



广州2010年亚运会高级合作伙伴
Guangzhou 2010 Asian Games Prestige Partner

Address:

Strategy Planning Department, China Southern Power Grid Co., Ltd.

No.6 Huasui Rd, Zhujiang Xincheng, Guangzhou

Postal Code: 510623

Tel: 86-20-38121093

Fax: 86-20-38122187

E-mail: csr@csg.cn



广州2010年亚运会高级合作伙伴
Guangzhou 2010 Asian Games Prestige Partner

Corporate Social Responsibility Report 2009



Power Supply
Reliability Rate of
the whole grid is
99.87%

The average
customer outage
decreased
105 minutes

Ranked the
185th
in the Fortune
500 list

Ranked the
1st by customer
satisfaction survey
in Guangdong and
Yunnan

87.77 million
tons of carbon dioxide
emission reduction
by energy saving and
emission reduction
campaign.

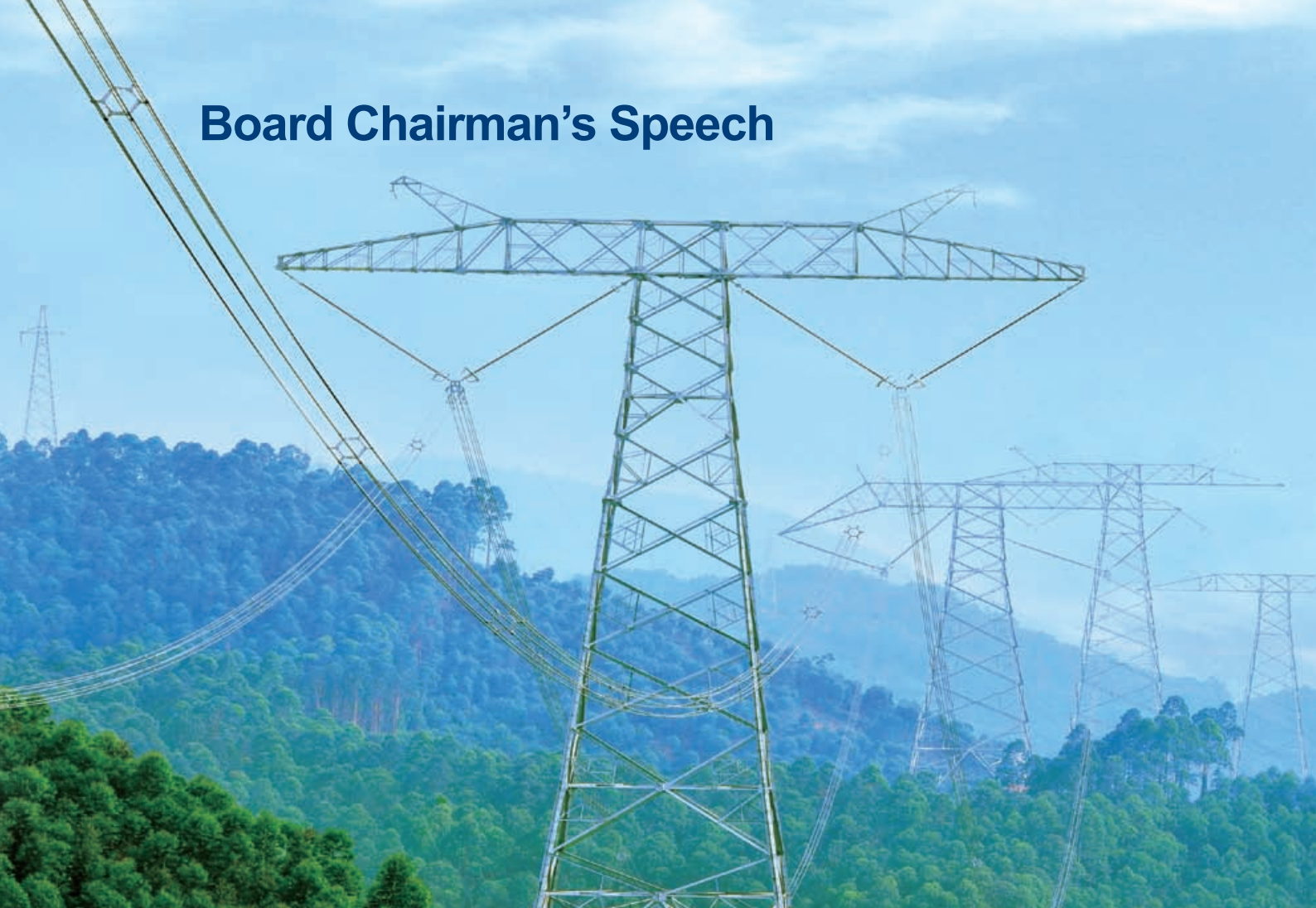
Electricity supply to
106,000
rural households with no
access to utility service in
the past



CSG Lights Up Every Household in Southern China



Board Chairman's Speech



Last year is an unusual and inspiring year.

At early 2009, after the aftermath of global financial crisis, China's economy was adversely effected. CSG encountered the toughest challenges since the establishment of the company: weak power demand and conspicuous contradiction. Facing the serious and complicated situation, under the decisive leadership of the Party Central Committee and the State Council, CSG earnestly implemented the principles and deployment of "ensure economy growth, ensure the people's livelihood and ensure the stability" promulgated by the Central Government, practiced scientific development, played power utility's role as infrastructure to facilitate economy's smooth and fast development of the 5 provinces and regions in CSG's service area.

Through in-depth study and understanding of the scientific development principle, we set our CSG target: increase power supply reliability rate and improve our scientific development level. We believe the target reflects CSG's reality and it is an important measure for us to undertake our social responsibilities and serve a harmonious society.

-----We took proactive measures to increasing power supply and expanding power sale in the 5 provinces under the context of economy growth, boosting domestic demand and structure adjustment. We fulfilled the set objective of increasing power sale 5% and realized a 6.2% growth rate.

-----We earnestly implemented the 10 measures of boosting domestic demand set by the State Council: we expedited the urban power grid upgrading and rural power grid improvement, fulfilled the tough task of 102.5 billion Yuan's investment on fixed assets well. Our effort culminated with the single operation of the 1st ± 800 kV UHVDC Transmission Project in the world---Yunnan to Guangdong project. More than 60% of project has been manufactured and engineered domestically, symbolizing a breakthrough of China's electricity technology and equipment manufacture. The project secured our leading position in international advanced level and the world power transmission and transformation technology. The 500kV cross-sea interconnection project---Hainan Interconnection project put into operation on schedule, ranking the 1st and 2nd in transmission capacity in Asia and in the world respectively. The project put an end to the history of Hainan as an isolated island in electricity.



---We always adhere to the “client-oriented” concept and make every effort to provide safe, reliable and continuous power supply to our customers. The average customer outage reduced 13.6% on YoY basis.

---We reinforced our effort in energy saving and emission reduction. We are dedicated to establish CSG as a green power grid, supporting green energy development and facilitating customers’ energy saving. We built China’s largest scaled EV charging station in Shenzhen.

We made fruitful achievement and accumulated valuable experiences in handling complicated situations. At the same time, we understand that, as an enterprise under the direct management of the state-owned assets supervision and administration commission of the State Council (hereinafter refer to as “the central enterprise”), our fundamental responsibility is to serve the party and the state and serve the economic and social development of the 5 provinces and region. As a power grid enterprise, our unremitting pursuit is to optimize the distribution of energy resources, promote the transform of economic development mode and to realize a sustainable development of the society and ourselves. As a Fortune 500 company , our mission is to shoulder our social responsibility, support 10 principles of the Global Compact, tackle global climate change and promote low-carbon economic development.

CSG can not achieve an overall, healthy and sustainable development without the support and help from all sides. CSG still has a long way to go to meet expectations in terms of administration, technology, service, etc. We hope this report can better our mutual understanding. We believe with sincere communication, trust , we can achieve a joint development for now and the future.

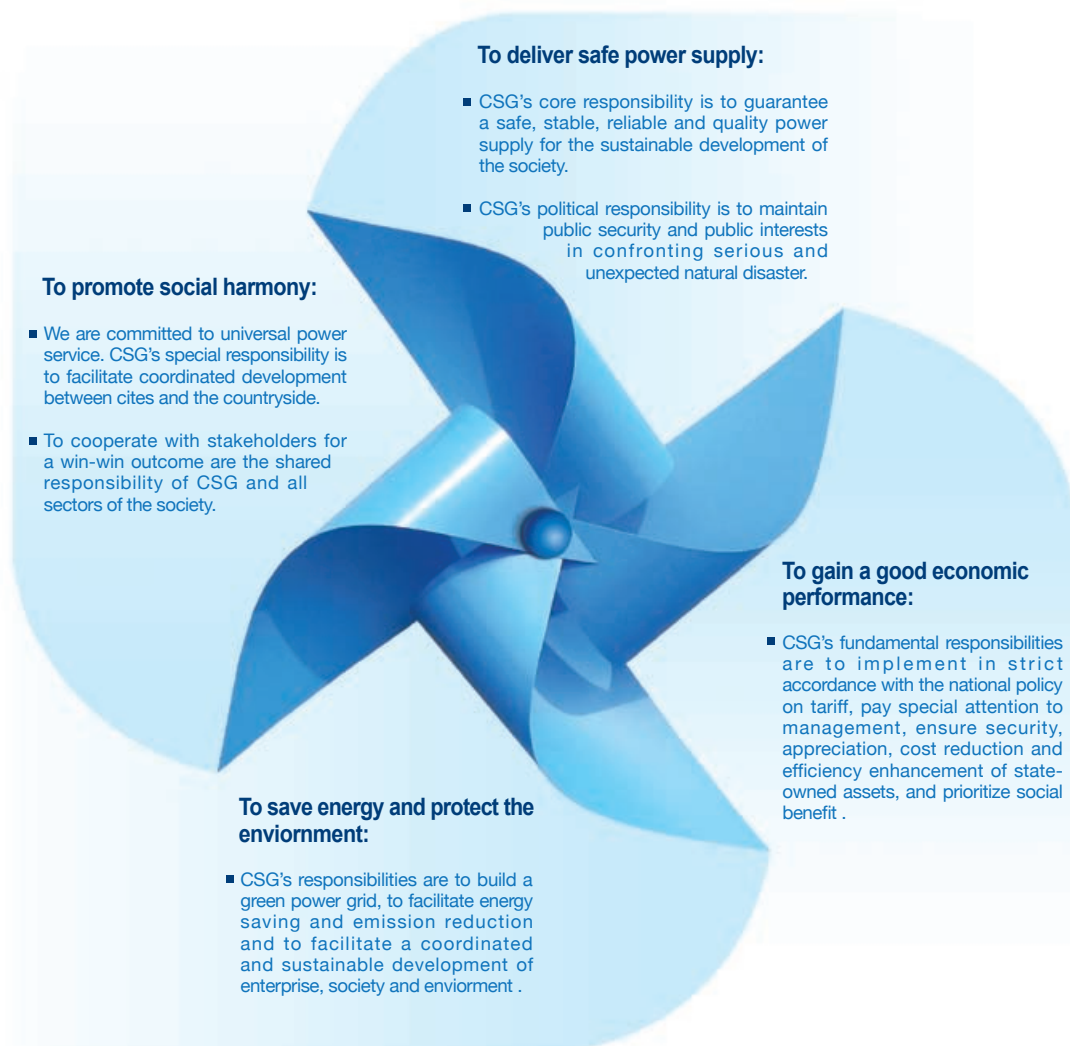
Zhao Jiongwu

Framework of Responsibility

Actively undertake social responsibility Make every effort to ensure electricity supply

Corporate social responsibility means that an enterprise should be held accountable for the impact of its activities of operation and administration on its stakeholders. Enterprises should interact with its stakeholders in a sincere and harmonious manner and facilitate its own growth and sustainable development of the society.

Central enterprise's practice of social responsibility is the actual practice of serving the Party and the state and serving social construction in line with the Scientific Development Principle. Electric power industry is an infrastructural industry and an utility industry in nature. It is the lifeline of the national economy, state energy security and social stability. CSG's mission is to "Actively take on social responsibility and make every effort to ensure electricity supply". CSG's social responsibility is reflected in the following 4 aspects:



Contents

01	Board Chairman's Speech	
03	Framework of Responsibility	
05	Responsibility	
11	About Us	
19	Electric Power Supply	
31	Economic Performance	
39	Energy Saving and Enviromental Protection	
49	Social Harmony	
59	Outlook of 2010	
60	Rating Report	
61	The 3 rd Party Endorsement	
63	Performance of the United Nations Global Compact	
64	Report Index	

To Increase Electricity Supply and Expand the Electricity Sale

Electricity Sales totalled 523.9 TWh,
6.2% increase compared to that of 2008.

12 TWh of it were obtained through electricity sales promotion measures

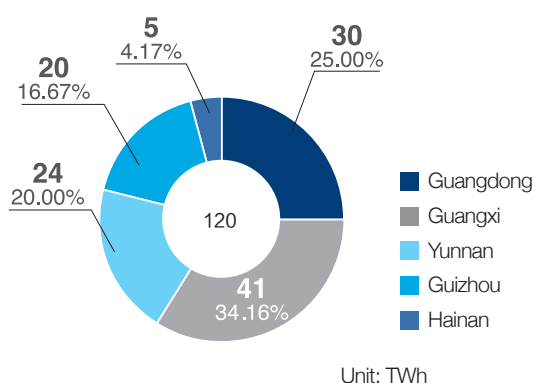
Starting from the 4th quarter of 2008, aftermath of global financial crisis continuously spread its impact on economic entities.

To prevent economy from drastic decline, the Central Party and the State Council rapidly announced a 4 trillion Yuan's Stimulus Package aiming to boost domestic demand and stimulate economy and to retain a 8% economic growth rate. At the beginning of 2009, CSG set a core working target of 5% growth in electricity sale to fulfill the Central Government's decision and deployment of "ensuring economic growth, ensuring the people's livelihood and ensuring the social stability "

Electric power market is a rapidly changing one. In the first half of 2009, power demand decreased 1.3%. CSG made tireless efforts to gain a power sale increase by taking specific measures. The whole year's power sale increased 12 TWh, 1.2% higher than the target set at the beginning of 2009. In 2009, 5 provinces and region scored a 10.5% economic growth and the whole nation recorded 8.7% economic growth, we are proud of our contribution to the achievement.



The Share of Additional Power Sale by
the 5 Provinces and Regions



Guangdong: BYD " Oil to Electricity"

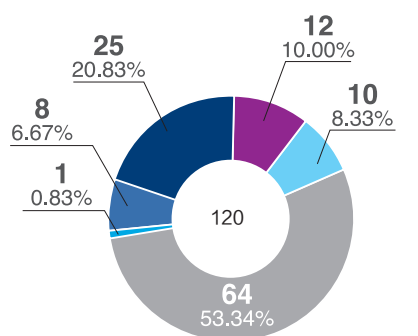
BYD Company Limited, headquartered in Shenzhen used oil to generate electricity for partial commercial production. The annual electricity consumption is about 200 million kWh. To address BYD's difficulties of low efficiency, loud noise and heavy pollution caused by diesel generating sets, Shenzhen Power Supply Branch provided on-site services and made a proposal on "oil to Electricity". They helped the company to shut down diesel generating sets and use electricity from the grid. This measure successfully reduced BYD's power consumption cost, and helped to protect the environment.

Guangxi: Placing the key sectors on the priority support list

Guangxi Power Grid Company played an excellent supporting role to the autonomous region government of Guangxi. It put forward a flexible scheme of purchase-sale coordinated power supply, carried out active measures to support key sectors' production. In 2009, Guangxi Power Grid Company organized 100 taskforce and paid 1200 visits to key factories, mines and enterprises. In total, 216 resumed production and in return, helped to stabilize power Consumption.

How 12 TWh was “Digged Out”

The Share of Additional Power Demand by Measures



Unit: TWh

- Assist to Restore Commercial Production
- Increase the Proportion of end-users' energy consumption
- Speed up business expansion
- Reducing outage
- Solve “the bottleneck” problem in power consumption
- Others

CSG established relevant organizations to translate responsibilities into actions and reinforced appraisal scheme. Company management visited grass-roots units to express their confidences and guidance. The company secured a brilliant success in increasing power supply and sale by taking a number of specific measures. We understand one more kwh power supply means to more contribution to economic growth”.

- CSG offered follow-up service to customers out-of-production or production decrease. In total, we helped them to stabilize and restore the power load totaled at 9500MW and in return, we sold additional 6.4 TWh power;

- We facilitate “household appliances to the countryside” campaign. Our measures of replacing coal (oil, gas, firewood) by electricity helped to increase the proportion of electricity in end-user’s energy consumption and increase power sale of 2.5TWh.

- The time consumed on application and installation for capacity expansion reduced 14 hours than last year. We ensured early operation and production of 11.40 GW new projects with an additional power sale of 1.2 TWh.

- CSG reinforced its efforts in customer outage management and outage reduction. The annual average customer outage reduced 13.6% than that of 2008 with an additional power sale of 1 TWh.

- CSG addressed “bottleneck” problem in a timely manner, facilitating power consumption to guarantee the power generation and transmission with an additional power sale of 0.8 TWh.

- An additional power sale of 0.1 TWh was gained by other measures.

Yunnan: “Electrification project for tobacco production” benefit tobacco growers

Yunnan Power Grid Company fully tapped the potentials of alternative energy market. Linchang Power Supply Branch vigorously promoted electric baking barn to tobacco growers. More than 3700 electric baking barns were built. It solved the problem of environmental pollution caused by firewood and coal, continuously reduced the energy consumption cost of tobacco growers, promoted tobacco production. The efforts were well received by tobacco growers. This “Electrification project for tobacco production” acted as a demonstration project and were rolled out to other regions of Yunnan Province.

Guizhou: “One Strategy for One Factory” facilitate Production

Guizhou Power Grid Company adopt the measure of “One Strategy for One Factory” and helped enterprises to overcome difficulties. It played a coordination role in the ingot aluminium procurement from Guizhou Enterprise of China Aluminum Co., Ltd.(GECA). They took proactive approaches to help GECA to solve cash flow difficulty, and stabilized its operation and employment. In return, GECA’s power consumption maintained a 2.2 million KWh per day.

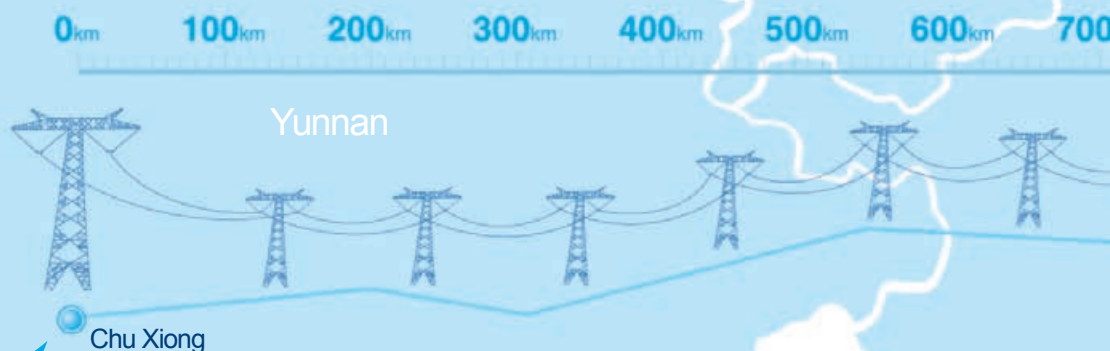
Hainan: Optimize Operation and Increase Production

Hainan Power Grid Company spared no effort to increase power supply. Dongfang Power Supply Branch guided Xinda Cement Company to optimize operation shift by taking full advantages of the difference of peak and valley tariff. The practice reduced 17% of average power consumption cost, increased 44% of the monthly power consumption and helped its production turnover.

Strategy with the First $\pm 800\text{kV}$ UHVDC Transmission Project in the World

Guizhou

Paying tribute to the 10th Anniversary of the Implementation of National Western Development



Yun-Guang UHVDC Transmission Project Starts from Lufeng County, Chuxiong Canton, Yunnan Province at its west end and Zengcheng City, Guangdong Province at its east end. It passes through Yunnan, Guangxi and Guangdong provinces with the total length of 1372 km, rated voltage of $\pm 800\text{kV}$ and the transmission capacity of 5000MW. The project was put into operation monopolarly on Dec. 28, 2009.

Domestic production rate is 62.9% with the leading technology

It was awarded “The Best Transmission and Transformation Engineering in Asia” by Asian Power Magazine



An Inspection on 2250kV Fundamental Frequency Testing Transformer

According to the Master Plan of Southern Power Grid Development, the power transmitted from the western China to Guangdong will exceed 41GW in 2020 and 56GW in 2030. After 2010, the main power resources from the west to Guangdong will be the hydropower in Northwest of Yunnan Province. The $\pm 800\text{kV}$ Yun-Guang UHVDC project construction is significant, as it implements the National Western Development Strategy and support western provinces' (Yunnan, for example) big-scale hydropower development export to other provinces.

Independent-Research: We adhere to the concept of “being independent, harnessing production, teaching and research”, CSG organized domestic research and design institutions, universities and manufacture enterprises to conduct 7 areas and 58 specific studies on UHVDC Transmission technologies.

