



**STATE GRID**  
CORPORATION OF CHINA



## 2009 Corporate Social Responsibility Report of State Grid Corporation of China



## LOGO

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The spherical logo stands for SGCC's promising future, global visions and resolution to becoming a world-class utility.

The circular design symbolizes the interaction, coordination, unity and harmony both inside and outside the company. This design further expresses the determination of SGCC in delivering quality services to achieve harmonious coexistence and joint development between customers, employees and society.

The crisscrossing lines on the logo stand for SGCC's core business of constructing and operating power grid. It further signifies SGCC's pursuit of excellence and distinction in ensuring social economic development by providing safer, cleaner, more economical and sustainable electricity supply.

The standard green color on the logo represents the green energy SGCC offers to the society, and SGCC's strive for evergreen vitality and sustainable development.



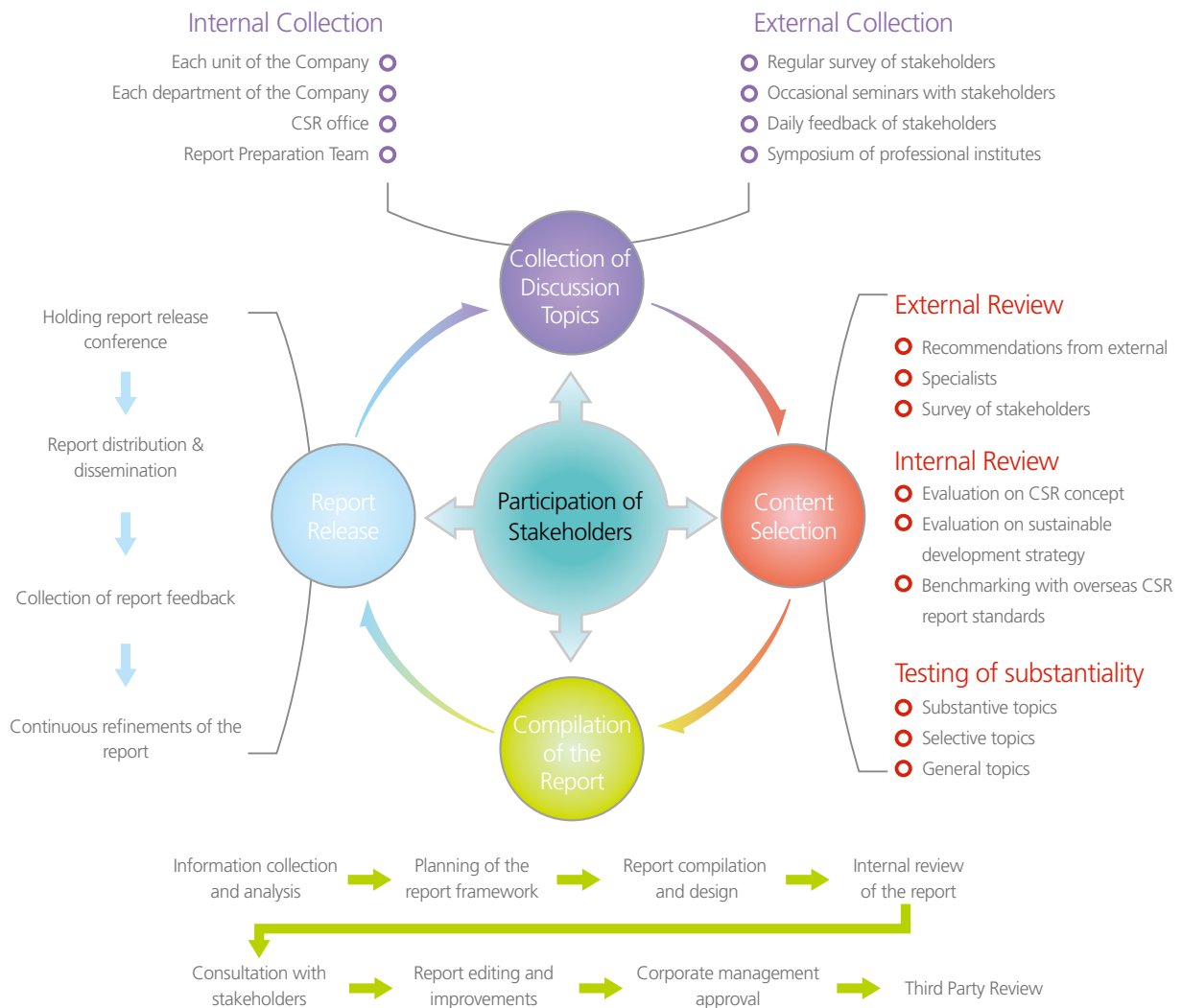
Integrity   Commitment   Innovation   Dedication



State Grid Corporation of China (SGCC) declares that all information revealed by the CSR Report is true, objective, comprehensive. The information conforms to the concept of social responsibility of SGCC, the strategy of sustainable development and reflects the true relationship between stakeholders and SGCC. The information addresses issues that are of concerns to stakeholders and presents an objective outlook on the Company's economic, social and environmental performance.

January 12, 2010

## Procedure for report preparation



# Report Overview

## Reporting period:

from January 1, 2009 to December 31, 2009. Part of the contents go beyond this period.

## Reporting cycle:

SGCC's CSR Report is an annual report, which is released at the beginning of each year.

## Organizational coverage:

The State Grid Corporation of China as a whole (Refer to "Corporate Profile" for organization structure)

## Previous reports:

SGCC released its CSR Report for four consecutive years on Mar. 2006, Jan. 2007, Jan. 2008 and Jan. 2009.

## Note on reporting data:

All data for the year 2008 quoted in this report is from final statistics of 2008. Part of these data differs slightly from the 2008 CSR Report.

## Standards followed by the report:

SGCC CSR Performance Guide

## References:

- Sustainability Reporting Guidelines (2006 Version), by Global Reporting Initiative;
- AA 1000 Assurance Standards, Accountability Institute, Britain; Guidance on Social Responsibility, ISO26000/DIS;
- Guidance on Chinese Enterprises' Corporate Social Responsibility, Chinese Academy of Science
- Recommended Standards and Examples for Chinese Enterprises' Corporate Social Responsibility, China Business Council for Sustainable Development

## Language of the report:

SGCC's CSR Reports are provided in both Chinese and English, including paper and electronic version. The electronic version can be downloaded from SGCC official website. Please send an e-mail to [csr@sgcc.com.cn](mailto:csr@sgcc.com.cn) or call Mr. Ding at 8610-66598394 to require a paper version of the CSR Report.

## Main innovations :

This report is the fifth CSR report of the company and major changes are as follows:

- Systematically disclosed SGCC's CSR Outlook
- Enriched SGCC's Strategy for Sustainable Development
- Expanded the contents for SGCC's responsibilities on Environmental Protection and Energy Conservation
- Illustrated the basic responsibilities and win-win partnership responsibilities of main stakeholders
- Addressed the types, contents, methods, and mechanisms to ensure the participation of stakeholders
- Answered 18 questions raised by stakeholders
- Reviewed the performance targeted in social responsibility of 2009
- Reviewed the fulfillment process of key responsibilities over the last five years
- Proposed "Eight principles" to guide social welfare work
- Extension of CSR reading accessible by SGCC CSR website

## Extended reading :

A wider range of contents was introduced at SGCC's CSR webpage, including the followings:

- Connotation of the 12 Responsibilities
- Content of basic responsibilities and win-win partnership responsibilities of main stakeholders
- Corporate governance
- Typical cases of fulfillment of social responsibility
- Annual honors and prizes
- Research achievements in social responsibility
- Pilot projects in CSR management
- Community Fund Association of the Grid
- Interpretation of Terminologies
- Methods of calculating reported indicators
- Video on responsibility fulfillment

Please log on to and browse at <http://csr.sgcc.com.cn>

## Future direction for improvement:

Further strengthen the CSR indicator system

- **Common responsibility:** SGCC believes that social responsibility is derived from the operation process of the Company. Effective management of the construction and the operation of the power grid will impact on the society and the environment. The guarantee of safer, more economical, cleaner and sustainable energy supply is the responsibility of both the company and its stakeholders.



- **Specific responsibility:** SGCC considers that the construction and operation of the power grid are processes for the exchange of interests between stakeholders. SGCC strives to deal with each stakeholder responsibly by implementing “Basic Responsibilities” and “Win-win partnership Responsibilities”.

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## Message from President



Mr. Liu Zhenya, President of SGCC

2009 was the year that SGCC spent diligently learning and putting in practice the Scientific Outlook on Development, and actively exerting the role model part of a Central SOE. Faced with the adverse impact from the international financial crisis, and the new situation arising from the profound restructuring of global energy, SGCC firmly stayed the course in its implementation of the strategic decision of the Central Government of Maintaining Growth, Guarding People's Well Being and Protecting Social Stability. Serving the national energy strategy and promoting sustainable development of social economy were our goals. Strengthening the "Two Transformation" (transforming the way in power grid development, transforming the way of enterprise development) and advancing the "Four Endeavours" (conglomerate operation, intensive development, lean management and standardized construction) were the main stream of our work. Guaranteeing safer, more economical, cleaner and sustainable energy supply were our focus. We established clear understanding of the status of China's social and economic development and the trend in energy allocations and global energy development. We accelerated the construction of strong and smart grid. We created a green platform for energy distribution. We elevated our ability and standard of sustainable development. We made every effort to create integrated values for our economy, our society and our environment. In the process of realizing scientific development we fulfilled our responsibilities to the society.

In modern society, power grid is extensively applied as a highly efficient, convenient and green infrastructure for energy distribution. Unleashing the full capabilities of the power grid in optimizing energy distribution, in ensuring a reliable, economical, clean and sustainable supply of energy, is the primary social responsibility of SGCC. Faced with the opportunities and challenges of a new era in energy reform which is fueled by the advances in clean energy and smart grids, SGCC management advocated a new strategy that was guided by Scientific Outlook, to coordinate the development of power grid using UHV power grid as the backbone for the transmission of energy at different voltage levels. The new power grids will be stronger and smarter. They can integrate data management, system automation and interactive operations. On January 6, 2009, the 1,000kV UHV AC Pilot Project was put into operation successfully and on December 26, the Xiangjiaba-Shanghai  $\pm 800$ kV UHV DC Pilot Project was successfully energized. The Smart Grid Pilot Project in Shanghai World Expo was one of the first pilot projects that have started construction. The abilities of SGCC to sustain large scale, huge range and highly efficient and optimal allocation of resources effectively support the construction of large coal-fired, hydro, and nuclear power generation and renewable energy stations. We believe that construction of strong and smart grids will have significant and far-reaching influence for China to tackle the challenges posed by the climate change and ecological environment, and to realize the green transformation to clean energy and sustainable use of energy sources and resources in economic and social development.



SGCC is a utility with service area covering 88% of the national territory, supplying electricity to a population of over one billion and managing state-owned assets of value reaching almost RMB 2,000 billion yuan. We are responsible for the continuous promotion of management innovation, giving full play to the advantage of conglomerate operations. We strive to use the least resources and environmental social cost in constructing and operating the power grids. We realize the efficient use, the maintenance and the increase of the value of state-owned assets. We create the maximum and integrated economic, social and environmental values. In 2009 SGCC exerted great efforts to advance conglomerate operation, intensive development, lean management and standardized construction. These initiatives have significantly improved the efficiency and performance of the company's operation. We launched intensive management on human resources and assets. We steadily promoted "Three Savings" initiatives (to save every penny, each piece of paper and each inch of conductor) activity with the aim to reduce costs and increase benefits. We have completed SG186 IT Project, raising the company's IT performance to a leading position in China. We campaigned the corporate spirit of "in search of excellence, in pursuit of out-performance", promoted corporate culture and teamwork, beefed up executive leadership, team building and fostered innovation and synergy.

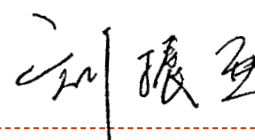
SGCC being a key state-owned enterprise in relation to the national security on energy and the economic lifeline of the nation, draws close attention from all levels of our society. We must strive to fulfill the core values of "integrity, commitment, innovation and dedication". We must intensify communications and exchanges with our stakeholders such as the government, society, users, employees and our partners. We must listen extensively to opinions and suggestions, establish mutual trust and relationship on the basis of recognised values. We must achieve a common understanding and cohesive efforts on development. We must coordinate and advance sustainable development of the company and the society.

SGCC is the first SOE to issue the CSR Report and the *Guidelines for the Implementation of CSR* in China. SGCC is actively exploring the path for the development of enterprise social responsibility with Chinese characteristics. Since the trial launch of CSR Management Program at SGCC's Tianjin Electric Power Company in 2008, SGCC launched trial CSR Management Program at Jiangsu Wuxi Power Supply Company and at Jiashan County Power Supply Company of Jiaxing, Zhejiang Province in 2009. The achievements of "Grass root based experiment on the practice and promoting of overall social responsibility management" by SGCC was fully recognized by SASAC and was honored with "Excellent Social Responsibility Practice of Central Government-Owned Enterprises of the Year 2009". SGCC undertook the R&D tasks of science and technology projects at national level, namely "Research on Management Practice of CSR Management" and "CSR Integrated Evaluation System". SGCC,

representing central government owned enterprises, participated in the drafting of CSR international standard ISO 26000.

We preach the Scientific Outlook on corporate social responsibility and insist on standards for creating social values. We advocate the enhancement of optimal allocation of resources as basic standard in guiding responsible corporate practice. We insist on a rational determination on the boundary of responsibilities, and that CSR is not extra work but a new mode of corporate operation involving important social resources allocation. The essence for fulfilling social responsibility by a company is to effectively control the impact of corporate operation on stakeholders and the natural environment, and to maximize integrated economic, social and environmental values.

Communication establishes trust and responsibility creates value. SGCC's issuance of the CSR Report for five consecutive years represents a process of continuously strengthening communications and exchanges, achieving a common understanding on development, concentrating composite forces for development, coordinating and promoting sustainable development of the company and the society. Guided by the Scientific Outlook on Development, we will implement President Hu Jintao's requirements that "enterprises are expected to demonstrate global responsibility, consciously incorporate social responsibility into their operation strategy, and strive to unify economic benefits and social benefits in their best mode of operation". We will speed up the construction of a strong and smart grid, create a green platform for energy allocation, improve the ability of sustainable development and build a modern corporation with "A Strong Grid, Excellent Assets, Services and Performance", and make further contributions to building up a harmonious society.



January 2010

## Corporate Profile



SGCC was established on December 29th, 2002. It is a government-owned enterprise approved by the State Council to conduct government authorized investment activities. SGCC was ranked the 15th in the Fortune Global 500 in 2009, nine ranks higher than 2008, and is the largest utility in the world.

The mission of the company is to provide safe, economical,

clean and sustainable electric power for social and economic development. The company's core businesses are the construction and operation of power network that covers 26 provinces, autonomous regions and municipalities. Its service area represents 88% of the national territory, supported by more than 1,500,000 employees to serve a population of over one billion.

Indicator	year	2005	2006	2007	2008	2009
Electricity sales (TWh)		1,464.6	1,709.7	1974.2	2,123.5	2,274.8
Length of transmission line * (km)		381,764	413,219	457,104	496,332	553,382
Transforming capacity ** (MVA)		983,380	1,137,790	1,342,700	1,601,420	1,890,800
Revenue (RMB billion yuan)		712.70	854.52	1,010.73	1,140.74	1,265.98
Total assets (RMB billion yuan)		1,169.70	1,212.79	1,361.75	1,643.46	1,860.0
Reliability of urban power supply (%)		99.755	99.839	99.880	99.865	99.903
Reliability of rural power supply (%)		99.382	99.491	99.541	99.545	99.615
Line loss (%)		6.59	6.40	6.29	6.12	6.04

\* 110 (66) kV and above transmission line

\*\*110 (66) kV and above transforming facilities

#### Honors and prizes for CSR fulfillment in 2009

A-Class Enterprise by SASAC Evaluation on Operation Performances	A-Class Enterprise by SASAC Evaluation on IT Projects
Top 100 World Brand	SASAC First Batch of IT Pilot Projects in SOEs
Second Place of Chinese Top 500 Most Valuable Brands	Third Place of Top 500 IT Empowered Enterprise in China
First Place of Top 500 Chinese Service Enterprises	Award of IT Empowered Enterprise
Top 60 Most Influential Brands of China	"Hundred Excellent Projects" completed in the 60 years since the foundation of the People's Republic of China
Top 60 Brands in Promoting Chinese Economy and Influencing People's Life	"Demonstration on Standardized National Key Project"
First Prize of National Award for Science and Technology Progress	National Silver Prize for Excellent Project
Second Prize of National Award for Technical Invention	National Excellence of Retirees Management
Gold Prize of Chinese Patent Award	The Best Partner of Beijing Internet Development Forum
Title of "National IT Pilot Project"	...

#### Honors and prizes for promoting social responsibility work in 2009

First Prize of the 15th National Business Management Modernized Innovation Achievement	Chinese CSR Report Leadership Enterprise Award
Excellent Practice in Social Responsibility by Central Governemnt Owned Enterprise	Special Contribution Award for Development of Chinese CSR Report
Benchmark Enterprise for Green Company of China	First place of Quality Evaluation on CSR Report of Chinese Industrial Economy Trades and Enterprises
The 3rd Chinese Management Academy Award	Excellent Enterprise Citizen of China
Listed on Top Chinese CSR in the First Financial Daily	Special Contribution Award of the Project Hope for the Last 20 years
Chinese CSR Special Award	Chinese Charity Award of Legal Aid Welfare
Second place in the Chinese Top 100 CSR Development Indicator	Award for the Sustainable Development Project Following the Earthquake Relief and Rescue
Top 50 Hurun CSR Ranking	...



Organizational Structure—  
Subsidiaries directly managed by SGCC

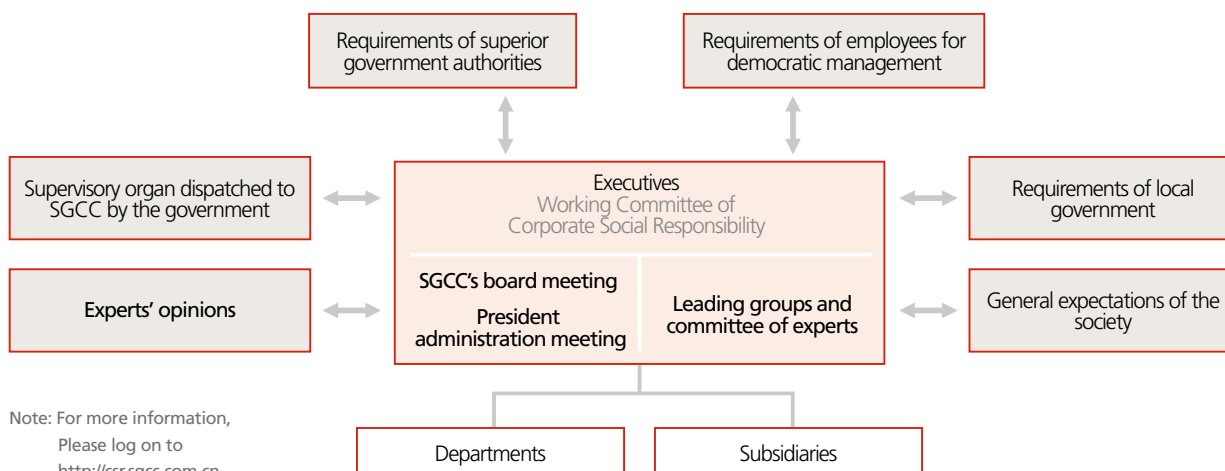
1 State Grid Operation Branch*	14 Zhongxing Power Business Development Co., Ltd.
2 State Grid Xin Yuan Co., Ltd.	15 Advanced Training Center of State Grid Corporation of China
3 State Grid Energy Development Co., Ltd.	16 State Grid Institute of Technology*
4 State Grid Information & Telecommunication Company	17 China Anneng Construction Corporation
5 State Grid DC Engineering Construction Branch*	18 State Grid Financial Asset Management Co., Ltd.
6 State Grid AC Engineering Construction Branch*	19 China Power Finance Co., Ltd.
7 China Electric Power Research Institute	20 Yingda Taihe Property Insurance Co., Ltd.
8 State Grid Electric Power Research Institute	21 Yingda Taihe Life Insurance Co., Ltd.
9 State Power Economic Research Institute, Beijing	22 Yingda International Trust Co., Ltd.
10 State Grid Energy Research Institute*	23 Yingda Security Corporation Ltd.
11 Shandong Luneng Group Co., Ltd.*	24 Chang'an Insurance Brokers Co., Ltd.
12 State Grid International Development Limited	25 Yingda Futures Brokerage Co., Ltd.*
13 Yingda Media Investment Group Co., Ltd.	

\* refers to subsidiaries newly established or restructured in 2009

Main Associations and  
Organizations SGCC Participated

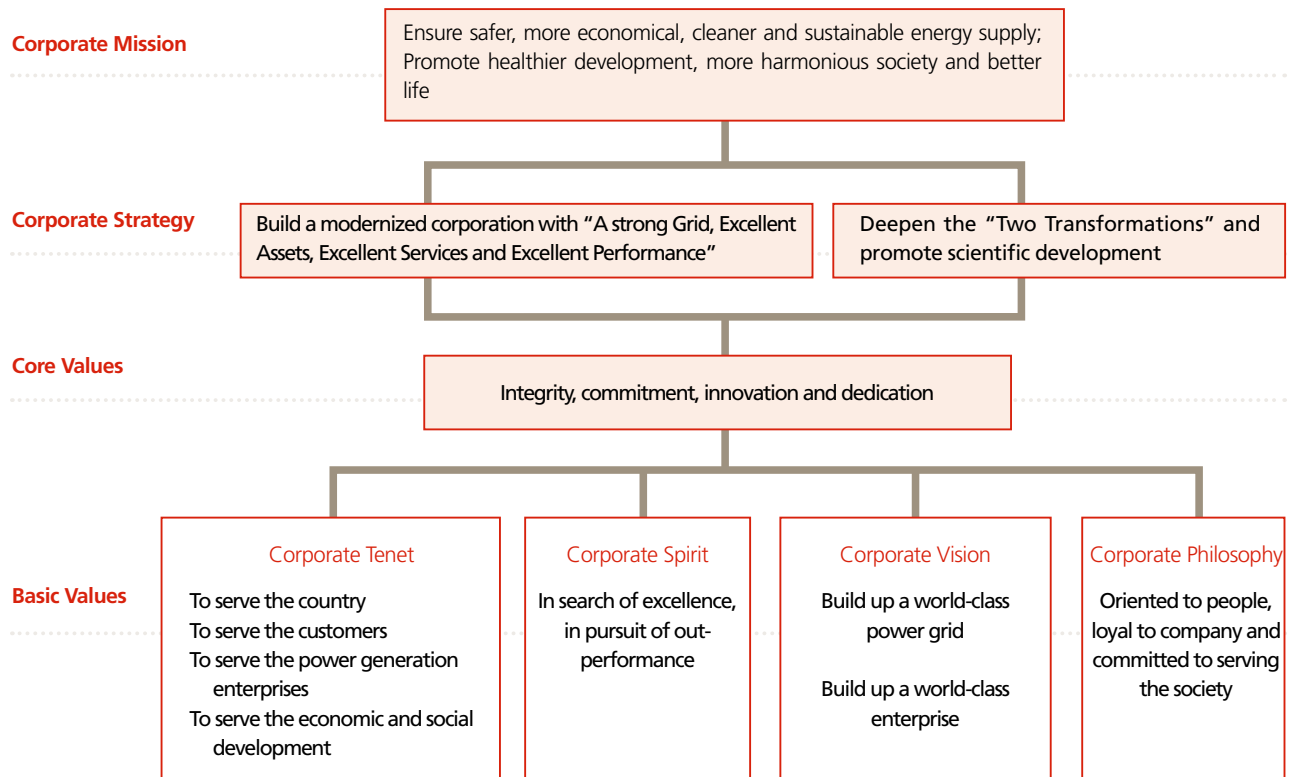
Name of Associations and Organizations	Role of SGCC	Name of Associations and Organizations	Role of SGCC
China Enterprise Confederation	Vice Chairman	China Electricity Council	President
China Federation of Industrial Economics (CFIE)	Chairman	China Society for Electrical Engineering	Vice President
China Business Council for Sustainable Development	Councilor	China Society for Hydropower Engineering	Vice President
China Association of Work Safety	Vice Chairman	China Electric Power Construction Association	Vice Chairman
China Association for the Promotion of Industrial Development	Councilor	China Electric Equipment Management Association	Vice Chairman
China Accounting Society	Standing Councilor	China Bidding Association	Standing Councilor
China Institute of Internal Audit	Councilor	China International Contractors Association	Councilor
China Supervision Society	Councilor	CIGRE	CIGRE.C2 Member
Investment Association of China	Vice Chairman	International Electrotechnical Commission	Member
Price Association of China	Councilor	...	

