Management/Responsibility Performance		G1.3/G3.2
Responsibility Management/Communication with Stakeholders	4.14/4.15/4.16/4.17	G5.1/G5.4/G5.5
Responsibility Management/Innovation on Responsibility		G3.1/G6.1/G6.2
Responsibility Management/Honors	2.10	P5.3/G4.3
Outlook 2013		A1
Report Rating	3.13	A2
The Endorsement from the Third Party		A2
UN Global Compact		P5.1
About Us/Corporate Governance	2.6/4.1/4.4/4.9	P4.5/M1.1
About Us/Organizational Structure	2.3/2.9	
About Us/Overview: CSG and its Secondary Units	2.2/2.4/2.7	P4.1/P4.2/P4.3
About the Report	3.1/3.2/3.3/3.4/3.5/3.6/3.7/3.9/3.11/4.12	P1.1/P1.2/P1.3/P1.4/P1.5/P1.6/P1.7/P1.8/G4.1/G4.2
Feedback Form		A4
Report Index	3.12	A3
2012 CSG Key CSR Performance		P5.2
Back Cover	2.4/3.4	P4.1

CSG Key Performance on Corporate Social Responsibility in 2012

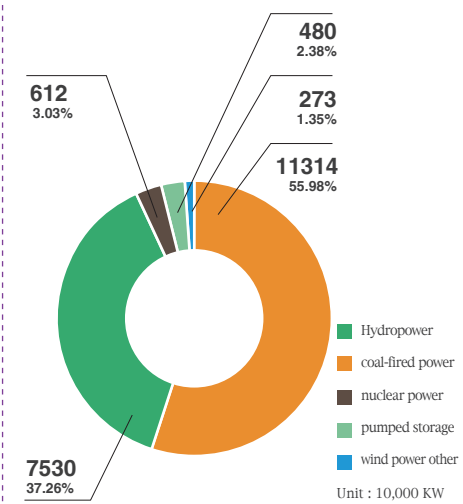
Power Generation Side

National Power Source Portfolio in 2012



Installed capacity : 113155

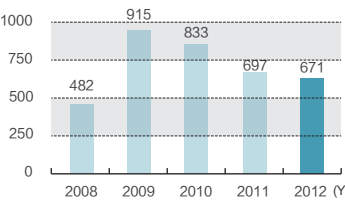
CSG Power Source Portfolio in 2012



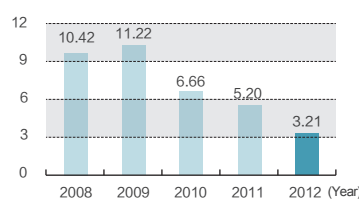
Installed capacity for the five provinces and region in CSG's service area: 20209(10,000KW)

Power Supply

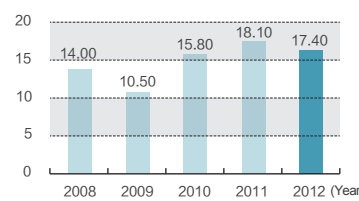
Investment in Power Grid Construction (100 million RMB)



SAIDI of Urban Users (hours/ household)



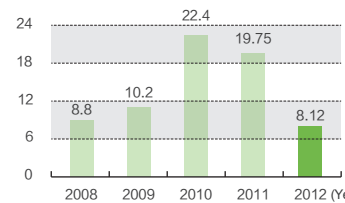
Investment in R&D (100 million RMB)



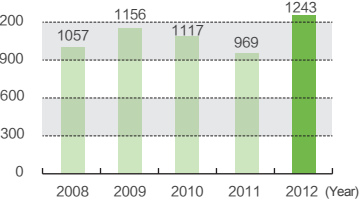
Main Business Data of CSG	2008	2009	2010	2011	2012
SAIDI of Urban Users (hours/ household)	10.42	11.22	6.66	5.20	3.21
Investment in Power Grid Construction (100 million RMB)	482	915	833	697	671
Investment in R&D (100 million RMB)	14.00	10.50	15.80	18.10	17.40
Length of Transmission Lines of 110 kV and Above (km)	124950	139286	151899	163404	165563
Capacity of Transforming Equipment of 110 kV or Above (10,000 KVA)	40873	48513	57932	64389	68892
Maximum Load of Unified Power Generation Management (10,000 KW)	8887	13393	10436	11323	11966

Green Energy

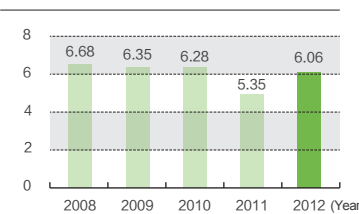
Saved Energy of Customer Side (0.1TWh)



West-to-East Transmission (0.1TWh)



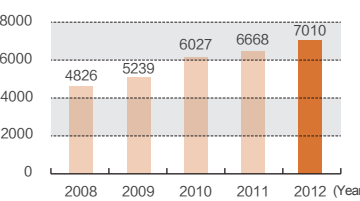
Line Loss Rate (%)