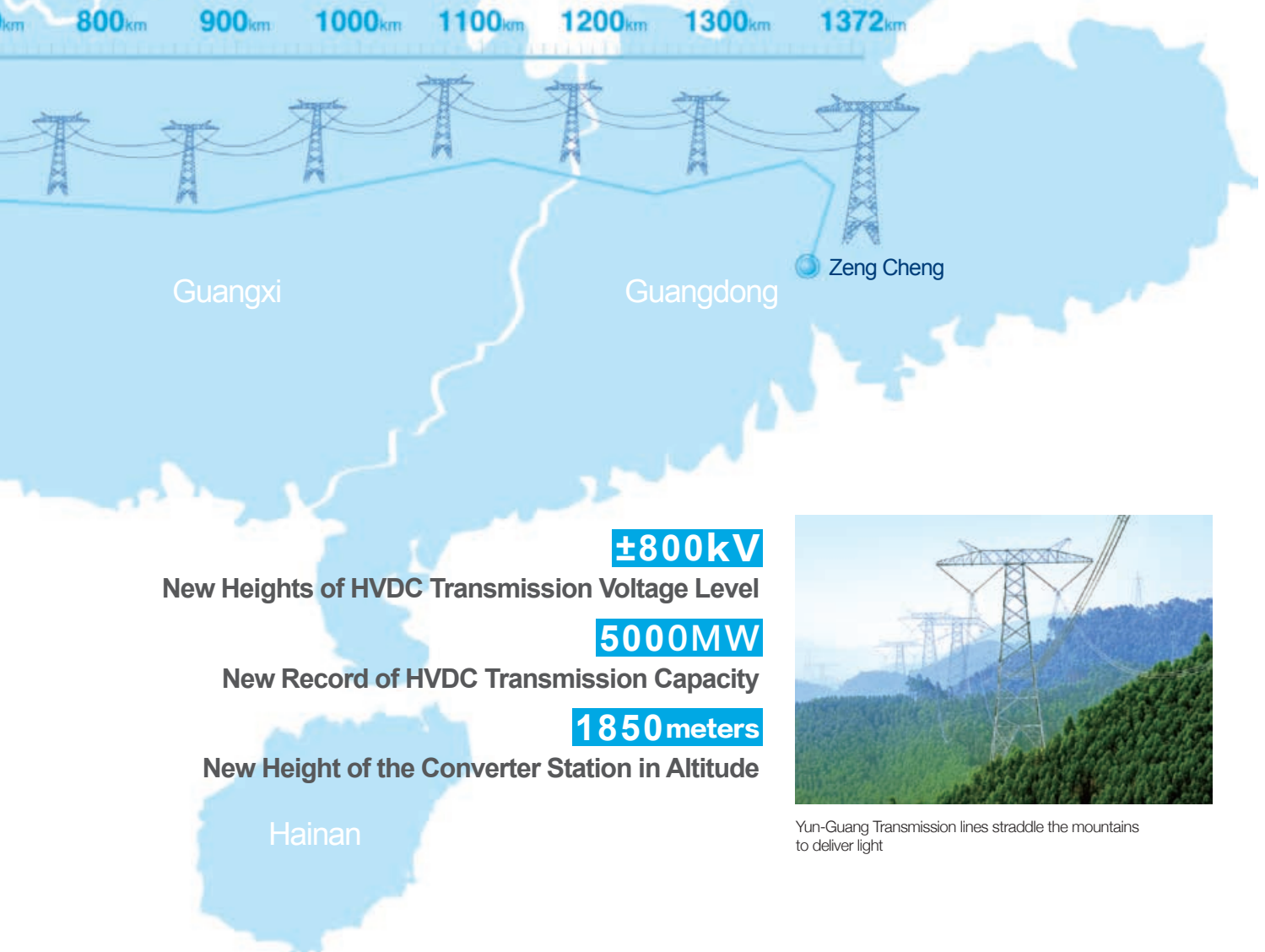
Self-Design: We conducted study on engineering system and complete design by using self-developed software and accomplished the construction drawing design independently.

Domestic manufacture: CSG adhered to the guiding principle of “Made in China and Cooperate with the world”, self-developed and manufactured most of the key equipments. Domestic manufacture rate reached 62.9%

Proprietary intellectual property rights: We researched and formulated 25 state and industry standards, applied or authorized 106 patents and registered 8 software copyrights.

Responsibility

We implemented the Central Government's decision on "Expansion of Domestic Demand", increased investment on power grid construction, accomplished the target goal under the situation of a doubled construction task by dedication and perseverance. The operation of $\pm 800\text{kV}$ Yun-Guang UHVDC Transmission Sample Project and Hainan Interconnection Project has great significance and far-reaching impact.



Yun-Guang Transmission lines straddle the mountains to deliver light

Transmission Capacity: To transmit Yunan's clean hydropower to the heart of Pearl River Delta with an annual supply of 22.5 TWh. In this way, Yunnan's resources have been translated into economic benefits and Guangdong benefited from clean power supply. The transmission capacity is equivalent to 2 $\pm 500\text{kV}$ HVDC lines.

Energy Saving and Environmental Protection: Based on coal-fired power plant replacement, the annual emitted CO₂ reduced 17 million tons. Compared with 500kV HVDC transmission project, line losses reduced 40% and 8300 hectares of ROW was saved.

Demonstration Role: As a demonstration project of China's UHVDC Transmission project, it laid the technical foundation for China to develop UHVDC transmission engineering, accumulated construction experience, trained a large number of specialized technical personnels, produced a series of technologies, specifications and standards with proprietary intellectual property rights. It boosted China's electricity equipment and power grid construction in terms of research, development, manufacture, and representing China's power grid operation and management level are ranking top in the world.

500kV Hainan Interconnection Project

The 1st in Asia and the 2nd in the world

End the history of Hainan as an "isolated" island in electricity

On June 30, 2009, 500kV Hainan Cross-Sea Interconnection Project, featured by extra high voltage, long distance and large capacity, was successfully put into operation, ranking No.1 in Asia and the 2nd in the world. It ended the long history of Hainan Province as an "isolatedly operated" island in electricity.

The project starts from 500kV Gangcheng substation in Zhanjiang City, Guangdong Province at its north end, passed by Leizhou Peninsula, crossed through Qiongzhou Channel, ended its south end at the 500kV Fushan substation in Chengmai County, Hainan Province. The total length of transmission line is 171.9 km with a sea cable of 32 km crossing Qiongzhou Channel. It is connected by 500kV AC lines with a designed capacity of 600MW. Fushan Substation is connected to the 220kV Hainan Power Grid by 5 circuits of transmission lines.

The development of industrial economy needs a stable and secure electric power supply. By the end of 2010, a large number of big scale industrial projects and tourism development projects will be in their construction and operation peak. The power demand of the whole province will present a great-leap-forward growth trend. Hainan Power Grid Company has an outstanding performance by creating the 9th new record on unified dispatching load despite the whole country's power demand was decreased in the 1st half of 2009.

The operation of Hainan Interconnection Project ensured a more stable, reliable and secure power supply to Hainan and made a significant contribution to improve Hainan's investment environment and promote Hainan's economic development as well as the construction of an international tourism island.



Sea Cable landed Linshi Island, Hainan





Traction Boat is drawing the floating-point package which holds the sea cable

Ensuring power grid security: Before the interconnection of Hainan power grid, fault and load backup had to be supported by single unit; After the interconnection, the bottleneck of so called “Big unit and small grid” can be effectively relieved. The security and stability of Hainan power grid operation was enhanced.

Reducing the operation cost: Hainan Interconnection Project will effectively increase the efficiency of hydropower and thermal power units. The inconnection set free Hainan's existing backup capacity of 330MW, equivalent to capacity increase of 1.5 TWh annually. It will basically meet the future demand of Hainan's economic development in the coming years.



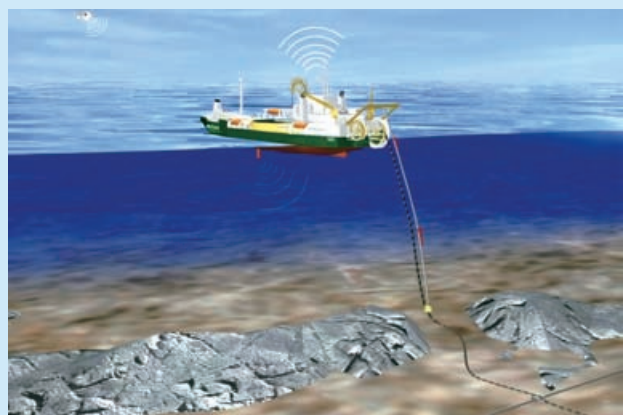
Over 100 km of 500 kV Cable is loaded on the ship

Relieving power shortage: The time difference between the summer peak load in Hainan and Guangdong is about 80 minutes, time difference between Yunnan and Guizhou grid is 20 minutes. We can take advantages of the “time difference benefit” by interconnection to relieve power shortage at peak time within a short timeframe.

Complementarity: In the coming years, thermal and nuclear power projects in Hainan years will be completed and operation will be started. Hainan Power Grid has the capacity to deliver power to Guangdong. The complementarity of the two provinces help to promote the energy cooperation within Pan-Pearl River Delta (PPRD) regional and realize an optimized distribution of regional resources in a bigger area.

Laying of the Marine Cable

During the engineering Construction of Hainan Interconnection Project, the most crucial and challenging task is laying 3 marine cables with the length of 32 meters each through Qiongzhou Channel. Fishing nets, fishing gears and remnant should be removed before the laying of cables. Then, a ditch in the seabed would be dugged out, and safety warning measures should be prepared. When the cables were being laid, it must to be laid on the ocean floor at one attempt. The key was to control the angle that cable plunging into the water and control the laying tension. These should be achieved by controlling the ship's sailing speed and laying speed. Once the cables were laid, cables must be buried to reduce the adverse impact of the complicated ocean environment on the cable and to ensure the security of operation.



The ship is laying the marine cable

China Southern Power Grid Co., Ltd, locating its headquarter in Guangzhou, is responsible for the power grid investment, construction and operation of the 5 provinces and region, including Guangdong, Guangxi, Yunnan, Guizhou and Hainan with the serving area of 1 million square kilometers and a population of 230 million.

Corporate Commitment:

Being Responsible to the Central Government
Serving the 5 Provinces

Corporate Mission:

Actively Take on Social Responsibility
Make Every Effort to Ensure Electricity Supply

Strategic Objective:

To establish CSG as a service-oriented, modern, integrated enterprise,
With a leading position in China and reputation in the world

Development Road Map:

Reinforcement Innovation Advancement

Corporate Lifeline:

Safety and Stability of Power Grid

Working Philosophy:

Attach more Importance to Relying on Scientific and Technical Advancement;
Attach more Importance to Establish Scientific Development Concept;
Attach more Importance to Social Benefit;
Attach more Importance to Effective Management;
Attach more Importance to Deepening Reform;
Attach more Importance to Human Resources Development.

Corporate Decree:

Safe Production No.1 Decree;
Legitimate Business No.2 Decree

Corporate Image:

CSG Lights Up Every Household in Southern China
Responsible Southern Power Grid, Harmonious Southern Power Grid

Corporate Concept:

Safety Idea

---All Accidents can be Prevented

Business Idea

---Emphasize Corporate Benefit, Prioritize Social Benefit

Service Idea

---Our Service is Endless

Behaviour Idea

---Make Every Effort to Accomplish Each Task

Clean Idea

---Clean Conduct, No Corruption

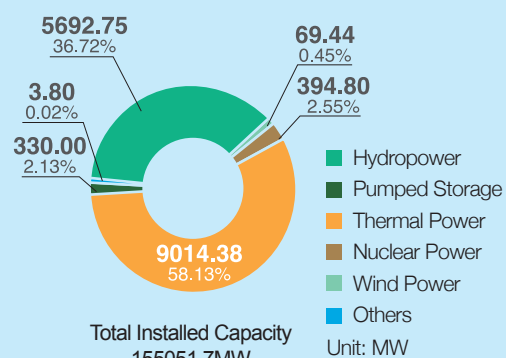
Team Idea

---Principle plus Affection Produce Harmonious and Powerful Teamwork; Lead the Team with High Standard, Strict Requirement, and Hearted Care; Common Pursuit throughout the Team, Smooth Implementation of Policy and Order, Everyone Enjoys Happy Working-day.



① Windpower ② Hydropower ③ Solar Power ④ Nuclear Power ⑤ Thermal Power

Structure of Power Generation Resources



About Us



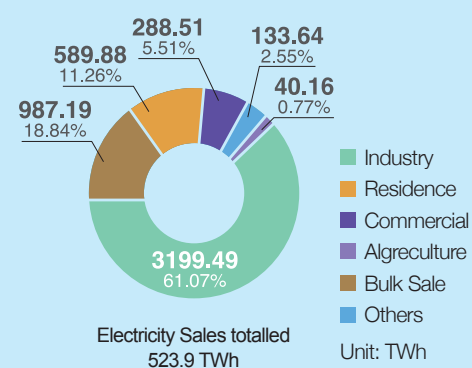
6 Transmission Line 7 Substation 8 Power Distribution House 9 business outlet

10 Industry 11 Agriculture 12 Commerce 13 Domestic

Main Business Data

	2005	2006	2007	2008	2009(year)
Total Assets Billion Yuan	2633	2952	3183	3837	4404
Sales of Power TWh	3476	3973	4597	4826	5239
Major Business Revenue Billion Yuan	1893	2230	2563	2842	3108
Length of 110kV and the above Transmission Lines km	88676	98566	107286	124950	139286
Transformation Capacity of 110kV and the above(MVA)	27500	30552	35022	40873	48513
Highest Load of Unified Dispatching power(MW)	5220	6025	6879	8887	9590
Power Transmitted from the West to the East(TWh)	535	675	863	1057	1156

Structure of Customers



Company Leaders

Zhao Jianguo
Board Chairman



Zhong Jun
Board Director
President



Xiao Peng
Board Director
Vice President



Zhou Jitai
Board Director
Vice President



Wang Jiuling
Board Director
Vice President



Qi Dacai
Board Director
Vice President



Wang Yushuang
Board Director
Head of Discipline
and Inspection



Wang Liangyou
Board Director
Vice President
Chairman of the Trade
Union



Zhang Xiaodong
Board Director
Vice President



Li Wenzhong
Chief Accountant



Company Governance

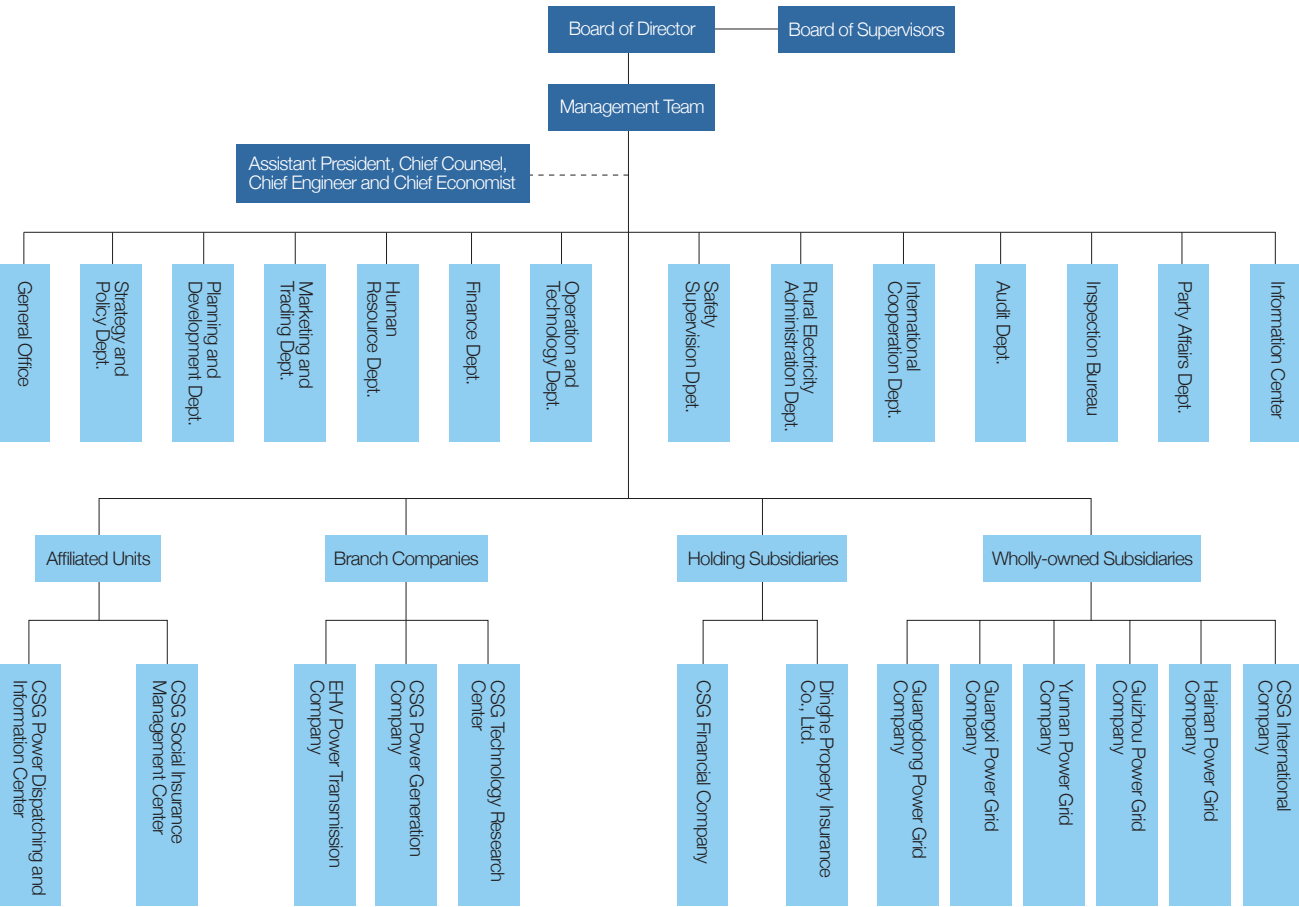
The company is administrated by the Central Government. State-owned Assets Supervision and Administration Commission of the State Council prosecutes his responsibilities as the patrons. Board of Supervisors for the Main State-owned Enterprises is assigned to CSG by the State Council.

The company's governance structure consists of board of Director and management team which is established in accordance with decision making, control, execution and inspection procedures. The company has well defined power and responsibility and continuously improves its governance operation mechanism.

The company pays special attention to enhance the corporate management and system construction, standardize collective decision-making procedure, significant decisions are made in line with regulated procedures to ensure the company's operation according to the laws.

Structure of Organization

CSG headquarter has 14 departments and 2 affiliated units. Under the CSG headquarter, there are 3 branches, namely CSG EHV Power Transmission Company, CSG Power generation Company and CSG Technology Research Centre; 6 wholly-owned subsidiaries, namely Guangdong Power Grid Company, Guangxi Power Grid Company, Yunnan Power Grid Company, Guizhou Power Grid Company, Hainan Power Grid Company, and CSG International Company. Besides, CSG is the controlling shareholder of CSG Financial Company and Dinghe Property Insurance Co., Ltd..



Introduction of Secondary Utilities

Guangdong Power Grid Company www.gd.csg.cn

Guangdong Power Grid Company is in charge of investment, construction, operation and management of Guangdong Power grid. It is responsible for power transmission and distribution management, power procurement, power sale, power trading, dispatching and optimized distribution of power resources, etc. It is China's largest-scaled provincial power grid company at the moment. It manages 21 local power supply enterprises and 40 utilities functioning as dispatching, communication, design and capital construction. By the end of 2009, the total assets of the company amounted to RMB 222.7 billion with 109,299 employees, serving 96.38 million clients.

Guangxi Power Grid Company www.gx.csg.cn

Guangxi Power Grid Company is in charge of investment, construction, operation and management of Guangxi Power grid. It is responsible for power transmission and distribution management, power procurement, power sale, power trading, dispatching and optimized distribution of power resources, etc. It manages 22 branch companies (14 of them are prefectural (city) electric power supply bureau), 43 wholly-owned and 1 holding subsidiary company. And it is mandated to govern 2 county level electric power supply enterprises. By the end of 2009, the total assets of the company amounted to RMB 50.9 billion with 63,980 employees and 50.49 million clients.

Yunnan Power Grid Company www.yn.csg.cn

Yunnan Power Grid Company is in charge of investment, construction, operation and management of Guangxi Power grid. It is responsible for power transmission and distribution management, power procurement, power sale, power trading, dispatching and optimized distribution of power resources, etc. It manages 30 branch companies, 87 wholly-owned companies and 11 holding subsidiary companies. By the end of 2009, the total assets of the company amounted to RMB 63.45 billion with 64,707 employees and 43.20 million clients.

Guizhou Power Grid Company www.gz.csg.cn

Guizhou Power Grid Company is in charge of investment, construction, operation and management of Guangxi Power grid. It is responsible for power transmission and distribution management, power procurement, power sale, power trading, dispatching and optimized distribution of power resources, etc. It manages 23 units with business in power sale, power design, construction, research and development. By the end of 2009, the total assets of the company amounted to RMB 43.11 billion with 47,901 employees and 39 million clients.

Hainan Power Grid Company www.hn.csg.cn

Hainan Power Grid Company is in charge of investment, construction, operation and management of Guangxi Power grid. It is responsible for power transmission and distribution management, power procurement, power sale, power trading, dispatching and optimized distribution of power resources, etc. It manages 18 branch companies, 2 electric power supply company which are listed as independent units, 11 affiliated units and 1 power plant. By the end of 2009, the total assets of the company amounted to RMB 11.588 billion with 11,719 employees and 8.7 million clients.