## Corporate Governance

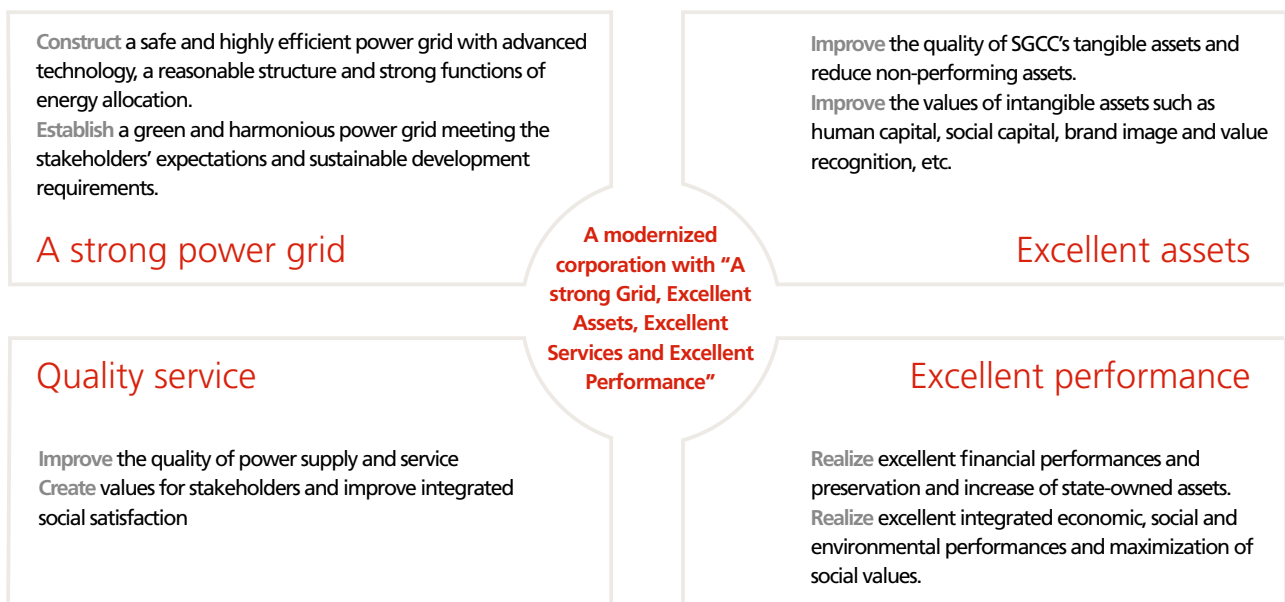


# Corporate Values

Persist in values of fulfilling social responsibilities in an all-round way



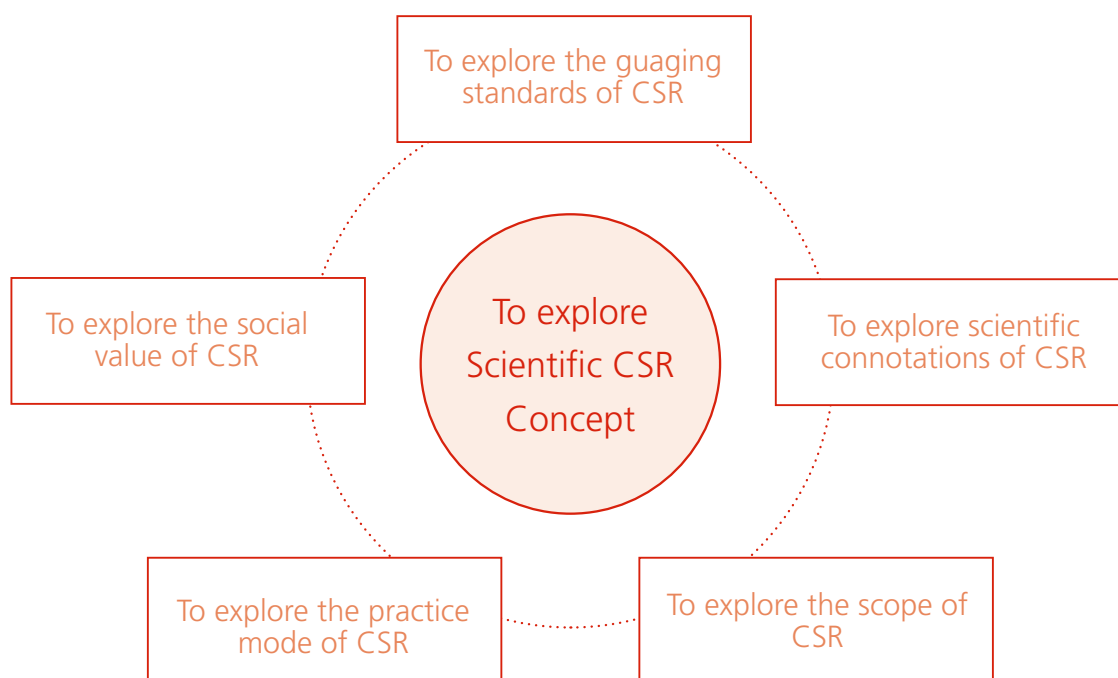
Incorporate the ideas of fulfilling social responsibility and promoting sustainable development into the corporate strategies



# Corporate Social Responsibility Concept

The concept of CSR is widely accepted both at home and abroad but great divergences also exist in the understanding of CSR. The promotion of a scientific CSR Concept is a pressing issue confronting the intensified introduction of CSR management practices.

Being the national pioneer in the release of CSR Report and the first enterprise to publish *Guidelines for the Implementation of CSR*, SGCC actively explore the national scientific CSR outlook and promote the sustainable, intensified and healthy development of CSR.



To explore the guaging standard of CSR	SGCC Recognition	CSR refers to the responsible behavior by the company towards society. The determination of whether a company's behavior is responsible towards society must be based on the standard that whether the company's behavior can facilitate the better allocation of social resources and maximally create social benefits, instead of simply considering the moral motive and willingness to fulfill the responsibilities. The determination of whether such a behavior is responsible towards society must be based on the extent of contribution of such behavior towards the optimization and distribution of social resources, and the maximum value such behavior would create on social welfare, instead of simple consideration of motive, ethics, and fulfillment.
	SGCC Practice	SGCC upheld the maximization and integration of comprehensive values on economy, social and environment as basic standard and target for the implementation of social responsibility by the company .

“ The core of CSR is sustainable development... which is based on conditions of the country and situation of the enterprise in forming a social responsibility concept that incorporates the philosophy of social responsibility into corporate mission, value and prospects. ”

Quoted from the report of the 2009 CSR Working Conference of Central State Owned Enterprises

Exploration of the scientific connotations of CSR	SGCC Recognition	CSR refers to a new mode of operation for the enterprise, not additional work for the enterprise. The conduct of a socially responsible enterprise is driven internally from the operational processes in supplying commodities and services. The essence in socially responsible conduct is in the realization and maximization of integrated economic, social and environmental values which generate benefits to stakeholders through effective management of asset, operations and stakeholders.
	SGCC Practice	SGCC impels the company's social responsibility undertaking based upon the "derived-from-within" nature of CSR as well as its core business of constructing and operating the power grid. During the interaction between the company and its stakeholders, SGCC respects people, inspires people with innovation and win-win partnership, builds strategic mutual trust with all relevant parties, consolidates joint forces in sustainable development , and strives to maximize integrated values.

To explore the content scope of CSR	SGCC Recognition	CSR refers to the corporate behavior that promotes social welfare. The purpose of this corporate behavior is, firstly, to realize the core social functions of a company, provide goods and services for the society; secondly, to become an excellent enterprise citizen and effectively administers the relationship between the company and its stakeholders. CSR contents are correspondingly divided into two levels: ensure realization of core social functions, which is the fundamental social responsibility of an enterprise; fulfill the "basic responsibility" for stakeholders (perform the legal obligations and keep up the ethical basic) and the "Win-win Partnership Responsibility" (cooperate with stakeholders to create integrated values).
	SGCC Practice	SGCC is the first to propose the "common responsibility/specific responsibility", which indicates that it is the most fundamental social responsibility of the company to realize the company's core social function of "ensuring safer, more economical, cleaner and sustainable energy supply"; and SGCC shall fulfill the "basic responsibility" and the "Win-win partnership Responsibility" for specific stakeholders.



Exploration of the modes of CSR implementation	SGCC Recognition	CSR is a new mode of corporate management, which will propel profound change in management practice. Compared with traditional shareholders' profit-oriented management mode, CSR realizes four major transformations: firstly, management framework is transformed from shareholders' value-oriented to social value-oriented; secondly, management objective is transformed from maximizing the profit-oriented financial value to maximizing social welfare-oriented integrated value; thirdly, management mode is transformed from gaining market competition edge to establishing a system which creates integrated values by cooperation; fourthly, the managerial assumption is transformed from regarding the enterprise as a production organization for realizing the profit objective for its shareholders to regarding the enterprise as a social platform for realizing diversified values for different social parties.
	SGCC Practice	Being the first to develop an all-round CSR management mode in China, SGCC optimizes its corporate missions, strategies, operations and culture by applying the social responsibility philosophy while giving full consideration to the impact of corporate growth and power grid development on human beings and the nature. It arranges and launches pilot CSR programs of all levels; further understands and improves its businesses on the basis of the social responsibility philosophy; examines and evaluates the basic responsibility, win-win partnership responsibility and creation of integrated values; makes continuous innovations in ensuring stakeholders' right to know, right of supervision and right of participation; finds out, promotes and creates social values of its corporate operation.

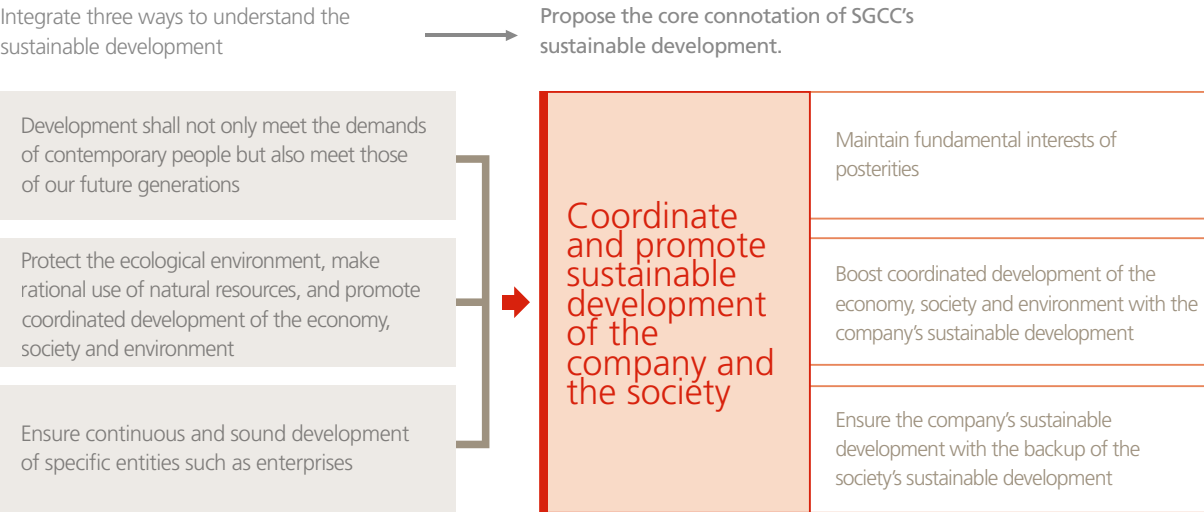
To explore social value of CSR	SGCC Recognition	CSR is an important social resources allocation mechanism parallel to the market mechanism, the government regulation & control mechanism and the social governance mechanism. It is a moral impetus of an enterprise derived internally which will motivate the company to help maintain social fairness and justice by keeping up the legal and moral basic, encouraging stakeholders' potential in creating integrated values by cooperation, enhancing effective operation of the market mechanism, the governmental regulation & control mechanism and the social governance mechanism, thus realizing optimal allocation of social resources.
	SGCC Practice	SGCC is the first to determine CSR as a social resources allocation mechanism which improves social welfare by giving full play to the company's and stakeholders' subjective initiative, and promoting effective operation of the market mechanism, the governmental regulation & control mechanism and the social governance mechanism. And this indicates that the CSR theory and practice is undergoing major change from "triple basic obligation" to "triple value creation".

“ CSR is an enterprise's behavior to realize sustainable development of the enterprise and the society, abide by laws and regulations, social norms and commercial ethics, effectively administer the impact of the corporation on stakeholders and the natural environment, and maximize integrated economic, social and environmental values. ”

Quoted from *SGCC Guidance for the Implementation of CSR*

# Strategy for Sustainable Development

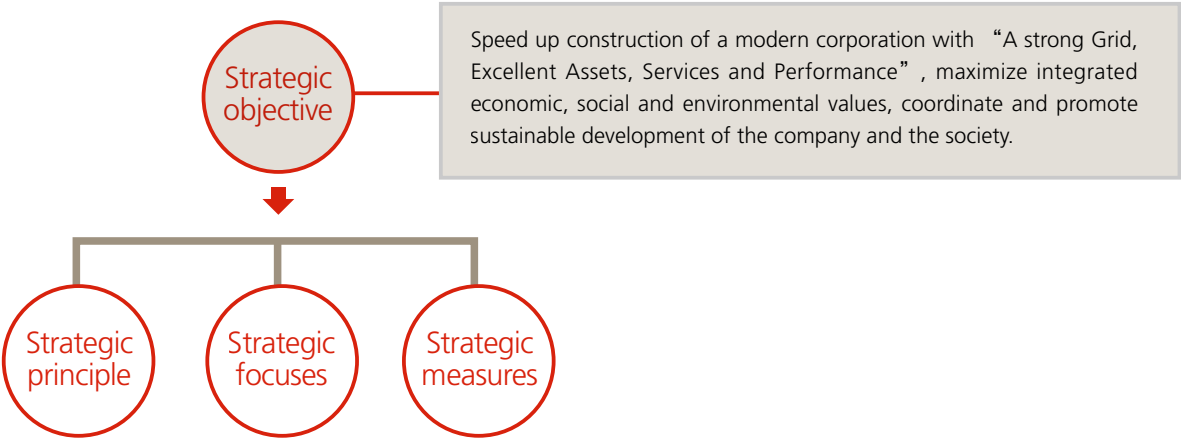
## Connotation of Strategy for Sustainable Development



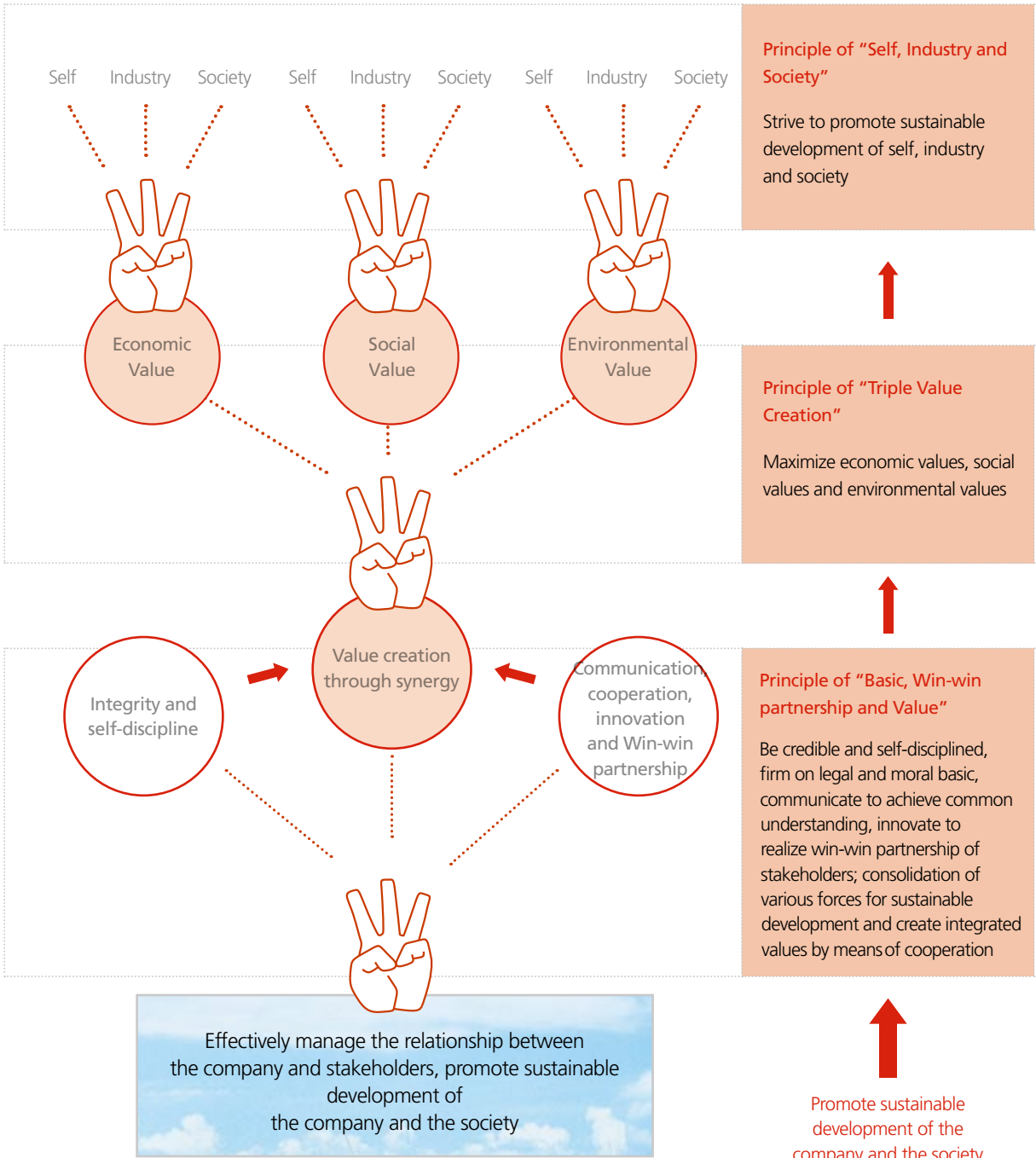
The key to coordinating and promoting the coordinated development is the synergy of forces of stakeholders.

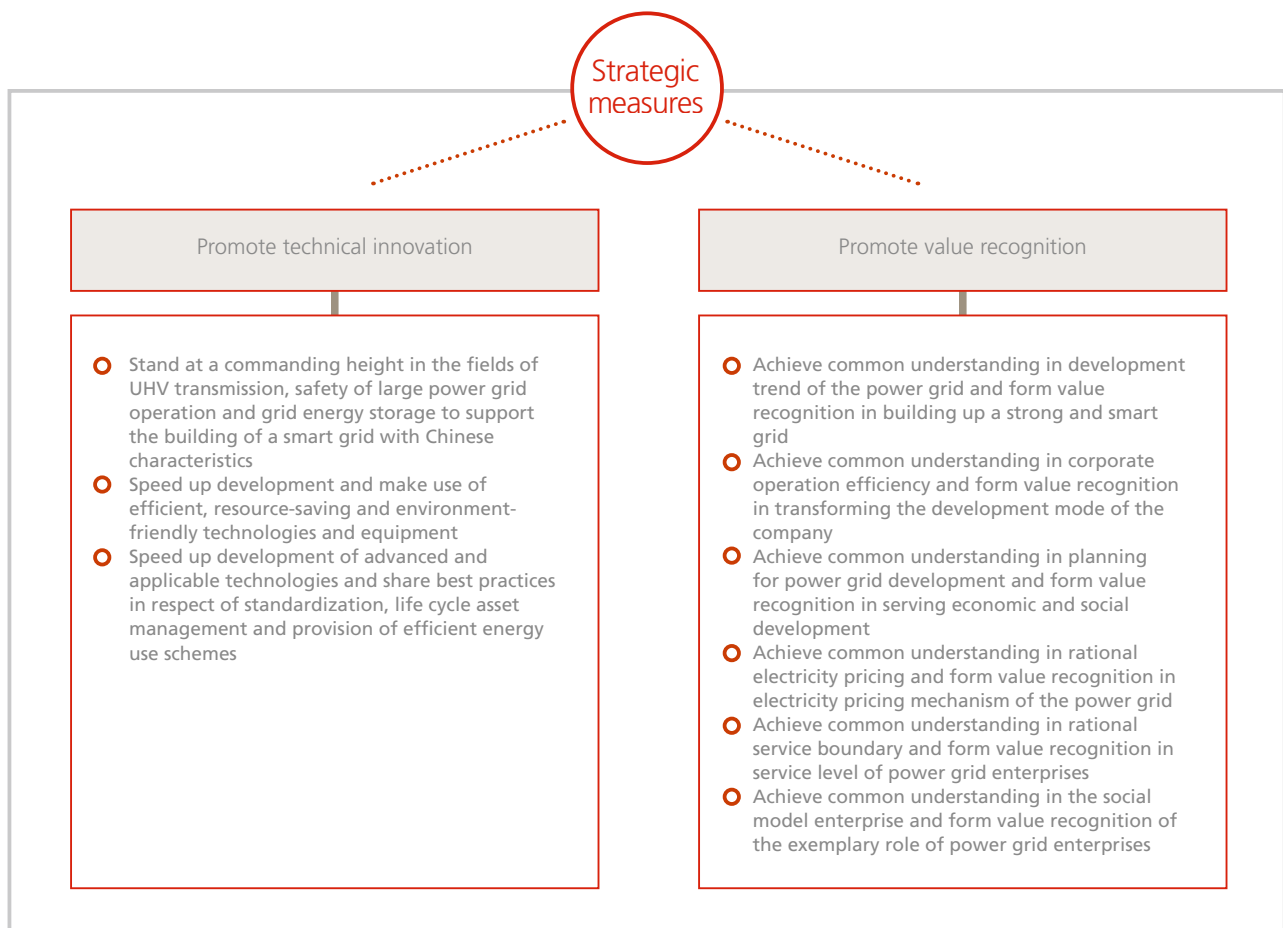
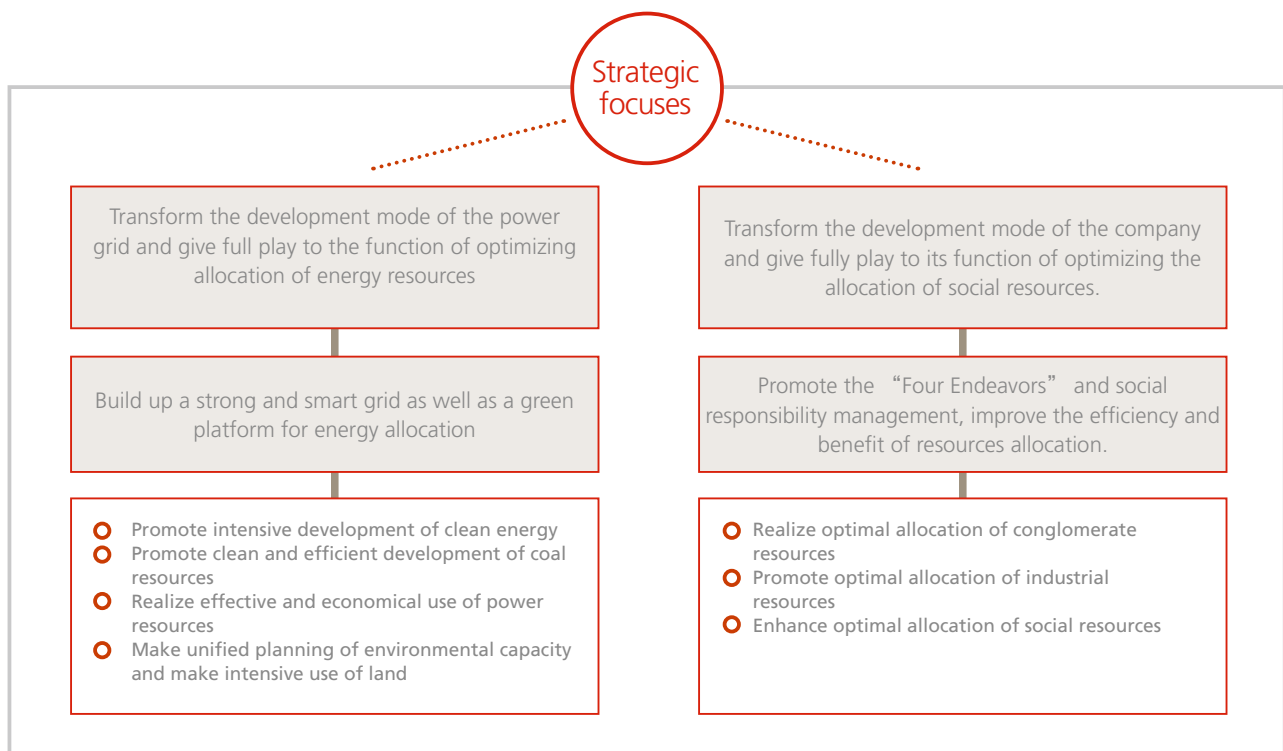
SGCC is dedicated to establishing an effective stakeholder participation mechanism, establishing mutual trust with stakeholders, achieving a common understanding in sustainable development, exerting the potential of creating integrated value by cooperation, improving the positive impact of corporate operation on the society and the environment to the maximum extent, reducing the negative impact to the minimum and maximizing integrated economic, social and environmental values.

## Strucure of sustainable development strategy



Strategic principles





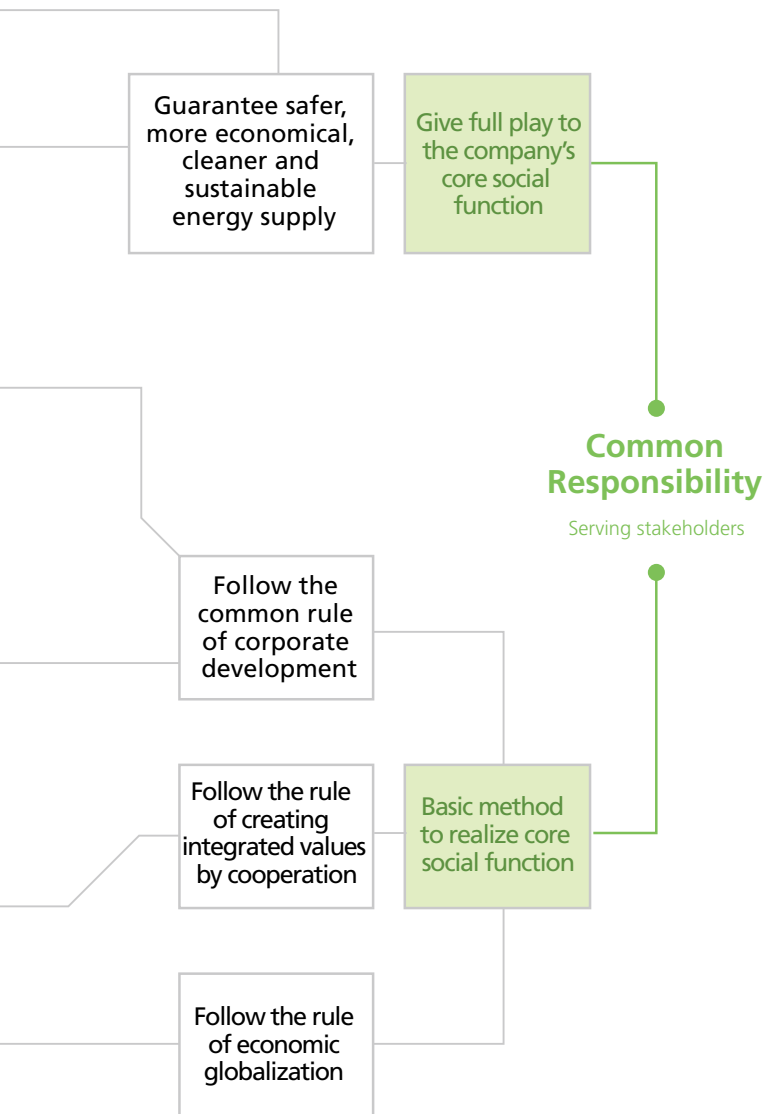
## Opportunities and challenges for promoting the sustainable development strategy

Current situation	Opportunities	Challenges
Further development of economic globalization	Improve the sustainable development ability by making good use of resources	Comply with international practice, and meet the challenges for global sustainable development
World sustainable development trend	Meet the requirements for transformation of economic and social development mode, and speed up construction of a strong and smart grid	Development of the smart grid is a key strategy for promoting sustainable development and we still have a long way to go in constructing a smart grid with Chinese characteristics
Clean energy revolution of the world	We are facing a historic opportunity to incorporate our development into a major industrial revolution	SGCC must seize the opportunity for developing clean energy, to speed up the construction of a strong and smart grid
Chinese government's commitment to combating climate change	We are having a valuable opportunity in propelling green development of ourselves, the industry and the society	SGCC is faced with challenges of giving play to the power grid functions and promoting adjustment of the energy structure
Chinese government proposes the objective of building a well-off society in an all-round way by 2020	Continuous and rapid development of the national economy provides strong power for promoting development of the power grid	The government and the society expect that SGCC speed up construction of a strong and smart grid with minimum resources input as well as environmental and social cost
China's overall advancement of the course of building an "Innovative Country"	Creates a favorable environment for technical upgrade and independent innovation of the energy industry	The government and the society hold high expectations on the company's construction of an "Innovative Enterprise"
Reform of the national energy pricing system	Rational power tariff will provide strong support for long-term development of the power grid	Stagnancy in alleviating contradiction of electricity pricing presents a severe challenge to constructing a strong and smart grid
Extraordinary growth of generation capacity installation	Speeding up development of the power grid and upgrading management level of power grid enterprises	Lagging grid construction results in difficulties in scientific planning of the power grid
Large-scale and centralized development of renewable energy sources such as wind and solar energy	Upgrading grid structure, intelligence and management; as well as the continuous improvement of the capacity of resources allocation	Large-scale integration of fluctuated energy brings challenges to safe and stable operation of the power grid and the quality of electric power



# Common Responsibilities





It is the core social function of SGCC and its social responsibility to stakeholders to fulfill the scientific development responsibility and the power supply safety responsibility, and ensure safer, more economical, cleaner and sustainable energy supply.