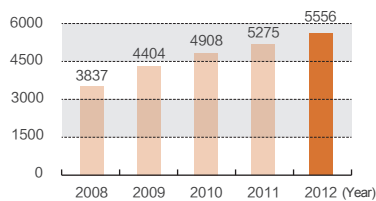
Main Business Data of CSG	2008	2009	2010	2011	2012
West-to-East Transmission (0.1TWh)	1057	1156	1117	969	1243
Saved Energy of Customer Side (0.1TWh)	8.8	10.2	22.4	19.75	8.12
Line Loss Rate (%)	6.68	6.35	6.28	5.35	6.06
Energy Saving through Smart Dispatching (10,000 tons of standard coal)	-	-	258	227	1440
Energy Saving Through Line-loss Reduction (0.1TWh)	11.4	48.5	70.7	66.0	16

Economic Performance

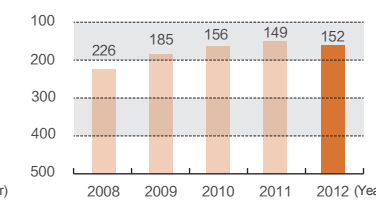
Sales (0.1TWh)



Total Assets (100 million RMB)



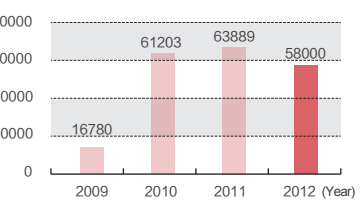
Ranking among the Fortune 500 (place)



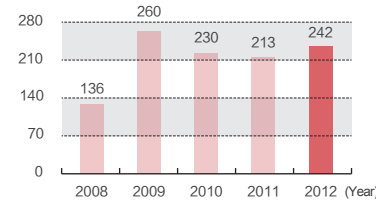
Main Business Data of CSG	2008	2009	2010	2011	2012
Total Assets (100 million RMB)	3837	4404	4908	5275	5556
Sales (0.1TWh)	4826	5239	6027	6668	7010
Ranking among the Fortune 500 (place)	226	185	156	149	152
Revenue of Main Business (100 million RMB)	2842	3108	3665	3894	4192
Total Profit and Taxation (100 million RMB)	295	208	320	337	382

Social Harmony

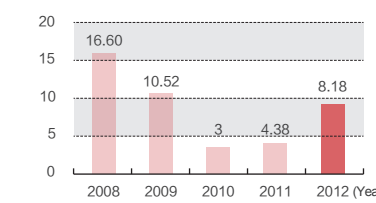
Participation of Volunteer Work (person-times)



Investment in the Construction and Upgrading of Rural Power Grid (Unit: 100 million RMB)



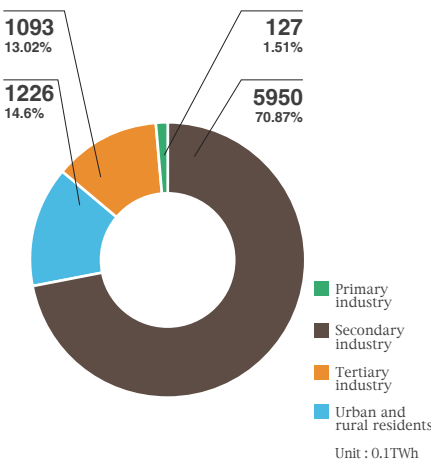
Number of First-time Power Users (10,000)



Main Business Data of CSG	2008	2009	2010	2011	2012
Investment in the Construction and Upgrading of Rural Power Grid (Unit: 100 million RMB)	136	260	230	213	242
participation of Volunteer Work (person-times)	-	16780	61203	63889	58000
Number of First-time Power Users (10,000)	16.60	10.52	3.00	4.38	8.18
Staff Training Rate (%)	94.0	96.4	96.3	96.5	96.0
Total External Donation (10,000 RMB)	14000	6712	23274	8280	3093

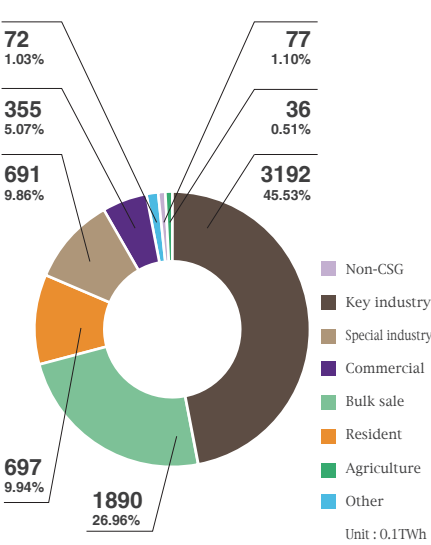
Customer Side

Customer Portfolio in 2012



Total consumption in the five provinces and region in South China: 839.6 TWh

Power Consumption Portfolio in 2012



CSG power sales :701 TWh