EHV Power Transmission Company www.ehv.csg.cn

The CSG Extra High Voltage Power Transmission Company is responsible of construction, operation and management of inter-provincial main networks and the important connection lines of China Southern Power Grid. It manages 10 grass-roots units. The capacity of power transmission from the West to the East reached 24.20 GW by 2009. By the end of 2009, the total assets of the company amounted to RMB 41.724 billion with 3,639 employees.

CSG Power Generation Company www.pgc.csg.cn

The CSG Power Generation Company is in charge of construction, operation and management of power plants for CSG. It has 7 subordinates. The total installed capacity reached 4920MW. By the end of 2009, the total assets of the company amounted to RMB 16.484 billion with 1,359 employees.

CSG Technology Research Center www.csg.cn

The CSG Technology Research Center (TRC) is the "National Assessed Enterprise Technology Center". Its main business covers power grid related research, new technology development, technical assistance and supervision, technical transfer, technical service, consultancy and training etc. By the end of 2009, the total assets of TRC amounted to RMB 378 million with 73 employees.

CSG International Company www.csg.cn

CSG International Co., Ltd. was established in 2007. 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, import/export of new technologies, international trade, consulting and information service. The registered capital is RMB 200 million. By the end of 2009, it has 51 employees.

CSG Financial Company www.csg.cn

Approved by China Banking Regulatory Commission (CBRC), CSG Financial Company was established on Dec.29,2004 as a non-banking financial institution with registered capital of RMB 1 billion. Its main business covers deposits, settlement, loan, and entrusted loan, its financial services cover securities investment and equity investment to financial institutions. It has 7 departments and sets 5 business departments in Guangdong, Guangxi, Yunnan, Guizhou and Hainan respectively. By the end of 2009, the total assets reached RMB 17.8 billion and total number of employees were 66.

Dinghe Property Insurance Co., Ltd. www.edhic.com

Approved by the China Insurance Regulatory Commission (CIRC), Dinghe Property Insurance Co., Ltd. Was founded on May 16,2008. Its main business covers property insurance, liability insurance, credit insurance, guarantee insurance, short-term health insurance and accident insurance, etc. It sets 11 departments, 1 sales department at the headquarter, 3 secondary institutions. And other 3 secondary institutions are preparing for construction. By the end of 2009, the total assets amounted to RMB 1.557 billion with 242 employees (including sales representatives).

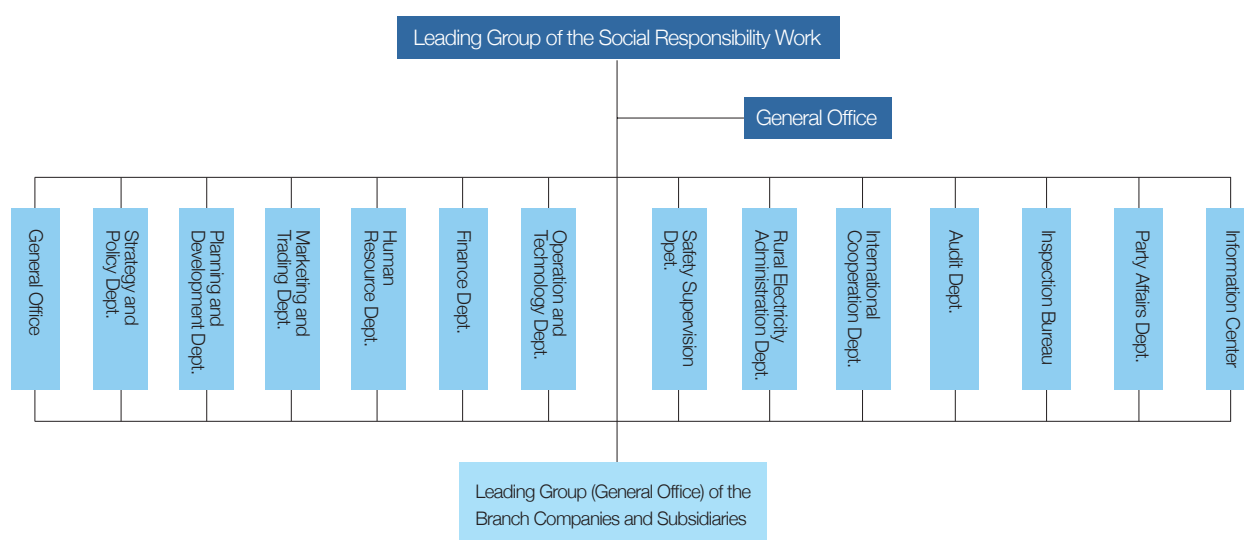
Responsibility Management

The Work System of Social Responsibility

Advocating “Being Responsible to the Central Government, Serving the 5 Provinces”, CSG actively facilitated and drove social responsibility management, perfected relevant work system, established a leading group and a general office. Each provincial power grid company established a working institution accordingly.

► The leading group heads the management and promotion of the company’s social responsibility practice. It oversees the approval of the working plan, addresses substantial issues, analyzes and effectively manages social responsibility risks.

► As a daily administrative arm of the leading group, the general office heads implementation of the resolutions made by the leading group, compiling working plan, conducting training, coordinating relevant issues, setting index system, collecting working documents, preparing and releasing company’s Social Responsibility Report.



Social Responsibility Index System

Taking the G3 standard and reference standard of international advanced enterprises and power sectors into account, CSG set a social responsibility index system with its own characteristics. Revision was made to the index system based on the social responsibility index system of power supply sector. The index is set by Research Center for corporate Social Responsibility Chinese Academy of Social Sciences.



Communication and Participation of the stakeholders

We always seek recognition and support from the stakeholders to realize the win-win goal. We pay great priority to stakeholders' expectation and requirement, bear in mind the impact of our operation and management on stakeholders, continuously perfect approaches and channels of communication, exchanges and participation.

• All of the 5 provincial power grid companies under the CSG composed their own 2009 Social Responsibility Report and have taken proactive measures to better their communication with their stakeholders.

The company attaches great priority to social responsibility communication and has established a communication platform with multi-channel and multi-level. The publication of the Social Responsibility Report is a solid evidence of communication.



Released Corporate Social Responsibility Report



Branch Companies of CSG have also released Corporate Social Responsibility Report of 2008

For more details, please visit www.csg.cn, Corporate Social Responsibility Feature Report

Stakeholders Analysis

Stakeholders Analysis	Expectation and requirement	Communication and response
Government (Sponsor)	<ul style="list-style-type: none"> Safe power supply State-owned asset value maintenance and appreciation Legal and standardized management 	<ul style="list-style-type: none"> National Policy implementation Regulatory system Operation management improvement Working report
Staff	<ul style="list-style-type: none"> Basic right protection Health and safety Career development Corporate culture 	<ul style="list-style-type: none"> Compliance with National labor laws and regulations Open corporate information Listen suggestions and advices Establish multiple communication channel
Customers	<ul style="list-style-type: none"> SAIDI reduction High quality service Energy-saving service 	<ul style="list-style-type: none"> Improves power supply reliability Customer need survey Accept complains Discussion and visits Provide guidance on energy-saving
Partners	<ul style="list-style-type: none"> Commitment Fair purchase Experience sharing 	<ul style="list-style-type: none"> Fair Open and Justice Dispatching Open purchase information Accept feedback and suggestion Negotiation and communication
Environment	<ul style="list-style-type: none"> Energy saving and emission reduction Resources saving Climate protection Eco-environment protection 	<ul style="list-style-type: none"> Energy-saving oriented generation scheduling Open environment information Energy-saving technology development Energy-saving technology promotion
Community and public	<ul style="list-style-type: none"> Community safety Public utility development Poverty-relief 	<ul style="list-style-type: none"> Community Education and publicity Workshop and communication Charity

Communication and Training on Social Responsibility

On May 26th, CSG released the second Corporate Social Responsibility Report, elaborating CSG's achievements in safe and quality power supply, contributions made to the economic and social development and the environment of year 2008 and interactions with its stakeholders.



On November 3rd, CSG attended the first Corporate Social Responsibility working Conference of Central Enterprises, delivering a report on "Launching Green Action, Promoting Energy-Saving and Emission Reduction, Taking Social Responsibility as an Electricity Enterprise".

CSG was admitted to the United Nations Global Compact Organization, CSG shall support and promote ten basic principles in the global compact of the United Nations.

On December 2nd, CSG attended the second Corporate Social Responsibility Report

International Seminar of Chinese Enterprise. CSG, together with 29 other enterprises, won the award of Golden Bees 2009 Best Corporate Social Responsibility Report in 541 reports.

On December 5th, CSG attended the 2009 Guangdong Province Corporate Social Responsibility Annual meeting and the 2nd Southern Corporate Social Responsibility Forum, sharing CSG's social responsibility concept and practice with its counterparts.

CSG attended a series of academic exchange events held by Corporate Social Responsibility Center of CASS, and relevant staff were invited to work in the center.

We also organized a number of trainings such as compiling Corporate Social Responsibility and the Best Practice of the World Advanced Power Utilities Social Responsibility.

Responsibility and Reputation

Major Awards of 2009 CSG Social Responsibility Practice and Promotion

Awards	Number	Granting Units
Central Enterprise Annual Operation Performance Evaluation A Rank	1	SASAC
Special Award for Performance Advance	1	SASAC
Excellent Central Enterprise Social Responsibility Practice	1	SASAC
Excellent Central Enterprise Financial Final Accounts	1	SASAC
Innovative Enterprise	1	MOST, SASAC, ACFTU
National Awards for Science and Technology Progress, First Prize	1	NOSTA
China Power Technology Awards, Third Prize	2	CSEE
China Quality Power Project Award	7	CEPCA
National Quality Power Project Silver Award	4	National Quality Award Evaluation Commission
National May 1st Labor Award	8	ACFTU
National Youth Safety Production Demonstration Post	2	CYLC, State Administration of Work Safety
National Pioneer of Youth Civilization	1	CYLC
National Women Civilization Post	3	All-China Women's Federation
National Women Pace-setter Unit	2	All-China Women's Federation
Women Staff Establishment Building Pace-setter Post	3	Energy Chemical Labor Union



Excellent Social Responsibility Practice in Central Enterprises



Society Special Award of Golden Bee 2009 Best Corporate Social Responsibility Report

Power Supply

- ▶ Safety and Operation
- ▶ Reliable Power Supply
- ▶ Quality Service
- ▶ Grid Construction
- ▶ Emergency Response Management
- ▶ Technology Innovation
- ▶ Management Innovation





Major Grid Failure
Major Equipment Failure
Major Fatal Injury

0

Annual SAIDI 11.12 hours,

13.6%

lowered than the same
period of year 2008.

Grid Construction
Investment reached

91.5

billion RMB.

Providing safe, reliable and high quality electricity for the sustainable economic and social development is CSG's core responsibility. CSG's lifeline is grid safety and stability and we are committed to meeting customers' needs and delivering quality service. It is imperative for us to reduce customer outage duration.



► Safety and Operation

Year 2009 was the hardest year for CSG, we faced a lot of difficulties and experienced the most complicated situation and the biggest pressure on safety production. We promoted "Systematic, Standardized and Indexation" management on safety production, implemented various risk control measures, so far there had been no severe production safety accidents. As the major economic-technical indicators went up, we successfully completed various tasks, and ensured the safe and stable operation of the grid and power supply in the service area.

Stable Grid Operation

CSG has formed the main network framework including $\pm 800\text{kV}$ UHVDC and 500kV AC/DC, and realized long distance, bulk capacity and EHV power transmission. CSG is one of the most complicated in structure and technology advanced power grid in the world, and it is difficult to control safety risk and manage the operation. We enhance the management on safety operation and advance the control on safety risk.

- We strengthened large power grid operation characteristics analysis, to ensure the safety operation after the Yunnan-Guangdong UHVDC transmission project and Hainan Interconnection project were put into operation.
- Power Grid Safety Risk Management Regulation and Quantization Evaluation Methods was established, and put forward 10 key risks and 25 key methods in grid operation.
- We improved EHVDC control and protection. Bipolar blocks were successfully avoided and the times of single pole blocks were greatly reduced, the system reliability was greatly improved.
- We optimized power grid structure, realized Electro-

Magnetic Loop Circuits work in Guangdong and Guangxi and improved power grid safety and stability.

- We greatly optimized safety and stability system, newly added 23 safety and stability station, and put multi HVDC coordinated control system into operation
- We strengthened risk analysis on operation, new equipment startup, typhoon, thunderstorm and high temperature. We also performed natural disaster pre-warning, established short-term operation pattern strategy, and actively prevented power grid operation risks.
- CSG Power Generation Company played an important role in peak shaving and valley filling. There were 13 times of emergency response to grid faults, and there were 52 times of equipment emergency response startup, with a 100% successful startup rate.

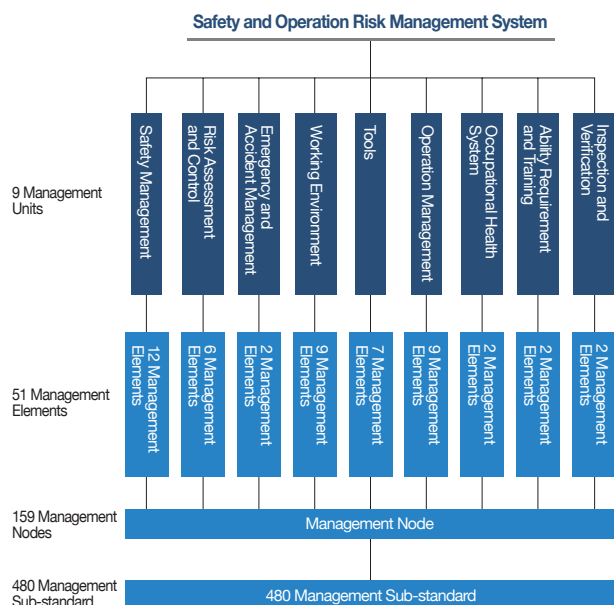
Healthy Operation of Equipments

We enhanced equipment defect management, promoted condition maintenance of equipments and enhanced healthy level of equipment.

- We performed special operation maintenance on 23 key power transmission and transformation equipments and 68 important power transmission and transformation equipments, and finished pretests and regular checks on major equipments as schedule.
- We strengthened the rebuilding of equipments, and the 5 500kV substations in Guangdong changed the switches and relevant equipments. The short circuit current withstanding ability rose to 63kA , the safety operation ability was greatly enhanced.
- We highlighted technical analysis, and implemented anti-accident measures. We spotted 12005 safety risks in 2009, and 10568 were modified, the modification rate reached 88%.
- We performed timely simulation analysis on the problems met during operation of equipments, the 220kV -and-above faults rapid removal rate reached 100%

Promote Safety and Operation Risk Management System

Based on 15 pilot units review and experiences, CSG rolls out the Safety and Operation Risk Management System in 76 primary operation units. CSG raises staffs awareness by risk assessment and control, standard formulation and implementation, inspection, verification. The practice fosters a safety culture of self-discipline, and facilitates a controllable and sustainable Safety and Operation Management System.



Safety and Operation Management Standardization

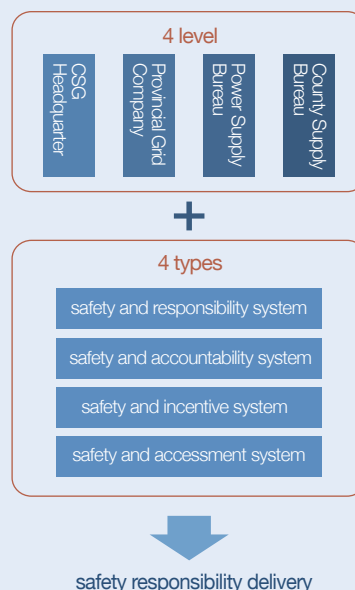
CSG incorporates Safety and Operation Risk System into major business procedures, and always optimizes production and management regulations and technical standards.

- CSG achieved standardized management of 1024 substations (110kv and above) and 34 transmission operation units, standardization rate reached 84% and 47% respectively.
- Standardized pilot projects successfully concluded in 10 operation groups, and 34 certificates of operation capability training were awarded.

Safety and Operation Responsibility Implementation

CSG establishes four systems, namely, safety responsibility system, safety accountability system, safety incentive system, safety assessment system. We ensure effective safety and operation responsibility implementation at all levels by position defining responsibility, standardized assessment management, stringent accident accountability system and enforcement of supervision and inspection.

safety operation responsibility system

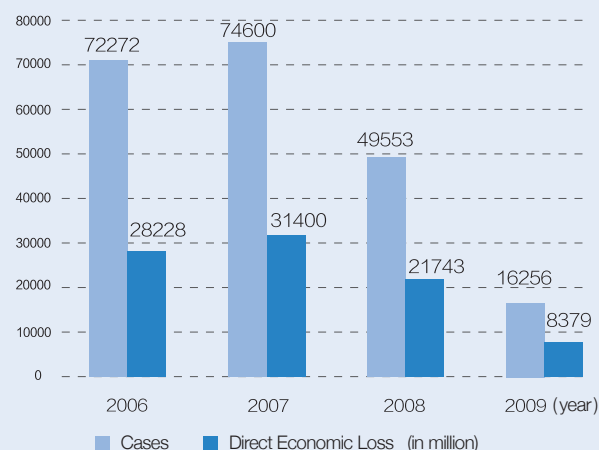


Power Facilities Protection

CSG formulates Power Facilities Protection regulation, completes and revises the internal security system, reinforces electricity equipment patrol and protection system, cooperates with local police force and invest more in technical security, publicity and education.

We work closely with local police forces to crack down crimes, for instances, vandalism, theft on electricity, telecommunication and radio equipments and has established a long-term electricity equipments protection system.

Power Equipment Stolen and Damaged and Economic Loss



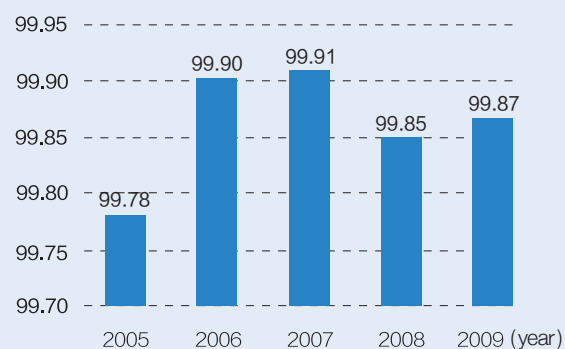
► Power Supply Reliability

CSG regards improving power supply reliability as the top priority, and views ensuring the continuous power supply to clients to the fullest extent as a key indicator of improving management level and practicing social responsibility

We compared the SAIDI with international advanced power utilities, systematically analyzed our own work flows, spotted weak points, and formed a whole-process management system covering planning, construction, production, technology, service and information with CSG characteristics. By integrating methods including improving power grid structure, enhancing automation level, power supply transfer, condition based maintenance and emergency response diesel generator storage, we tried our best to reduce customer outage time.

The urban power supply reliability rate of CSG was 99.87%, despite the influence caused by the upgrading of urban and rural grid, the number could reach 99.92%, a 0.07 percentage point increase year-on-year. The rural power supply reliability rate reached a new height in recent years, the number was 99.74%. The average outage time for urban users was 11.22 hours/household, a 1.66 hours/household decrease year-on-year; the average outage was 2.546 times/household, a 0.183 times/household decrease year-on-year.

Power Supply Reliability Rate in Urban Areas (%)



Power Supply Reliability Rate in Rural Areas (%)



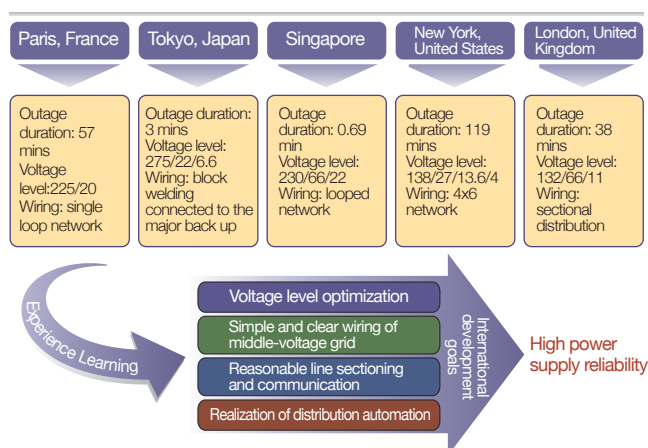
NOTE: The Snow and Ice Sleet disaster in 2008, and suburban grid upgrading in 2009 slightly lowered the power supply reliability rate.

SAIDI in major cities

City	2009	2008	SAIDI Reduction (hour)
Guangzhou	5.75	7.09	1.34
Shenzhen	2.80	5.01	2.20
Nanning	6.26	8.45	2.19
Guilin	10.36	20.21	9.85
Kunming	25.50	10.82	- 14.68
Guiyang	34.06	38.93	4.87
Haikou	11.95	14.65	2.70

Build A Strong Distribution Network

Reflecting on successful experiences of distribution network management in developed countries, CSG analyses factors of power supply reliability, identifies weak links and addresses them one by one.



► We studied and established Guiding Principles on CSG 110kV-and-below Urban and Rural Distribution Grid Planning, Guidelines on Typical Line-wiring and Distribution Grid Technical Equipment, Management Methods on Urban Distribution Grid Construction and Rebuilding and so on to optimize urban power grid.

► We analyzed the shortages in fundamental management, equipments and facilities management, operation management, on spot operation management, DSM and emergency response management.