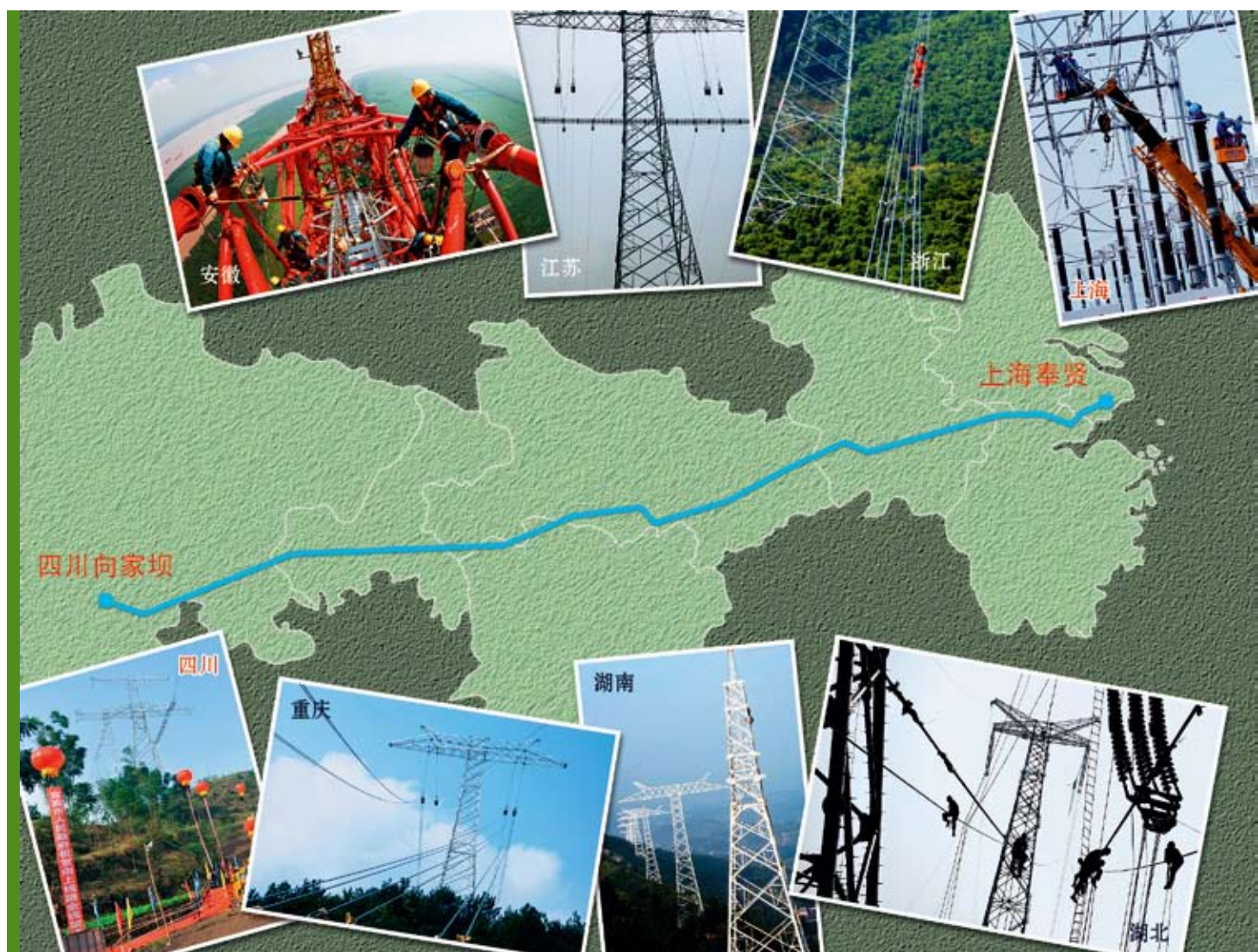
Three major rules shall be abided by when realizing the core social function and fulfilling the **scientific development responsibility** and the **power supply safety responsibility**.

- Follow the universal rule of corporate development, fulfill the **management excellence and technical innovation responsibilities**, and guarantee safer, more economical, cleaner and sustainable energy supply with first-class management and technology.
- Follow the rule of creating integrated values by cooperation. Fulfill the **communication and cooperation responsibility**, establish strategic mutual trust with key stakeholders, achieve a common understanding in sustainable development and concentrate composite forces for creating integrated economic, social and environmental values.
- Follow the rule of economic globalization, fulfill the **global vision responsibility**, comply with the international practice, improve the company's ability of fulfilling the responsibilities by making use of resources and meet the global challenges in sustainable development.





## Responsibilities on Scientific Development



On December 26, 2009, Fengxian Converter Station Pole I in Xiangjiaba-Shanghai  $\pm 800\text{kV}$  UHV DC Transmission Pilot Project and the entire line were successfully energised. The Project is a DC power transmission project with the largest transmission capacity, the longest transmission distance, the most advanced technologies and the highest voltage in the world. Having a length of almost 2,000km, which passes through 8 provinces and municipalities and crosses over the Yangtze River four times, it will transmit large-scale clean hydropower from the southwest to the load center in the east.





## Construction of a strong and smart grid has made an important step

**Development of the UHV power grid achieves new breakthroughs.** The Jindongnan-Nanyang-Jingmen 1000kV UHV AC Pilot Project developed, designed and constructed in China with independent intellectual property right has operated safely and stably for almost one year, which proves the technical feasibility, equipment reliability, system safety and environment friendliness of UHV. Success of the UHV pilot project significantly improves the company's core competitiveness and international influence, and lays a solid foundation for further transforming the development mode of the power grid. The Project was successively granted the title of "Hundred Excellent Construction Project in 60 Years since the Founding of the People's Republic of China" and "Standardized National Key Pilot Project". In addition, the Jinping-Sunan  $\pm 800$ kV UHV DC Power Transmission Project is progressing smoothly.

Breakthroughs have also been achieved in key UHV technical study and equipment development. The world first 6-inch thyristor converter valve has passed the prototype test successfully, and study on home-made  $\pm 1000$ kV UHV DC equipment has been carried out steadily.

**The construction of a smart grid has been launched in an all round way.** We have organized a special institution for promoting construction of the power grid, formulated and implemented the "Plan for Implementing First-Phase Key Projects of the Strong and Smart Grid", carried out the planning for the smart grid and made unified planning for infrastructure construction and study on key and special projects. We have further promoted key technical study on the smart grid, determined 117 research items of ten categories, started to construct the national wind power technology research and testing center, national research and development (experiment) center for solar power generation, and research and testing center for smart power utilization technology study. We have carried out planning for the smart grid of the corporate and provincial level and launched the first batch of pilot projects.



The Jindongnan-Nanyang-Jingmen 1000kV UHV AC Pilot Project developed, designed and constructed in China with independent intellectual property right has operated safely and stably for one year

**Acceleration of the construction of large-scale thermal power generation, hydropower, nuclear power and renewable energy bases.** Push forward large-scale and intensive exploitation of the coal bases in southeast of Shanxi, north of Shaanxi, Xilinguole League and Hulunbeier League; promote the construction of transmission projects of Xiangjiaba Hydropower Station and Xiluodu Hydropower Station and planning for transmission of the hydropower bases at Wudongde and Baihetan and in the Upper Stream of the Jinsha River and the Yalong River Area; implement the plan of the power grid connection of such large-scale nuclear power stations as Fujian Ningde Nuclear Power Station and Shandong Haiyang Nuclear Power Station; actively participate in developing a 10GW wind power base in the northwest. Implement the renewable energy source development strategy of constructing large bases and incorporating into large power grids, and greatly improve the ability of the power grid to accommodate renewable energy sources on a large scale.

**Provide overall services for the east, central and west regions and intensify strategic cooperation in energy sources;** realize optimal allocation of energy resources by means of a strong and smart grid, actively promote the project of "Shanxi-Shandong Power Transmission" and "Shanxi-Hunan Power Transmission", and speed up strategic cooperation among Shanxi, Shandong and Hunan etc. It is predicted that during the "12th Five-Year Plan", direct transmission from Shanxi Province to Shandong and Hunan will be up to 10GW.



The Company vigorously promotes the construction of Shanghai 2010 World Expo smart grid Pilot Project and actively carries out the research on relevant technology of smart grid

## The ability of the power grid to allocate resources is continuously improved

**Promote coordinated development of power grids of subordinate networks.** SGCC started the construction of such key projects as Manasi-Urumqi-Turpan-Hami 750kV Power Transmission Project and promoted the cross-regional transmission projects such as the Ningdong-Shandong, Hulunbeier-Liaoning, Deyang-Baoji Transmission Projects, etc. As a result, the Laxiwa, Lanzhoudong-Qian County 750kV transmission projects have been put into operation. Main networks of regional and provincial power grids have been continuously reinforced. Construction and reconstruction of urban and rural power distribution network are continuously intensified and the structure of power grid is further optimized.

### **Vigorously promote technical upgrade of the power grid.**

We completed an investment of RMB 40.06 billion yuan in 2009, 13,098 technical upgrading projects, and renovated 96.1 thousand kilometers of transmission lines and a transformation capacity of 139,630 MVA, thus significantly improving the ability of allocating power grid resources. In addition, we continued improving the existing transmitting capacity of the power grid and completed 190 projects in the year, which raised the transmitting capacity of the power grids of various levels by 17,193 MW.

## The action of resources allocation of the electric power market will be brought into full play

Vigorously promote the Inter-Regional and Inter-Provincial electricity trade. Complete 294.399 TWh electricity trading volume in the national power market in 2009, 11.58% higher than the same period of the last year.

Complete 404.385 TWh inter-regional and inter-provincial electricity trade, 9.26% higher than the same period of the last year, in which 204.258 TWh for inter-regional electricity trade, 9.33% higher than the same period of the last year; 200.127 TWh for inter-provincial electricity trade, 9.18% higher than the same period of the last year.



Please illustrate significance of speeding up constructing the strong and smart grid on carrying out the national energy strategy, ensuring national energy security and enhancing sustainable development of Chinese economy and society.



The strong and smart grid is based on the strong power grid with UHV as the backbone and with coordinated development of its subordinate networks, which is supported with a communication information platform, controlled by means of smart methods and characterized by informatization, automation and interaction, involving each link of generation, transmission, transformation, distribution, utilization and dispatching of the power system, covering all voltage levels. We will realize a strong, reliable, economical, efficient, clean, environment-friendly, transparent and open, friendly and interactive modern power grid integrating the "electric power flow, information flow and business flow".

A strong and smart grid is a powerful green platform for energy allocation, which is capable of allocating energy resources over long distances, on a large scale and with high efficiency in the whole country or over a larger area, and it is of great importance to realize clean and efficient development of coal resources, to make full use of the low-grade coal resources, and

to ensure the sustainable supply of energy sources. The power grid is also extremely important in promoting large-scale and intensive development of clean energy sources such as large-scale hydropower and nuclear generation, as well as renewable energy sources such as wind and solar power, pushing forward the adjustment of energy structure in China, facilitating the low carbon-oriented transition in the development mode, and breaking the energy and environment bottlenecks that are restricting economic and social development. And it is also very important in optimizing the allocation of electric power resources, upgrading the energy efficiency, making unified planning for utilizing the environmental capacity of the eastern and western regions as well as the land resources, and promoting all-round and coordinated development of the Chinese economy, society and environment.



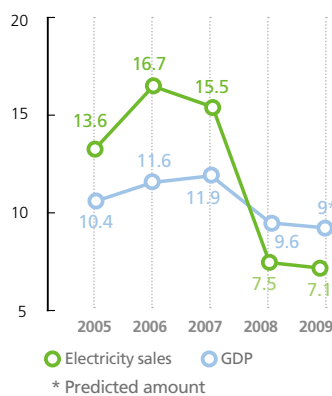
## Process of fulfilling social responsibility in scientific development



## Main performance indicators of scientific development

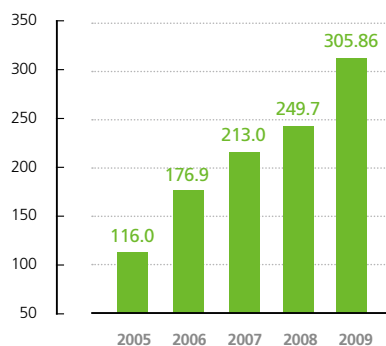
Electricity sales growth rate and GDP growth rate

Unit: %



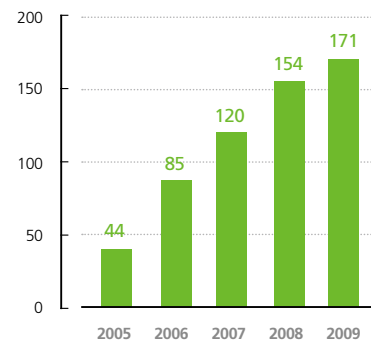
Investment in power grid construction

Unit: RMB Billion yuan



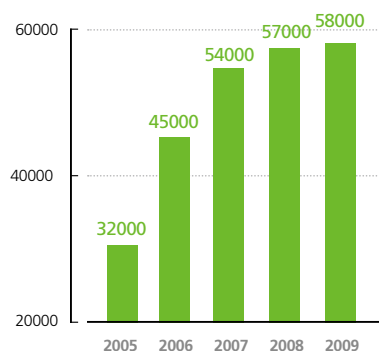
Accumulated increase of the existing transmitting capacity of the power grid

Unit: GW



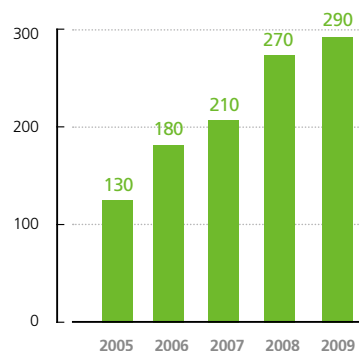
Transmission line of 110(66) kV and above putting into operation

Unit: km



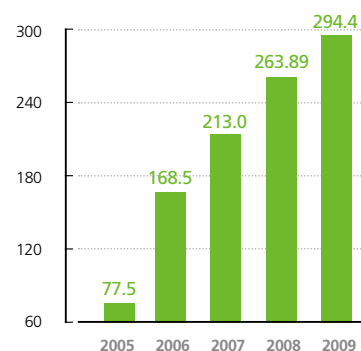
Transformation capacity of 110(66) kV and above putting into operation

Unit: GVA



Electricity trading volume in the national power market

Unit: TWh







## Responsibilities on Power Supply Safety



In 2009, SGCC gave full play to its advantage of conglomerated operation, and successfully ensured power supply during the 60th anniversary of New China celebration events without any grid flashover, equipment fault or power supply error. This is another significant achievement obtained by SGCC following the “Zero Fault and Zero Accident” power supply record created during the 2008 Olympic Games.



## Advance the development of the long-term mechanism of power supply safety

We strive to overcome the difficulties and rise to the challenges of the heavy construction workload, the relatively weak grid structure, as well as severe natural hazards and frequent occurrences of damages resulted from external forces, and intensify the construction of the long-term mechanism of power supply safety. In the whole year of 2009, we realized zero major grid and equipment accident in the whole year, ensured safe and stable operation of power grid and maintained social public safety.

Following the principle of “safety first with emphasis on prevention and overall control”, we always put safe & reliable power supply on top of our agenda, implement our work philosophy of production safety from all aspects, involving all staff members, throughout the whole process and in an all-round way, and ensure absolute power grid safety with appropriate use of personnel, time and force.

We constructed the long-term mechanism for production safety and strengthened the fulfillment, supervision and evaluation of production safety responsibility. We established a routine mechanism for check and control of potential dangers, and intensified the hidden danger control for the power grid, personnel and important users. We evaluated the safety of the power grid, intensified the education on safety risks and realize “Moving forward of the checkpoint” for safety prevention.

We established and improved the emergency response system of the power grid, intensified the infrastructure construction for emergency and improved the ability of emergency response. We secured sufficient input in production safety, strengthened overall control, and guaranteed power supply safety together with the government, safety supervisory organizations, power generation enterprises, users and all social circles. And we also carried out the “Care for All” and “Project Safety” and advocated the safety culture.



Putting into operation the China Pavilion Project for Shanghai 2010 World Expo



## The power grid disasters withstanding capability is steadily improved

**Thoroughly conduct feature study on improving the capabilities of the power grid to cope with disasters.** SGCC carefully analyzes the occurrence of natural disasters in different regions and their impact on power supply safety, makes differentiated planning and design, modifies and perfects the standard specifications for power transmission lines, organizes tackling of hard-nut problems for responding to snow storm and freezing disasters, and improves the power grid against natural disasters.

**Consolidate the technical support for the power grid against natural disasters.** Increase safety input, accelerate upgrading and reconstruction of aged and out-of-date primary and secondary transmission and transformation equipment, promote technical upgrading of the power grid and equipment, improve the safety technical level of the grid as well as the grid's ability to resist the disasters and accidents, and improve the system's level of flexible operation, safety and reliability.

**Improve the company's ability of responding to natural disasters and emergency management.** We intensify the construction of the organizational structure for the power grid against natural disasters, perfect the emergency plan against natural disasters, reinforce the construction of disastrous weather pre-warning mechanism, intensify the building of emergency repair teams, improve the emergency response ability and minimize the impact of disasters and any possible losses.



Zhejiang Electric Power Company has succeeded in research and test on “De-icing and Dynamic Reactive Compensation System” .

The Shandong Electric Power Company dispatched 458,400 person-times of the power supply guarantee personnel, 2,880 truck-times of generator vehicles, and 25,925 truck-times for rush repair, and successfully completed the power supply guarantee task in the 11th National Games.



## Perfect the power grid safety emergency system

**Reinforce the emergency organization system.** SGCC established an emergency guidance and management mechanism, formed an emergency working mechanism that is unified in leadership, rapidly responsive, coordinated, orderly and efficient in operation, and realized systematic, specialized and normalized emergency management step by step.

**Perfect the emergency plan system.** SGCC established a safety emergency plan system covering all levels, promoted the release of 11,000 emergency plans and on-site emergency handling programs, and established a considerate emergency plan system.

### **Improve the ability to ensure power supply under emergency.**

We will accelerate key emergency works such as the power grid emergency command center, the back-up power dispatching system, the emergency material reserve system, emergency power system, emergency communication system and helicopter operation. We will also carry out emergency drills on large-area outages in important cities and improve the ability of the power grid to guarantee power supply under emergency.

On August 7, 2009, we carried out the “Meet Summer Peak Drill” with the aid of the newly-built 31 emergency command centers of the Headquarters and provincial subsidiary companies.



China has high frequencies of various natural disasters with a wide coverage. The large-scale snow storm and ice disaster, the Wenchuan Earthquake and frequent natural disasters occurred successively in 2008 constitute grave threat to the safety of the power grid. Please illustrate how SGCC improves its power grid's ability of responding to severe natural disasters.



SGCC always considers improvement of the power grid against severe natural disasters as an important task of ensuring power supply safety. We summarize the experiences and lessons on response to natural disasters and contingencies and greatly improve the hazard-prevention and emergency power supply security of the power grid.

Firstly, we increase power grid input, accelerate construction of the power grid, optimize the grid structure, promote technical upgrading of the grid and equipment and consolidate the material foundation for ensuring power grid safety;

Secondly, we reinforce scientific and technical support for the grid to respond to severe natural disasters, intensify cooperation with the meteorological sector, develop new technologies against extreme weather and extreme freezing weather, promote the use of new earthquake resistant and arrester equipment and technologies, and upgrade the ability to respond to natural disasters such as earthquakes and lightning strokes.

Thirdly, we improve the emergency management ability to respond to severe natural hazards. We intensify ordinary emergency management, execute the *National Emergency Response Plan for Dealing with Large-Area Power Grid Outage Incidents promulgated by the State Council*, establish an integrated and highly efficient emergency responding system, including a top-down emergency organizational system, and establish an all-covering emergency plan system, carry out specific emergency drills and accelerate essential emergency works.

we have established a strong and widely covering emergency command center network, with an emergency power capacity of up to 400MW, which may dispatch 80,000 people rapidly for emergency so as to effectively meet the needs of rush repair of the power grid and public power supply security under emergency.



## Process of fulfilling social responsibility in power supply safety



### Jiangsu Electric Power Company intensifies the construction of emergency response groups.

Firstly, organize the team. Organize provincial, municipal and county level power grid rush repair teams of about 18,000 persons.

Secondly, provide the equipment. Provide maritime satellite telephones, inflatable boats, amphibious vehicles, snow clearers, heavy-duty drainage equipment, mobile lighthouses and so forth as per different regions, and establish a materials allocation and transport mechanism covering the whole system, realize province-wide allocation and distribution of materials and equipment.

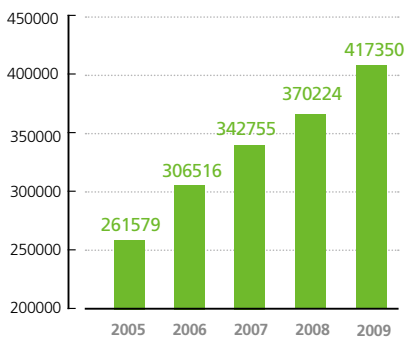
Thirdly, control and adjust the mechanism. Develop and prepare various emergency plans and relevant working regulations, appropriately control and adjust the information receiving and reporting, comprehensive study and evaluation, emergency decision making, group dispatching and coordination of efforts, and formulate the working standards.

Fourthly, practice and drills. Keep on checking and improving the emergency groups' ability of power grid routine operation and maintenance as well as rush repair, attach great importance to carrying out different emergency drills of up to 1,000 times each year.

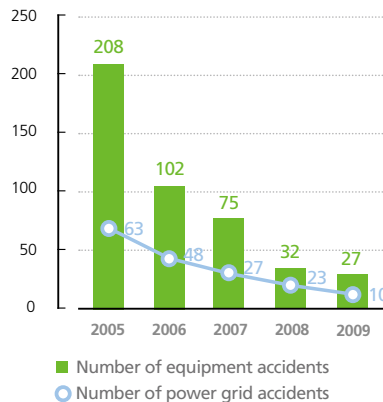
## Main performance indicators of power supply safety

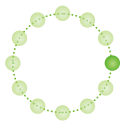
Peak load within SGCC's service area

Unit: MW



Number of equipment accidents and power grid accidents





## Responsibilities on Management Excellence



SGCC further promoted conglomerate operation, intensive development, lean management and standardized construction; implemented the management of overall social responsibility; carried out provincial, municipal and county pilot programs; gave full play to the company's advantages, and maximized integrated values. The company's pilot practice on management of overall social responsibility in Tianjin, Wuxi, Jiangsu, and Jiashan County, Jiaxing, Zhejiang province was appraised by SASAC as "Excellent Social Responsibility Practice of Central Enterprise of the Year 2009".





## Intensify the company's "Four Endeavors" management and improve the operation efficiency and performance

**Group operation is taking shape.** We accelerated the construction of an integrated information management platform as a support; innovated the institutional mechanism, and promoted flattened management of the organizational structure, intensification of resource allocation as well as specialization of business management. We also implemented large-scale planning, construction, operation, production and marketing management. The effectiveness and efficiency of allocating the company's core resources were greatly improved.

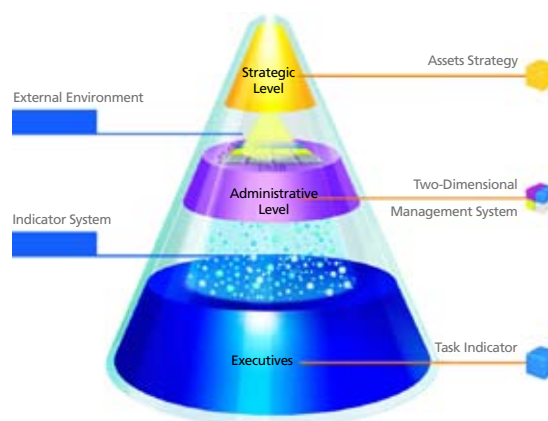
**Solid progress has been made in intensive development.** We implemented consolidated management, promoted unified accounting and centralized accounting, funds management and capital operation, and fund concentration ratio reached 98.6%. The benefit reached 6.6 billion yuan in 2009. We also established a unified materials management system and working mechanism, and adopted a new mode of public bidding characterized by "unified organization by Headquarters and implementation by provincial subsidiary companies". As a result, the bidding amount of the whole year reached RMB 186.32 billion yuan, saving RMB 16.79 billion yuan. In order to improve the level of consolidated management of human resources, we promoted the reconstruction of labor organization with flattened management, and launched a pilot program in State Grid Shanghai Company. While implementing the brand-name strategy, we promoted our brand connotation of "being credible, reliable and responsible", thus pushing the construction of the company's soft power a major step forward. SGCC was ranked in the second place among "Chinese Top 500 Most Valuable Brands" in 2009.

**Lean management has been steadily pushed forward.** We intensified the life cycle management of assets, made studies on the indicator system, evaluation model, assessment and decision-making system, and enhanced liquidation and linking of the account, card

and materials. We further carried out first-class benchmarking work and application of the achievements, established a benchmarking communication platform for large power supply enterprises, organized the company's holding financial subsidiaries in implementing the financial business benchmarking, encouraged provincial subsidiary companies to implement specific international benchmarking; and organized State Grid Shandong and Jiangsu Companies in participating in international benchmarking programs for transmission and distribution assets operation and maintenance.

### In-depth development of standardized construction is on the way.

In an effort to build a standardized management system and intensify the construction of the organizational structure and the talent pool, 81.5% of the regional and provincial subsidiary companies established a standardization committee or a sub-committee, totaling 243 persons engaging in standardization full-time and 1175 part-time, as well as 1788 internal auditors working as per the international management system. We implemented *the Management Method for Technical Standard of SGCC* and released 1,156 standards. We also established the management standard system and the working standard system in 85% regional and provincial subsidiary companies.



Life Cycle Asset Management and Implementation System

### Carry out the "Three Savings" activity

SGCC carried out the activity of "save every penny, save each piece of paper and save each inch of conductor" throughout the whole course of production and operation with the aim to reduce costs and increase benefits. The activity was conducted from six aspects. In the first place, take measures to broaden sources of income and reduce expenditure. Secondly, intensify the overall budget management; strengthen the management of controllable expenses; and strictly control the management costs such as office expenses and travel expenses. Thirdly, optimize the design scheme, apply new materials, new technologies and control the construction cost. Fourthly, put more efforts on maintenance, intensify the application and promotion of new technologies, strive to reduce equipment repair and maintenance cost. Fifthly, make innovations in ideas, optimize the work flow and carry out technical research on hard-nut problems. Sixthly, intensify the management of controllable expenses and control office expenses.

## Explore all-round CSR management and create maximum comprehensive values

**Advocate the scientific CSR concept.** Adhere to the definition of the boundary and the fundamental standard of CSR fulfillment based on whether the company's behaviors will facilitate better allocation of social resources to maximize the comprehensive value. Propose the company's mission of "ensuring safer, more economic, cleaner and sustainable energy supply", facilitate the transformation of the management concept from internal orientation of focusing on power network construction and operation to the social value orientation of creating comprehensive economic, social and environmental value; Push the transformation of CSR understanding from the dedication to fulfilling legal and moral obligations to the win-win partnership mode of creating comprehensive values by cooperating with the stakeholders .

**Push multi-level pilot programs of all-round CSR management to implement the idea of "pilot demonstration rooted in the subsidiaries".** Tianjin Electric Power Company has launched and reinforced the CSR pilot for regional and provincial power companies, and SGCC's Wuxi branch company in Jiangsu province and Jiasan Company in Jiaxing, Zhejiang province have respectively launched the CSR pilot for prefecture and county-level power supply companies so as to sum up and refine effective modes and experiences of different levels in pushing forward CSR management, thus promoting all-round CSR management firmly.



The CSR work launched by SGCC was honorably rated as "Excellent CSR Practice of Enterprises under Central Government in 2009" , would you please introduce the preliminary results achieved by your company in terms of the three-tier pilot work citing specific cases ?



In carrying out the pilot work for the regional and provincial electric companies, the Tianjin Electric Power Company of the SGCC summarized a CSR management target mode featuring "all employees' participation, all-around coverage, full-process blending" and explicitly defined the CSR standards for the regional and provincial companies in 12 aspects, the "safe, efficient, green, harmonious" CSR fulfilling standard and the CSR fulfilling performance indicator system framework. The Tianjin Company also proposed the mode of "determining the standard, evaluating the current situation, working out the schemes, pushing in an all-around way, balancing the feed-back and constantly making improvement" , and searched for a scientific development mode of speeding up the electric grid development suitable for the local economic and social development at minimum resources input and social environment cost.

In carrying out the pilot program for the prefecture-level company, SGCC's Wuxi Company in Jiangsu province actively incorporated the concept of "all-round CSR management to create maximum comprehensive value" into the effective path of business operation, putting forward the responsibility operation mode of " $\Sigma$  (business+improvement) R = work/value". While re-understanding and re-thinking about each business and its improvement from the concept of CSR, the Wuxi Company achieved "externalization of internal work and internalization of external expectations" so as to let the

society understand the social value of the corporate work and the employees fully understand the expectations and requirements of the stakeholders. The Wuxi Company also examined and evaluated each business and its improvement mode in terms of comprehensive value creation and effective management.

In carrying out the county-level pilot project, SGCC's Jiasan Company in Jiaxing, Zhejiang province took the initiative to carry out the exploration in establishing a CSR management index system. It has established an overall social responsibility management index system involving the business categories of various kinds and containing about 50 indexes including customer satisfaction, and included it into department performance evaluation, effectively facilitating the organic combination of CSR management with daily operation. Besides, the company has set up a post of CSR internal inspector who is responsible for carrying out the internal audit on the CSR propagation, implementation, supervision and responsibility fulfilling performance of the pilot company.

Through the three-tier pilot work, the executives and employees of the pilot units unanimously consider that **social value recognition, social value lifting and social value creation have been achieved by pushing all-round CSR management.**



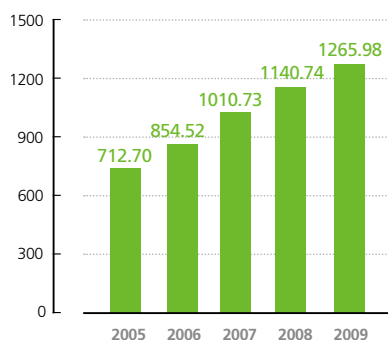
## Process of fulfilling responsibility in management excellence



## Major performance indicators in management excellence

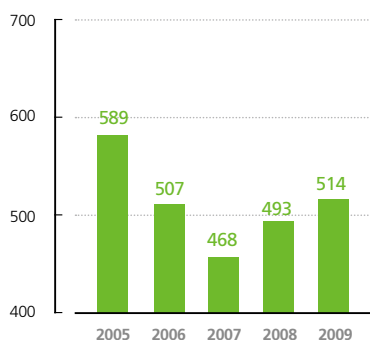
**Revenue**

Unit: RMB billion yuan



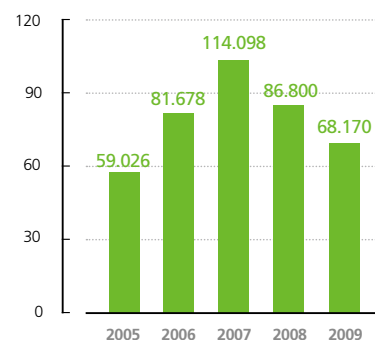
**Total asset turnover days**

Unit: day



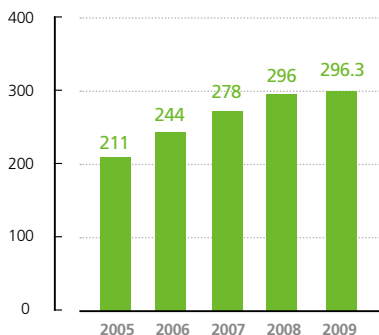
**Taxes paid**

Unit: RMB billion yuan



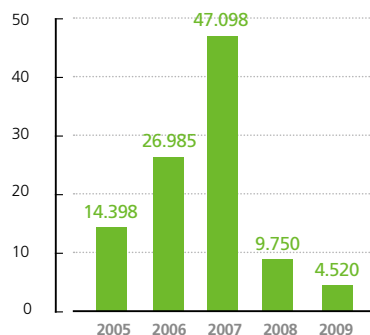
**Overall productivity**

Unit: thousand yuan/ ( person.year )



**Total profit**

Unit: RMB billion yuan



**Return on equity**

Unit : %





## Responsibilities on Technical Innovation



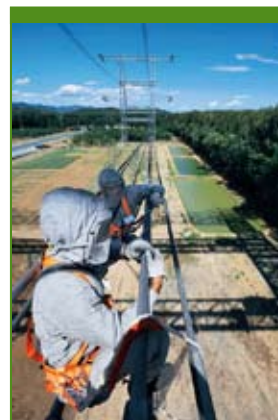
In 2009, by focusing on supporting the strong and smart grid construction and promoting the clean energy development, SGCC pushed forward the strategy of "building first-class talent team, implementing large scientific research, creating great achievements, fostering large industries and realizing extensive application", and completed the UHV AC/DC, Tower, and High-altitude Test Bases as well as the State Grid Simulation Center and the State Grid Metering Center. The Company also launched the construction of the National Wind Power Technology Research and Testing Center, National Research and Development (Experiment) Center for Solar Power Generation, and the Wind and PV Energy Storage and Transmission Model Project ".





## Understand the mission of technical innovation in the new era

The technical innovation and advancement of the energy industry are of great significance to the country in building an innovative country and realizing the independent innovation of basic industries and the core technologies upgrading. It is our significant historic mission to play a leading role as an enterprise under the central government in carrying out technical innovations, accelerate the building of an innovative enterprise, support the strong smart grid construction by way of significant scientific and technical innovation, push forward the leaping development of the strategic new industries, facilitate the optimization of the energy structure of China, ensure a safer, more economical, cleaner and sustainable energy supply, promote the industrial upgrading of the energy equipment industry and the uplifting of our international competitiveness, and facilitate the transformation and upgrading of the economic development mode.



The  $\pm 800$  kV UHV DC power transmission live-line work conducted for the first time in the world came to a success at the UHV DC testing base. As an important means for the UHV transmission line maintenance, the live-line work will ensure the uninterrupted power supply of UHV transmission line.

## Lift technical innovation capabilities

**Speed up the strong smart grid construction and usher in the development of power grid in the world.** In 2009, SGCC established the strategic plan for constructing the strong smart grid. By 2010, it is planned to complete the strong smart grid development planning and to carry out the R&D and pilot work for the critical technical equipments; By 2015, SGCC plans to achieve significant breakthroughs and extensive application of critical technical equipment, build a world-class national wind energy and solar energy power generation research (experimental) center, and work on the critical technologies in respect of new energy power generation and grid connection. Start to build wind, solar power energy storage and transmission pilot project with the largest capacity, the most advanced technologies and the most flexible operation in the world, so as to play a guiding role for the construction of new energy power generation projects.



Effect drawings of the National Wind Power Technology and Testing Research Center and the National Wind and Light Energy Storage and Transmission Model Project



Effect drawing of the National Wind and Solar Power Storage and Transmission Demonstration Project

### **Build a world-class research base to support the grid development.**

Fully complete the UHV AC and DC tower and high-altitude testing bases, the State Grid Simulation Center and the State Grid Metering Center. Currently, the Corporation has established an UHV testing and research system with the strongest capacity and the highest technical level in the world, created 37 world records in terms of testing condition and capacity, obtained 130,000 sets of valid data and carried out the live-line testing for the UHV equipments of nearly 100 manufacturers in our country.

### **Perfect the technical innovation system and optimize the overall research arrangement.**

Optimize and integrate the internal R&D system with the four research institutions directly under SGCC and 26 research institutions under the subordinate enterprises as its main body, so as to carry out unified management, operation and efficient allocation of the research resources of the Corporation. Optimize the arrangement of research institutions, and construct the technical research center, the technical service center, the testing center and the energy policy research center for supporting the scientific and technical innovation strategy of "building first-class talent team, implementing large scientific research, creating great achievements, fostering large industries and realizing extensive application".

### **Strengthen research for key technologies and fortify the technical team construction.**

Prepare to construct the smart grid research institute and speed up research for the key technologies such as the UHV grid, the smart grid, large grid safety and grid energy storage, etc. Implement the "Thousand Talents Plan" set by the talent work coordination team under the central government, target at making breakthroughs in terms of key technologies in the electric power industry.

### **Strengthen management on technical research, and speed up the application of technical achievements.**

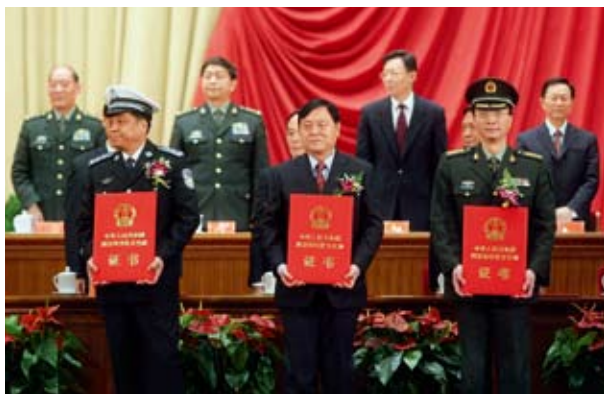
Intensify research funding management and push forward the intensive management and standardization management of research projects. Push forward the strong smart grid construction and incorporate it into the national scientific and technical development planning and major scientific project programs. Establish the intellectual property strategy of the Company and strengthen the patent management. Strengthen the popularization and application of the new technologies and new equipments such as the compact transmission line, multi-circuit line on the same tower, large-capacity transformer, series compensation and controllable series compensation in the power grid planning, design, construction and operation, etc.

## SGCC made notable achievements in technical innovation

**Participate in formulation of domestic and overseas technical standards of the power grid.** SGCC released the UHV AC power transmission standard system framework composed of 77 national and industrial standards under 7 categories and 15 national standards. It carried out research on standards related to new energy and complete technical regulations for power grid integration of wind power generation and solar energy PV generation. It also carried out leading research on the smart grid technical standard system, put forward 8 modification recommendations for IEC smart grid standard system framework and release 23 standards for enterprises engaged in smart grid development.

**SGCC takes the lead in the world UHV power grid technology development and large power grid safety research.** After the successful R&D of critical 1000 kV UHV AC equipments and technologies, breakthrough was achieved again in developing the critical equipments such as the  $\pm 800$  kV UHV DC converter transformer and the converter valve. Measures for coordinated control of the regional power grid and the UHV power grid were proposed and the power flow control policy for the UHV AC transmission line was set forth for the first time in the world; the power grid wide-area monitoring analysis and protection control system was put into operation successfully. The research on safety stabilization principle and the smart control policy for mixed AC and DC large-scale power grid was carried out. The capability of handling power grid emergency and hazard alarming were raised and breakthrough was achieved in relieving disasters. The scientific and technical innovation conducted in advance has provided strong support for the development of the UHV power grid and the construction of the smart grid.

In 2009, the Company was awarded with one first prize and five second prizes of the National State Scientific Advancement Award; one gold prize of Chinese Patent Award; and one outstanding prize.



SGCC's program of "Key technology research and device design, manufacture & application on all-digital real-time simulation of power system" won the first prize of the National State Scientific Advancement Award



In order to push ahead the development of the renewable energy industry, what breakthroughs will SGCC achieve in critical technologies?



The only way to utilize on a large scale the renewable energy resources such as the wind and solar energy is to convert them into electric power. Due to intermittence and fluctuation occurring during wind power and PV power generation, the power grid will be subject to serious impact and the power quality can hardly meet the need of the users if they are extensively connected into the power grid. The renewable energy industry can hardly develop rapidly and soundly if there is no effective technical solution to the technical problem of grid connection.

To give full support to the renewable energy development, SGCC has started the construction of the National Wind Power and Solar Power Generation Research (experiment) Centers to rapidly improve the capability of carrying out power generation with renewable energies, technical research and testing on grid integration. Push forward the standardization, certification and testing system construction for the renewable energy industry to provide technical basis for the development of the renewable energy industry; carry out the demonstration and construction work for the national-level wind and PV energy storage and transmission projects, carry out the research, testing and verification of the significant technologies by relying on the model projects, and focus on the research of the significant and key technologies such as coordination planning technology for the power grid and the energy sources of various kinds, large-scale critical energy storage technologies, joint-scheduling technology for new energy resources of various kinds and new energy power generation output predication technology to break through the technical bottleneck that is restricting the renewable energy development.

### The research on critical power supply technologies for electrified railway has reached world-class level

The project of "Research on Critical Power Supply Technologies for the Electrified Railway" is of great significance for enhancing power supply for electrified railway, the reliability and power quality improvement of the traction power supply, strengthening railway transportation capacity and facilitating the electrification of the railways in China. This is an inter-industries and inter-disciplines systematic research conducted in China for the first time for the critical power supply technologies in electrified railways. As a result of such a project, totally 8 innovation results were achieved, 1 monograph was published, and 16 academic papers have been published on the renowned international academic journals in the SCI and EI system, and 5 patents were obtained.



## Process of fulfilling technical innovation responsibility



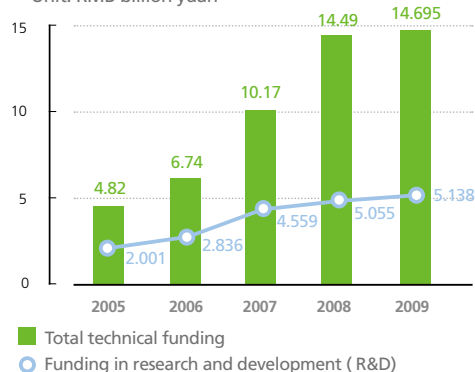
## Major performance indicators in technical innovation

(Unit: number)

Year	National Prize on Science and Technology		Patent Prize		Standard Innovation Prize		China Electric Power Technical Advancement Prize	
	First prize	Second prize	Gold prize	Outstanding prize	Second prize	Third prize	First prize	Second prize
2005		3					2	12
2006		3		1	1	3	6	14
2007	1	4		3	1	1	4	15
2008	1	3				2	5	13
2009	1	5	1	1	1		4	16
Total	3	18	1	5	3	6	21	70

### Technical input and R&D input during 2005~2009

Unit: RMB billion yuan



Projects	Unit: number	2005	2006	2007	2008	2009
Patents applied for		177	212	685	2362	2528
Invention:		50	59	239	812	1068
Patents granted		113	146	333	567	1517
Invention:		9	17	56	57	105
The cumulative patents owned		866	1012	1427	1994	3511
Invention :				196	253	358





## Responsibilities on Communication and Cooperation



In 2009, SGCC deployed and pushed forward the communication and cooperation strategy of “implementing leading brand strategy and build up core competence”, established strategic mutual trust with the key stakeholders, promoted the value recognition of building a strong and smart grid and deepening of the “two transformations”, and made great efforts in consolidating the social foundation supporting the development of the Company and its power grid to elevate the company’s services and the social sustainable development capability.





## Understand the importance of recognition by the stakeholders

Push forward the governmental and societal recognition on SGCC's corporate values and power grid development, which concerns the overall situation of the national energy strategy and the social and economic sustainable development of the country.

As a powerful energy allocation platform, SGCC is an important integral part of the national comprehensive energy transportation system and plays a fundamental role in achieving optimal energy allocation throughout the country, and even over extended areas, and in ensuring the national energy resource safety. Besides, as the core of the energy industry, the innovative development of the power grid plays a leading role in implementing the national energy strategy, pushing the epoch-making reform of the energy development and utilization, taking the historic opportunity in the world-wide energy resource development and bringing along the leap-forward development of renewable energies.



SGCC launches the *Energy outlook* - the first magazine for energy outlook, which specializes in energy report and makes active contributions to the implementation of the national energy strategy and pushing the healthy development of the energy industry.

### Join efforts from all parties to speed up the smart grid development

Consulting with the government departments, expert groups and the social public, SGCC has successfully prepared a *General Outline for Preparation of State Smart Grid Planning*, the *Code of Preparation for Regional and Provincial Smart Grid Planning*, and the *Critical Equipment Development for Smart Grid*. With the support of all parties, SGCC pushed forward construction of the national solar energy and wind power generation technology research and testing centers, and the smart power utilization technologies research and testing center. It has started the comprehensive smart grid demonstration project for the Shanghai World Expo Center to popularize the idea of the strong smart grid by means of the platform of the Shanghai World Expo garden. SGCC will strengthen the international exchanges, actively participate in international conferences and deeply communicate in terms of related information on the smart grid so as to jointly push forward the smart grid development.

SGCC plays a very important role in prompting the development of related industries and driving force for the social investment. Meanwhile, the significant breakthroughs achieved in equipment and technologies for the strong and smart grid will play an inestimable role in carrying out the technical upgrade for the domestic manufacturing industry, raising the international competitiveness and achieving independent manufacturing of critical materials. It can notably push the technical upgrading and rapid development of the related industries such as the electrical, mechanical and equipment manufacturing industry, the metal smelting and calendaring processing industry, and the metalwork industry, etc.

As a state-owned extra-large utility under strict regulation of the government and the society, the decision-making with regard to the development of SGCC and its power grid and the full exertion of its comprehensive value creating function must be made on the basis of a consensus on development with the stakeholders and their understanding, trust and support.

## Push the value recognition of the government and society for the development of the grid and SGCC

### Push the value recognition for the strong smart grid construction.

Under the full support of the stakeholders, starting from the national situation of imbalance between the historical development stage and regional economy development as well as China's energy resources heritage and the world energy sources development trend, SGCC has put forward the development direction of constructing a strong smart grid and actively strived for the formation of extensive consensus of all parties in a bid to realize optimal resources allocation to the maximum extent and create the maximum economic, social and environmental values.

### Push value recognition for the operation efficiency and benefits of the Corporation.

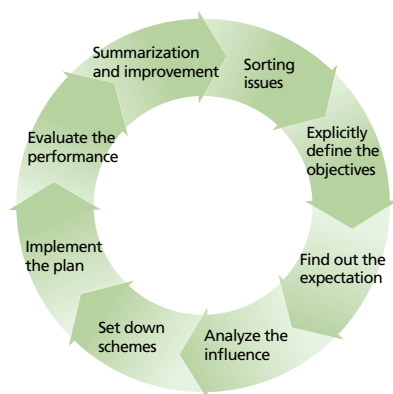
Under the guidance of the Outlook on Scientific Development, SGCC pushes conglomerate operation, intensive development, lean management and standardization construction, making great efforts to construct the strong smart grid with the least-possible resources input at the lowest environmental and social cost, realizing the high-efficiency operation and value preservation & increase of the state-owned assets. The efforts made by SGCC in actively transforming its development mode and lifting its conglomerate resources operation efficiency and benefits need to be known and recognized by the government and the society.

### Push forward the value recognition of mid-and long-term grid development planning.

As the power grid is the important infrastructure for ensuring sustainable development of the economy and the society, its development shall meet the power supply demand of economic and social development. In order to promote scientific power grid planning and achieve compatibility between power grid planning and national energy planning, and between industrial development planning and local social and economic development planning, it is necessary for the government at all levels, society and SGCC to make joint efforts.

### Reach a consensus on speeding up power grid development with the governments at provincial level in SGCC's service areas

In January of 2009, SGCC held in-depth talks with Zhejiang provincial government regard to the issues of common concern such as grid construction and development and came into a consensus. Both parties signed a document titled *Minutes of Talks on Jointly Pushing of Grid Construction and Development in Zhejiang Province*. In 2009, SGCC held talks on grid construction and development with all governments within its business areas and signed minutes of meeting on development, coming to extensive consensus with them with regard to the acceleration of grid construction to meet the power demand of the local economic and social development, thus facilitating the creation of a perfect situation where a grid development consensus within the Company, the government and the society is jointly established, the grid development efforts are concentrated and the local economic and social development is supported.



**Sorting issues:** collect and sort out the issues on which the stakeholders' participation is needed.

**Explicitly define the objectives:** anticipate the role of the stakeholders' participation

**Find out the expectation:** find out the expectation and requirements of the stakeholders.

**Analyze the influence:** analyze the power and influence of the stakeholders.

**Set down schemes:** determine the participation rules, resources safeguarding and action planning.

**Implement the plan:** implement the stakeholder participation scheme.

**Evaluate the performance:** Evaluate the result and efficiency of the stakeholder participation.

**Summarization and improvement:** sum up the experiences in good time to perfect the stakeholder participation system and procedures and make persistent improvement.



## Elevate the capability of SGCC in pushing forward its value recognition strategy

**Explicitly put forward the strategic target of building the soft power of the Company.** Deeply understand the development law of harmonized construction and mutual reinforcement of hard power and soft power for the first-class companies in the world. Earnestly analyze the characteristics of power grid enterprises and the new situation that we are facing in the power grid development. Put forward the strategic move of “fully implementing the brand leading strategy and build the Company’s soft power”. For a company that operates in cooperation with its stakeholders and receives great attention from the society, the understanding, trust and full support from the stakeholders is the social foundation for pushing ahead the sustainable development of the Company and the society.

**Specifically strengthen the organization management system for brand building.** Set up a special organization to carry out the communication and brand building, optimize and integrate the functions of the relevant work such as news publicizing, external liaison, brand building, social responsibility, charity funds, etc, and perfect the organization, the working system and the working procedures for pushing the communication and cooperation. A three-level press spokesman working system composed of head office, the regional and provincial grid companies, and the prefecture level companies has been preliminarily established, and a centrally commanded brand building working system with clear work division and high operation efficiency has come into being. Implement the communication and cooperation responsibility fulfillment with all employees participation, explicitly define the responsibility of each department, unit and post for communication and cooperation with the stakeholders, actively promulgate the brand connotation of “credibility, commitment, reliability and trustworthiness” and elevate the popularity of the brand of the Company.

Perfect the stakeholder participation system and explore to build a strategic stakeholder participation system and a business-related stakeholder participation system with their own specific characteristics, which will meet the development demand of the head office, the regional and provincial grid companies and the prefecture and county-level companies. Ensure the stakeholders’ right to know, to supervise and to participate by way of effective system arrangements, resources safeguarding and action assignment so as to fully exert the potentials and advantages in cooperation with the stakeholders to create comprehensive economic, social and environmental values.



Could you please specify the procedures and mechanism that SGCC adopted in identifying, sorting and responding to the core concerns of the stakeholders?



The Company attaches great importance to the construction of the stakeholders participation mechanism and guarantees the stakeholders’ right to know, to supervise and to participate with its effective system arrangements, resources guarantee and action assignment. It is an important integral part of the stakeholder participation mechanism of SGCC to identify, sort and respond to the stakeholders’ core concerns. The Company has established systematic procedures and mechanism for this purpose.

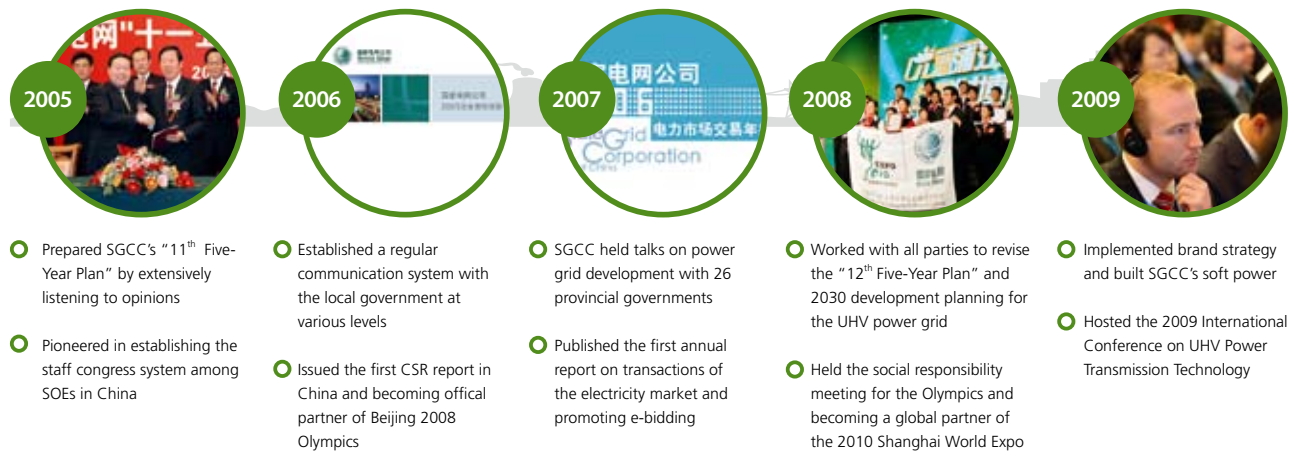
On one hand, aiming at the Company’s mission of safeguarding a safer, cleaner, more economical and sustainable energy supply, the Company earnestly identifies all stakeholders such as the central government, the local government, energy equipment supply enterprises and the experts in the fields of energy resources, water resources and environment. By reporting to the State Council and the relevant ministries and commissions under the central government on regular or irregular basis, holding regular high-level talks with the local government and organizations, participating in industrial development forums, holding discussions with key manufacturers and critical technical development joint meetings, we identify the core issues and establish development consensus, exploit cooperation potentialities and join efforts for development.