► Analyze the distance in automation level, on spot working technical level, equipment and facility level and lighting-proof and contamination preventing technology level between CSG and world-advance power companies.

► In 2009, we invested 21.66 billion RMB on grid upgrading, a 25% increase year-on-year. We implemented specific management on 15 major city-level grids, and it was the first time to decide a 35 billion RMB investment on major city-level power grid construction.

Comprehensive Outage Management

CSG continues to strengthen Comprehensive Outage Management, adopts “pre-planning, and forecast” as the major principle in outage management, and provides coordinated effective assessment on maintenance, infrastructure construction, major technical upgrading and new electricity access application. We arrange reasonable outage plan and strictly control temporary outage.

- CSG ensures the pre-arranged outage of each customer under three times or 24 hours in a year.
- Outage notice will be issued to VIP customers and customers of special transformers outage.



On-load Exercises

CSG promotes on-load exercises, reduces outage duration and frequency, and try its best to realize zero interruption to the customers during repair and fault checking.

- We adopt on-load exercises on distribution lines in 24 power supply bureaus, in total, 6695 times of on-load exercises in 2009.
- Guang Zhou Power Supply Bureau realizes on-load exercises, with 2229 times of on-load exercises in 2009. It successfully establishes itself as largest training base in Guangdong Province. Kun Ming Power Supply Bureau increases on-load exercises in a prudent manner, with 1259 times of on-load exercises annually.

Hypernormal Load Transfer

The 220kV Gongming Substation of Shenzhen Power Supply Bureau needed to perform interruption rebuild. If we followed the normal working procedure, it would have to cut the power supply for 35 days, staggered about 500MW and influenced 1,639,440 hour households, and it would make the rural power supply reliability rate drop by 0.44 percentage points, and we would lose 230GWh of power.

Shenzhen Power Supply Bureau established a hypernormal load transfer plan, and greatly adjusted the operation patterns of 10 substations and 19 110kV transmission lines, the load transfer range was enlarged from 2 network district to 4, yet there was no client influenced by the rebuild.

Express Supply Restoration

CSG improves real-time monitoring and automatic operation of distribution network and supply restoration, we are proud to achieve express reaction, express arrival, express repair and express restoration.

- We are committed to our pledge that is the arrival time of maintenance team to urban areas in 45 minutes and to rural areas in 90 minutes.
- Reduces maintenance arrival time by 10%, and the average fault outage duration is shortened by 36%.



Power Supply Guarantee to Significant Events

Secure Supply for Significant Events in 2009

No.	Events	Location	Time
1	China's 60 th National Day Celebration	whole grid	Sep. 30 th , Oct. 6 th
2	10 th Year anniversary of Restoration of Macao's Sovereignty	Zhuhai, Zhongshan, Jiangmen	Dec. 20 th
3	Boao Forum for Asia	Boao	April. 17 th -19 th
4	10 th Hainan Joy Festival	Danzhou	Dec. 11 th
5	Pan-Pearl River Delta, the Beibu Gulf economic cooperation forum	Nanning	Jun. 10 th

Rush Repair

In the past, when there were faults in transmission lines, Guangzhou Power Supply Bureau would consider to adopt interruption maintenance. After regarding improving power supply reliability as the first task, the bureau changed its thinking. The rush repair work flow changed from “fault spotting, fault segregation, rush repair and power supply recover” to “fault segregation, temporary power supply transfer, fault spotting and rush repair”, to try their best to maintain power supply. In July 2009, the 220kV Fulintian B line, which is major transmission line in middle and east Guangzhou, tripped. It took 8 days for Guangzhou Power Supply Bureau to repair, but there was no influence to the users, and there was not a single complaint by customers.

► Quality Service

CSG commits itself to Endless Service. By listening to customers' needs, we strive to meet customers' demand, deliver quality and convenient services and share mutual development with our customers.

CSG promotes brand building for quality service, improves services that aim at rapid reaction, convenient tariff pay-in, reliable tariff calculation, efficient hotline service and considerate services. We will further our work in establishing a marketing service culture.



Rapid Reaction

CSG establishes model design standardization of new access application, to better and simplify relevant procedures, reinforce time limitation control and reduce application waiting time.

- Adopts "Guaranteed satisfactory solution system", meaning whoever taking the first enquiry must be responsible for a guaranteed satisfactory solution.
- Provides counter, telephone, internet, on spot and inter-city service.
- Releases procedures to the public and provide multiple channels for information access.
- The power supply scheme reply will be responded in 2.5 working days, 47% faster than the national level.
- The auditing of access project information takes 3.8 working days, 56% faster than the national level.
- The electricity meter installation and power access takes 2.2 working days, 35% faster than the national level.

Convenient Tariff Pay-in

Provide customer-oriented quality service with a number of pay-in options to strive for an open and convenient tariff payment. Offers convenient tariff pay-in options, such as ATM pay-in machines, charge cards, IC card payment and on-line payment.

- Provides tariff information system to solve customer's doubts and worries.
- Provides safety pre-warning services to protect customer's asset safety.



Reliable Tariff Calculation

- Strictly follow the Meter Reading Table System.
- Inform customers relevant tariff information on-time through staff delivery, mail delivery, SMS, email or digital TV service.
- Run regular metre check, control miscalculating rate under 0.8%, 0.2 percentage point lower than the industry level.

Efficient Hotline Service

- Promotes one-stop service, formulates 95598 call center operation and management standard, further advances brand building of 95598 hotline, and provides 24 hour on-duty consulting services, new access application and fault repair service.
 - Rolls out standardization management, reinforces complaint management. Every complaint should be answered and solved within specific time frame.
 - Complaint solution rate was 100%, satisfaction rate of complain solution is 96.1%.
 - Annual accepted cases reached 17.248 million.
 - The rate of manual answered hotline reached 88.5%.
 - 60.76 million text messages sent to customers annually.
- Average waiting time before the hotline being answered by an operator was 8.35 sec/time.

Considerate Services

CSG provides a wide range of fair and open services .

- We formulate the Construction and Management Standard of Power Supply Bureau Business Branch to promote business counter service standardization.
- Besides, CSG actively carries out door- to- door visits to our customers and provides effective solution to their difficulties.



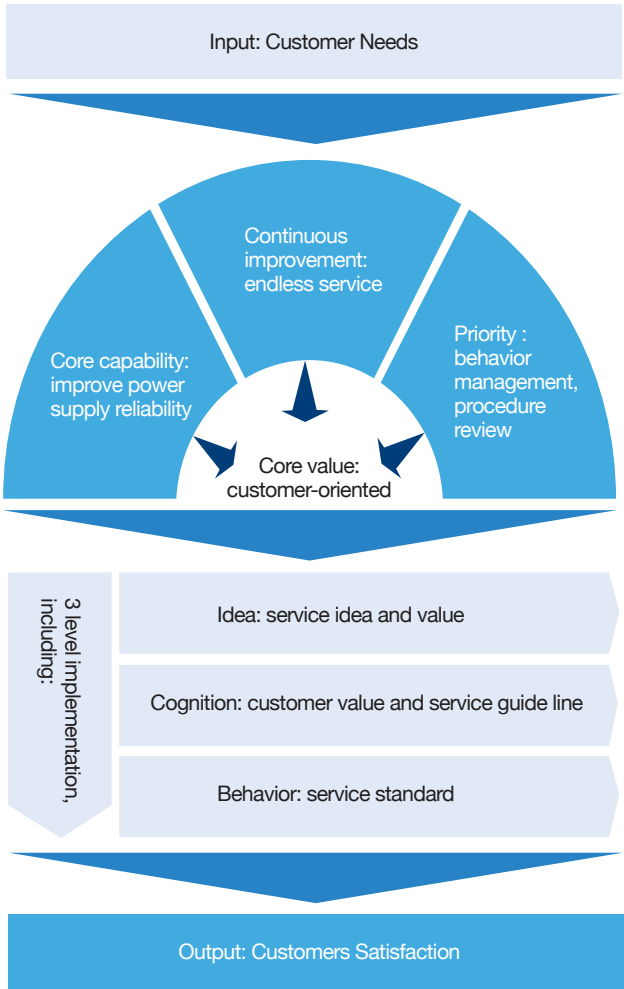
Marketing Service Culture Building

CSG released Marketing Service Culture Brochure. The brochure summarized experiences drawn from marketing service culture building. We formulated Marketing Service Culture Building and Transformation Working Plans, and launched a pilot work on it. The pilot project incorporates market service culture with specific business and promotes integration of service culture and corporate management.

2009 Marketing Service Innovation Achievements Promotion List

Number	Achievement	Promotion Area	Finish Time
1	Construct and Promote "Client-centered" Value System	The whole CSG	The end of 2009
2	Marketing Inspection Sampling Analysis and Decision Support System	The whole CSG	September, 2009
3	Exploration and Practice of Power Supply Companies Contractual Energy Management	10 city-level power supply bureaus in Guangdong	The end of 2009
4	Established Marketing Service Accidents Investigation and Teatment System	The whole CSG	September, 2009

Framework of Marketing Service Culture List



Guangdong Power Grid Company: Ranked Top for 4 Consecutive Years

For four consecutive years, Guangdong Power Grid Company supply service ranked 1st in the comprehensive evaluation conducted by Guangdong Provincial Survey and Research Center. The evaluation looks at supply service,telecommunications, civil aviation,traffic, postal service, bank service, water supply, oil supply and travel service.

► Grid Construction.

CSG completed permanent asset investment of 105.1 billion RMB, among it, grid construction investment was 91.5 billion RMB increased by 91.5%. CSG built 9,174 km transmission lines (220kv and above), and the newly added transform capacity amounted to 51.97GVA.

CSG increased investment in 15 selected major cities, completed the 5-year grid planning of 62 cities. CSG completed the study and evaluation of its "12th-Five-Year" Plan on National Economy and Social Development and mid-and-long term development plan, and completed the Application on ratification of Xiluodu and Nuozhadu Power Plants to Guangdong DC Transmission.

CSG comprehensively arranged and established power grid technology principle and construction standards. The upgrading of urban and rural grid was integrated in the company's key projects management. CSG also promoted project construction coordination regionalization management.

We actively worked with regulation departments to inspect the implementation of domestic demand expansion investment projects and the urban and rural grid upgrading projects

18 key projects were put into operation and the west- to-east power transmission has formed the structure of "8 ACs, 5 DCs", with total transmission capacity over 23GW.

CSG completed the study on CSG Power Supply Plan to Macao: 2010 to 2020.

Seven programs have been awarded China power quality engineering award, four of which won Silver Award of State Quality Project.

CSG awards in 2009

China Quality Power Project Award in 2009

Program	Awards
Guizhou-Guangzhou II ± 500 kV DC Transmission	China Quality Power Project Award, National Quality Power Project Silver Award
500kV Yanshan Substation Project	China Quality Power Project Award, National Quality Power Project Silver Award
500kV Jiaying Substation Project	China Quality Power Project Award, National Quality Power Project Silver Award
500kV Jiaying Substation Project	China Quality Power Project Award, National Quality Power Project Silver Award
500kV Luobai II Power Transmission and Transformantion Project	China Quality Power Project Award
500kV Yafu II Transmission Line Project	China Quality Power Project Award
500kV Xianlingshan Substation Project in Guangdong Province	China Quality Power Project Award

Cooperate with Local Governments and Facilitate Grid Construction

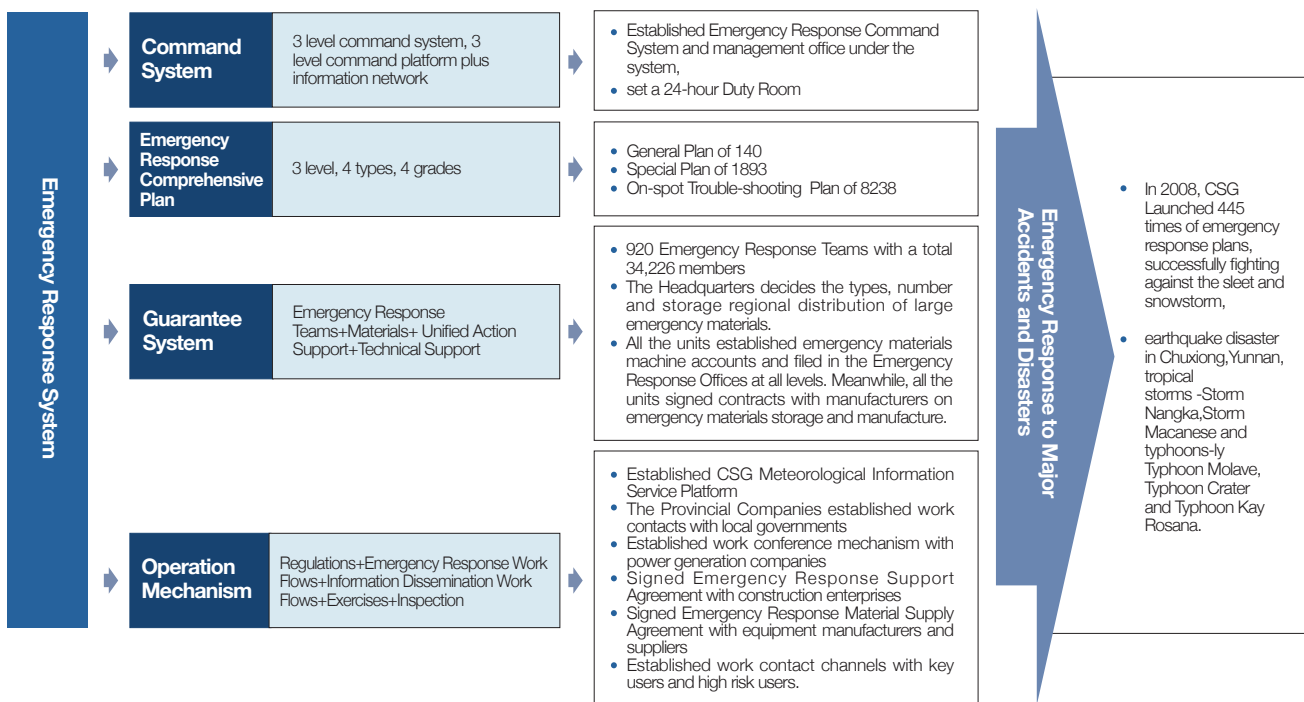


CSG establishes cooperation mechanisms with local governments in the five provinces. These mechanisms coordinate and address grid construction challenges and difficulties. So far, 48 out of 62 cities have been awarded direct approval from the government in grid construction.

► Emergency Response

CSG further improves the Emergency Response System, including the Emergency Response Command System, the Emergency Response Comprehensive Plan System, the Emergency Response Security System and the Emergency Response Operation Mechanism. CSG builds Emergency Response Command Platform in three levels, namely grid level, provincial level and city level. CSG has revised the Emergency Response Comprehensive Plans, has standardized the Emergency Response Procedure, has launched relevant rehearsals which ensure the effective operation of the Emergency Response System.

CSG makes timely pre-warning and pre-arrangement, achieving effective and rapid response to emergencies, power supply restoration, lost and negative effect minimization.



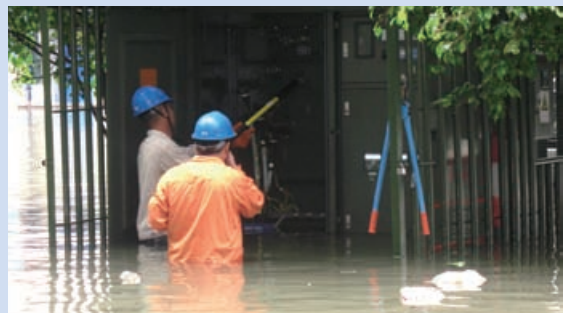
Timely Power Supply Restoration in Earthquake-struck Area

A Magnitude 6.0 earthquake struck Yao An Town, Xiongzhou, Yunnan Province. 18 units and 3017 staffs in Yunnan Power Grid Company were involved in the disaster relief work. Power supply to the first temporary shelter was recovered just 8 hours after the earthquake strike. 25 hours after the earthquake, power supply to 2616 households and 95 tents in Mayou, Putao and Huangnitang village was recovered.



Emergency Response to Typhoon Crater

Typhoon Crater landed in Guangdong, Taishan on September 15th 2009, causing severe damages to Guangdong power grid. 46 110kV-and-above lines tripped, and 738 low voltage distribution transformers were out of power. Guangdong Power Grid Company rapidly implemented the emergency response, and the power supply bureaus in Jiangmen, Yangjiang, Maoming, Zhanjiang and Shanwei made urgent assemblings and organized disaster relief materials allocation to recover the damaged equipments at the fastest speed. Such emergency response ensured the orderly power supply.



► Technology Innovation

CSG is dedicated to technology investment and grid technology upgrading.

We progress innovation enterprise with solid measures and commit ourself to safe, reliable and quality power supply.

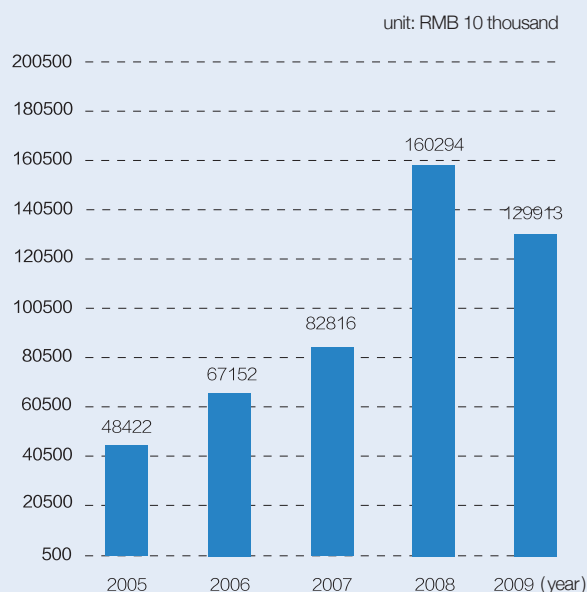
CSG introduces technology in $\pm 800\text{kV}$ UHV DC transmission and DC transmission. Based on existing technologies, we make innovations on them. Breakthroughs are made in stable operation technology and simulation of AC and DC hybrid operation technology.

- ◆ In 2009, CSG technical investment reached 1.3 billion RMB.
- ◆ CSG was awarded historic high 83 technical programs .
- ◆ CSG has newly added 100 programs for patent application and 32 approved new patent.
- ◆ CSG met the target of 30% increase in patent application.

CSG Scientific Technology Awards

Years	Award Amount	First prize	Second Prize	Third Prize
2005	39	2	13	24
2006	37	2	15	20
2007	44	2	17	25
2008	73	3	26	44
2009	83	4	29	50

CSG Scientific Project Approval Investment



Smart Grid Research

CSG has established Smart Grid Technology Research Taskforce with the mission to promote research on smarter distribution network, end-side load management, new energy utilization, digital substation construction, distributed generation and storage technology.

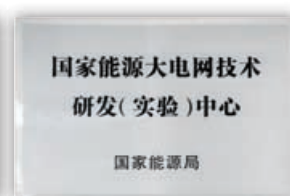
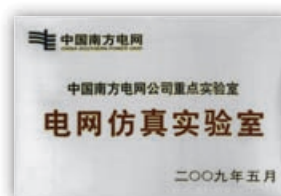
CSG's priority on Smart Grid Construction is to improve grid technology, improve the ability in grid operation and power supply reliability. We shall proactively promote energy-saving and emission-reduction technologies, establish research test units in hydro power utilization, energy-saving dispatching, loss-reduction technology, distributed generation integration, smart metering and storage technology. In addition, we shall further promote construction of telecommunication and information platforms, standardize digital substation construction to lay a solid foundation for future smart grid construction.

Construction of National Key Laboratories

◆ Power Grid Simulation Laboratory

The National Energy Administration granted CSG Power Grid Simulation Laboratory the title of "National Energy Large Power Grid Technology Research and Development (Experiment) Center".

CSG Power Grid Simulation Laboratory can realize four functions, including the real-time closed-loop test of power grid control and protection devices, AC/DC power system research, DC control and protection system characteristics research and accident analysis, senior training on AC/DC power system. The scale, function and application of real-time simulation experiment enjoy the leading position in the world, and it has become a national key laboratory with international influence.



◆ National Engineering Laboratory for UHV Engineering Technology

Approved by the NDRC, the National Engineering Laboratory for UHV Engineering Technology (Kunming) became one of the first six National Engineering Laboratories. The establishment of the Laboratory filled the gaps in researches on UHV AC and UHV DC transmission and transformation technology at high altitude and under strong ultraviolet rays. The Laboratory became the world-advanced UHVDC transmission technology R&D platform.

► Management Innovation

Further TOTOP Programme

CSG redoubled its effort to establish itself as an internationally advanced Power Supply provider. The pilot units should stick to "customer-oriented" principle, and enforce internationally advanced standards and requirements internally. Significant improvement has been achieved.

◉ Management Innovation

CSG reorganized major business procedures, such as network planning, construction, operation, technology, management and service, etc. The efforts are designed to establish close contact with our business and to reduce customer outage. CSG initially established customer demand-driven business process and management system, realizing fundamental change from the "device-driven" to "customer demand-driven".

◉ Outage Duration Reduction

Guangzhou, Shenzhen Power Supply Bureau reduced customer outage duration from 24.5 hours, 26.2 hours in year 2006 to 5.8 hours, 2.8 hour respectively. The two bureaus successfully improved power supply reliability under the context of large-scale grid construction.. Nanning, Kunming, Guiyang, Haikou Power Supply Bureau achieved outage reduction.