On the second hand, aiming at the daily business operation, the Company has developed a business-related stakeholder participation mechanism to identify the stakeholder emerging in the course of operation and analyze the positive and negative impact of the operation upon the stakeholders, and has worked out corresponding stakeholder participation schemes, including the general manager’s liaison officer system for the employees, the grid-generator coordinating system and the regular discussion system for the suppliers, the questionnaire survey and expert visits for the users, the news conference and large exhibitions for the public, etc. so as to hear the opinions from the stakeholders and learn about their expectations and demands and determine the priority of issues to be settled.

Stakeholders	Core concerns	Response of the Company
Governments at all levels	Meet the energy demand for sustainable economic and social development.	<ul style="list-style-type: none"> <li>○ Prepare the <i>Wind Power Grid Connection Operation Condition Report</i> through active researches to provide suggestions for the new energy development of the country.</li> <li>○ Strengthen the communication and assist the governments at all levels in completing the preparation of the electric power-centered medium and long-term energy resource development plan, and include the power grid planning into the local economic development planning.</li> <li>○ In 2009, the Company respectively held special talks on grid construction and development with all provincial governments within its business areas, coming into extensive consensus with regard to increase of grid investment, acceleration of grid project construction, pushing of coal-power base development, acceleration of UHV AC and DC project construction, supporting of power equipment manufacturing industry development, and establishing of a normal communication mechanism, etc.</li> </ul>
Power generation enterprises	Adhere to “fair, open and just” power grid dispatching & transaction and reasonably arrange the generation.	<ul style="list-style-type: none"> <li>○ Carry out the special activities for the “fair, open and just” power dispatching and transaction; perfect the information release; issue <i>Opinions on Standardization of Inter-Regional and Inter-Provincial Electricity Trade</i> and ensure an open, transparent and standardized operation.</li> <li>○ Issue <i>Regulations for the Entry of Newly-built Generating Sets into Commercial Operation in SGCC (for Trial Implementation)</i>; and provide fine management to the commercial operation of newly-built generating sets</li> <li>○ Carry out “one-stop” service for the transaction, settlement; commercial operation of newly-built generating sets; information release, report and submission.</li> <li>○ Construct the strong smart grid; further research on the safety, stability and mechanism of large-scale wind power grid connection; realize the wind power dispatching &amp; operating control and the wind power prediction.</li> </ul>
Suppliers	Adhere to the principle of fair, open and just procurement to maintain a long-term and stable cooperation relationship.	<ul style="list-style-type: none"> <li>○ Establish the Material Department, the Logistic Service Center and the Branch Logistic Service Centers; establish and issue all types of rules &amp; regulations related to material management to standardize the material procurement and ensure fair competition.</li> <li>○ Enlarge the scope of centralized procurement, intensify centralized procurement, optimize the procurement flow, expand the expert team and add 313 bid evaluation experts.</li> <li>○ Provide funding support on research and achieve a series of breakthroughs in terms of critical UHV equipments together with the equipment manufacturers. The critical equipments such as the ±800 kV UHV converter transformer and converter valve of all types have been successfully developed, and the domestic manufacture ratio for the DC power transmission equipment has been increased from 30% in 2003 to the current 100%.</li> </ul>
Designing and construction enterprises	Control the project cost in a reasonable way and ensure the project quality	<ul style="list-style-type: none"> <li>○ Jointly improve project quality, control project cost, and minimize the impact of construction on the environment</li> <li>○ Jointly reinforce field management to reduce risks of accident</li> <li>○ Perform contractual obligations and effect project payments as scheduled</li> </ul>
Scientific research institutions	Actively promote the development of new technologies, materials and processes and increase investment in scientific research	<ul style="list-style-type: none"> <li>○ Sign and enter into strategic cooperation agreements with a series of prestigious universities and scientific research institutions at home to conduct cooperation in scientific and technical projects, jointly establishing an enterprise-backed IUR system encouraging innovation in transmission technology.</li> <li>○ In association with a number of research institutions, software and hardware manufacturers at home, we have developed and manufactured a series of smart technical support systems for power grid dispatching, which incorporate several world-leading technologies, and developed advanced UHV technologies and key equipment with joint efforts.</li> </ul>
Financial institutions	Keep reasonable demand for funding and controllable fund risks.	<ul style="list-style-type: none"> <li>○ Strengthen the strategic cooperation between banks and enterprises and increase the operation returns of funds</li> <li>○ Strengthen website construction and information promulgation; publicize and communicate the corporate strategies in a timely manner, enhance enterprise transparency, and jointly control the operation risks of funds</li> <li>○ Utilize a number of financial tools and extend SGCC's financing channels.</li> </ul>
Third party agency assessing the CSR report	Continuously upgrade the inclusiveness, substantiality and responsiveness of the CSR report	<ul style="list-style-type: none"> <li>○ Disclose the systems and mechanisms participated in by stakeholders</li> <li>○ Increase the number of quantitative indicators for disclosure</li> <li>○ Enrich the contents of SGCC's sustainable development strategy</li> <li>○ Increase the contents of answers to hot issues</li> </ul>



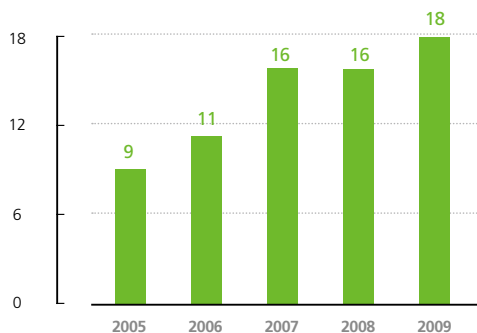
## Process of communication and cooperation responsibility fulfillment



## Major performance indicators for communication and cooperation

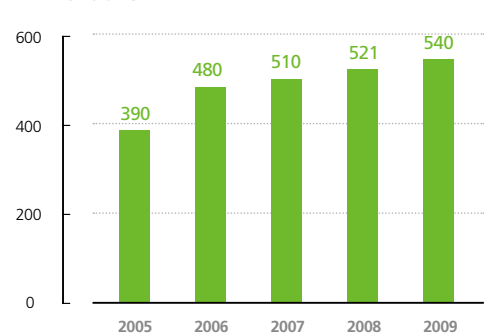
Number of news release conferences organized by SGCC's head office

Unit: time



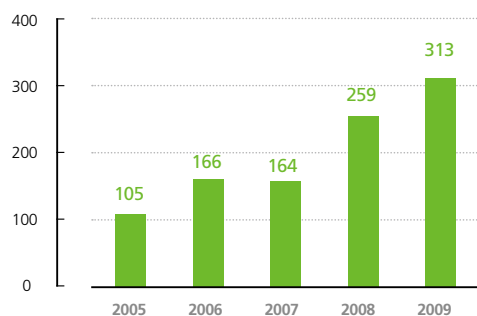
Power dispatching and transaction information release

Unit: time



Information Submitted to the Government by SGCC's head office\*

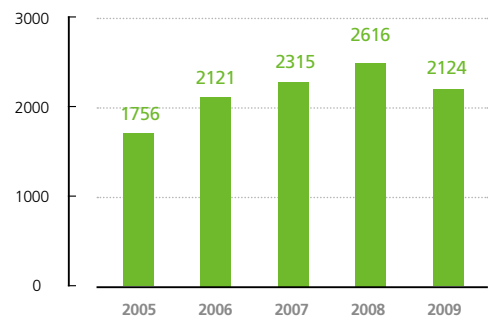
Unit: piece



\* Governmental departments include General Office of the CPC Central Committee, General Office of the State Council, State-owned Assets Supervision and Administration Commission, National Development and Reform Commission, and State Electricity Regulatory Commission, etc.

Portal Website Traffic\*

Unit: thousand times



\* SGCC realized the physical isolation between the intranet and internet in 2009, which leads to reduced visits





## Responsibilities on Global Vision



In September 2009, Liu Zhenya, President of SGCC, delivered a keynote speech with the title of "Strong smart grid: the Engine for Energy Innovation, Development and Reform" at the opening ceremony of GridWeek in the U.S. It was the second time that Mr. Liu met Steven Chu, Secretary of Energy, who visited SGCC in July with Gary Faye Locke, Secretary of Commerce. They held talks together on constructing a strong and smart grid, promoting the development of clean energy and responding to the sustainable supply of energy and challenge of the global climate change.



## Be a responsible operator of the national power transmission grid of the Philippines

The National Grid Corporation of the Philippines (NGCP) jointly established by SGCC and the Philippine partners obtained a 25-year concession of the transmission network. SGCC fully exerts its advantages in technology, management and funds and conducts sincere cooperation with local partners to strengthen the operation and management of the national power transmission grid of the Philippines in an all-round way, thus significantly improving the safety level, supply reliability and financial performance of the grid operation. SGCC also comprehensively enforces the international human rights and labor standards, puts an end to child labor, forced labor and discrimination in any form; provides remuneration and welfare; ensures the safety and health of the employees and adheres to the environment-friendly and energy-conserving practice in the corporate operation and keeps harmonious co-existence with the local communities.



On January 15, 2009, Du Zhigang, Chairman of the National Grid Corporation of the Philippines (NGCP), and Walter Brown, General Manager of the corporation, accepted the gold key which represents the operation right of the grid, officially kicking off the operation of the national power transmission grid of the Philippines.

## Responsibly carry out the international energy cooperation and execute the transnational cooperation

SGCC has promoted the Sino-Russian electric power cooperation, constructing Sino-Russian Phase 1 power transmission and transformation project, exploring Sino-Russian cooperation in international bidding for power transmission and transformation equipment, and restoring and expanding Sino-Russian cross-border electricity trade. The energy cooperation with Mid Asian countries, such as Mongolia and Kyrgyzstan, has witnessed progress, with the preliminary feasibility study for the initial project of Sino-Mongolian cooperation accomplished, and the commercial negotiation has also been officially activated. SGCC has been developing international economic and trading cooperation in a responsible manner, providing technical service for overseas projects under construction, with a contract volume amounting to USD 17.9 billion.

The Henan Electric Power Company has undertaken the construction of the 330KV LUMWANA substation in Zambia, which has been put into operation and begun to supply power to local copper mines. Rupiah Banda, President of Zambia attended the opening ribbon-cutting ceremony and gave positive comments on the project, appreciating the remarkable contributions of SGCC to the local economy.

## The UHV AC project put into operation in China attracted extensive attention across the world

Upon successful commissioning of the Jindongnan-Nanyang-Jingmen 1000KV UHV AC Demonstration Project on January 26, 2009, SGCC received congratulations respectively from the International Council on Large Electric Systems (CIGRE), the International Electrotechnical Commission (IEC), the U.S. Cambridge Energy Research Association (CERA), the International Electric Research Exchange (IERE), the Power & Energy Society of the International Institute of Electrical and Electronic Engineers (IEEE PES) and other international academic organizations and authoritative research institutes expressing congratulation to China on the breakthrough in the construction of the ultra-high voltage power grid.

- According to Jean Kowal, Secretary of CIGRE, "the successful operation of the project is, no doubt, an important milestone in the history of electricity projects in the world", and "it will vigorously drive forward the development of special technology in the field of ultra-high voltage".
- Enno Liess, Vice Chairman of International Electrotechnical Commission (IEC) commented that "it stands as an important landmark to push forward the development of electricity technology in the world to successfully put the ultra-high voltage AC experiment demonstration project into operation. The achievement is remarkable and stimulating".
- Daniel Yergin, Chairman of the U.S. CERA put it that "it will greatly drive the research and establishment of an international standard for ultra-high voltage technology to put the project into operation".
- Etsuji Kodama, Secretary of IERE indicated that "the experiences accumulated in all fields regarding the actual construction and operation of the ultra-high voltage project will be applied in future projects in a better way. I believe that the SGCC of China will become a global leader in electricity technology in the industry of electricity in the near future".
- Wanda Reder, Chairman of IEEE PES commented that "this project represents the highest level of international power transmission technology".



## Deepen international communication and actively participate in the establishment of international standards

The international conference on ultra-high voltage reached extensive consensus. SGCC held the 2009 International Conference on UHV Power Transmission Technology (UHV 2009) with the theme of “UHV power transmission technology– innovation and sustainable development”. Zhang Dejiang, Vice Premier of the State Council of Chinese government, attended the conference and delivered an important speech; and over 400 representatives of 26 electricity enterprises, 11 research consultation agencies, 9 association organizations, 11 universities, and 27 manufacturing enterprises from 21 countries and regions were present at the conference.



Extensive participation in the establishment of international standards: SGCC has actively participated in related activities and establishment of international standards organized by IEC, CIGRE, and IEEE, etc. It has become the member of senior management of IEC, actively participated in the undertakings of the IEC UHV standardization, the smart grid standardization, and the electricity efficiency. The IEC TC 115 Technical Committee for HV DC Power Transmission, the secretary office of which is set at SGCC, has established the strategic business plan; proposed a draft for the IEC road map for standardization of the HV DC power transmission system; and started to prepare the standards for 4 HV DC fields. SGCC has also made important contributions to the research report of the CIGRE on the UHV transformer substation equipment and system, the UHV insulation, and other work.

Intensify global communication in terms of experiences, technologies, and management of sustainable development. SGCC has joint discussions with the international community to address the common challenges that the human society is confronted with, including the global climate changes, ensuring the sustainable supply of energy resources, following responsible international practice, and elimination of extreme poverty, etc. It has kept frequent technical exchange with world-class research institutes and electricity enterprises, cooperating to develop state-of-the-art technologies of electricity in the world. SGCC has, since 2006, sent over 200 executives, organized in 10 groups, to many world-class corporations, such as Siemens, ABB and GE.



Undoubtedly, it is of great significance for SGCC to stress the global vision responsibility as SGCC's headquarters have extensive international exchange and businesses. However, is it necessary for the regional and provincial companies, the city and prefecture-level companies, and especially the county-level companies to emphasize the global vision responsibility?



The global vision responsibilities of SGCC mainly have the following connotations in four aspects:

**First**, to have a deep understanding of the overall influence of economic globalization on SGCC. At present, SGCC and its customers are all fully integrated in economic globalization. Enterprise operation and quality service require SGCC to weather the economic fluctuation, i.e. the impact of the global financial crises to the power sales and tariff recovery.

**Second**, to have a profound understanding of the importance of mobilizing resources to improve the sustainable development, including natural resources, capital, technology, equipment, management experience.

**Third**, to have an in-depth understanding on international benchmarking. The mission of SGCC is to “build a world-class grid and a world-class enterprise”, and this is the common task and objective of utility.

**Fourth**, to have a profound understanding on the global responsibility that the world largest utility must shoulder to tackle challenges against sustainable development, including ensuring the sustainable supply of energy resources and responding to major challenges of the global climate change, following the international practice, and eliminating extreme poverty, etc.

Based on the above four aspects of SGCC's CSR connotations, it is clear that the headquarters and all the subsidiaries must establish a global outlook in an all-round way, benchmarking with the world first-class company to improve SGCC's sustainable development capacity and jointly building up a harmonious world.



## Process of global vision responsibility



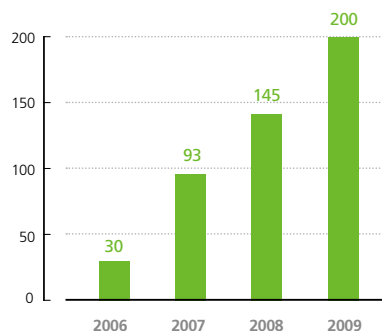
### Make full use of the specialized technical advantage in power grid construction, to explore the overseas market

State Grid Electric Power Research Institute and China Metallurgical Group Corporation have signed a contract on Integrated Substation Automation System of Ramu Nico Project in Papua New Guinea. That nico project is one of non-ferrous metal mining projects with largest overseas investment of China and is of strategic importance for relieving the short supply of nickel in China and prompting the development of related industries. The 10kV substation, which will supply power to the project, will apply NS2000 integrated substation automation system researched and developed by the State Grid Electric Power Research Institute itself. The system will be used to realize the monitoring and control to the electrical equipment in the mining and smelting areas and can well ensure the in-depth development and production safety. NS2000 integrated substation automation system was previously applied in overseas electric power projects for several times, and more than 20 sets of the system have been successfully launched in countries such as Sudan, Thailand and Indonesia etc. Based on its advanced technology and excellent service, it gains recognition from all users and thus it helps to boost the output of our country's electric power technology.

## Major performance indicators for global vision

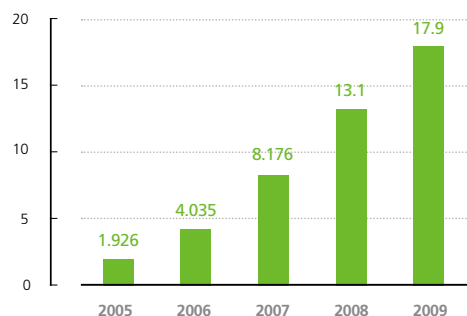
Total overseas executive trainings of SGCC

Unit: person-time



Accumulated contract volume of technical services for overseas projects under construction

Unit: USD billion

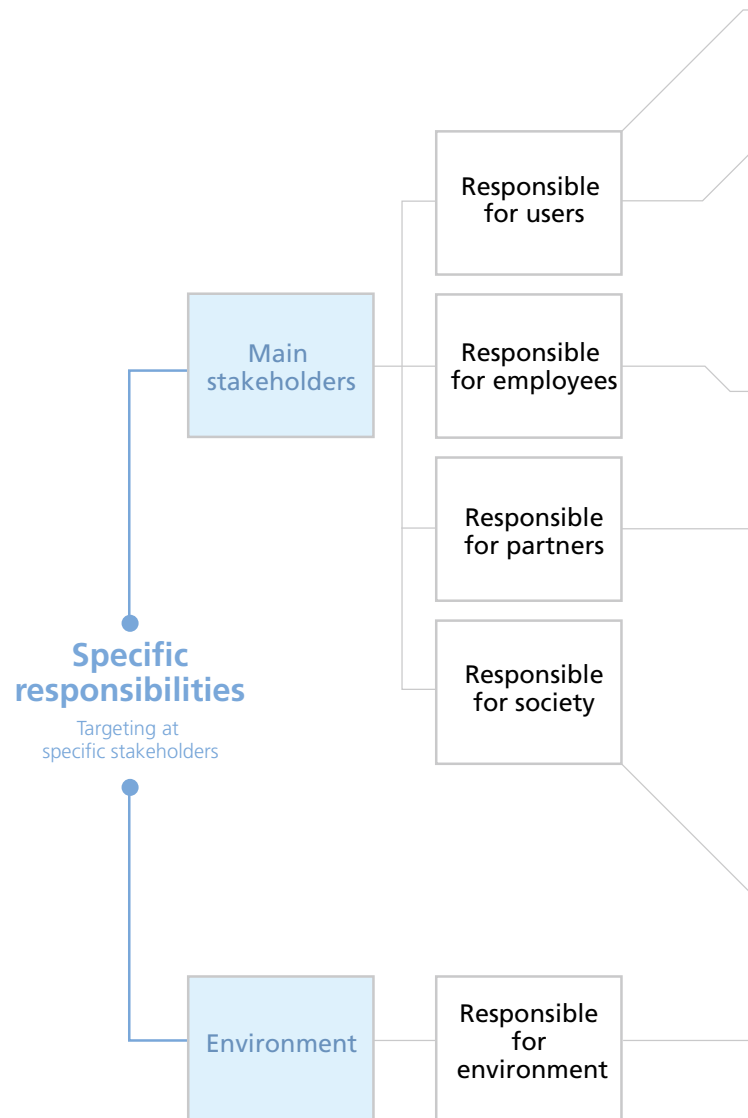


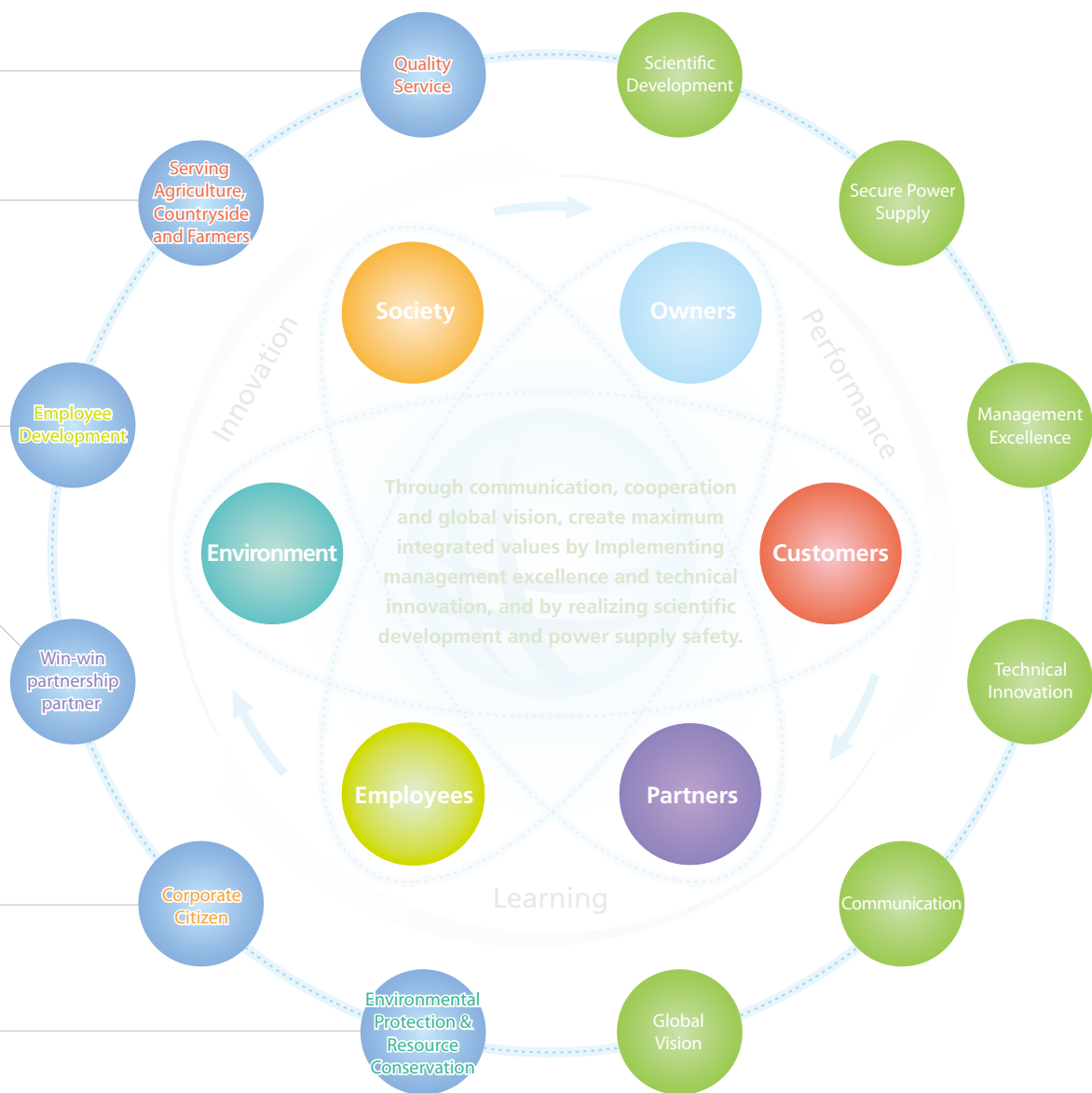
# Specific Responsibilities

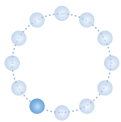
How many types of stakeholders that SGCC connects prescribes how many specific responsibilities it is shouldering. SGCC's headquarters, setting foot on the national conditions and its own actuality, has confirmed its stakeholders, including the shareholder, user (including agriculture, countryside and farmer), employee, partner, community, society in the broad sense, and environment, etc.; except that the responsibilities for shareholders are not listed independently, it has respectively described the responsibilities for [quality services](#) to users, responsibilities in [serving "Agriculture, Countryside and Farmers"](#), responsibilities on [employees development](#), responsibilities in [facilitating win-win to partners](#), responsibilities as a [corporate citizen to the communities](#) and the society in the broad sense, and responsibilities on [environmental protection and energy conservation](#).

To each specific stakeholder, SGCC not only performs the common responsibilities, but also shoulders specific social responsibilities, including legal and ethnic basic responsibilities (performing "three-fold basic responsibilities"), and the win-win partnership responsibilities to cooperate with stakeholders to create integrated economic, social and environmental values (realizing "the creation of three-fold values").

Companies at regional, provincial, city and county levels may determine more extensive and specific stakeholders according to the local situation and their actualities and define the contents of social responsibilities to all specific stakeholders.







## Responsibilities on Quality Service







In 2009, SGCC organized and carried out quality service activity of “greeting the 60th anniversary of the motherland and exhibiting the splendid achievements in power supply services”, perfectly accomplished safe power supply and quality service in greeting the 60th National Day.

SGCC implemented the central government’s arrangement on “ensuring growth, safeguarding people’s livelihood and guaranteeing stability”, performed quality service responsibilities, improved the normal mechanism for quality services, helped users to respond to the financial crisis, improved the quality of power supply service and displayed the service brand of “State Grid”, realized and improved the Company’s values in the process of creating values for users.





## Performing quality service responsibility to users

Type of responsibility	Specific content
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p> <ul style="list-style-type: none"> <li>Carrying out electricity metering according to the laws and implementing the national policy on electricity pricing</li> <li>Carrying out the demand side management, the electric power load management and electricity use examination</li> <li>Protecting users' privacy under laws</li> <li>Announcing the procedures and system for use of electricity supply services and the service-charging standards</li> <li>Conformity of the power supply quality to the national standard</li> <li>Providing services, such as business consultation, trouble-shooting reports and complaint handling, etc.</li> <li>...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basic)</p> <ul style="list-style-type: none"> <li>Improving the transparency of service</li> <li>Improving the workflow of business extension and application for installation, marketing service and rush repair in case of failure, etc.</li> <li>24-hour accepting business consultation, information enquiry, trouble-shooting report and service complaint</li> <li>Providing a variety of convenient service modes and barrier-free electricity service</li> <li>...</li> </ul>
Mutual-win partnership responsibility	 <p><b>Win-win responsibility</b> (User/Corporation mutual win)</p> <ul style="list-style-type: none"> <li>Guide users to use electricity in a safe, scientific and economical manner</li> <li>Innovating the service modes for customer consultation, recovery of electricity charges and complaint handling</li> <li>Opening the centralized purchasing platform to users and providing optimized scheme for power utilization</li> <li>Inviting users to experience the power supply services</li> <li>...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p> <ul style="list-style-type: none"> <li>Making joint endeavors together with the government and related social organizations, guiding and encouraging users to purchase green power supply and support the development of renewable energy sources</li> <li>Encouraging users to use green and energy-saving equipment and technology, advocate the green production and green livelihood</li> <li>Encouraging users to participate in supervision of the Corporation's industrial practices, and continuously improving the Corporation's service ability</li> <li>...</li> </ul>





#### Innovating service mode to support the construction of key projects.

To meet the electricity demand for accelerating the construction of Beijing-Shanghai high-speed railway and other electrified railways, SGCC has established a leading group for power supply to electrified railways, strengthened research and guidance of power supply service to railways, planned and improved the power supply service scheme so as to provide quality and efficient services for ensuring electricity supply of railway construction.