◉ Improvement of customer service

ShenZhen Power Supply Bureau received 19.92 times per million customer complaints, reaching the international advanced level and was awarded the "Star Quality Service Award of Central Enterprise". According to Gallup survey, the Customer Satisfaction Rate towards Guangzhou Power Supply Bureau reached 77.1%, ranking the top 30% of international advanced list.

Key Indices of Shenzhen Power Supply Bureau TOTOP Programme

Items	Number	National Advanced
Safety Production Risk Management System (unit: in Diamond)	4	3
Annual Average Outage of Urban Users (unit: Minutes)	168	200
Labor Productivity per capita (unit: 10,000kWh/people*year)	1531	Over 1,000
Annual Complaints Per Million Clients (unit: Times)	19.92	100
Clients Satisfaction by the Third Party Survey	78.92	75-80
Line-loss Rate (unit: %)	3.30	About 5
Performance Concept Survey	4.1	3.8

Comprehensively Launched the TOTOP Programme

Guangdong Power Grid Company strives to be innovative and views innovation as a process of constant improvement. They spare no effort to provide high quality power service for clients.

◉ Power Supply Reliability

The average outage time of urban and rural users were 7.71 hours and 20.02 hours respectively, 46% and 56% reduction compared to those of 2008, the biggest decreases in recent years.

◉ Work Flow Modification

We have modified 570 work flow models, and completed the stabilization of 237 work flows. We have modified and replaced the irrational and unnecessary work flows to improve efficiency.

◉ Life Cycle Management of Assets

We established 19 assets management strategies covering 5 aspects: planning and design, equipment procurement, project construction, operation and retirement. We also modified 28 key business resolutions, and designed 721 system summary function points. These efforts set the asset value management chain as the foundation of the Life Cycle Management of Assets management system.

Held the First Management Forum

CSG always attaches great importance to management innovation. In 2007, the CSG headquarters launched soft subject research aiming to encourage reforms, development and harmony of CSG. The soft subject research was gradually implemented within the whole organization, the achievements were put into actual practice, and good results were achieved. The soft subject research became an important way to build CSG into a learning and innovative company, and to improve the level of scientific management and decision-making. During the 3 years, the headquarters was responsible for 66 subjects, and the wholly-owned subsidiaries and branch companies carried out 239 subjects.

In 2009, CSG held the first Management Forum. Management of functional departments and the subordinate units attended the forum and delivered reports. The management forum established itself as a high-end platform for the company to exchange research achievements, broaden horizon, encourage staffs to think out of the box and management innovation. The Technology Forum and the Management Forum serve as the "two driving forces" for CSG's stable scientific development



Economic Performance

- ▶ Operation Performance
- ▶ Operation in Strict Accordance with Law and Regulation
- ▶ Cost Reduction and Efficiency Improvement
- ▶ Boost the Development of Power Market
- ▶ Encourage Supply Chain Development
- ▶ Serve the Development of Low-carbon Industries
- ▶ Encourage Economic Growth of the Five Provinces/Regions
- ▶ Strengthen Cooperation with Hong Kong and Macao
- ▶ Boost the GMS Power Cooperation





Sales of Electricity:
523.9TWh, a

6.2%

year-on-year
increase

Main Operation
Revenue:

310.8

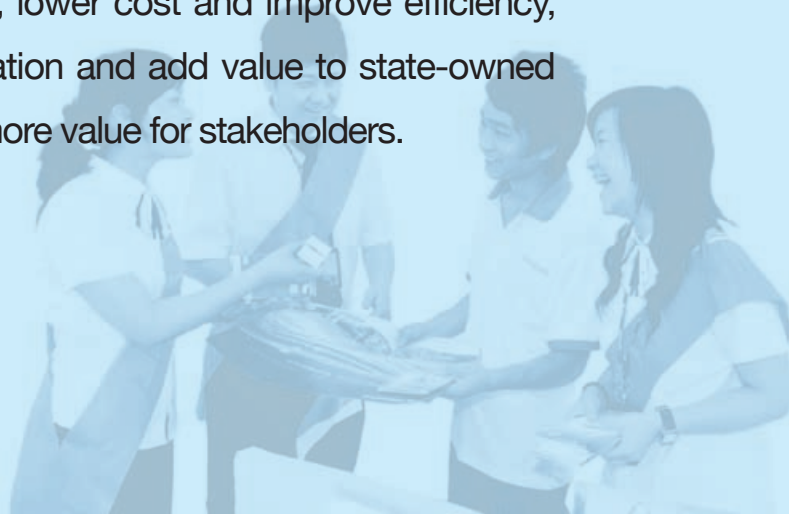
billion RMB

Total Pretax Profits

20.8

billion RMB

It is CSG's fundamental responsibility to strictly implement the state's tariff policy, boost management and operation level, lower cost and improve efficiency, ensure the preservation and add value to state-owned assets and create more value for stakeholders.

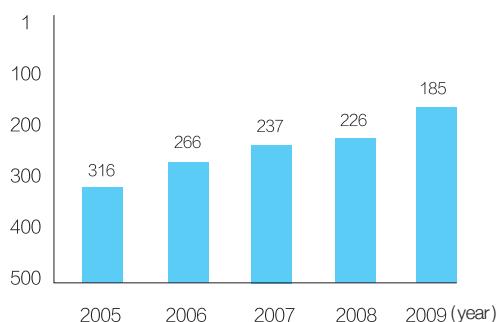


► Operation Performance

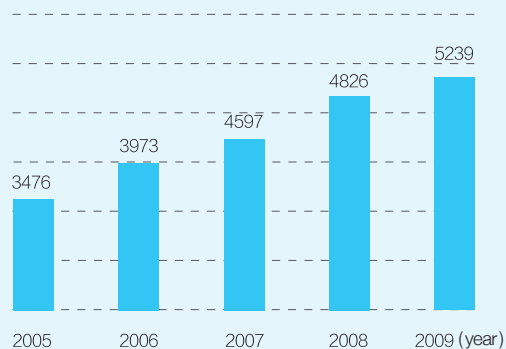
CSG optimized power resource allocation, and provided economic value created by power service. The value is not only reflected in CSG's own financial performance, but also in encouraging low-carbon industry development, as well as encouraging regional economic development.

We stick to the operation concept of "improving benefits and attaching priority to social benefit", CSG strictly operates the nation's tariff policy to meet the customers' needs; even affected by the mark up thermal power, we enhanced fundamental management, reduced cost, enhanced efficiency, innovated management methods and ensured the preservation and appreciation of state-owned assets.

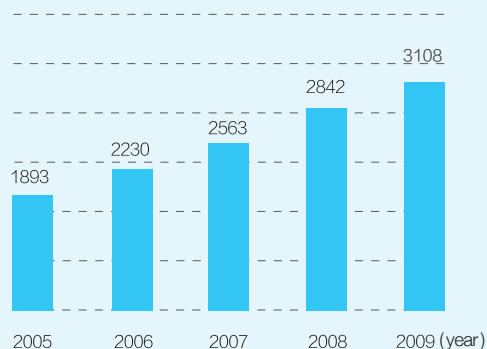
The rankings of CSG among the Fortune 500



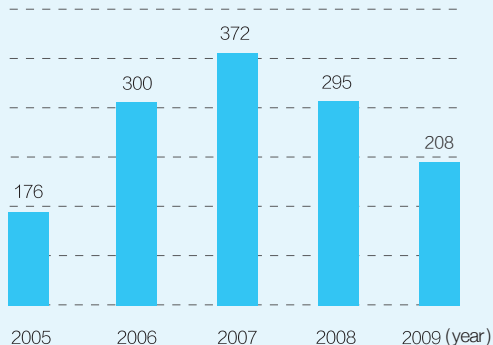
Sales of Electricity 523.9TWh, an 8.6% year-on-year increase



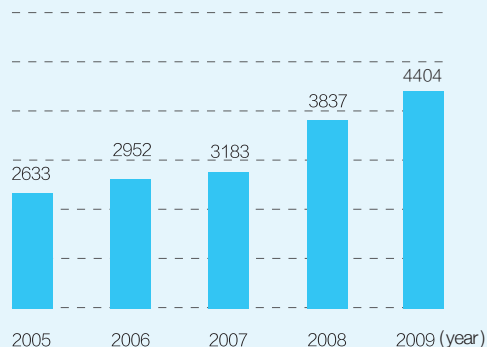
Main Operation Revenue 310.8 billion RMB, a 9.4% year-on-year increase



Total Pretax Profits 20.8 billion RMB, a 29.5% year-on-year* decrease



Total Assets 440.4 billion RMB, a 14.8% year-on-year increase



Notes: The total pretax profits of year 2008 and 2009 were effected by the ice storm, the thermal power price increase and desulfurization cost increase.

► Operate Strictly in Accordance with Law and Regulation

To ensure normal operation and sustainable development of CSG, we have been reinforcing legal compliances, and fight against unfair competitions and bribery. In year 2009, there was no substantial law infringement or tax-evasion, tax-fraud in CSG. The 2009 credit rating of CSG was AAA.

Legal Risk Management

CSG strictly implemented the 3-Year-Plan of Legal Governance, and strengthened the management of legal risk and contracts. All economic contracts and important regulations are reviewed and the contract compliance rate was 100%.

Internal Control Improvement

CSG further improved its internal control system including the following 6 key aspects: material procurement, project contract award, assets transfer, capital management, buy and sale of power and foreign investment.

- We standardized the key field work flow management and standards in headquarters and wholly-owned companies and branch companies. In 2009, we established 1435 regulations, and modified 1283. By promoting a universal management, risks were efficiently controlled.
- 251 supervision groups were established to carry out comprehensive supervision, to ensure 100% implementation of delivery, capital availability and trouble-shooting for projects under the Central Government Stimulus Package. The supervision groups are charged with the mission to deliver high quality of projects, safe construction, and clean staff.
- According to Measures for Preliminary Work of Overseas Power Project Investment Management, we have gradually standardized preliminary management on overseas power project to lower overseas investment risks.



Supervision on Major Decision-Making Process

We carried out supervision on “Three Majors and One Large” management (namely, major decisions made on collective basis, on major issues, appointment and dismissal of major management staff, arrangement of major projects and use of large amount of funds). In total, we checked 8838 major decisions made on collective basis, and so far have not identified any infringement.

Clean Education

So far, 838 clean education were organized, and in total, 30820 staff attended the education programme. 2514 management staffs delivered lectures and anti-corruption reports.

Performance Inspection

We carried our performance inspections on key projects and key components of operation. In total, 680 performance inspections were carried out, and 1268 pieces of inspection suggestion were put forward, 36.72 billion RMB of materials procurement bidding and 22.36 billion RMB were supervised.



► Cost Reduction and Efficiency Improvement

CSG actively promotes intensive financial management, and implements comprehensive budget management, so as to improve management and better budget control on operation.

CSG implements strict cost inspection to lower power purchase cost and power supply cost. The controllable power supply unit cost was 4.9 percentage points lower than the budget; we optimize power purchase structure, and lowered the power purchase cost by 200 million RMB.

- CSG reinforced tariff risk management and control. The account receivables at the end of 2009 were 200 million RMB less than that of 2008.

- CSG has improved comprehensive management on financing, construction fund raising is made through multi channels and at low cost. We have successfully issued 10 billion RMB mid-term notes.

- CSG has enhanced capital regulation and control, and has improved fund utilization efficiency. The 2009 loan-deposit ratio was 73%, and 720 million RMB revenue was achieved from fund operation.

- CSG effectively controlled capital-liability ratio. The fixed assets investment in 2009 was 105.1 billion RMB, representing a 56.4% year-on-year increase, the capital-liability ratio increased 3 percentage points only.

- CSG's expenses including overheads, business travel,



conferences, networking and foreign affairs were controlled, with zero increase compared to the previous year.

► Encourage Power Market Development

By adopting market-oriented measures, CSG has actively coordinated the relationship between the thermal power in the East and the West, and the relation between power plants and power grids. These approaches gained supports from the government, companies and clients, and encouraged harmonious development of power market.

Guangzhou Power Supply Bureau: Cost Breakdown to Enhance Operation Performance

Guangzhou Power Supply Bureau changed its budget management from a percentage management based one to an activity-based management based one, and has established standards for budget planning on cost and expense to enable Whole Process Control on costs. They have analyzed and established cost budget model and budgeting standard, and break the controllable cost budget down to five categories: remuneration, market and client service, power business operation, supporting business, and general management business. Each category will be divided into parts so as to strictly control cost.

Guangzhou Power Supply Bureau enjoyed the overall improvement of Business Operation and Management Performance, the 2009 Unit Controllable Power Supply Cost was 65.41 RMB/MW, compared to their performance in 2008 (66.60 RMB/MW), achieving 1.19 RMB/MW year on year reduction.



► Encourage Supply Chain Development

CSG's business operation brings economic benefit to supply chain companies. In 2009, CSG enjoyed a rapid increase of power sales and the fixed assets investment. In particular, power grid construction investment increased to 91.5 billion RMB, recording a 91.5% year-on-year increase. Investment increases has brought business opportunities for power plants, power construction companies, power equipment manufacturer, logistics companies and financial institutes, and greatly supported the development of supply chain companies.

► Serve Low-carbon Economy Development

It is the consensus of the whole world to develop low-carbon economy and low-carbon industry. We strive to make accomplishments in low-carbon economy. CSG has established the Low-carbon Development Support Taskforce, and has launched a series of low carbon initiatives. CSG takes its own initiative to research updates on construction of low-carbon society at home and abroad and renewable energy development and application. We compiled Renewable Energy Power Generation Development and Planning in Southern China and formulated CSG's measures to Support Renewable Energy Development.

CSG proactively facilitated new technologies development, such as Electric Vehicles, and supported R&D of power storage technology, grid control technology for large-scale EV charging. At the end of 2009, the largest EV charging station in China went



into operation. The charging station is a cooperation project between CSG and Shenzhen Municipal Government. The first phase consists of 2 EV charging stations and 134 charging spots. The charging-spot-mode helped the citizens to charge their EVs at night when the charging tariff was low.

Construction of Renewable Energy Application Experimental Base

The first renewable energy application experimental base in CSG was put into operation in Longgang, Shenzhen. The base integrated various renewable energy technologies including solar power generation, wind power application, battery power storage and EV charging. A solar power panel was built in the base which can generate power and function as a parking-lot. The panel is 50m in length, 5.5m in width, with maximum power generation capability of 30WP. It is estimated that the panel can generate about 40,000KWh a year. So far, the solar power EV charging technology has been improving, it might emerge as the mainstream in the future.



► Serve the Development of the Five Provinces (Regions)

78% of developable water resources and 95% of coal reserve in CSG's service area were in Yunnan and Guizhou Province. Guangdong's economic aggregate account for 70% of the five provinces and regions, and its total power consumption is 1.5 times of the total of the other 4 provinces (regions). Social economy and resource of the five provinces and regions are imbalanced. The West-to-East Power Transmission Program effectively solved this problem, and the program has emerged as an important platform for regional resource optimization.

By the end of 2009, the West-to-East Power Transmission has formed "8 ACs, 5 DCs" transmission channels, each channel with 1000km lines in length, with total transmission ability exceeding 23GW. In total, power transmitted amounted to 497TWh. The West-to-East Transmission provides Guangdong with clean power, and helps the development of the West. Power industry becomes the key supporting industry of Yunnan, Guizhou and Guangxi.



Yunnan: In 2009, the power transmitted from Yunnan to Guangdong reached 23.98TWh. During the recent 10 years, the power transmitted to Guangzhou has increased by more than 200 times. Yunnan-Guangdong Power Transmission offers opportunity for Yunnan Province development, and hydropower has emerged as the backbone industry of the province.



Guangdong: Clean, cheap, reliable and high quality power from the West has become an indispensable part of Guangdong's energy mix. By the end of 2009, Guangdong received 441.2TWh of power from the West. In year 2009, one-third of Guangdong's total power consumption was transmitted from the West. The West-to-East Hydropower Transmission significantly reduced coal and gas consumption, which effectively saved energy, improved resource utilization, and reduced pollution.



Guizhou: In total, 167.6TWh of power was transmitted to other provinces. Power industry has emerged as the most important supporting industry of Guizhou. During the past 10 years, power industry contributed the most to the provinces' economic growth. The value-added of industry of the West-East Power Transmission in 2009 was 11.8 billion RMB, and the power industry contributed over 20% of the industrial growth.



Guangxi: Power industry has become Guangxi's supporting industry. By the end of 2009, Guangxi received 55.7TWh in total. During the Eleventh-Five-Year Plan period, Guangxi met its own power consumption needs, and transmitted 1 GW seasonal power to Guangdong.



Hainan: The province proactively integrates itself in the Pan-Pearl River Delta energy cooperation. The Hainan Power Interconnection Project helps to create a good business opportunity for the power export of the power transmitted from the West and Hainan itself, and boost the development of International Tourism Island.

► Enhance Cooperation with Hong Kong and Macao

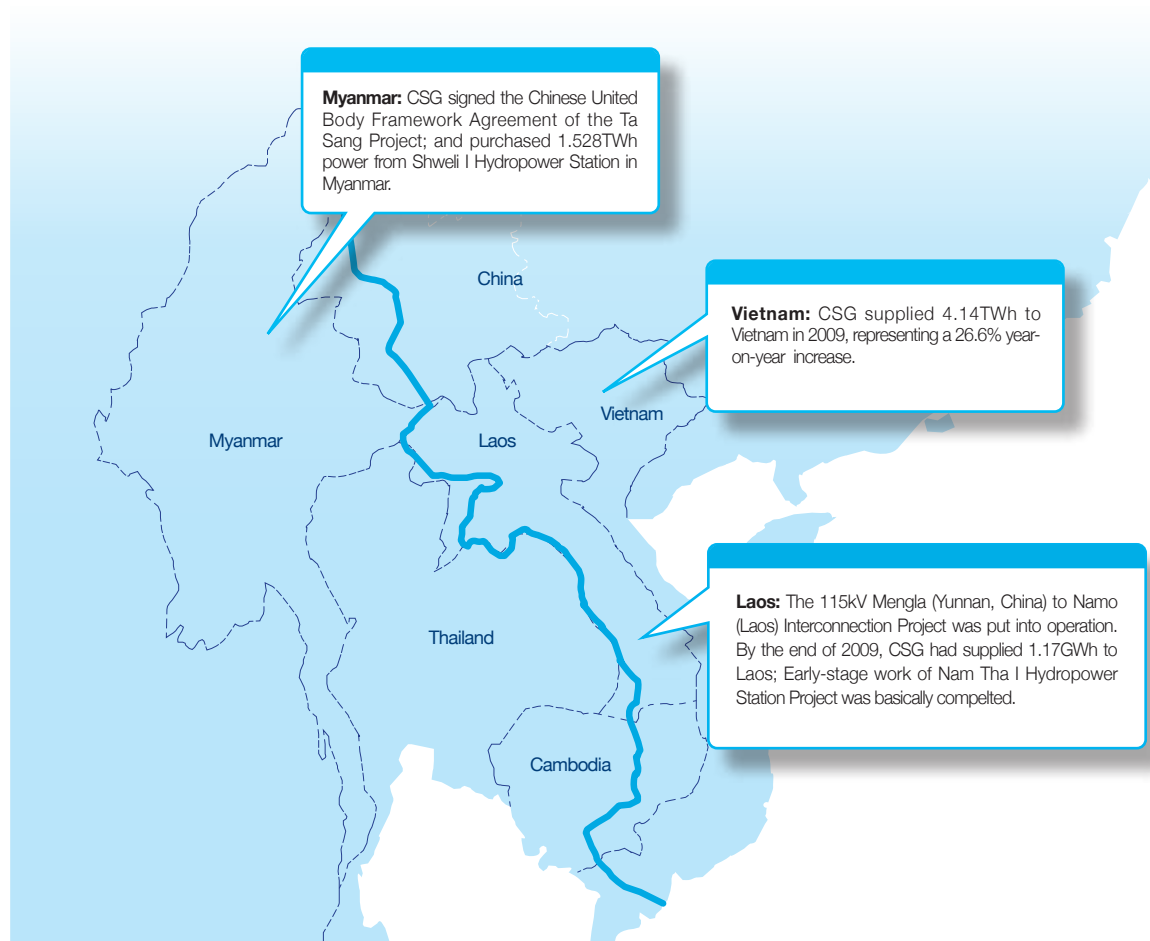
CSG actively strengthens its cooperation with Hong Kong SAR and Macao SAR, and expands power exchange volume with the two regions.

- Bought 2.951TWh from Hong Kong
- Supplied 2.227TWh power to Macao, accounting for 61% of the total social power consumption of Macao.



► Boost GMS Cooperation

CSG is the Chinese Executor in Greater Mekong Sub-region (GMS) power cooperation authorized by the Chinese Government, and has been playing an active role in regional power grid interconnection, power trade, power grid and power source projects, construction and operation among GMS countries.



Environmental Protection

- ▶ Consume Green Energy
- ▶ Build Green Power Grid
- ▶ Energy Efficient Operation
- ▶ Synergy with Customers to Facilitate Energy Conservation
- ▶ Energy Conservation Publicity
- ▶ Energy Conservation in Offices





The 2009 West-to-East
Power Transmission

115.6 TWh

Assisted Customers
Saved

1 TWh

Line-loss reduction is
equivalent to

4.85 TWh

It is CSG's responsibility to build a Green Grid, facilitate energy conservation , emission reduction, and sustainable and coordinated development among companies, the society and the environment.