#### Creating a sound electricity consumption environment to help enterprises survive the crisis.

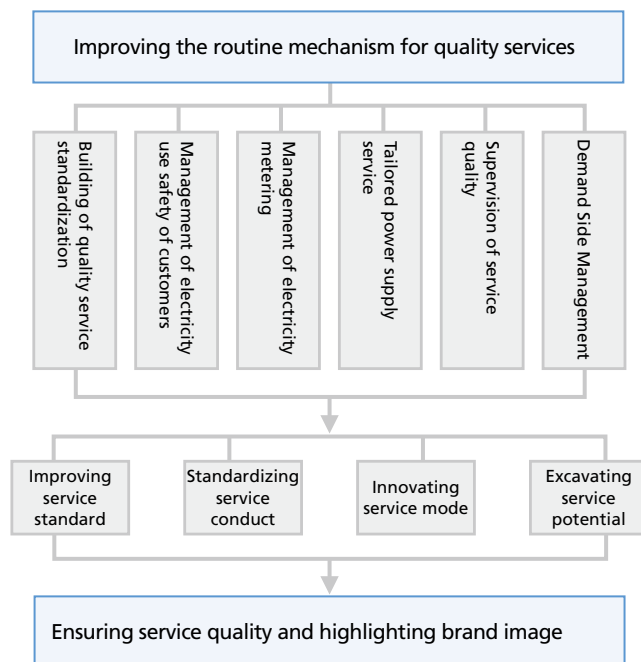
SGCC Gansu Company, adhering to the concept of "sincere service and seeking development with joint efforts", carries out the "linking" work mechanism of customer maintenance and grid maintenance to reduce losses arising from repetitive power failure, thus realizing the win-win partnership of enterprise benefits and social benefits. SGCC Zhejiang Company helps textile enterprises to improve electricity consumption schemes and advises customers to adopt a variety of methods to use electricity in a reasonable and economical way and save expenditure on electricity.



### Responding to the financial crisis and carrying out the deployment of "ensuring growth, safeguarding people's livelihood and guaranteeing stability"

Serving the construction of national key projects, guaranteeing the electricity service demand of key projects, and ensuring high-quality commissioning of projects, SGCC accomplished tasks for guaranteeing the power supply to at least 3822 key projects all the year round.

#### Improving the routine mechanism for quality services



#### Strengthening the construction of quality service standardization.

Carrying out the "'Ten Promises' for Power Supply" and the "'Ten Prohibitions' for Employees' Service Conduct", and establishing a uniform standard for power supply service and customer service.

#### Intensifying management on electricity use safety

SGCC strengthened the electricity use safety management and carried out elimination of hidden troubles, intensified emergency management and emergency control and established the "Measures for Emergency Management for Power Supply Service of SGCC" to improve the emergency handling capacity for emergencies. In addition, we cooperate with the government to carry out orderly electricity use management, regularly compiled the orderly electricity use scheme and built a routine mechanism for orderly power use.



**Intensifying management of electricity metering.** SGCC, under the authorization of the Government, established a management system for state grid metering featuring “complete system, advanced technologies, scientific management and efficient operation”, to promote the technical progress in metering, elevated the smart level of the metering system, and met the metering requirements of customers.

**Strengthening tailored power supply service.** SGCC innovated service approaches and implemented a variety of new payment methods. It pushed the power supply service into communities, put into operation mobile operating carts, and implement “one-stop” service and many other tailored service approaches to facilitate customers to access to various businesses. In addition, it established “electric power opening day” to increase the channels of “face-to-face” communication and exchange with customers.

#### Providing convenience for Beijing citizens to pay electricity charges

SGCC Beijing Company opens the “three-through” project for paying public service fees and convenient electricity sales service, and this is the first public service project realizing the function of “All-In-One-Card” in Beijing. All the 4.7 million card ammeter customers and the 136,000 network ammeter customers may purchase electricity through over 300 UnionPay self-service payment terminals and may also pay electricity charges with a card at the electricity sales counter of banks and at the business offices of the electricity company.

**Strengthening the supervision over service quality.** SGCC implemented close-loop management over power supply service, put the service under a controllable condition. It promoted a centralized mode for handling complaints and reports and intensified monitoring and assessment, so as to have all complaints of customers “replied to, analyzed, corrected and assessed”. It accepted governmental and social supervision and participated in industrial practice appraisal, thus continuously upgraded the service quality of power supply.

**Strengthening demand side management.** SGCC played its part as an implementation principal for demand side management, SGCC has cooperated with the National Development and Reform Commission to publish the “Measures for Demand Side Management”, thus filled the gap of rules for demand side management at the national level. It organized the compilation of the “Manual for Implementing Projects on Demand Side”, and put forward a practical mode for carrying out projects of demand side management in China.



On August 11, 2009, Chengdu Shuangliu Airport suffered power failure over a large area owing to malfunction of a 110kV transformer substation. SGCC Sichuan Company participated in the urgent repair, helping the airport to restore power supply in time. While the Sichuan Company was generally held responsible for this large area outage, it was later disclosed by media that this 110kV transformer substation was constructed, operated, and maintained by the Shuangliu Airport itself, and SGCC did not need to assume the responsibilities in this accident. How does SGCC regard such events in which outages over large areas are actually caused by users while SGCC is wrongly held responsible?

- The first and foremost responsibilities of SGCC are to put an end to power failure over large areas and ensure social and public security.
- According to the provisions of national laws, the construction and maintenance of power supply facilities should strictly follow the principle of “the property rights owner shall be responsible for power supply safety”. However, since the safe power supply to major users, such as the civil aviation, railway, water supply, and major sports stadiums, etc., is concerned with the order of social production and life, SGCC attaches great importance to power supply safety and has formulated pertinent contingency plans. Upon every major festival and event, SGCC will regularly check and eliminate risks and carry out comprehensive rectification. In case of any contingency like the power failure in Shuangliu Airport, SGCC will quickly start the contingency plan and help to restore power supply as soon as possible, thus minimizing losses and unfavorable impact on the communities.
- Although the public have certain misunderstanding on the boundary of SGCC’s safe power supply responsibilities, such misunderstanding also reflects their anticipation of SGCC. It is the greatest wish of SGCC to ensure safe and reliable power supply and safeguard social and public security.



The 2010 Shanghai World Expo, which attracts worldwide attention, is approaching day by day. How will SGCC make use of its successful experience during the Beijing Olympics to ensure the safe and reliable quality power supply for the Shanghai World Expo?

In 2008, SGCC registered the record of “zero error and zero accident” in power supply in the history of the Olympics, accumulating valuable experiences in safeguarding major power supply. The Company will carefully summarize outstanding practices in organization and leading of power supply guarantee, formulation of power supply guarantee scheme, establishment of power supply guarantee team, and emergency plan for power supply guarantee, etc., and make in-depth analysis over special advantages in ensuring safety power supply with joint efforts of the government, power generation enterprises, stadiums, and other related parties, as well as in conglomerate operation of the Company, striving for creating new achievements in guaranteeing power supply for the Shanghai World Expo.

At present, SGCC, adhering to the principle of “orderly guidance, concerted cooperation, full preparation, and in-place guarantee”, strengthens organization and leading, details the implementation of the scheme for ensuring power supply for the World Expo, accelerates the construction of the key power transmission channels, makes great efforts in maintaining the operation of key stations and lines, and improves the emergency guarantee scheme, so as to make a full preparation for ensuring the Shanghai World Expo with safe and reliable quality power supply.

## Fully strengthening the construction of the service brand of “State Grid”

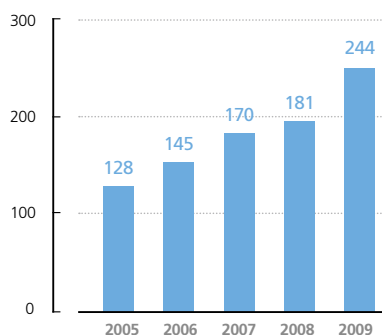
With unified power service hotline “95598”, service window logos, connotation of service brand, and service brand standards, SGCC is building a unified service brand of “State Grid”.

All departments and subsidiaries of SGCC actively integrate service resources and provide tailored services in combination with local features and enterprise background. SGCC Hebei Company provides a 10-minute electricity sales service circle in urban areas, Zhejiang Company the first 24-hour smart business window, Jiangsu Company the tailored service of “electric power examination”, Fujian Company the activity of “serving Taiwanese businessmen and warming Haixi”; the quality service practices of SGCC brand building have been established one after another across the nation.

The fulfillment rate for “Ten Commitments” of SGCC’s power supply service has maintained 99.99% for the latest four consecutive years, and the overall service quality witnesses continuous improvement. All agencies are teeming with quality service teams, such as Li Qingchang Party Member Service Team and Shaanxi Erbao Emergency Repair Service Team, as well as many quality service stars.

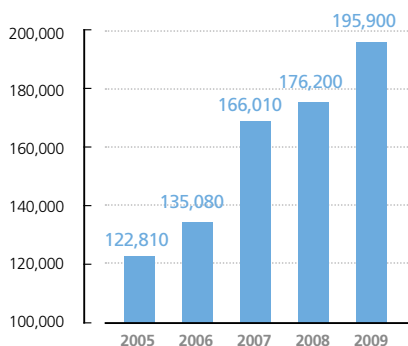
Number of customers

Unit: million



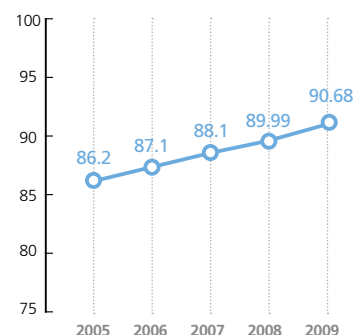
Newly connected capacity

Unit: MVA



Market share

Unit: %



## Participation of Stakeholders — Participation of Users

Type of participation	Content	Mode	Guarantee mechanism
<b>Notification of information</b> (Corporation → User)	<ul style="list-style-type: none"> <li>Disclosing legal information (electricity charge, electricity charge quality and related enterprise qualifications, etc.)</li> <li>Disclosing information on the general concerns of the users (method of payment, hotline for service and rush repair and workflow of business extension and application for installation, etc.)</li> <li>Disclosing information on major events (outage, emergency power supply and disposal of major power supply events, etc.)</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Bulletin at business halls</li> <li>Announcement of information on website</li> <li>Brochures</li> <li>Media bulletin</li> <li>Conferences</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Perfecting and improving the power supply service information disclosing system</li> <li>Integrating the power supply quality and users satisfaction into the performance assessment system of the Corporation</li> <li>Establishing quality service capability construction system</li> <li>Implementing management of relationships among customers and connecting users' power utilization information</li> <li>Regularly collecting users' feedback information and determining their major concerns</li> <li>Releasing the CSR Report</li> <li>...</li> </ul>
<b>Accepting feedbacks</b> (User → Corporation)	<ul style="list-style-type: none"> <li>Opinions, suggestions, complaints, anticipations, and requirements of users</li> <li>Learning the satisfaction degree of users</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>95598 service hotline</li> <li>Network feedback platform</li> <li>Conducting regular investigation on satisfaction degree</li> <li>Carrying out survey over industrial practice building</li> <li>Consultation of expert and public opinions</li> <li>...</li> </ul>	
<b>Dialogue and communication</b> (Corporation ↔ User)	<ul style="list-style-type: none"> <li>Learning and jointly determining major concerns of specific users</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Holding users' meeting</li> <li>Visiting users</li> <li>Participating in associations and forums</li> <li>Power supply experience of users</li> <li>...</li> </ul>	
<b>Joint action</b> (User ↔ employee)	<ul style="list-style-type: none"> <li>Jointly establishing action plans for solving major problems</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Participation in major projects</li> <li>Checking and eliminating risks</li> <li>Industrial practice appraisal</li> <li>...</li> </ul>	

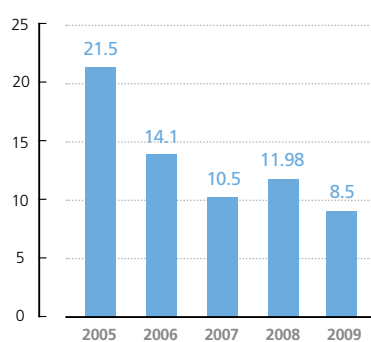
Voltage qualification rate of urban end-users

Unit: %



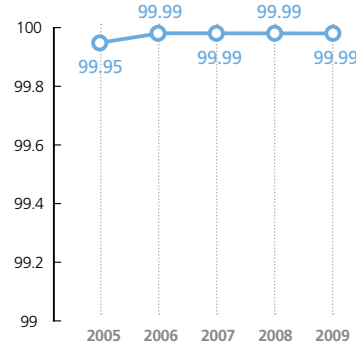
Urban customer average interruption duration

Unit: hour/customer



Fulfillment rate for the "Ten Promises" on power supply service

Unit: %







## Responsibilities in Serving Agriculture, Countryside and Farmers






In 2009, the “Power for All” Project organized and carried out by SGCC in Tibet entered the last tough period, bringing electricity to 22,000 households and 90,000 farmers and herders in Tibet.

SGCC implements the Central Government’s arrangement of building the new socialist countryside, carefully performs its responsibilities for serving agriculture, countryside and farmers, and carries out the rural power development strategy of “new countryside, new electricity and new service” for strengthening the construction of grid infrastructure in rural areas and improving the level of quality service for rural power, so as to promote prosperity of rural areas, agricultural development and farmers’ livelihood.



## Performing responsibilities in serving agriculture, countryside and farmers

Type of responsibility	Specific content
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p> <ul style="list-style-type: none"> <li>Enforcing the regulations for safety production of rural power and ensuring the safe operation of rural power grids</li> <li>Enforcing the policy of "one grid, one tariff"</li> <li>Managing rural electric facilities under laws</li> <li>Implementing related national standards and carrying out the construction and upgrading of rural power grids</li> <li>Ensuring that power supply quality is in conformity with the national and industrial standards</li> <li>...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basic)</p> <ul style="list-style-type: none"> <li>Implementing the rural "Power for All" Project to promote universal service and make electricity civilization available to every household.</li> <li>Improving the structure of rural power grids and continuously enhancing the quality of power supply and service level</li> <li>Cooperating with the government to rationalize the rural power management system in local self-supply areas and reduce the farmers' burden of electricity charges</li> <li>Strengthening the management of power utilization safety in rural areas and reducing the rate of power utilization accident and casualty</li> <li>...</li> </ul>
Mutual-win partnership responsibility	 <p><b>Win-win responsibility</b> (Agriculture, countryside and farmers / Corporation mutual win )</p> <ul style="list-style-type: none"> <li>Implementing the "New Countryside, New Power and New Service" development strategy to provide safe, economical, clean and sustainable electricity guarantee for the construction of the new socialist countryside</li> <li>Delivering power utilization safety knowledge in rural areas to improve the ability of farmers for using electricity in a safe, scientific and conserving manner</li> <li>Strengthening training in rural area</li> <li>...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p> <ul style="list-style-type: none"> <li>Supporting the government to implement the rural grid improvement projects and reform of rural electric power management</li> <li>Assisting the local government in implementing economic &amp; social development and energy source planning, being a good electric power commander for local economic &amp; social development</li> <li>Assisting the government in carrying out the activities and projects of "Rural Electric Power Going to Countryside", "Electricity in Place of Fuel" in rural areas to promote prosperity of rural areas, development of agriculture and affluence of farmers</li> <li>...</li> </ul>



Serving the overall development of experimental areas for the construction of the new countryside

Hubei Provincial government established Xianhong experimental area for the new countryside construction, including 14 towns totaling 407 villages, 197,800 households and 754,500 people altogether, covering an area of 1467 km<sup>2</sup>.

SGCC Hubei Company, focusing on increasing the incomes of farmers and construction of modern agriculture and improvement of people's livelihood, to promote the enthusiasm of the government, enterprises and farmers, and arranged funding in three phases, amounting to RMB 58 million yuan, to strengthen the construction of infrastructure for rural power grids and improve the level of rural power supply, thus providing strong electricity guarantee for implementing the national policies and arrangements supporting the development of "agriculture, countryside and farmers".

#### Warm-hearted services win the trust of farmers

At the beginning of June, 2009, Lingbi County of Anhui Province was attacked by tornado, and more than 5000 grid poles fell broken. SGCC Anhui Company carried out emergency repair day after day, restoring power supply by mid of July. July 13 was the day to pay electricity charges for Mabeitai District. Lei Xiuping, a meter reader, received one mid-aged man, who said, "I am paying my two-month fees. You have worked so hard in the emergency repair, and I feel I must make up for payment of all my pending electricity charges!" Lei Xiuping replied with a smile, "It not late to pay now!" This farmer had postponed two-month fees before the tornado, but he was determined to make up for the overdue charges for he himself saw the painstaking work of power supply workers.

#### Supporting home-going migrant-workers to start business

Affected by financial crisis, many working men out of hometown return to their hometowns to start a new business. SGCC Jiangxi Gao'an Company opens a "Green Channel" for power utilization of home-going migrant-workers who will start a new business. Any peasant-workers provided with power utilization conditions will be treated fast and in priority; for migrant-workers who will start large-scale businesses, Account Managers will be assigned to provide onsite services to support the pioneering works. Fast and convenient power supply service drives the migrant-workers' passion in establishing their own businesses, and various half-industrial & half-agricultural small-scale processing enterprises have settled in countryside.

## The last tough period of the "Power for All" Project in rural areas



Farmers and herders are helping carry the poles



Farmers and herders watch TV at home

On September 30, 2008, Qinghai Province realized "Power for All". Thus within the service areas of SGCC, with the exception of Tibet, achieved "Power for All" in rural areas. By the end of 2009, SGCC has accumulatively solved the electricity availability problem of 1.262 million households and 4.756 million people without electricity.

Since the start of the "Power for All" project in the rural areas in Tibet, SGCC has invested RMB 2.38 billion yuan altogether and solved the problem of electricity use for 119,000 households and 539,000 million people without access to electricity, accomplishing the "Power for All" tasks in 16 counties, including Gyangze County of Xigaze, Nagchu County of Nagchu Prefecture, and Gar County of Ali, etc.

## Pushing forward the development of new rural electrification in an all-round way

SGCC closely combines the development of new rural electrification and construction of the "ecological village", "civilized village", and "demonstrational village" led by the government and pushes them forward in a harmonious way. In 2009, altogether 132 counties, 1687 towns and 30363 villages achieved electrification. Since the implementation of the project, 302 counties, 3706 towns and 64933 villages achieved electrification in accumulation.

## Management level of rural power enterprises witnessing continuous elevation

Energetically promoting eight key tasks in the construction of the rural power standard system, structuring of specialized operation organization, onsite standard operation, application of "typical design" for the rural grid, "two-clearings" of power transformation and transmission facilities to save energy conservation and reduce loss.

SGCC, carries out in-depth construction of rural power standardization, unifying the management regulations, management mechanism, construction standard and workflow of county-level companies; in this way, the Corporation's capacity and level in serving "agriculture, countryside and farmers" are improved significantly.



## Implementing rural grid improvement project and serving the national policy to drive domestic demand

In accelerating the rural grid improvement, SGCC arranged and implemented three batches of middle and western rural grid improvement projects and electricity development projects in areas without electricity accesses, with the aim of expanding domestic demands, accumulatively investing RMB 26.45 billion yuan all year round, building and reconstructing 110 (66) kV lines amounting to 2,827 km, and 277 110 (66) kV transformer substations; 35 kV lines amounting to 5,712 km, and 588 35 kV transformer substations; 10 kV lines amounting to 50,000 km, 57,000 transformers, and low voltage lines amounting to 96,000 km.

## Deepening rural power supply service and serving national policies for supporting and benefiting rural areas

Serving "home appliances going to the countryside". SGCC organized the printing and circulation of the "Manual of Power Supply Service for 'Home Appliances Going to the Countryside'", introducing knowledge about using electricity in a safe, scientific and conserving manner, increasing consultation service regarding electricity use for household appliances; it also opened business "green channel" and implemented integral solutions for rural power supply service, so as to help farmers to solve electricity troubles concerning new home appliances.



Upgrading of medium and low-yield farmland. SGCC increased investment in the construction of power supply facilities for agricultural irrigation in main grain production areas and big agricultural provinces and implemented the pilot project of "Electrification of motorized wells on farmlands" to facilitate the improvement of agricultural irrigation and increase yields of crops, and such projects were warmly welcomed by the government at all levels and a vast number of farmers.

Supporting the development of local agriculture. SGCC increased investment in the construction of distribution networks of 10kV and below in the aspects of building standard, power quality reduction of losses and energy conservation, grid facilities and management, and power supply service, etc., to ensure the power supply for the long-term development of agricultural science and technology demonstration parks and to promote the development of local industries relating to the agriculture across the country.

Protecting agriculture, fighting against draught and ensuring harvest; at the beginning of 2009, Henan, Hebei, Shanxi and other provinces were stricken by a rare draught. SGCC quickly launched arduous campaigns against the draught and established draught-fighting emergency network. In this way, SGCC provided strong support for solving power supply to agricultural irrigation and grain production.



The issue of "electricity at sky-high price" in Jiangjin, Chongqing aroused extensive attentions from all social sectors. Where does the root of "electricity at sky-high price" lie in?

In view of differences in management systems, rural power supply is divided into two categories: inside SGCC and outside SGCC. The rural areas with power supply managed by SGCC have realized "one grid, one charge" for tariff both urban and rural residents, and national standard has been executed strictly. However, the rural power services areas not managed by SGCC have nonstandard and indiscreet charging rates for electricity owing to unfinished upgrading of the rural grid or disorderly management and other factors.

To take Jiangjin, Chongqing as an example, Jiangjin Power Supply Company held by SGCC Chongqing Company has accomplished upgrading of the agricultural grids in its supply areas and realized "one grid with identical charge" for both urban and rural residents, the price for residential lighting electricity is up to RMB 0.52 yuan/KWh. However, in the areas where Yangshi Electric Power Company, a small local hydropower enterprise in Jiangjin, is responsible for power supply, the rural power grid did not undergo upgrading and the collection of electricity charges violated the provisions of the Chongqing Price Department on implementing "one grid with identical charge" and "meter reading to each house" for rural residents; meanwhile, line losses and management losses were apportioned to every household. As a result, the electricity charge for local rural households was extremely high, thus bringing about the issue of "electricity at sky-high prices" exceeding RMB 60 yuan per KWh at the maximum.

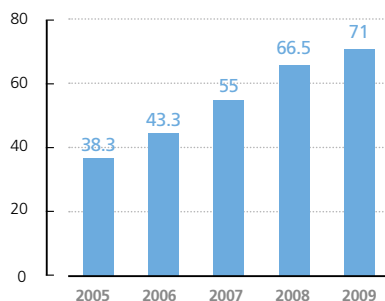
In order to solve the problem of "electricity at sky-high price" in Jiangjin, Chongqing, SGCC Chongqing Company took initiative to reach an agreement with the Chongqing Municipal Government. In the principle of "Government leading and enterprise implementing", the power supply areas of Jiangjin Yangshi Electric Power Company were fully taken over by the Chongqing Jiangjin Power Supply Company, which was to invest over RMB 20 million yuan to finish the rural grid upgrading from September 2009 on. Hence, it ensured that the common people there might enjoy the beneficial policy of "one grid with identical charge".

## Participation of stakeholders — participation of agriculture, countryside and farmers

Type of participation	Content	Mode	Guarantee mechanism
<b>Notification of information</b> (Company → agriculture, countryside and farmers)	<ul style="list-style-type: none"> <li>○ Disclosing legal information ( policy of “Three Publicities and Four to Households”, electricity charges and charging standards etc. )</li> <li>○ Disclosing information on “agriculture, countryside and farmers” that is of general concern to the society ( knowledge on using electricity in a safe and conserving manner, charging method and workflow of business extension and application for installation, etc. )</li> <li>○ Disclosing information on major events concerning the rural area ( “Power for All”, drought fighting and electric power conservation, convenience activity of “Home Appliances Going to the Countryside”, )</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Announcement of information on the website</li> <li>○ Notice at business office</li> <li>○ Regular media disclosure</li> <li>○ Press conference</li> <li>○ booklet and handbill, etc.</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Strengthening the construction of organizational structure and establishing rural power administrative departments of different levels</li> <li>○ Perfecting the system for disclosing the information related to serving agriculture, countryside and farmers</li> </ul>
<b>Accepting feedbacks</b> (Agriculture, countryside and farmers → Company)	<ul style="list-style-type: none"> <li>○ Listening to opinions, suggestions and complaints of farmers and related groups</li> <li>○ Learning anticipations and requirements of farmers and related groups</li> <li>○ Investigating the satisfaction degree of rural power service</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ 95598 service hotline</li> <li>○ Network feedback platform</li> <li>○ Investigation of the satisfaction degree of power supply quality and service in rural areas</li> <li>○ Survey of industrial practice building</li> <li>○ Expert consultation meeting</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Implementing the performance evaluation on responsibilities of serving agriculture, countryside and farmers</li> <li>○ Strengthening the construction of ability of serving agriculture, countryside and farmers</li> </ul>
<b>Dialogue and communication</b> (Company ↔ agriculture, countryside and farmers)	<ul style="list-style-type: none"> <li>○ Learning and jointly determining the core concerns in serving agriculture, countryside and farmers</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Special governmental symposium</li> <li>○ Serving agriculture, countryside and farmers meeting</li> <li>○ Onsite inspection on serving agriculture, countryside and farmers</li> <li>○ Expert forum</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Investigating the core concerns in serving agriculture, countryside and farmers</li> <li>○ Continuously strengthening the communications and cooperation with agriculture, countryside and farmers competent departments, agriculture-related organizations and experts</li> </ul>
<b>Joint action</b> (Company ↔ agriculture, countryside and farmers)	<ul style="list-style-type: none"> <li>○ Jointly formulating and implementing the “New Countryside, New Power and New Service” development strategy and promoting such major topics as electrification in new countryside and protection of rural power facilities, etc.</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Participation in major projects</li> <li>○ Checking and eliminating hidden hazards regarding the safety of rural power</li> <li>○ Protection of rural power facilities</li> <li>○ Industrial practice appraisal</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Releasing the CSR Report</li> <li>...</li> </ul>

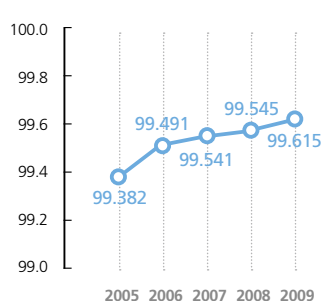
Investment in the rural grid

Unit: RMB billion yuan

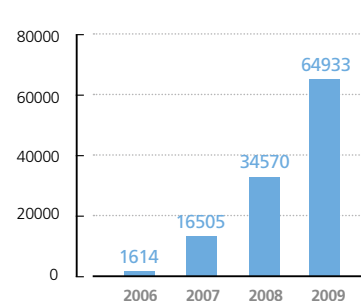


Reliability rate of rural grid power supply

Unit: %



Cumulative number of electrified villages





In 2009, the Central Government issued the No. 1 document "Opinions on the CPC Central Committee and the State Council on Promoting the Stable Development of Agriculture and Increasing Farmers' Incomes". Which specific measures did SGCC take in implementing the requirements of the Central Government?