Chinese Government has always attached great importance to tackling climate change, and has made the solemn pledge in Cop15:to “by year 2020, fossil energy will account for 15% of the primary energy consumption, and unit GDP CO2 emission will be reduced by 40%-45% than that of 2005”.

In 2008, coal used for power generation account for 45% of the total coal consumption, the emission of CO2, SO2, nitrogen oxides and smoke and dust in power consumption amounted to 40%, 53%, 50% and 42% respectively of the nation's total emission.

According to our research, the annual average Energy Saving and Emission Reduction potential (ESER)of power generation and consumption in the five provinces (regions) is as follows: 53% on the demand side , 39% on the generation side,8% on the power grid. In line with our service principle, CSG launched the Green Action under the theme of “Scientific Power Consumption, ESER”, to achieve energy conservation and actively shoulder the responsibility of ESER as the power source side and demand side.

We are improving our environmental management system. Taking into the feature of power industry and our own responsibility into consideration , we have built a energy-resource transformation and transmission optimization platform.The platform is designed to to implement green concept in generation, transmission, distribution and consumption, and encourage green development of companies and communities.



CSG implement ESER in three aspects: power source side, power grid side and demand side.



► Consume Green Energy

CSG has redoubled its efforts to practice energy saving power generation and dispatching, give priority to hydropower, arrange the coal-fired units to generate power based on its own energy consumption level, and support renewable energy to be included in energy mix. CSG has always taken its own initiatives to support energy mix optimization, with an aim to realize coordinated development of large scale coal-fired power and clean energy.

Make Full Use of Hydropower

China's developable hydro power resources amounts to 400 million KW, 60% of them (240 million KW) are located in Yunnan and Guizhou Province. Only 24.9% of the resources were developed by the end of 2009. There is a great development potential for hydropower in the southwest provinces.

On one hand, there is rich hydro power resources in the five provinces and regions, on the other hand, Guangdong's primary energy reserve only account for 3.5% of the total. CSG makes full use of the abundant hydro power resource in the West, and encourages the hydropower installation in the total installed capacity. The approach is of great significance to low-carbon economy development. CSG's installed capacity of hydropower amounted to 36.72%, higher than nation's average-22.51%. Meanwhile, the installed capacity of thermal power account for 58.13%, lower than the nation's average-74.6% .

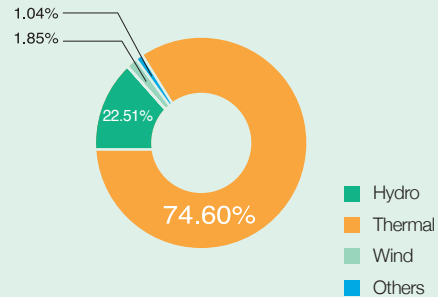
► In the past seven years, West-to-East Programme transmitted 399.2TWh power in total, equivalent to savings of 127.35 million tons of standard coal, 2.46 million tons of CO₂ emission reduction and 1.27 million tons of smoke and dust emission reduction.

► In 2009, CSG's total hydropower generated amounted to 135TWh.

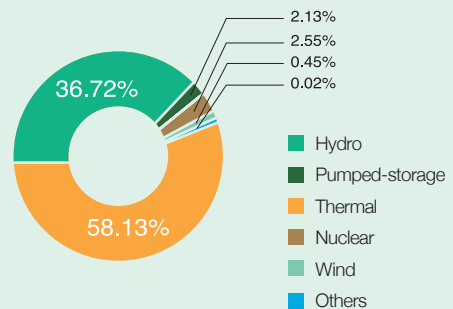
► By adopting scientific dispatching, CSG consumed 3.4TWh of redundant hydropower, equivalent to savings of 1.07 million tons of standard coal, 21 thousand tons of SO₂ emission reduction, 2.36 million tons of CO₂ emission reduction and 11,000 tons of smoke and dust emission reduction .



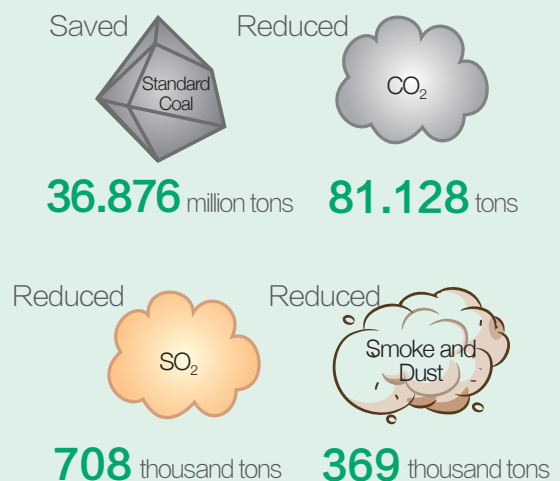
The 2009 Installed Capacity Structure of China



The 2009 Installed Capacity Structure of CSG



The 2009 Green Performance of West-East Hydropower Transmission



Encourage Clean Thermal Power Development

CSG adopted a number of measures to encourage the development of Large Capacity, Efficient and Low Emission Thermal Power projects.

- CSG arrange power generation of coal-fired units according to their energy consumption level, so as to improve power generation rate of coal-fired units. In 2009, CSG's standard coal consumption was 315g/kWh, representing a 4g/kWh year-on-year decrease; coal consumption in power supply was 336g/kWh, representing a 6g/kWh year-on-year decrease.
- Replacement of Small sized Units with Big sized Units. In 2009, CSG assisted the government to shut down a total capacity of 6.7GW of small sized coal-fired power generation units. By the end of 2009, the total capacity shut down amounted to 14.09GW, exceeding the target (13.27GW) set during the Eleventh-Five-Year Plan period.
- Promotion of desulfurization of coal-fired units to reduce SO₂ emission. The 65 power plants and 175 coal-fired units centrally dispatched by CSG realized desulfurization real-time monitoring, with 100% monitoring information access rate, and 90.9% average efficiency of desulfurization devices.

Support the Development of Renewable Energy

CSG encourages power generation from renewable energy, and supports the development and utilization of renewable energy (solar, wind power and so on) power generation projects. In CSG's service area, the wind power installed capacity increased by 62.87%, and the power generated increased by 62.83%.



Lamps that use wind and solar power



We vigorously support the development of wind power and solar power generation in areas with abundant wind and solar resources (Yunnan and Hainan, for instances) and provide grid access service. The wind power generated in Hainan amounted to 86.8GWh in 2009, 6 times of the number in 2008.

“Construction of Solar Power Generation Test Platform” Project Research by Yunnan Power Grid Company

Yunnan Power Grid Company launched the “Construction of Solar Power Generation Test Platform” Project Research to support the development of solar power. The first Grid-connected Photovoltaic System in Yunnan, Yundian Science and Technology Park 160kWp Grid-connected Photovoltaic System was established. The system successfully realized stable, efficient and standardized operation after the connection to the power grid.



► Construct Green Grid

We devote ourselves into the construction of Green Grid, and attach great importance to environmental protection in grid construction. All grid construction projects were granted environmental protection license in line with relevant laws, with 100% environmental impact assessment approval rate. We perform “simultaneous Design, Construction and Operation” management on power construction projects, to ensure pollution control facilities work efficiently with the projects themselves. We take the initiative to open projects for relevant regulatory agencies’ inspection, we are proud that we have excellent compliance with environment protection.

● In 2009, Guangxi Power Grid Company invested 88.34 million RMB on environmental protection in their power grid construction projects. In total Hainan Power Grid Company invested 3.76 million RMB to launch environmental impact Assessment of 52 power transmission and transformation projects with the capacity of 110kV or above.

Noise Reduction

CSG has reinforced sound-proof material in substations, and optimized ventilation system design, and installed separation walls to reactors that cause low-frequency interference to substations.

● CSG invested 22.35 million RMB to launch AC Filter Noise Control Project in 500kV Zhaoqing Converter Station, and the day-time and night-time noise level of residential sensitive spots reached Level 1 Standard (day-time $\leq 55\text{dB(A)}$ night-time $\leq 45\text{dB(A)}$)



DC Converter Station Noise Separation

Land Utilization Optimization

During the construction of power transmission and transformation facilities, we have adopted advanced technologies such as DC transmission, compact transmission, same-tower multi-circuit transmission line, etc. Under context of the same power transmission scale, we significantly reduce land utilization of substations and circuit corridors, which effectively saved the land resources.



Biodiversity Protection

We have attached great attention to biodiversity protection. We have adopted technologies including high-tower crossing, tension stretching and airship stretching to minimize the impact of construction on vegetation as well as wildlife when transmission lines passed across forests, natural habitats, wetlands and wild animal corridors.



Airship Stretching to Reduce Impact on Vegetation

► Energy Efficient Operation

Energy Saving Power Generation and Dispatching

- By giving priority to hydropower, and arrange power generation of thermal power units based on their energy consumption levels, in total, we saved 2.43 million tons of standard coal, equivalent to reduction of 47 thousand tons of SO₂ emission.
- The Guizhou and Guangdong Power Grid Company had made energy saving power generation and dispatching a daily, standardized and systematic practice. Guangxi, Yunnan and Hainan Power Grid Company are ready to perform trial-operation of the energy saving power generation and dispatching.
- On Dec. 27th 2009, CSG shared its experience at the National Energy Workshop, titled Implement the National Low-carbon Economy Strategy, Actively Promote Energy Saving Power Generation and Dispatching.

Lower Line-loss

CSG launched a comprehensive line-loss reduction evaluation campaign which aims at lowering power loss in power transmission and transformation. By the end of 2009, 57 power supply companies of CSG had practiced and promoted the line-loss management.

- Meanwhile, we encourage the utilization of energy efficient equipments, including amorphous alloy distribution transformers; we have completed technical upgrading on high-loss distribution transformers.
- In 2009, the total line-loss rate was lowered to 5.81%, representing a 0.87% year-on-year decrease, and 4.85TWh of power was saved, equivalent to 1.63 million tons of standard coal, 30 thousand tons of SO₂, 3.86 million tons of CO₂ and 16 thousand tons of smoke and dust reduction.

Wastes Disposal

CSG always takes its own initiative to purchase environment-friendly power equipments. Our switch equipments are 100% oil less of. We have enhanced oil treatment in substations, and have achieved recycling of oil in transformer maintenances.

We try every means to avoid pollution caused by waste leak. By the end of 2009, the reclamation rate of SF₆ of basic units reached 67%.

Total Line-loss Rate (%)



P.S. Line-loss means the power depletion and loss during power transmission and marketing process of power grid companies.

Grid Equipment Energy Conservation Modification List

Project	Number/Range	Price/Notes
Install Low Voltage Reactive Power Compensation Equipment to Distribution Network	Guizhou Power Grid Company	695 million RMB
Replacement and Modification of High-loss Distribution Transformers	9565(CSG)	119% Completed
10kV line high voltage reactive compensator and low voltage distribution transformer reactive compensator	10 companies including Chengmai (Hainan)	3.2 million RMB
Type S11 Amorphous Alloy Distribution Transformers	300 43250kVA Transformers 492 Transformers (CSG)	21.49 million RMB

What is SF₆?

SF₆ has excellent insulation and blowout ability, and is widely used in power system. SF₆ is a kind of greenhouse gas, it can stably exist in air for 3,200 years decomposed. Its greenhouse effect is 24,900 times of CO₂. Therefore, SF₆ recovery is CSG's important measure to tackle climate change and shoulder its social responsibility.

► Help Customers to Save Energy

CSG has signed the MOU on Establishing Power DSM Long-term System to Promote ESER with the local governments in the five provinces/regions. The MOU specifies a long-term Demand Side Management (DSM) system in which stakeholders play different roles: the governments as the leading driving force, power grid companies as the implementation equity, clients and energy intermediary institutions as participants. The MOU is designed to promote end-user energy conservation.

- We proactively provide energy saving diagnoses, suggestions and project construction services for customers, and encourage them to use energy efficient equipments.
- By the end of 2009, we had organized 560 energy saving and loss reducing seminars, relevant trainings to 40,642 companies, and about 103 thousand management staff.
- CSG made 26,000 energy saving diagnoses for its customers, and assisted customers to save 2.4TWh of power.
- CSG offered a specific power consumption optimization plan to Liuzhou Iron & Steel Company, helping them to save about 100 million RMB.

Demand Side Management (DSM)

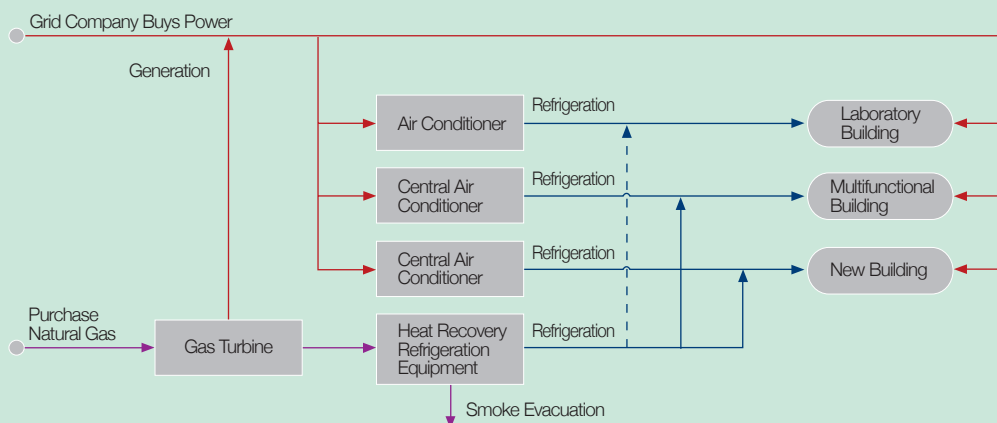
Demand Side Management (DSM) : Incentive measures taken to guide customers to change their way of power consumption. DSM helps to improve end-user efficiency, optimize resources allocation, protect environment and minimize power service costs. DSM is a systematic project to facilitate coordinated development of power industry and the national economy.

CSG initiated the “Three Transformations” concept in DSM, encouraging transformation from peak shaving to end-user efficiency improvement, transformation from power consumption management to energy saving service, and transformation from administrative measures to economic and technical measures.

CSG carries on its Green Action practice with the theme “Scientific Power Consumption, Energy Saving and Emission Reduction”. The Green Action, including working mechanism construction, energy saving technology promotion, marketing mechanism exploration, energy saving publicity and organization structure improvement. We formulated the Implementation Plan of CSG Green Action and Key Points for Implementation of CSG Green Action to facilitate the DSM.

Combined Cool and Power in Foshan, Greatly Enhanced Primary Energy Efficiency

The demonstration project of Foshan CCP Distributed Energy Supply System was put into operation in 2009. The project success symbolizes an important phased research achievement made by the Distributed Energy Supply Subject under the National 863 Plan. Currently, coal-fired primary energy efficiency in China is about 40%, and gas-fired primary energy efficiency is about 50%. The primary energy efficiency of CCP Distributed Energy Supply System exceeds 75%, it efficiently reduces pollution, and it is conducive to the development of distributed energy and to realize ESER target.



Note: Distributed Generation (DG) refers to power generation facilities that are directly deployed in power distribution network or near load centers. DG helps to encourage economic, efficient and reliable power generation.

► Energy Conservation Publicity

CSG adopts a variety of measures to promote energy conservation in communities. We published brochures such as Tips for Residential Power Conservation and Tips for Commercial Power Conservation, and distributed to public free of charge. So far, over 800 thousand brochures were distributed.



Tips: Residential Power Conservation

- ◆ In selection of electric light source and lighting products, we recommend energy efficient lighting products and bulbs.
- ◆ Make full use of natural light and the reflection on light-light. It is recommended to use light color paints for ceilings and walls. Making use of wall reflection can improve 20% of illumination.
- ◆ The luminous efficiency of CFLs is 6-7 times than that of ordinary bulbs; also, CFLs excel in illumination and lifetime.
- ◆ Reduces times you turn on and off lights. When you leave the room, remember to turn off the lights



Tips: Commercial Power Conservation

- Steel Industry:** To adopt technologies such as: Dry Coke Quenching Technology, Top Gas Pressure Recovery Turbine Technology (TRT), Blast Furnace Gas-fired Boiler, Low Heat Value Gas Turbine, Converter Steel-making with Negative Energy Consumption and Regenerative Mill Furnace.
- Nonferrous Metal Industry:** To use equipments such as Flue Gas Waste Heat Boiler, Radiation Preheater, Waste Gas Heat Exchangers, to collect the waste heat to generate power
- Coal Industry:** To adopt gas extraction technology and gas utilization technology
- Chemical Industry:** To adopt Energy saving sodium hydroxide manufacturing, Waste Heat Generation of sodium carbonate, closed carbide furnace, Waste Heat Generation of Sulfuric Acid.



CSG held the Second ESER Campus Campaign jointly with South China University of Technology. With the theme of "ESER, Green Energy", campaign events include: ESER Lectures, CSG Cup ESER Social Practice and Scientific Competition, and CSG Cup ESER Publicity Design.



To arouse public awareness on environmental protection, in particular, the awareness of and the primary and middle school students, CSG established Energy Conservation Demonstration Centers in 12 cities including Guangzhou and Shenzhen. By the end of 2009, the centers had already attracted over 2 million citizens.

► Energy Conservation in Offices

CSG advocates Energy Conservation in offices; we encourage employees to save water, electricity and paper, to reduce energy loss caused by standby mode of office equipments, to promote video meetings. By the end of 2009, energy saving lighting modification have been completed all offices and 2,195 outlets.

We achieved zero power consumption increase under the context of employee increase and power supply system modification project. In 2009, the headquarters consumed 40,538 tons of water, representing a 5.6% year on year decrease; meetings of all kinds decreased, a 25% year on year decrease, equivalent to 960 thousand kilometers of business flights saving; 1,639 batteries were reclaimed; and 12,518 plants were planted.

2009 CSG ESER Performance

Contents	Power or Power Saved (TWh)	Equivalent to Standard Coal Saving (thousand tons)	Equivalent to SO ₂ Emission Reduction (thousand tons)	Equivalent to CO ₂ Emission Reduction (thousand tons)	Equivalent to Smoke and Dust Emission Reduction (thousand tons)
West-East Hydropower Transmission	1156.0	3687.6	70.8	8112.8	36.9
Hydropower	34.0	107.0	2.1	235.5	1.1
Lower Line-loss	48.5	163.0	3.0	358.5	1.6
Customer Side Energy Conservation	10.0	31.9	0.6	70.2	0.3

ESER Performance in the Past 7 Years

Contents	Power or Power Saved (TWh)	Equivalent to Standard Coal Saving (thousand tons)	Equivalent to SO ₂ Emission Reduction (thousand tons)	Equivalent to CO ₂ Emission Reduction (thousand tons)	Equivalent to Smoke and Dust Emission Reduction (thousand tons)
West-East Hydropower Transmission	3992.0	12734.5	244.5	28015.9	127.3
Hydropower	308.8	985.1	18.9	2323.4	9.9
Lower Line-loss	114.1	379.1	7.3	858.5	3.7
West-East Hydropower Transmission	24.0	82.1	1.6	180.6	0.8



Harmonious Society

- ▶ Employee Development
- ▶ Win-Win Cooperation
- ▶ Serve Agriculture, Rural Areas and Farmers
- ▶ Charity





Employees Participated
in Trainings

96.4%

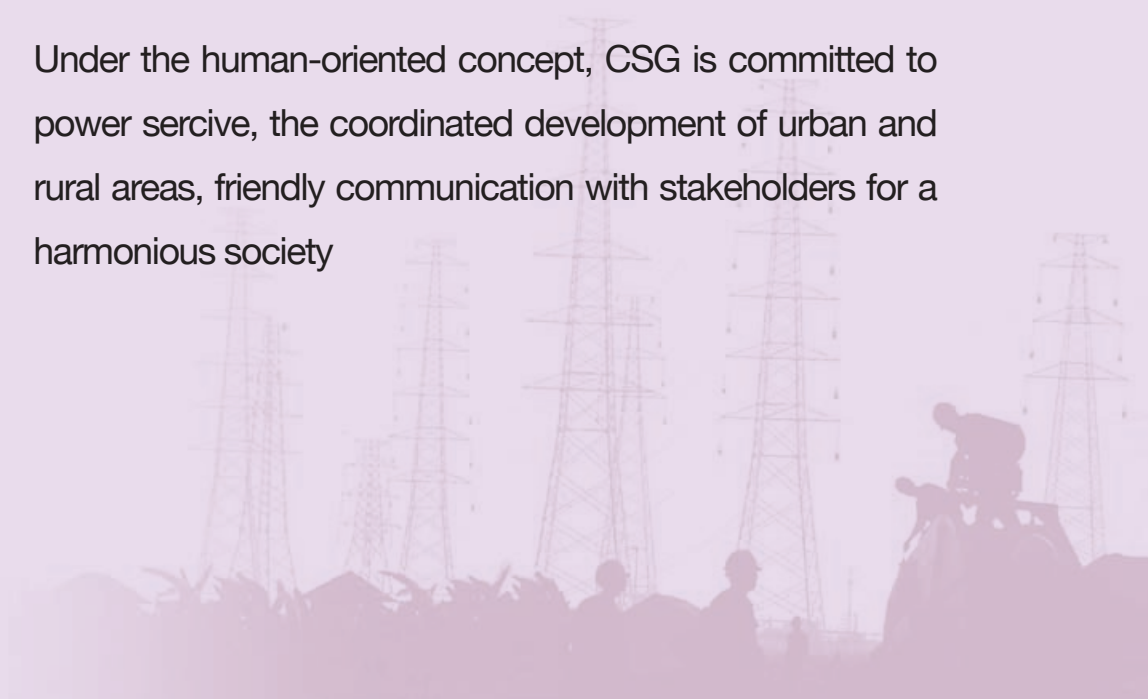
Invested 26 Billion RMB
on Rural Grid Construction
and Upgrading

26 Billion RMB

Donated 12.39 Million RMB
to the Typhoon Morakot
Struck Taiwan

12.39 Million RMB

Under the human-oriented concept, CSG is committed to power service, the coordinated development of urban and rural areas, friendly communication with stakeholders for a harmonious society



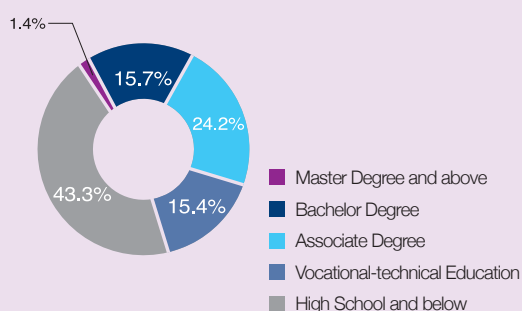
► Employee Development

We encourage mutual development, meaning company development with employees' development. We have tried every means to create sound career prospects for employees' growth. We advocate "happy working" philosophy, and actively build a company of harmony.