SGCC has taken measures in five aspects:

First, SGCC accelerated the rural grid construction to push and drive forward home demands and invested a cumulative total of RMB 26.45 billion yuan in 2009.

Second, SGCC further implemented the rural "Power for All" Project, and solved the electricity availability problem for 1.262 million households and 4.756 million people without access to electricity within our service areas since 2006.

Third, SGCC implemented the project of "electrification of motorized wells on farmlands" in provinces of Henan, Hebei and Heilongjiang which were attacked by heavy draught, to support the upgrading of medium- and low-yielding farmlands and assist to achieve big harvest.

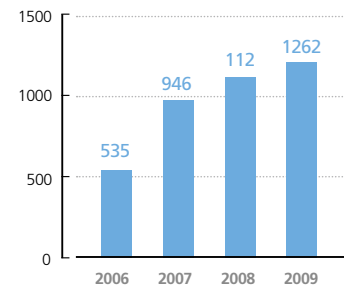
Fourth, SGCC pushed forward the development of electrification in new rural areas, with 132 counties, 1687 towns and 30,363 villages achieving electrification.

Fifth, SGCC carried out fixed site electric power poverty alleviation, actively responding to the call of the Central Government. It has made great efforts for 15 consecutive years since 1995 in helping Zigui County, Changyang County, Badong County and Shennongjia Forestry to relieve poverty.



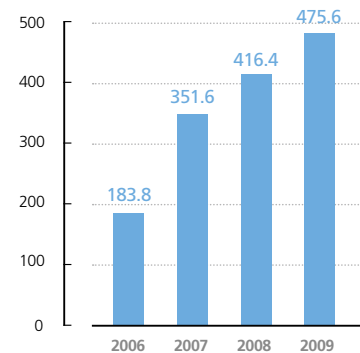
#### Incremental number of households connected to the electricity

Unit: thousand households



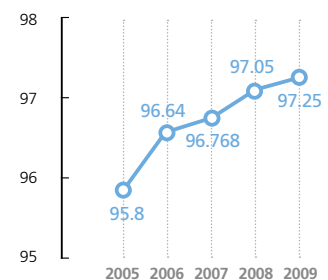
#### Incremental population of electrification

Unit: thousand persons



#### Voltage Qualification Rate for Rural End-users

Unit: %



Note: Indicators of responsibilities in serving agriculture, countryside and farmers have been adjusted according to the latest statistics.





## Responsibilities on Employee Development







In 2009, SGCC implemented the strategy of “vitalizing the Company through human resource development”, perfected the training and education system, and fully strengthened the construction of the staff team by pushing forward the “1551” talents cultivation project.

SGCC, putting into practice the concept of “talent being the foremost resources”, carefully performed its responsibilities on the development of employees, protected their legal rights and benefits, ensured their safety and health; proactively intensified training of employees, deepened democratic management of employees, and improved the mechanism for the training, selection and promotion to support the Company’s sustainable development with the comprehensive development of employees.





## Performing responsibilities on employee development

Type of responsibility	Specific content
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p> <ul style="list-style-type: none"> <li>Respecting and ensuring the international human rights and labor standards signed by the Chinese government, putting an end to child labor, forced labor and discrimination in employment and occupation</li> <li>Comprehensively enforcing the "Labor Contract Law" and related social insurance laws and regulations, regulating the management of labor relations, and purchasing various social insurances for employees according to laws</li> <li>Strengthening the occupational sanitation and health management according to laws</li> <li>Providing protective measures to employees necessary for their positions under the <i>Production Safety Law of the People's Republic of China</i> and other laws and regulations</li> <li>Ensuring employees to adequately exercise their democratic management right under the <i>Trade Union Law of the People's Republic of China</i> and other laws and regulations concerned</li> <li>...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basic)</p> <ul style="list-style-type: none"> <li>Fully supporting the ten principles of the UN "Global Compact"</li> <li>Establishing the system of staff representatives' congress and promoting democratic management by employees</li> <li>Adhering to principle of "open, just, and fair" recruitment, strengthening the management of employees' career development planning, and safeguarding the rights and benefits of the retirees</li> <li>...</li> </ul>
Mutual-win partnership responsibility	 <p><b>Win-win responsibility</b> (Employees / Corporation mutual win)</p> <ul style="list-style-type: none"> <li>Implementing regular medical check-up and strengthening psychological health guidance to ensure the physical and psychological health of employees</li> <li>Strengthening the training planning and improving the training system for all-staff training</li> <li>Making smooth communication between the Company and employees, and encouraging them to offer constructive suggestions</li> <li>...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p> <ul style="list-style-type: none"> <li>Supporting the employees to carry out volunteer activities, carry forward the social morality, service the communities, protect the environment and promote the construction of harmonious society</li> <li>Supporting the employees to carry out innovative activities through rationalization proposals, small inventions and creations, tackling technical problems and QC group activities, etc.</li> <li>Supporting the employees to upgrade their abilities of self-learning, communication, cooperation, organization, coordination, innovation and self-management</li> <li>...</li> </ul>

## The top ten characters moving SGCC



### **Ning Zhizhong**

A line inspector of primitive forest



### **Xu Xintao**

An era pioneer active in innovation



### **Li Yuancheng**

Keeping a life and death promise



### **Li Hongying**

A self-surmount winner in life



### **Qiu Bingxia**

Loving mama of nine kids



### **Wang Zhigang**

Lightening every lamp in new Beichuan County



### **Song Ying**

Seeding the hope with love



### **Abulikemu**

A poon taking its root in the desert



### **Fu Zhongyang**

A backbone for ice resistance and electricity supply



### **Xie Hui**

Lightening the costal region with whole heartiness

## Safeguarding legal rights and benefits of employees and ensuring safety and health of employees

Fully enforcing the "Labor Contract Law" and other laws and regulations, SGCC signed labor contracts with employees to regulate the management of labor relations. The Company respected individual dignity and freedom, stressing the balance of work and life of employees. SGCC helped to address practical living problems of employees through establishing employees' mutual assistance funds and carrying out the "sending warmth" activity, etc.

SGCC actively exerted the functions of appealing, complaining, and reporting mechanism by employees; established the complaint and report handling office at all levels to provide employees with a variety of channels to appeal, complain and report, and keep confidentiality for the reporters to ensure their safety. In strict conformity with given procedures, it carries out investigation and examination over the issue appealed, complained and reported on and handles such issues accordingly.

By improving working conditions and occupational health and safety management. SGCC promoted the concept of health, established health archives for employees, carried out regular physical examination, and paid attention to the psychological health of employees.

By implementing "Safety Project", SGCC organized employees to receive safety training and enhanced the self-management and restriction mechanism for employees to improve their safety competence; carried out the activity of "against rule violation" and strengthen labor protection to ensure the personal safety of workers.

SGCC established 1736 activity centers and 50 universities for aged employees to provide medical care, learning materials, entertainment, and activities to senior retirees.

## Pushing forward the construction of corporate culture and deepening democratic management of employees

SGCC builds up excellent corporate culture based upon "four-unification" (unified core values, development objective, brand strategy and management standard), consolidates the concept of "One State Grid", and sets up the consciousness of "I'm a State Grid member". It inspires employees to carry forward the corporate spirit and fully exert enthusiasm, initiative spirit and creativity so as to realize the joint development of employees and the Company.

SGCC maintains a multi-level democratic management system from the group company to grass-roots enterprise teams, so as to fully bring into play the functions of staff representatives' congresses at all levels. It established an on-site inspection system of staff representatives for fully exercising the functions of the staff representatives in democratic management and supervision. It carefully outlooks the proposals of staff representatives' congresses, with a handling rate of proposals up to 100%. The Company also establishes the President contact person system to encourage employees to offer suggestions and recommendations.



## Improving employees' training in an all-round way and establishing the employee development mechanism

SGCC improves the training mechanism and establishes a multi-element training system, formulating corresponding training planning pertinent to different positions. It enhances and integrates the training education resources and strengthens the construction training teacher team.

Through carefully implementing the "1551" talent cultivation project, SGCC strengthens the construction of four talent groups, respectively planning the career development channels for all types of employees.



Actively conducting the career planning for young employees

Strengthening the exchange and cultivation of employees, to realize cross-positioning of managers and their tempering in Xinjiang and Tibet, SGCC sent in the headquarters 24 excellent employees to Tibet and Xinjiang for 3-5 years, so as to cultivate and train the employees in hard places and support the development of Tibet and Xinjiang. In 2009, SGCC selected 92 managers from subsidiaries to the Headquarters for being trained and fostered.



Establishing SGCC Management College and SGCC Technical College



It is reported that that SGCC has provided all-round support for training talents in Tibet and other western areas. Could you introduce the Corporation's plan for training talents in the west and assistance to talents in the western regions?

SGCC attaches great importance to training of and assistance to talents in the west, and has particularly set "the plan of training excellent young talents for power enterprises in west China" in the "11th Five-year Plan" education and training plan.

According to the plan, SGCC will select young talents from electric power enterprises in the five western provinces as well as Tibet to have centralized training and then send them to electric power enterprises in the east to receive a half-year practical training on their assigned post. In 2009, SGCC selected and sent 40 talents specialized in technology and management to Tibet for assistance, and sent 60 talents of electric power enterprises in the five western provinces and Tibet to the eastern region to receive practical training, organized the assistance training for Tibetan talents in relation to financial management, power marketing and human resources and have trained 330 specialized talents for Tibet Electric Power Company.

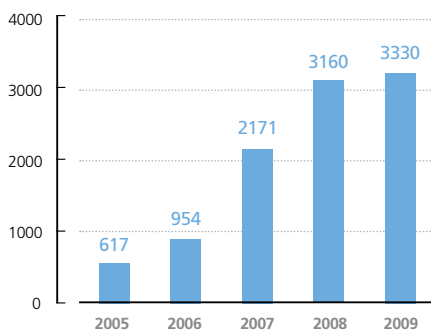
In the future, SGCC will further strengthen the training of talents from the western areas, provide in-depth assistance to western talents, and establish a long-term work mechanism for assistance.

## Participation of Stakeholders — participation of employees

Type of participation	Content	Mode	Guarantee mechanism
<b>Notification of information</b> ( Company → Employees )	<ul style="list-style-type: none"> <li>○ Disclosing legal information ( salary, vacation, safety and health, working conditions etc. )</li> <li>○ Disclosing issues of the general concern of employees ( welfare standard, training opportunities etc. )</li> <li>○ Disclosing other major information concerning the interests of employees ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Corporate manual</li> <li>○ Announcement of information on the website</li> <li>○ Corporate regulations and rules</li> <li>○ Increase transparency ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Establishing employees democratic management system such as workers' congress and openness of factory affairs</li> <li>○ Perfecting and improving the employees' responsibility information disclosure system</li> <li>○ Integrating the implementation of all-staff training, promotion of employees democratic management and strengthening of construction of employees groups into the performance assessment system of the Company</li> </ul>
<b>Accepting feedbacks</b> ( Employees → Company )	<ul style="list-style-type: none"> <li>○ Listening to the opinions, suggestions and complaints of employees</li> <li>○ Learning the anticipation and requirements of employees</li> <li>○ Investigating the satisfaction degree of employees ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Employees' hotline</li> <li>○ Internal media</li> <li>○ Special report</li> <li>○ Employees' suggestion box</li> <li>○ President Contact Person</li> <li>○ Internal complaint and report handling mechanism ...</li> </ul>	
<b>Dialogue and communication</b> ( Company ↔ Employee )	<ul style="list-style-type: none"> <li>○ Learning and jointly determining major concerns of employees ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Training of employees</li> <li>○ Acceptation of complaints and reports</li> <li>○ Symposium of staff representatives</li> <li>○ Symposium of President Contact Person ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Establish regular employee satisfaction investigation system</li> </ul>
<b>Joint action</b> ( Company ↔ Employee )	<ul style="list-style-type: none"> <li>○ Jointly formulating the action plan for solving major issues ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Staff representatives' congress</li> <li>○ Proposal of staff representatives' congress</li> <li>○ Negotiation on collective labor contract</li> <li>○ Participation of staff representatives' congress in major decision-making</li> <li>○ On-site inspection of staff representatives ...</li> </ul>	<ul style="list-style-type: none"> <li>○ Establishing employees hotline, mailbox and network exchange mechanism</li> <li>○ Releasing the CSR Report ...</li> </ul>

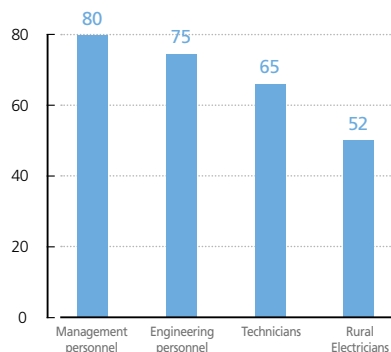
Investment in employees' training

Unit: RMB million yuan



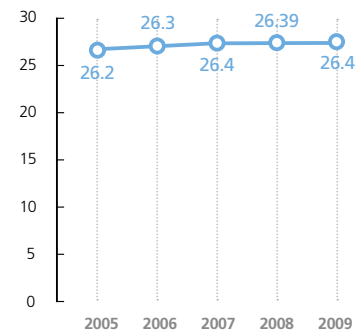
Average training hours of all employees

Unit: hour/(person-year)



Proportion of female employees

Unit: %





Could you introduce related conditions about the all-staff training and training of skilled workers?

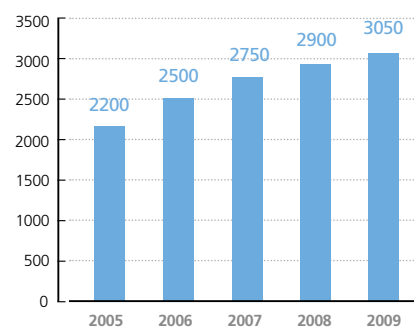
SGCC, putting into in-depth practice the concept of "talent being the foremost resources", attaches great importance to all-staff training and takes it as a strategic task to push forward and carry out. The Corporation has released the *Interim Provisions of SGCC on Education and Training*, *Provisions on the Management of SGCC Training of Skilled Workers*, and other matching rules, giving specific regulations and requirements on the planning and concrete contents of training for various personnel, and it has established a long-term mechanism for the training of employees, thus ensuring the smooth progress of all-staff training and special talent training plan.

As for the training of skilled workers, SGCC fully exercises its advantages in conglomerated operation, developing occupational competence and quality model and training specifications coverings all skilled workers of the whole Company, establishing a standardized system for training skilled workers and enhancing tailored training. 2010 is the last year of the "11th Five-year Plan", SGCC will comprehensively implement the planning for "11th Five-year Plan" training, put into practice the Company's strategy of "vitalizing the Company through human resource development", and formulate the "12th Five-year Plan" training planning, to further push forward all-staff training.



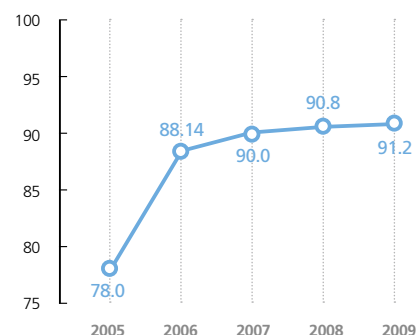
#### Employee Training Person-times

Unit: thousand person-times

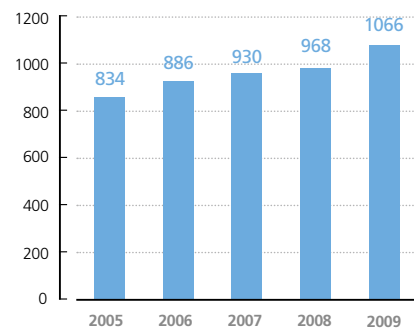


#### Training Coverage Rate

Unit: %



#### Number of Labor union organizations







## Responsibilities on Win-win Partnership







In 2009, SGCC actively explored the mode of power supply to electric vehicles and its operation mode to drive the development of electric vehicles industry, establishing the first Caoxi Charging Station for Electric Vehicles, which has been successfully put into commercial operation .

SGCC actively implemented the social responsibility concept of “adhering to legal and moral basic, pushing forward sustainable development and creating maximum values” and performed win-win responsibility. We took great effort to exercise its influence and driving force both to the upstream and downstream enterprises, working together with partners to push forward sustainable development of the Company and its partners, the industry and society.



## Performing win-win responsibility for partners

Type of responsibility	Power generation enterprise	Supplier	Design and construction enterprise	Scientific research institute	Financial institution
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p> <ul style="list-style-type: none"> <li>Abiding by relevant national rules and regulations on dispatching and transaction</li> <li>Settling electric charges as scheduled ...</li> </ul>	<ul style="list-style-type: none"> <li>Preventing corruption and commercial bribe and carrying out bidding under laws</li> <li>Timely contract payment ...</li> </ul>	<ul style="list-style-type: none"> <li>Jointly strengthening safety management and preventing risk of accidents</li> <li>Timely contract payment ...</li> </ul>	<ul style="list-style-type: none"> <li>Protecting intellectual property</li> <li>Paying for scientific research as scheduled ...</li> </ul>	<ul style="list-style-type: none"> <li>Adhering to the principle of fair competition and combating unfair competition</li> <li>Adhering compliance management and disclosing true and accurate information ...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basics)</p> <ul style="list-style-type: none"> <li>Putting into practice of the ten measures to ensure open, fair and just power distribution and increase work transparency</li> <li>Timely arranging the outgoing transmission projects and guaranteeing the timely transmission of new power supplies ...</li> </ul>	<ul style="list-style-type: none"> <li>Adhering to the principle of being open, fair and just to ensure impartial transactions</li> <li>Pushing forward independent innovation and technical advancement and driving forward the localization of key electrical equipment ...</li> </ul>	<ul style="list-style-type: none"> <li>Regulating the procedure of bidding and ensuring fair transactions</li> <li>Controlling project cost in a reasonable way to ensure an appropriate profit room ...</li> </ul>	<ul style="list-style-type: none"> <li>Creating a fair competition environment for scientific research institutions</li> <li>Formulating reasonable and feasible technical schemes to provide convenient conditions for scientific research ...</li> </ul>	<ul style="list-style-type: none"> <li>Insisting on solid utilization and improving the credit of the Corporation</li> <li>Strengthening information distribution and improving transparency of information ...</li> </ul>
Win-win partnership responsibility	 <p><b>Mutual win responsibility</b> (Win-win Partnership)</p> <ul style="list-style-type: none"> <li>Strengthening strategic cooperation and promoting the concerted development of grid and power plant</li> <li>Establishing long-term cooperation system, intensifying daily communication and sharing information ...</li> </ul>	<ul style="list-style-type: none"> <li>Carrying out joint R&amp;D in order to reduce the risk in developing new technologies</li> <li>Establishing long-term cooperation system, intensifying daily communication and sharing information ...</li> </ul>	<ul style="list-style-type: none"> <li>Jointly strengthening project management and development mutual-trusting and reciprocal relationship</li> <li>Establishing long-term cooperation system, intensifying daily communication and sharing information ...</li> </ul>	<ul style="list-style-type: none"> <li>Increasing investment in scientific research and jointly tackling technical barriers</li> <li>Establishing strategic cooperation and promoting the industrialization of achievements in scientific research ...</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening strategic cooperation and extending the Corporation's financing channels</li> <li>Improving the capital operation profits and controlling capital risk ...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p> <ul style="list-style-type: none"> <li>Jointly carrying out research into electricity and energy development strategies, promoting the uniform planning of grids and power supplies and improving layout to facilitate the concerted development of the industry</li> <li>Promoting the development of clean energy and promoting the sustainable development concept ...</li> </ul>	<ul style="list-style-type: none"> <li>Popularizing responsible purchasing, and strengthening attentions on factors including occupational health and safety, environmental protection and energy conservation, etc. during the examination of suppliers' qualification</li> <li>Popularizing the concept of sustainable development and giving priority to purchasing products including new technologies, materials and processes ...</li> </ul>	<ul style="list-style-type: none"> <li>Supporting the selection of energy-conserving and environment-friendly equipment and the adoption of green construction processes and methods</li> <li>Popularizing new equipment, technologies and processes to improve project quality ...</li> </ul>	<ul style="list-style-type: none"> <li>Actively promoting scientific innovation and jointly establishing a technical innovation system</li> <li>Jointly promoting technical achievements to facilitate sustainable development ...</li> </ul>	<ul style="list-style-type: none"> <li>Jointly managing capital risks and maintaining the stability of the financial market</li> <li>Innovating the combination of industry and financing, and promoting the concept of responsible investment ...</li> </ul>



Could you please introduce SGCC's specific measures on promoting the localization of major equipment and practical effects?

SGCC has been providing vigorous support to the localization progress of major installation, believing that it will effectively reduce the investment in energy industry and adapt to the demand of the rapid development of electricity industry in China to accelerate the localization rate of major equipment. In recent years, the Company actively supported and vigorously pushed forward the localization of major installations in the aspects of centralized bidding and purchase, combined assailing in the development of UHV key equipment, and development of key technologies, etc. making great achievements. To take the equipment for DC power transmission project as an example, the localization rate has been quickly improved to the present 100% from 30% in 2003, thus achieving qualitative leaps.

#### Persisting in harmonious development of the generator and grid

In 2009, the Corporation pushed power generation enterprises to jointly establish transaction contact officers for the plant and grid electricity market, altogether organizing its affiliated agencies and power generation enterprises to set up a team consisting of 1107 contact officers for the electricity market. In addition, SGCC has also the website for publishing electricity transaction information and improved the information publishing flow to fully disclose the information on the electricity transaction price; by actively carrying out one-stop service pilot programs, such as transaction settlement, putting new generators into commercial operation, and information publication and reporting, etc., the company has realized "revolving inside rather than outside", thus largely improving the communication efficiency of the parties and actively extending the stretching services.

### Carrying forward the sustainable development concept of "realizing the maximum comprehensive economic, social and environmental values" and jointly creating a responsible value chain

**Promoting the performance concept of "realizing the maximum comprehensive economic, social and environmental values".** By exerting its advantages – extensive business influence, many stakeholders and strong industrial driving force, SGCC explores to implement the management of social responsibilities of supply chain, drives forward its upstream and downstream partners, effectively manages the influence of its own operation to the society and environment, and coordinates to push forward its own and social sustainable development through strengthening the examination over the qualification of suppliers and social performance assessment in terms of health, safety, and environmental protection.

**Promoting the performance concept of "safety, efficiency, environment-friendliness, and harmony".** Focusing on the formation responsibility development consensus of "adhering to legal and moral basic, assembling the joint forces for the sustainable development of electricity industry, and jointly safeguarding the national energy safety", SGCC works jointly with partners to improve itself, industrial and social safety, energy utilization efficiency, resource conservation and environmental protection capacity, to encourage business partners to take into full consideration the anticipation of stakeholders and excavate the comprehensive value creating potential of the value chain.

### Constructing partnerships which are in mutual trust, complementation, and win-win partnership and jointly building up a sustainable value chain

**Jointly pushing forward the sustainable development of the power industry with power generation enterprises.** Responding to the severe tribulation arising from that power supplies are put into centralized production in large scale, SGCC has published the "Regulations for Transacting New Generator Unit into Commercial Operation (interim)" and timely arranged the combination of new generator units for achieving efficient operation in a scientific way; through strictly abiding by the laws and regulations, the Company also implemented the power dispatching transaction, and got done with such works as grid connection, cross-regional and cross-provincial power transaction, settlement of electricity charge and information release, etc. From 2005 to 2009, the capacity of regional generator units of the Company increased from 407 GW to 671GW.

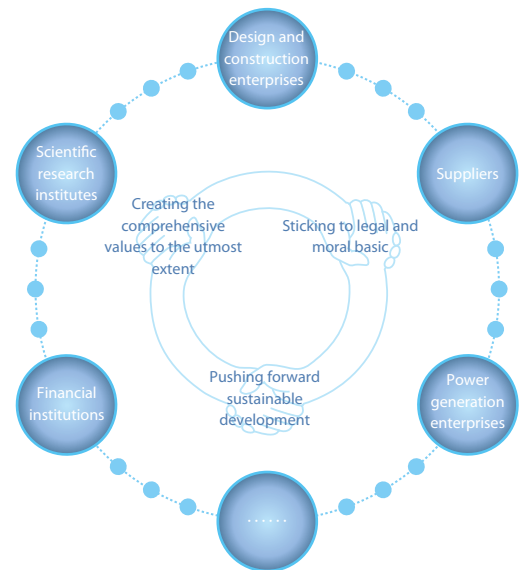
**SGCC has made all-round cooperation with design and construction enterprises to improve project quality and profit.** Working jointly to promote new equipment, technologies, and processes to improve project quality, control project cost, ensure construction safety, and reduce influence of construction to environment. Xining 750kV Substation and Tai'an Pumped Storage Power Station respectively won 2009 China Luban Prize for Construction Projects". This was the 11th time that the Company won the highest prize for constructions in China.



**Strengthening cooperation with scientific research institutes to jointly improve the capacity in scientific and technical innovations.** SGCC has cooperated with a number of universities and first-class research institutes to establish an enterprise-backed IUR system for scientific and technical innovation in power grid. In 2009, SGCC, with joint efforts, developed and manufactured a smart technical support systems for power grid dispatching, which possesses many world-leading technologies, and established the national dispatching center and an integrated national power grid dispatching system in which the grid dispatching in "North China, East China and Central China" mutually stands by.

**Jointly creating an efficient supply chain in mutual trust and support with suppliers.** SGCC has established Supply Chain Management Department to promote the new centralized bidding and purchasing mode of "Headquarters for unified organization and provincial companies for specific implementation", carried out "open, fair and just" bidding, and put an end to discrimination against manufactures, so as to ensure the compliance and efficiency of centralized bidding. It has also made joint efforts with suppliers to push forward the localization of core equipment for power transmission.

**Strengthening cooperation with financial institutions to deepen the company's intensive management of financial resources.** SGCC has improved the efficiency of capital operation, reduced capital management risks and realized the win-win partnership combination of industry and finance. In 2009, SGCC accumulatively issued three phases of RMB 90 billion yuan medium-term bills, and RMB 20 billion yuan special bond for power grid construction, and introduced RMB 40 billion yuan funds by means of accredit, special financing of the Post Savings Bank of China, etc.