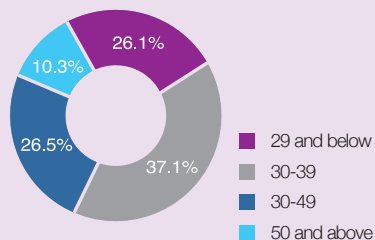
By the end of 2009, we have 303,498 employees; female employees accounted for 22.9%, and minority nationality employees accounted for 14.6%. We are an equal employers, providing equal job opportunities to disabled people. We are expanding our R&D team and increasing the proportion of female managing staffs.



Employee Education Structure



Employee Age Structure



Employee Interests

We act in accordance with the Labor Law and relevant regulations. We are enrolled in all kinds of social security systems and pay social security fees according to laws and regulations. The labor contract signing rate reached 100%, and employee social security participation rate also reached 100%, with no substantial labor disputes. According to a 2009 sampling survey, the general employee satisfaction was 97.4%.

- We practice fair employment system and equal remuneration differences between male and female employees. There is no racial discrimination or child labor in CSG.
- We actively promote employee localization. Preferences will be given to qualified local citizens to do power grid construction and maintenance.
- We follow the SASAC requirement on total wage control, and have implemented total wage budget management to standardize payroll distribution.
- We practice in strict accordance with Regulations on Paid Annual Leave for Employees
- Employee Turnover Rate: 0.46%



Employee Occupational Safety and Health

We implement with strict accordance with National Occupational Safety and Health Regulation. We pay great attention to employees' occupational health, in particular, health conditions of workers of special trades. The employee health examination rate reached 100%.

► We launched campaigns against safety: breach of regulations, Carelessness and negligence. We have adopted solide measures to reinforce staffs' awareness on safety and compliance, and have improved employee safety equipments and facilities, to ensure employees' safety.

► CSG has standardized rural grid construction safety management, and has established safety risks prevention and inspection mechanism. CSG perform inspection and examinations at regular intervals to ensure rural power workers' safety.

► CSG has launched Care Employee Campaign to relief their pressure. We practiced employee mental health instruction plan in 18 pilot units, and performed 319 tutorials , 305 case instructiosn. In total, 2083 people received instruction.

Democratic Management

CSG strictly follows policies to facilitate democratic management. A mumber of practices like, Employee representative conference, business open and democratic evaluation are adopted to timely update employees, collect and implement suggestions put forward by the representatives. We respect and guarantee employees's right to know, to participate, to supervise and to express.

► We actively support lbour union's independent work. Labor union establishment rate and the member rate reached 100%.

► We involve employees' participation in orporate management by adopting questionnaire, seminars, and one-to- one interviews. We have collect employees' constructive suggestions, 10,319 pieces of suggestion in total.Our employee review and corporate culture establishment survey helped us to identify 1692 problems.



Employee Training

► CSG have practiced and furthered a Learning Enterprise construction. We are working with employees to improve their qualification and caliber.We always hold systematic, specified, human-oriented and differentiated trainings. We reinforce training to our backbone workers, county-level power supply company workers, and allocate more training resources to frontline workers.

► We organized long-distance training on National Group Leader Management Proficiency Qualification certification, 1167 group leaders were trained in the first session. We held professional knowledge and skill enhancement trainings for county-level power supply company staffs. We also have enhanced education and trainings of rural power staffs, with the aim to improve their skills and qualifications. We provided coordinated trainings for the 3640 newly recruits

The 2009 CSG Training

Training index	Number of Trainees	Training Sessions	Involvement (%)
Total	694645	18296	96.4
Frontline staffs	480040	12105	97.2
Group Leaders	43589	878	100
County-level Power Supply Companies Managing Staff	11262	280	100

Care Staffs

The company provides care and support to staffs with financial difficulties, visiting their family on important festivals such as spring festival and the mid-autumn festival, sending greetings to model workers' family and family members of those who sacrificed their lives for grid construction.

- The Labor's Union organizes performances, evening party,



singing competition, speech contest, games and a number of recreational activities to enrich staff's leisure time.

- The company pays special attention to female staff's welfare, organizing lectures on female health, etiquette and personal image design.

Fund Provided to Staff with Financial Difficulties in 2009

Unit	Content	Person/time	Amount (unit:thousand RMB)
CSG Headquarter	grants	3	1.8
Guangdong	grants	163	99
Guangxi	grants	—	71.52
Yunnan	grants	650	45.78
Guizhou	grants	439	22.9
Hainan	grants	458	38

Honor and Awards

Honors in 2009

Honor	Winners	Awarded By
National Labor Medal	SUN Yanxi and other 10 staffs	ACFTU
National Outstanding League Member,	CHEN Hengqing and other 2 staffs	CYLCC
National Outstanding League Leader, National Young Professional Model Labor of CE's	ZHAO Wei and other 8 staffs	SASAC
National Female Pioneers of Energy and Chemical Industry	TANG Li and other 5 staffs	ECU
Outstanding Provincial/Regional League Member, Outstanding League Leader	MAO Cui and other 9 staffs	PYLCC
Outstanding League Member, Outstanding League Leader of CE's, 2008 Young Professionals of CE's	LV Zhi and other 6	CEWCG
Guangxi Provincial Labor Medal	GAO Wenjian and 9 other staffs	GPFTU
Guizhou Provincial Labor Medal	CHEN Dequan and other 8 staffs	GPFTU
Outstanding Party Member, Outstanding Party Leader	PAN Shan and other 5 staffs Party Committee of Hainan Province	SASAC
Yunnan Provincial Labor Medal	YANG Min, LI Tianquan	YPFTU
Guangdong Model Labor	XIAO Tiesheng and other 8 staffs	GPPG

► Win-Win Cooperation

CSG insists on mutual-beneficial and all-win cooperation strategy, it is committed to economic development and social progress. CSG is ready to meet challenges and opportunities with stakeholders.

Support Asian Games and Universiade



CSG is the Prestige Partner of Guangzhou 2010 Asian Games and the Partner of Shenzhen 2012 26th Universiade. CSG is dedicated to delivering full support and ensuring power supply to the two sport events.

Under CSG's centralized and standardized deployment, Guangdong Power Grid Corporation has launched all-around power supply program for Asian Games, including key transmission lines and substations construction; supporting distribution network construction and underground projects (referring to electric and power transmission line, water and heat supply lines, and gas supply lines); supporting system optimization of emergency commanding center. Shenzhen Power Supply Bureau has set up emergency power supply commanding center, upgraded T&D lines and stations, and devoted a lot of time and effort to ensure safe and security power supply for the Universiade.

Enhance Cooperation with Power Generation Company

CSG has signed "Grid Integration and Dispatching Agreement" with power generation companies, and has always acted in compliance with "Electricity Purchase and Sale Contract". CSG's power dispatching is open, fair, and impartial.



Guarantee Supplier's Interests

- CSG's bidding process are conducted in the "Sunshine Purchasing System". To guarantee rights and interests of both parties, CSG has introduced separate recommendation, bid evaluation and bid-deciding making process.
- CSG improves its Accountability purchasing system, cooperates with suppliers on the principles of honesty, and increases the proportion of accountability purchase.
- CSG increase the proportion of domestic materials and goods, and facilitate growth of local suppliers.

Strengthen Contractors' Ability to Fulfill Obligations

The company compiled and distributed 3000 video teaching material on "Grid Construction Worker Safe Behavior" to contractors. Video highlighted risks and precautions to be noted during site works, and urged contractors to implement social responsibility.



International Cooperation

CSG has established cooperative relationship with a large number of world renowned power utilities and international organizations, and has carried out in-depth technical exchanges and cooperations with them. In 2009, CSG signed the cooperation framework agreements with Singapore and TEPCO and several fruitful trainings ensued under the agreement.

CSG actively takes part in important international meetings and professional symposiums. In 2009, CSG sent delegations to Cross-straight Power Industry CEO Roundtable Forum, International Power Industry Technology and Equipment Exhibition(Vietnam), International Electricity Research Exchange Association(IERE), International Symposium on Electromagnetic Compatibility, 16th International EHV Technical Seminar and CIGRE, etc.



CSG signed the Cooperation Framework Agreement with Singapore Energy Company



CSG signed the Memorandum of Understanding with TEPCO

Participate Industrial Exchange

CSG attaches great importance to communication with industrial peers, supports industrial associations development, and takes part in a large number of exchange and communication activities.

CSG jointly organized "2009 China Power Enterprise Management Forum" with the China Electricity Council. The theme of the Forum is "Process Optimization and Reengineering in Power Enterprises". It provides a platform for management experience sharing and is conducive for power industry management level.

CSG's Role in Major Social Organizations

Social Organization	Function
China Electricity Council	Vice Chairman
Power Branch, China Institute of Internal Auditors	Vice Director
Power Branch, China Inspection and Supervision Society	Vice Chairman
CEPSI	Member
Japan-Sino Science and Technology Association	Member

Support Wuhan-Guangzhou Express Railway

Guangdong Power Grid Corporation works closely with railway authority in Wuhan-Guangzhou express railway construction and played a crucial role in the express operation and 2009 spring festival peak transportation period. To provide walk-way for Wuhan-Guangzhou express railway, 15 110kV and above OHL has to be relocated or upgraded in Guangzhou. Guangzhou Power Supply Bureau made risk analysis and control, scheduled proper progress for each line, and facilitated the operation of Wuhan-Guangzhou express railway on Dec.26th, 2009.



► Serve Agriculture, Rural Area, and Rural Population

Strengthen power networks construction at county level; promote identical management and service in urban and rural area; try our best to serve the construction of socialist new countryside.

Increase Investment in Rural Network

CSG completed investment of 26 billion RMB in county level network construction, representing a 91.2% year-on-year increase. We built and upgraded 10kv lines of 36011 kilometers, 33690 rural distribution transformers, and low voltage lines of 46347 kilometers.

Electricity to Every Rural Household

We have made extra efforts to implement “Electricity to Every Rural Household” program, put 1 billion RMB into a special fund to supply electricity to 106 thousand people. The target was accomplished in Guangdong, Guangxi, Guizhou and Hainan provinces. In the supply area of southern power grid, electricity accessibility in administrative villages reaches 99.95%, household electricity accessibility reaches 99.71%.



Facilitate “Appliances to Countryside”

We actively assisted and facilitated for “Appliances to Countryside” Campaign. We organized service teams based on rural power supply institutions to better our understanding on rural consumption. We provide coordinated service to facilitate “Appliances to Countryside” Campaign, expand electricity market in rural areas, and promote electrification in rural families. In 2009, rural electricity sales in five provinces recorded a 11.2% year-on-year increase; rural residential consumption increased 18.7%, evidently higher than the increase of the overall consumption.

Power Supply to Households Which Had No Access to Power in the Past (10 thousand household)



Relieve Rural Population's Burden

By implementing “one meter one household” project, 390,000 new meters were installed in Yunnan. The project helped peasants to reduce 30 million RMB plus electricity expenses. 217,000 new meters were installed in Guizhou, 88.8% of the customers have their own meters; in Hainan, “one meter on household” is realized in rural areas.

Guangdong Power Grid Company completed the take-over of 50 county-level power supply companies, which realized the same tariff policy in both urban and rural areas, and saved 1.7 billion RMB for the farmers.

Improve Rural Power Service

CSG improves base management in county level power supply entities, bring rural power service in line with the company's standard level. 210 county level power supply entities maintained or newly acquired the title “CSG Standard Power Supply Entity”.

We strengthened standard management of service counter in rural areas. 3172 out of 3242 service counters reached CSG standard, at a rate of 98%. Service hot-line covers 100% of rural area.



► Social Welfare

The company gives full support to the development of welfare services, such as education, healthcare, culture etc.; commits itself to poverty-relief and disaster-relief activities; gradually perfects donation system, encourages staffs to make donation and to take part in volunteer activities.

Poverty-Relief

Make substantial efforts to revive economy in remote areas and to increase local residents' income; establish "one-to-one" special poverty-relief fund for infrastructure construction in under-developed areas; pay annual support visits to the designated under-developed areas.

Disaster-Relief

When natural disasters such as earthquake, typhoon, flooding and ice disaster hit, CSG makes utmost efforts to restore power supply and donate materials and money to effected areas. We support disaster-relief efforts and post-disaster reconstruction, delivering warm regards and care to thousands of households.



Donation to Disaster-affected Area



Aug. 5th, 2009, typhoon Morakot hit Taiwan. CSG staff donated 12.39 million RMB for the disaster-stricken area voluntarily.



Jul. 9th, 2009, Yaoan county in Chuxiong Yi Autonomous Prefecture was stricken by M6.0 earthquake. Staff of Yunnan Power Grid Corporation donated 104.7 thousand RMB.

Donations in 2009

Nature of Donation	Amount (Unit: Thousand RMB)
1. Relief Donation	14045.7
(1) Donation to disaster-effected area	5407.2
(2) Donation to designated under-developed area	924.2
(3) Donation to disabled people Fund	30.7
(4) Donation to designated regions	6119.3
Among which: donation to Xinjiang	57000
donation to Tibet	376.7
(5) other relief donation	1564.3

Nature of Donation	Amount (Unit: Thousand RMB)
2. Social Welfare Donation	43221.9
(1) donation to education, science, culture, healthcare and sports	40935.5
(2) donation to environment protection	120
(3) donation to energy conservation and emission reducing	—
(4) donation to public facility construction	687.1
(4) other social welfare donation	1479.3
2. other donation	9852.8
Total amount	67120.4

Support Xinjiang

Since 2005, CSG has sent six staffs to work in Maigaiti county, the Kashi region of Xinjiang ygur Autonomous Region; and in total , we raised 18.15 million RMB fund for education, medicare, and people's livelihood. We assisted local government to attract investment, we facilitated over 20 enterprises to Maigaiti county for cooperation; We invested more than 800 thousand RMB in talents training, so as to nurture sustainable growth impetus for the region.



Cares for Residents' Health

CSG always attaches great importance to community residents' health. To eliminate residents' misunderstanding of electromagnetic radiation, the company conducted joint examinations with local environment protection bureau and other third party organizations at outdoor/indoor substations and around high voltage lines, all examinations results are far below the national standard index. The company released all examination results to the public. Besides, CSG makes full use of bus ads, subway ads, radio programmes, site visits and exchanges to communicate with the public, better their understandings of power facilities.

Guangzhou Power Supply Bureau organized mutal visits of citizen representatives from Guangzhou and Hong Kong through the massmedia. By visiting the substations closed to households and schools in Hong Kong, to help Guangzhou citizens to experience the integration of urban substations and communities, and to effectively relief the citizens' misunderstanding of substation electromagnetic radiation.

Volunteers

CSG volunteers visit schools, villages, and underprivileged families. 16780 people participated in 1047 organized programs.



Visit to Wenchuan Earthquake-stricken Area

From Jun. 20th to Jun.23rd, 2009, volunteers from Guangzhou Power Supply Bureau, Shenzhen Power Supply Bureau and Chengdu Power Industry Bureau visited Yinxiu county and Longchi county, the two counties severely damaged by the Wenchuan earthquake in 2008. The volunteers donated digital cameras to local residents, educating them safe electricity utilization knowledge, and played short videos and films made by themselves.



Outlook 2010

Year 2010 will be a year of more complications, with many uncertainties. Based on experiences and lessons learnt from efforts tackling global financial crisis in 2009, we will implement central government's strategy, playing the demonstration role of a central enterprise, and take the initiative to shoulder social responsibility, provide quality power supply service for the stable economic development in five provinces.

Ensure Grid Safety: spare no effort to ensure safe and stable grid operation, enhance employees' awareness of safety and regulation, enhance management and control over defects and weak links, so as to ensure safe operation and power supply during Guangzhou Asian Games.

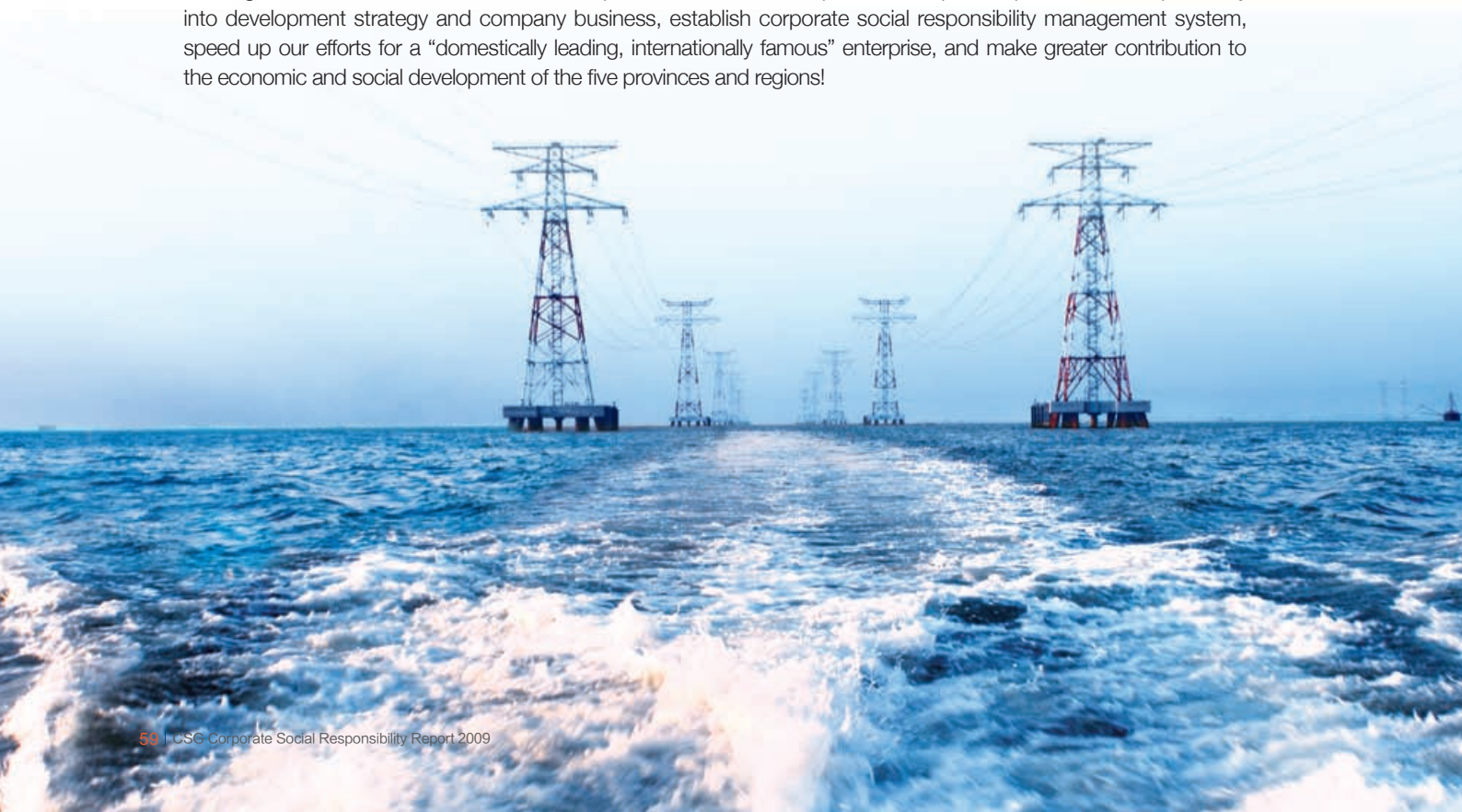
Optimize Grid: optimize power network structure at different level; improve organization of grid planning, design, engineering; increase investment for 110kV-and-below project; promote urban network retrofitting and rural network upgrading.

More Green: To contribute to the economic development mode transition and the economic structure adjustment, CSG is striving to establish itself as the Green Platform serving scientific development of the five provinces. We will make in-depth research on grid enterprise's responsibility in developing low-carbon economy, expand CSG Green Action, take substantial steps in energy-efficient generation dispatching, line loss management, and demand side energy conservation.

Solidify Foundation: CSG improves company management and have made new progress in strengthening development basis. We keep on implementing To-Top program, actively promote management innovation and standardize our management basis, and bring our practice in line with international practice; We standardize five core business processes(T&D equipment management, dispatching operation, marketing and sales, capital management and grid construction) in accordance with the company's centralized management strategy.

Harmonious Environment: We create sound internal and external environment for a stable, harmonious and green development, and make our due contribution to the stability and harmony of the whole society. We properly coordinate relationship between all stakeholders, company, employee, generation companies, community and government of different levels.

Looking into the future, CSG will continue to implement scientific development concept, incorporate social responsibility into development strategy and company business, establish corporate social responsibility management system, speed up our efforts for a "domestically leading, internationally famous" enterprise, and make greater contribution to the economic and social development of the five provinces and regions!



Rating Report



Entrusted by CSG, the Corporate Social Responsibility Research Center of Chinese Academy of Social Sciences, Economics Department selected experts from the China Corporate Social Responsibility Report Rating Panel to chair the "Rating Panel of 2009 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd.". The rating panel rated the "2009 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd.(hereinafter referred to as Report)" in accordance with the standards of CASS-CSR 1.0.

I. Rating Basis

CASS-CSR 1.0 jointly released by China Corporate Citizen Committee, WTO Tribune, and the Corporate Social Responsibility Research Center of Chinese Academy of Social Sciences, Economics Department.

II. Rating Conclusion

Comprehensiveness

The Report made a full and accurate disclosure of responsibility management, market responsibility, social responsibility and environment responsibility, covered core indices of power supply industry and all stakeholders. It is of good integrity.

Substantiveness

The Report disclosed actions and effectiveness of CSG's practice in ensuring power supply, corporate operation performance, and energy conservation and emission reduction. It fully demonstrates key responsibilities of power supply industry and the key responsibility of year 2009.

Balance

The Report disclosed "data of power facility theft", "major grid accidents", "major equipment accident", "major personal injury and accidents", and the "decreased total profits and taxes in 2009". It reflects a complete and balanced picture of the company.

Comparability

The Report demonstrates sound longitudinal comparability by releasing key performance index of 5 consecutive years.

Readability

The Report is of good readability. It comprises "Responsibility Column", "About Us", "Power Supply", "Economic Performance", "Green Environment" and "Harmonious Society" five chapters, with clear structure, easy language and exquisite layout design.

Innovativeness

The Report is of sound innovativeness. It gives the key performance of implementing responsibility in the title page, evidently displayed the key figures of each chapter in the over pages, and adopts a map to show the major company events of 2009.

Comprehensive Rating

The 2009 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd. was rated four and a half star by the panel. It should be regarded as a leading corporate social responsibility report.

III. Suggestions

- to disclose more facts in relation to core performance indices in responsibility management, social harmony, etc..
- to add more comparable key performance data regarding other enterprises of the same industry, so as to improve horizontal comparability.
- to identify future goal for social responsibility in "Outlook".

IV. Rating Panel

Panel leader:

PENG Huagang, Vice Consul, Director of SASAC Research Institute

Panel Member:

HU Xiaozheng, Director of Power Reliability Management Center, SERC

CHEN Yuanqiao, Secretary General of China ISO Social Responsibility Special Workforce

YIN Gefei, Vice President of WTO Tribune

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

CHEN Jiagui
Consul

Member of NPC Standing Committee
Executive Chairman of the Chairman Panel of Chinese
Academy of Social Sciences

陳佳貴

PENG Huagang
Team Leader of Rating Panel
Vice Consul, Director of SASAC Research Institute

彭華崗



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

Third-party Evaluation

CHU Xuping Deputy Director of SASAC Research Institute

We should take current economic and social development into consideration. To evaluate the social responsibility performance of a public utility, we should focus on its efforts on technological progress, quality services, and transformation of development approach. The 2009 Corporate Social Responsibility Report of China Southern Power Grid Co., Ltd. Provided a satisfactory answer for communities

I. Progress in Technological Advancement

The company completed the 500kV Hainan cross-straight interconnection project, where the submarine cable adopted is the longest in Asia, and the second largest in the world. In particular, the company constructed the world's first $\pm 800\text{kV}$ UHV DC transmission project---Yunnan-Guangdong UHV DC project, and has started single pole operation. Over 60% of the project was domestically manufactured, bringing China's power technology and equipment manufacturing to the world-leading level. The company now plays a leading role in the world's transmission and transformation field.

II. Achievement in Quality Service

The company identifies its core responsibility as delivery of safe, stable, reliable, and quality power supply for the sustainable development of the economy and the society. Southern power grid maintained safe and stable in 2009. There was no major grid accident, major equipment accident, or major personal injury. The reduction of customer outage time is set as a compulsory requirement. Urban power reliability was 99.87%, the annual average outage time was cut down by 13.6%. According to the third-party customer satisfaction survey on utility industries, the company's power supply service (based on survey conducted in Guangdong, Yunnan) ranked No. 1 for 4 consecutive years. In the fight against ice disaster and the rare drought, CSG demonstrated that it deserves the title of being "the most admirable people in the new age", and set up a model of quality service for the public industry.

III. Improvement in Green Growth

Grid is the hub of power industry, it plays a crucial role in energy conservation and emission reducing. By implementing energy efficient generation dispatching, prioritizing hydro generation, queuing generation of coal-fired units in accordance with their energy-intensity, supporting integration and generation of new energy, optimizing generation structure, CSG is one step closer to a true green company. In the past seven years, 399.3TWh of hydro electricity were transmitted from west to east, equivalent to saving of 127 million tons of standard coal, 2.45 million tons of SO₂ emission reduction. In the year of 2009, the company assisted local governments in shutting-down 6700MW small coal-fired units. By the end of 2009, the total shut-down capacity aggregated to 14090MW, exceeding 13270MW, the target set for the 11th five-year plan period. By scientific generation allocation of coal-fired units in accordance with their energy-intensity, the generation coal consumption in southern China was 315g/kwh in 2009, representing a 4g/kwh year-on-year decrease. The company also provided energy conservation diagnosis and suggestion for customers, helping them to save 1 TWh of electricity on the demand side. All the above substantial efforts shall be deemed as an outstanding contribution to the transformation of economic growth approach.

The Report and the practices of CSG in 2009 highlighted central enterprise's mission, namely, to create value for the nation, to provide quality service for customer, and to work for the welfare of the whole society.

HU Xiaozheng Director of Electricity Reliability Management Center SERC

The Report highlighted the core social responsibility of power utility as a central enterprise, that is , to provide safe, reliable and quality power supply guarantee for the sustainable development of the economy and the society. With substantial amount of cases and data, the Report summarized and reviewed the company's efforts in implementing social responsibility in 2009, stressed the achievement in increasing supply and expanding sales, and in constructing a strong large grid. The Report is of clear structure, objective content, accurate data, and strong credibility.

SHA Yiqiang Director of Research office, China Electricity Council

There are different interpretations about corporate social responsibility. A central enterprise, should take on responsibility to promote economic and social development on one hand and achieve business target on the other hand. 2009 CSG report provides a very good illustration of a company's development concept and its outstanding contribution to the regional development. Readers are impressed by CSG's outstanding achievement made since its foundation.

ZHANG Chengfu Chairman of China Energy and Chemistry Union

This year's Report maintains the consistent style---highlighted theme, concise language, comprehensive and accurate data, and convincing cases. It reflects CSG's remarkable performance in its social responsibility commitment. In the recent 3 years, the company took initiative to issue annual corporate social responsibility report, and invite public supervision. The company attaches great priority to the Report, continues to strengthen management and implementation of social responsibility.

Performance of the United National Global Compact



Ten Principles		Reflected in the report as	Implementation
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights.	Social Harmony/ Employee Development/ Employee Rights	<ul style="list-style-type: none"> Comply with laws and regulations, implement labor law and rules. Pay full respect to and guarantee employees' right to know, right to participate, right to supervise and right to express.
	Make sure that they are not complicit in human rights abuses.	Social Harmony/Employee Development/Employee Rights Social Harmony/Employee Development/Democratic Management	
Labor	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	Social Harmony/ Employee Development/ Democratic Management	<ul style="list-style-type: none"> Strictly abide by regulations, for instances, employee representative conference, information transparency, democratic evaluation, etc. Make timely update to staffs on business operation and other relevant information. Stick to a fair employer system, male and female staffs receive same salary for same job with no racial discrimination and no child labor.
	The elimination of all forms of forced and compulsory labor.	Social Harmony/ Employee Development/ Employee Interests	
	The effective abolition of child labor.	Social Harmony/ Employee Development/ Employee Interests	
	The elimination of discrimination in respect of employment and occupation.	Social Harmony/ Employee Development/ Employee Interests	
Environment	Businesses are asked to support a precautionary approach to environmental challenges.	Green and Environment Protection	<ul style="list-style-type: none"> Carry out "Green Action" with the theme of "Scientific Utilization of Electricity, Energy Conservation and Emission Reducing"; substantially save energy and reduce loss in the company's own businesses; take the initiative to help generation side and demand side to save energy and cut down emission.
	Undertake initiatives to promote greater environmental responsibility.	Green and Environment Protection	
	Encourage the development and diffusion of environmentally friendly technologies.	Green and Environment Protection/Make full use of Green Power Green and Environment Protection/Energy Efficient Operation	
Anti-corruption	Businesses should work against corruption in all its forms, including extortion and bribery.	Compliance	<ul style="list-style-type: none"> clean business education and anti-corruption lectures for management team. Performance monitoring, paying special attention to key focus and key links.

Report Index

Report Directory	GRI	CASS-CSR
Cover	2.1	P2.3
Inside Front Cover		P4.2
Board Chairman Speech	1.1/1.2/4.8/EC4	P2.1/P2.2/G1.1/G1.2
Responsibility Framework		P2.1
Responsibility Column/Increase Supply and Expand Sales	EC8	ESM2.1/ESS4.1/ESE2.1
Responsibility Column/the World's First $\pm 800\text{kV}$ UHV DC Transmission Project	EC8	ESE2.5/ESE2.7
Responsibility Column/500kV Hainan Interconnection Project	EC8	ESM2.1
About Us	2.2/2.5/2.6/2.7/2.8	P3.2/P4.1/P4.2/G1.1/M1.2
About Us/Company Leaders		S2.10
About Us/Corporate Governance	2.6/4.9	P3.5/P3.6
About Us/Organization Structure	2.3/4.1	G3.1/P3.3/ P3.4
About Us/Introduction to Secondary Units	2.2/2.3/2.8/3.6	P3.2/P3.4
About Us/Responsibility Management/Social Responsibility Working System	4.8	G1.4/G2.1/G2.2/G2.3/G2.4/G3.3
About Us/Responsibility Management/Social Responsibility Index System	4.9	
About Us/Responsibility Management/Stakeholder Communication and Participation	4.4/4.14/4.15/4.16/4.17/S05	G2.4/G2.5/G3.1/G3.2/G3.3/G3.4/
About Us/Responsibility Management/Social Responsibility Exchange and Training	EC8	G3.5/M2.1/M3.1/M3.2
About Us/Responsibility Management/Responsibility Honor	2.10	G3.5
Power Supply	4.8	P4.3/M2.14
Power Supply/Safe Production/ Stable Operation of the Grid		EC2/M2.5/ESM2.2/ESM2.3
Power Supply/Safe Production/Sound Operation of the Facility		S3.1/S3.2
Power Supply/Safe Production/Roll out Safe Production Risk Management System	PR2	ESS3.2 /ESM2.7
Power Supply/Safe Production/Standard Management of Safe Production		S3.1
Power Supply/Safe Production/Implementation of Safe Production Responsibility		S3.1
Power Supply/Safe Production/Protection of Power Facility	PR2	S3.1
Power Supply/Reliable Supply		ESS3.2
Power Supply/Reliable Supply/Strong Distribution Grid		ESM2.1/ESM2.2/ESM2.3
Power Supply/Reliable Supply/Comprehensive Outage Management	EC8/PR2	ESM2.1
Power Supply/Reliable Supply/Live Work	EC8/PR2	ESM2.1
Power Supply/Reliable Supply/Rapid Restoration of Supply	EC8/PR2	ESM2.1
Power Supply/Reliable Supply/Secure Supply for Important Events		ESM2.1
Power Supply/Quality Service/Happy to Use	EC8/PR5/PR6	
Power Supply/Quality Service/Easy to Pay	EC8/PR3/PR5/PR6	M2.1/ M2.2
Power Supply/Quality Service/Accurate Metering	EC8/PR3/ PR5/PR6	M2.1/ ESM2.8
Power Supply/Quality Service/Good Hot Line Service	EC8/PR5/PR6	M2.1/M2.2/ESM2.8
Power Supply/Quality Service/Personalized Service	EC8/PR5/PR6	M2.1/M2.2/M2.3
Power Supply/Quality Service/Marketing Service Culture	EC8/PR1/PR5/PR6	M2.1/M2.2
Power Supply/Grid Construction	EC8/PR2	M2.1/M2.2
Power Supply/Emergency Management	4.11/PR2	ESM2.1/S4.1
Power Supply/Technological Innovation		ESM2.7/S3.2
Power Supply/Technological Innovation/Smart Grid Research		M2.9/M2.10/M2.12/M2.14
Power Supply/Technological Innovation/National Key Lab		M2.9
Power Supply/Management Innovation/In-depth To-Top Program	PR5/PR6	M2.14
Power Supply/Management Innovation/Launch To-Top Program in Provincial Grid Corporations	PR3/PR6	ESM2.3/M2.3/M2.5/ESE2.2
Power Supply/Management Innovation/the First CSG Management Forum		ESM2.2
Economic Performance	4.8	G3.4/G3.5
Economic Performance/Operation Performance	2.8/4.8/EC1	
Economic Performance/Law Compliance	S08	P4.1/P4.2/S1.2
Economic Performance/Law Compliance/Legal Risk Management		G4.1/G4.4
Economic Performance/Law Compliance/Strengthened Internal Control	S04	G4.1/G4.2
Economic Performance/Law Compliance/Supervision on Major Decisions	S04	G4.2/M3.4/M3.7
Economic Performance/Law Compliance/Clean Business	S03	G4.2
Economic Performance/Law Compliance/Performance Supervision	S04	G4.3
Economic Performance/Reduce Cost and Enhance Performance	EN5	G4.2
Economic Performance/Promote Development of Electricity Market	EC9	M1.4
Economic Performance/Development of Service Chain	EC9	

Report Index

Report Directory	GRI	CASS-CSR
Economic Performance/Development of Low-carbon Industry	EC2/EC8/EC9	E3.8
Economic Performance/Serve the Economic Development in Five Provinces	EC8/EC9/S05	S4.1/S4.2
Economic Performance/Strengthen Cooperation with Hong Kong and Macau	EC9	S4.1/S4.2
Economic Performance/Promote GMS Cooperation	EC9	S4.2
Environment Protection	4.8/EC2/EN5/EN18/EN20	S1.1/E1.1/ E1.10/E2.1/E2.4/ESE2.2
Environment Protection/Make Full Use of Green Power/Full Utilization of Hydro Power	EN5/EN7/EN8/EN18/	E2.5/E2.6/ESE2.5/ ESE2.7/E3.8/E3.9
Environment Protection/ Make Full Use of Green Power/Promote Development of Clean Fossil-Fired Generation	EN5/EN7/EN18/SO5	E2.4/ESE2.5/ESE2.6/ (E3) /E3.8/E3.9
Environment Protection/ Make Full Use of Green Power/Support Development of New Energy	EN5/EN7/EN18/SO5	E2.5/E2.6/ESE2.5/ESE2.7/ (E3) /E3.8
Environment Protection/Construct Green Grid/ Noise Reduction		S4.1
Environment Protection/Construct Green Grid/Save Land	EN7/EN11	E1.4/S4.1/E1.8
Environment Protection/Construct Green Grid/Protect Biodiversity	EN12	E1.7/S4.1
Environment Protection/Energy Efficient Operation/Energy Efficient Generation Dispatching	EN7/EN18	E2.1/ESE2.3
Environment Protection/Energy Efficient Operation/Reduce Line Loss	EN5/EN7/EN18	E1.6/E2.1/ESE2.1/ESE2.2 /E3.9
Environment Protection/Energy Efficient Operation/Proper Disposal of Waste	EN27	E1.3/E1.6/E2.8/ (E3)
Environment Protection/Facilitate Customer Energy-saving	EN6	E1.2/E1.6/E2.1/E2.8/ESE2.3
Environment Protection/Promote Energy Conservation	EN6	E1.2/E1.9
Environment Protection/Green Office	EN6/EN18	S4.1/E1.9/ESE2.10/ESE2.11/ESE2.12/ESE2.13/ (E3)
Social Harmony	4.8/EC1	S4.7/ESM2.4
Social Harmony/Employee Development	4.4/LA1/LA2/LA13	S2.11/S2.21/S4.3
Social Harmony/Employee Development/Employee Interests	EC3/LA4/LA14/HR6/HR7	M3.6/S2.1/S2.2 /S2.3/S2.5/S2.6/S2.8/S2.22
Social Harmony/Employee Development/Employee Professional Safety and Health	EC3/LA8/LA9	S2.12/S2.13/S2.14/S2.15/ESS3.1
Social Harmony/Employee Development/Democratic Management		S2.4/S2.20
Social Harmony/Employee Development/Employee Training	EC3/LA10/LA11	S2.17/S2.18/S2.19/ESS2.1
Social Harmony/Employee Development/Care for Employee		S2.23
Social Harmony/Employee Development/Employee Honor		P4.3
Social Harmony/Win-win Cooperation/Support Asian Games and Universiade	S05	
Social Harmony/Win-win Cooperation/Strengthen Cooperation with Power Plants		M3.1/M3.7
Social Harmony/Win-win Cooperation/Guarantee Supplier's Interests	EC6	M3.1/M3.2/M3.3/M3.4
Social Harmony/Win-win Cooperation/Improve Contractor's Ability to Implement Obligations	EC6/HR3	M3.1/G2.5
Social Harmony/Win-win Cooperation/International Communication and Exchange		
Social Harmony/Win-win Cooperation/Industrial Exchange	4.13	M3.1
Social Harmony/Serve Agriculture, Rural Area, Rural Population/Expand Investment in Rural Network	S05	ESM2.4/S1.1/ESS4.1
Social Harmony/Serve Agriculture, Rural Area, Rural Population /Electricity to Every Rural Household	S05	ESM2.4/ESM2.5/ S1.1/ESS4.1
Social Harmony/Serve Agriculture, Rural Area, Rural Population/Appliance to Countryside	S05	
Social Harmony/Serve Agriculture, Rural Area, Rural Population/Reduce Rural Population's Burden	S05	ESM2.4/S1.1/ESS4.1
Social Harmony/Serve Agriculture, Rural Area, Rural Population/ Improve Rural Power Service	S05	ESM2.4/S1.1/ESS4.1
Social Harmony/Social Welfare		S4.5/S4.9/S4.5
Social Harmony/Social Welfare/Poverty-Relief	EC1	S4.6
Social Harmony/Social Welfare/Disaster-Relief	EC1	S4.7/S4.8
Social Harmony/Social Welfare/Support Xinjiang	EC1	S4.2/S4.10
Social Harmony/Social Welfare/Cares Residents' Health		S4.1/E1.9
Social Harmony/Social Welfare/Volunteer Activity	EC1	S4.9/S4.10
Outlook 2010	4.8	P2.2/G1.1/G1.2/ (A1)
Rating Report		
Third Part Evaluation	3.13	(A2)
Performance of the United Nations Global Compact		
Report Index	3.12	(A3)
About the Report	3.3/3.5/3.11	P1.4/ P1.5
About the Report/Time	3.1	P1.3
About the Report/Range	3.4/3.7	P1.2
About the Report/Compiling Basis	3.8/4.12	P1.1/P1.7/G1.3
About the Report/Data Source	3.9	P1.1/P1.6
About the Report/Title Description		
About the Report/Feedback Sheet	3.4	(A4)
Back Cover	2.4/3.4	P1.8/P1.9

About the Report

This Report is the third Social Responsibility Annual Report issued by China Southern Power Grid Co., Ltd. It is produced in Chinese and English version. Adhering to the principle of objective, standard, transparent, and comprehensive, the Report disclosed the company's safe and quality power supply, and its performance in economy, environment, and society.

Time

From Jan.1st, 2009 to Dec.31st, 2009. Part of the content extends before the year of 2009.

Range

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

Compiling Basis

The Report was compiled in accordance with the requirements of SASAC's "Guidelines---About Central Enterprises' Implementation of Social Responsibility". It also referred to the ten principles of the United Nations Global Compact, Global Reporting Initiative's G3 Guidelines, China Federation of Industrial Economics's "China Industrial Enterprise and Industrial Association Social Responsibility Guidelines", and the CASS-CSR 1.0 of Chinese Academy of Social Sciences.

Data Source

Data adopted in the Report is from the company's official documentations and statistics reports.

Title Description

In the Report, "China Southern Power Grid Co., Ltd." is also referred to as "southern power grid company(CSG)", "the company", or "we".

Feedback Sheet

To help us improve our social responsibility, your comments are welcomed. Wwe treasure your feedback:

1. Your overall comment on the Report is :

☐ very good ☐ good ☐ Ok ☐ poor ☐ very poor

2. The quality of 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 graphic design and layout design of the Report is:

☐ very good ☐ good ☐ Ok ☐ poor ☐ very poor

5. Your suggestions regarding our social responsibility, please specify:

Address:
Strategy Planning Department, China
Southern Power Grid Co., Ltd.
No.6 Huasui Rd, Zhujiang Xincheng,
Guangzhou
Postal Code:510623
Tel: 86-20-38121093
Fax: 86-20-38122187
E-mail:csr@csg.cn