#### Building a database for supplier's responsibility information

In 2009, SGCC carried out supplemental examination over the qualification of suppliers for combined appliances, breakers, isolating switches, capacitors, and lightning arresters, to have an overall verification over the data changes, or updated, supplemented and improved data and information of the supplier pool, including reports on their production conditions, tooling equipment, production capacity, supply achievements, operation achievements, and prototype tests, etc., and carried out examination over suppliers of other equipment and materials in succession. SGCC organized the investigation and assessment on over 2000 suppliers in electrical manufacturing industry in China, enriching contents and information about safety and health, environmental protection, and resource conservation, etc.



How does SGCC supervise and control the centralized bidding and purchase?

SGCC has been trying to construct a software and hardware platform for bidding and procurement in terms of regulation and culture, where corruption is combated against and clean management is advocated. The discipline examination and supervision agencies of the company at all levels exercise the monitoring functions over bidding activities in the principle of graded management and graded supervision, take the lead to organize personnel in related departments, including audit, law and finance, etc., into a monitoring team to supervise the whole bidding process; the auditing departments at all levels are responsible for carrying out special audit over the bidding and purchase of equipment and material; the headquarters and supply chain Management departments of all agencies (bidding managements center) set up supervision positions (supervisor) to perform routine supervision over related bidding and bid activities.



## Participation of Stakeholders — participation of partners

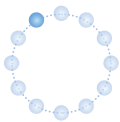
Type of participation	Content	Mode	Guarantee mechanism
Power generation enterprise	Notification of information	<ul style="list-style-type: none"> <li>○ Press conference on dispatching information</li> <li>○ Announcement of information on the website</li> <li>○ Contact officer for the generator-grid operator transaction</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Making study on energy development trend by cooperation</li> <li>○ Jointly working out the planning for development of power industry</li> <li>○ Perfecting the dispatching transaction information disclosure system</li> <li>○ Perfecting such work specifications as power transaction and grid connection, etc.</li> <li>○ Establishing the generator-grid transaction contact officer work specifications</li> <li>○ Releasing the CSR Report</li> <li>...</li> </ul>
	Receiving feedback	<ul style="list-style-type: none"> <li>○ Listening to opinions and suggestions of power generation enterprises</li> <li>○ Learning information related to dispatching transaction</li> <li>...</li> </ul>	
	Dialogue and communication	<ul style="list-style-type: none"> <li>○ Symposium</li> <li>○ Coordination meeting on planned outage</li> <li>○ Paying regular visit</li> <li>○ Forum on industrial development</li> <li>...</li> </ul>	
	Joint action	<ul style="list-style-type: none"> <li>○ Mechanism for coordinating power generation and transmission construction</li> <li>○ Jointly working out the planning for the industry development</li> <li>...</li> </ul>	
Design and construction organization	Notification of information	<ul style="list-style-type: none"> <li>○ Bidding information press conference</li> <li>○ Issuing the new equipment, technologies and processes</li> <li>○ Special coordination meeting on construction</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Improving the information disclosing system</li> <li>○ Perfecting regulatory documents, including design specification, production safety and project management</li> <li>○ Organizing the participation of internal experts</li> <li>○ Releasing the CSR Report</li> <li>...</li> </ul>
	Receiving feedback	<ul style="list-style-type: none"> <li>○ Listening to opinions and suggestions of the counterparts</li> <li>○ Learning suggestions on improving the design scheme</li> <li>...</li> </ul>	
	Dialogue and communication	<ul style="list-style-type: none"> <li>○ Regular brief meeting on construction situation</li> <li>○ Coordination meeting concerning design and construction</li> <li>...</li> </ul>	
	Joint action	<ul style="list-style-type: none"> <li>○ Quality and safety inspection of construction site</li> <li>○ Special coordination meeting</li> <li>...</li> </ul>	
Research Institute	Notification of information	<ul style="list-style-type: none"> <li>○ Information press conference</li> <li>○ Forum on scientific and technical development</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Improving the system for publishing information on scientific and technical projects, bidding and management</li> <li>○ Integrating into the performance assessment system of the Corporation</li> <li>○ Regulating the methods for managing intellectual property</li> <li>○ Coordinating the participation of internal experts</li> <li>○ Releasing the CSR Report</li> <li>...</li> </ul>
	Receiving feedback	<ul style="list-style-type: none"> <li>○ Expert consultation meeting</li> <li>○ Meetings</li> <li>...</li> </ul>	
	Dialogue and communication	<ul style="list-style-type: none"> <li>○ Technical exchange summit</li> <li>○ Joint study on major programs</li> <li>○ Signing the strategic cooperation agreement</li> <li>...</li> </ul>	
	Joint action	<ul style="list-style-type: none"> <li>○ Jointly tackling the technical problems</li> <li>...</li> </ul>	



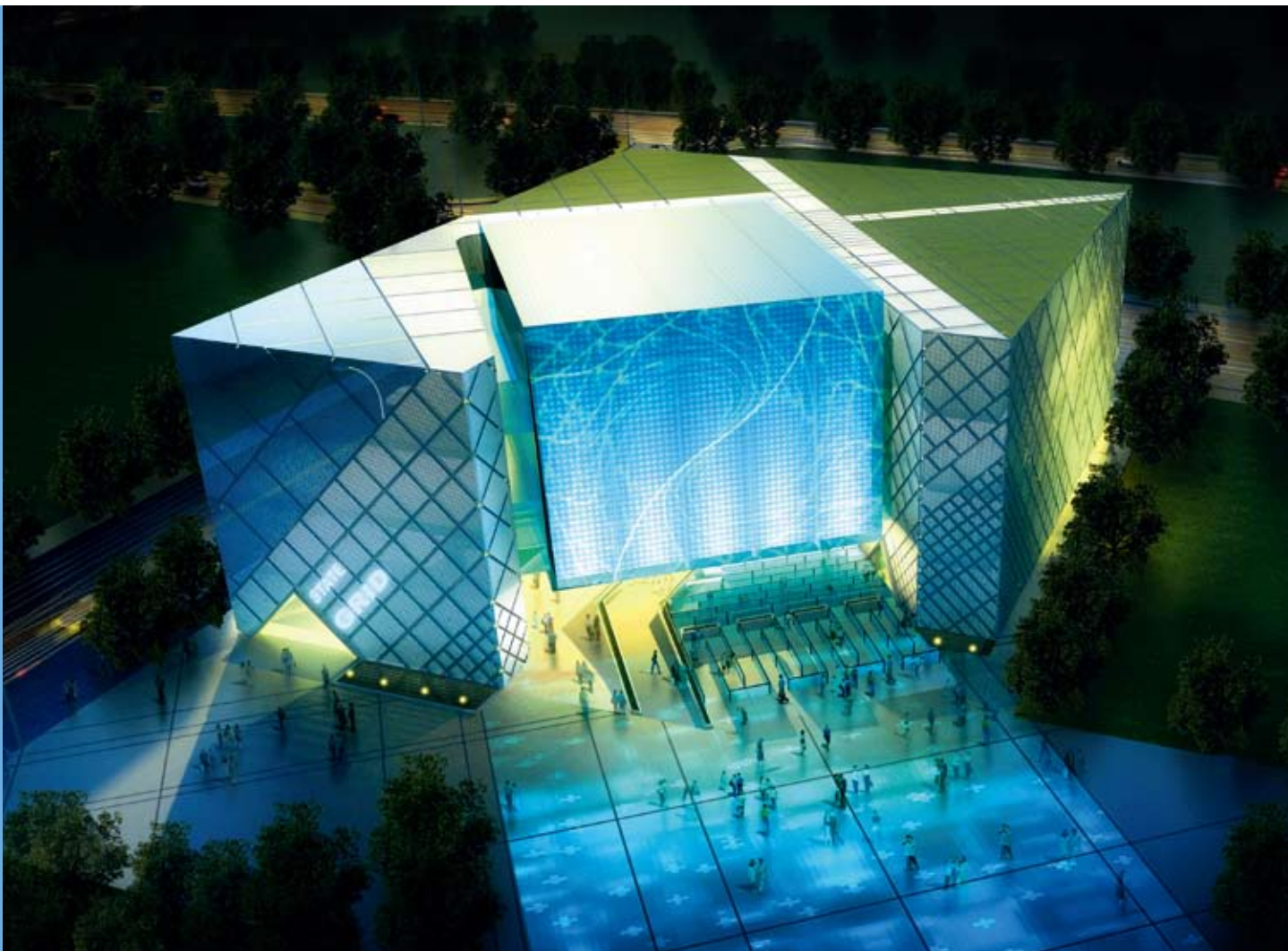


Type of participation	Content	Mode	Guarantee mechanism
Supplier	Notification of information	<ul style="list-style-type: none"> <li>○ Publishing purchase information of the Corporation</li> <li>○ Disclosing the purchase policies and compliance management methods of the Corporation</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Bidding information press conference</li> <li>○ Announcement of information on the website</li> <li>...</li> </ul>
	Receiving feedback	<ul style="list-style-type: none"> <li>○ Listening to suggestions on purchase policies and technical parameters</li> <li>○ Accepting reports on disclosed information that violates the rules</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Investigation and visit</li> <li>○ Expert consultation symposium</li> <li>○ Complaint hotline</li> <li>...</li> </ul>
	Dialogue and communication	<ul style="list-style-type: none"> <li>○ Learning the standards for examining the qualification of suppliers</li> <li>○ Exchanging technical information on products</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Construction and management of suppliers' database</li> <li>○ Expert consultation symposium</li> <li>...</li> </ul>
	Joint action	<ul style="list-style-type: none"> <li>○ Joint development of key equipment</li> <li>○ Jointly paying attention on major social topics of environmental protection, energy conservation, health and safety, etc.</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Strategic cooperation mechanism</li> <li>○ Compliance verification and feedback</li> <li>...</li> </ul>
Financial institution	Notification of information	<ul style="list-style-type: none"> <li>○ Disclosing the Corporation's development strategy and planning</li> <li>○ Disclosing the Corporation's capital demand, financing mode, and other information</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Information press conference</li> <li>○ Announcement of information on the website</li> <li>○ Symposia</li> <li>...</li> </ul>
	Receiving feedback	<ul style="list-style-type: none"> <li>○ Listening to suggestions on financing methods</li> <li>○ Accepting consultation on bidding information</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Work research</li> <li>○ Forum on finance industry</li> <li>...</li> </ul>
	Dialogue and communication	<ul style="list-style-type: none"> <li>○ Discussing the cooperation potential and intention of the parties</li> <li>○ Determining the core topics of common concern</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Strategic cooperation symposium</li> <li>...</li> </ul>
	Joint action	<ul style="list-style-type: none"> <li>○ Issuing financial products, such as bond, note, etc.</li> <li>○ Collecting the Corporation's electricity charges</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>○ Cooperation in major projects</li> <li>○ Electricity tariff collection structure</li> <li>...</li> </ul>

Indicator	2005	2006	2007	2008	2009
Installed capacity in SGCC's service areas (GW)	407	486	551	613	671
Total on-grid electricity in SGCC's service areas (TWh)	1640	1840	2540	2280	2430
Centralized tendering volume (RMB billion yuan)	14.2	119.1	163.5	187.9	186.32
Localization rate of equipment purchased in centralized tendering (%)	93.8	94.2	94.45	97.28	95.8
Luban Prizes awarded	6	7	8	9	11
Total amount of interest paid (RMB yuan)	193.5	191.5	206.9	293.4	260.1



## Responsibilities on Corporate Citizen







In 2009, SGCC, as the global partner of the 2010 Shanghai World Expo for power supply and service, fully carried out power supply guarantee and service campaign, independently constructing and operating the State Grid Hall with the theme of “Innovation & illuminating dreams”.

SGCC played a model role in performing responsibilities as a corporate citizen, carried forward social morality and noble commercial morality, made exploration to implement the Company’s strategy for public welfare. With great enthusiasm in social and public welfare, we vigorously supported employees’ volunteer activities and served the construction of a harmonious society.



## Performing corporate citizen responsibility to communities

Type of responsibility	Specific content
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p> <ul style="list-style-type: none"> <li>Strictly observing laws and regulations as well as industrial guidelines</li> <li>Fair competition</li> <li>Paying tax under laws</li> <li>Combating against commercial bribery</li> <li>Actively carrying out the construction of a clean Party and honest management team</li> <li>...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basic)</p> <ul style="list-style-type: none"> <li>Observing social ethics and guiding the construction of industrial practices</li> <li>Promoting the construction of corporate credit</li> <li>Pushing forward the campaigns for assisting Tibet and electricity poverty alleviation</li> <li>Actively carrying out disaster relief and donation activities</li> <li>...</li> </ul>
Win-win partnership responsibility	 <p><b>Mutual win responsibility</b> ( Society / Company mutual win )</p> <ul style="list-style-type: none"> <li>Combining the social forces, accepting the social supervision consciously and intensifying the Company's compliance management</li> <li>Basing upon promoting optimal allocation of social resources, carrying out social public undertakings in a standardized way</li> <li>Implementing charity marketing, upgrading the Company's core ability and creating the Company's brand image</li> <li>...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p> <ul style="list-style-type: none"> <li>Promoting government legislation by means of offering advice and suggestions and supporting experts group and the like</li> <li>Supporting the employees to carry out volunteer services, service the communities and promote the construction of harmonious society</li> <li>Supporting the community-based organizations, environmental protection organizations, expert leaders, media and other relevant parties to solve major social problems and environmental problems</li> <li>Giving full play to the role of Power Grid Foundation for Public Welfare and enhancing the social welfare to the utmost extent</li> <li>...</li> </ul>



As for the term “corporate citizen”, different people have different understanding. In the eyes of a great many, corporate citizen directly equals the social responsibility of an enterprise. Why does SGCC take corporate citizen responsibility as one of the 12 aspects of CSR that the company shoulders?

There are mainly three types of opinions on the differences and similarities between the two concepts of corporate citizen and corporate social responsibility: first, the local concept of the corporate citizen treats the corporate citizen responsibility as one part of corporate social responsibility; second, the equivalence concept considers that a corporate citizen is equivalent to corporate social responsibility; third, the extended concept treats the corporate citizen as a concept transcending corporate social responsibility, regarding an enterprise as a citizen of the society.

SGCC takes corporate citizen responsibility as one of its 12 social responsibilities and keeps consistent to the general understanding of the public. For instance, the different roles of a social member are usually defined as “to be a good employee in the company, a good family member at home, and a good citizen in the society”. Therefore, the company adopts the local concept of the corporate citizen, believing that the corporate citizen responsibility is one part of the corporate social responsibility, and has obvious difference in meaning and contents from an employee’s responsibility and an external stakeholder’s responsibility of a Company.

## Pushing forward compliance management in an all-round way

SGCC deepens its law-based corporate governance and has a systemic analysis over legal risks contained in its main businesses, so as to take pertinent measures for preventing risks; it has compiled the practical guides for seven categories of typical cases and published 20 unified contract texts, thus strengthening the normalized management and standardized construction of its economic and legal affairs in an all-round way, and actively exploring the work mode for integration of legal resources and overall management. The Headquarters and three units of SGCC have been conferred with the title of model organization by the Ministry of Justice and the Department of Legal Publicity in the mid-term of the national “5th Five-year Plan” on Legal Publicity.

SGCC has established the “Implementing Scheme for Carrying out Self-examination and Self-correction of Unfair Transaction Behaviors”, the “Opinions on Carrying out Special Control and Governance of Commercial Bribes”, etc. to carry out self-examination and self-correction to unfair transactions, established a three-dimensional early warning mechanism for the graded reporting and parallel pre-controlling of commercial bribery cases, strictly implement the exclusive reporting system, and improve the accountability system regarding links of bidding, manufacture supervision and acceptance. SGCC also launched the “integrity campaign” to establish a lasting mechanism for creditable enterprises and improve the compliant operation awareness and capacity.

## Actively participating in public welfare undertakings

In March 2009, SGCC, with the approval of the Ministry of Civil Affairs of PRC, launched the Power Grid Foundation for Public Welfare with a registered initial fund of RMB 100 million yuan, to explore an unified and efficient public welfare platform and strive for improving the Company’s capacity and level in taking part in public welfare undertakings. The company carried out 470 public welfare activities all the year round.

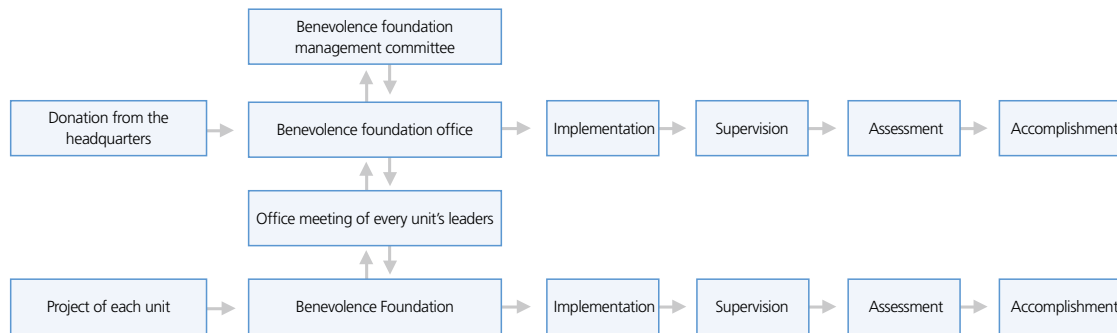
Cooperating with the Ministry of Civil Affairs, China Youth Development Foundation, and China Disabled Persons’ Federation, SGCC launched the second phase of benevolent assistance project to the aged, poverty-stricken students. SGCC subsidized RMB 1 million yuan to the China Legal Aid Foundation to support the legal aid undertaking in west China. We pushed forward the power poverty alleviation and power assistance to Tibet for 15 years consecutively. In 2009, SGCC carried out 23 fixed poverty alleviation projects in Zigui, Changyang and Badong County with a total investment amounting to RMB 13.87 million, of which the special fund for power poverty alleviation accounts for RMB 4.2 million and the local self-raised matching fund under its driving RMB 9.67million.



Providing tea farmers with electricity-based tea panning service



### Establishing the process for managing the loving care foundation

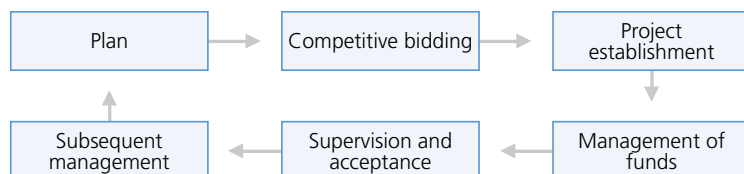


### Operation flow of "State Grid Foundation for the Project of Loving Care and Hope"

**Plan:** proposed by the management committee (the committee is jointly established by the China Youth Development Foundation and SGCC). After the review of the management committee, the office will assign the funds to each provincial youth development foundation.

**Competitive bidding:** Each provincial youth development foundation will invite tender to all counties in the province and the people's government of every county may offer bid to the provincial youth development foundation after ascertaining the supporting funds. And the provincial youth development foundation will establish an evaluation panel for assessing all bids and then may give a preliminary list and the office of the management committee will make verification finally.

**Project establishment:** the government of the county where the school receives assistance may enter into and sign a contract with the office of the management committee after ascertaining the supporting funds and units of design, construction, supervision, inspection, and audit.



**Subsequent management:** the hope school should be covered under the management of local education authorities after completion.

**Supervision and acceptance:** the local county youth league committee should prepare the monthly progress report and submit it to the management committee; upon completion of the project, the management committee shall invite the local youth development foundation for re-inspection.

**Management of funds:** reimbursement shall be brought within certain limits, and the local government should apply for reimbursement to the provincial youth development foundation.



Assisting migrant workers' children

### Number of Hope Schools established with the aiding of SGCC

Schools established under the aiding of SGCC in recent years	165
Schools to be established with the aiding of SGCC in 2010	100

("Project Hope" aided to build 15940 hope schools altogether in 20 years)



SGCC is honored with the "20-year Special Contribution Award of the Project Hope" by the China Youth Development Foundation



Anhui Electric Power Company, after raising RMB700, 000 yuan for a primary school in Liuran Village, Liuji Township of Lixin County (an AIDS-stricken village) as a solution to the full schooling of the 160 children from the aids-infected families, selected the village as a place for support and helped the school solve their problems, having managed to raise RMB30, 000 to buy desks and chairs, schoolbags and stationeries for the students there. For many years, the Fujian Company has been carrying on the "Sunshine Side by Side with Hope" campaign that helps school dropouts. They have established a help-pair program between the youth collectivity (youth) and the poverty-ridden students to help the students with their schooling and have issued a Help School Dropouts Management Method to ensure long-term and effective activities to help the school dropouts. The Chongqing Company initiated a massive public welfare program called "films to the rural area" and organized 20 projection teams that offered 3,000 Patriotic films to the villagers. In addition to the classical red contents, they also offered scientific education films practical to the farmers and publicity films showing how to use electricity in a safety way. Guojia Power Supply Service Office in Shenyang City, Niaoning Province has been providing blind assistance voluntary services for a long time, establishes helping relationship with schools for the blind, cadres' sanitariums and communities, and establishes the Loving Care Party Group, Loving Care Fund, makes the blind service cards and provides 24hr service. The Ningxia Company made an active donation of RMB2.4 million yuan to the Hope Project and implemented the "234" learning aid project, having aided in the construction of two SGCC Ningxia Electric Power Company Loving Care Hope Primary Schools and supported 300 new college students and 400 high school students from the poor families of the ethnic minority nationalities, for which the company was listed among the "Top 10 Public Welfare Enterprises in the Ningxia Autonomous Region". The Xinyuan Tianhuangping Pumped Storage Company set up a She Loving Care Fund for supporting the students from poor families of the ethnic minority nationality and the "Huangpu River Source" eco protection station, and made all efforts to enrich the life of the minority nationalities students by means of the Love EMS, the Love Relay and cantonment visits.

## Exploring and putting into practice the "eight-elements" principle for public benefit undertaking

Strategy	In accordance with its strategy, nature of expenditure on public benefit and requirements for implementing public welfare projects, SGCC determines the scale and mode of expenditure on public benefits in different categories so as to ensure that such expenditure may create the maximum comprehensive values.
Budget	According to its public welfare strategy and the annual conditions, SGCC makes a pre-estimate of its annual expenditures on public welfare under the entries of the sum total, the large projects, and the sub-items, and studies to determine the specific annual budget and verify the approval authority of budget expenditure.
Research	It is required that every public welfare project have project feasibility study pertinent to its different nature to ascertain the expected achievement, management requirements, demand of funds, and matching measures.
Procedure	A functional management department is set up with professional management personnel to establish scientific and reasonable approval flow with a smooth mechanism, so as to ensure that all expenditures on public welfare may undergo necessary approval proceeding.
Management	SGCC ensures to implement full-process management over a project of expenditure on public welfare and monitor key nodes, monitor the function investment direction and utilization in reference to the budget and evaluate the project progress according to the project's expected achievement.
Feedback	A smooth mechanism for unblocked feedback and communication should be established to keep regular track of the progress quality, specific achievement and existing problems of a public benefit project and to coordinate the concrete progress of the project and make timely adjustment.
Supervision	Both internal and external monitoring mechanisms, open, transparent, and normative, are established for the implementation of the public welfare project, so as to build a project evaluation and assessment mechanism internally and accept the supervision of stakeholders and social public monitoring externally.
Improvement	A continuously improving boosting mechanism for public welfare should be established to make summarize the public benefit project and discuss experiences in time according to specifications, so as to intensify social communication about public welfare and continuously improve the management capacity and level.

## Conduct employee volunteer service activities

For seven consecutive years we have carried on the youth voluntary service activities named "Youth Sunshine Day", and led the Corporation's young volunteers to the communities, counties, schools and enterprises to show our love and concern, promote harmony and other youth voluntary service activities by carrying out the disaster prevention and salvation, safety in production, quality service, popular science education, serving agriculture, countryside and farmers, community construction and poor-aiding, from which have stood out a large number of excellent SGCC youth volunteers represented by Zheng Xianrong and Yang Guang.



Youth volunteers of the company visiting the elders at gerocomium



## Excellent SGCC youth volunteers

	<p>吴洋 <b>Wu yang</b></p>	<p>Dedicating colorful youth, strive to go beyond ourselves; carry on the volunteer spirit, pursue excellent service.</p>
<p>Exchanging sincerity for understanding, and action for inspiration! Keep in mind gratitude, and keep making progress.</p>	<p>郑仙荣 <b>Zheng xianrong</b></p>	
	<p>刘瑜 <b>Liu yu</b></p>	<p>Make a gift of rose, and fragrance will linger in your hands; help others, and your life will be more brilliant.</p>
<p>陈忠毅 <b>Chen zhongyi</b></p>		<p>Each volunteer service is an experience, each experience is a fortune; what we offer is our sincerity that is rewarded with pleasure and a purified heart.</p>
<p>Volunteers light up life with their smile, write down their lives with love, spread about civilization with dedication. I'm never too happy as a volunteer!</p>	<p>杨光 <b>Yang guang</b></p>	
<p>I'd love to be an envoy of happiness sowing happiness and carrying forward love.</p>	<p>周海萍 <b>Zhou haiping</b></p>	
<p>胡志文 <b>Hu zhiwen</b></p>		<p>Short as life is, dedication never dies.</p>
<p>Let's help everyone that needs help.</p>	<p>艾沙江·尼扎木丁 <b>Eshaj-Nizamdin</b></p>	
	<p>刘雅潇 <b>Liu yaxiao</b></p>	<p>I'm not able to help everyone, but I'll try to help whoever I can help.</p>
<p>Serve the technical development of the electric power industry, contributing to volunteer service.</p>	<p>毛茅 <b>Mao mao</b></p>	

SGCC North China Chengde Company extended the connotation of the "love drift" voluntary service and initiated three love drift donation activities centering on the theme "supporting the poor with love, boosting harmony by contribution" (donating a book, RMB10 and a piece of clothing). They also set up a loving care fund and carried out a number of public welfare activities to help the school dropouts and support the poor families. The Beijing Company launched a love-delivery move called "loving care service card" and delivered the "loving care service card" as per different regions and different levels mainly targeted at the widowed, diseased and poor electric power users, keeping expanding their voluntary service concept and increasing their service scope. The Tianjin Chengdong Company actively carried out volunteer service activities together with the streets, member, neighborhood committees and important users, and collected suggestions for solving practical difficulties in power utilization and excluding the difficulties and anxieties for the people. The Shandong Jinan Company organized a "trustworthy rainbow, harmonious National Games" volunteer activity, set up National Games youth volunteer power conservation inspector stations, power conservation propaganda stations and power service guide stations to involve in the whole power conservation work and fulfilled the inspection tour and safeguarding of the important equipment. The Shanghai Company took an active part in the "three five" movement, provided all-dimensional service for the World Expo, initiated a series of activities including "local power police" coming into communities, psychological assistance, delivering "convenience cards" and "citizen classrooms" against power theft, with an accumulated volunteer service of 4,786 man-times and 26,064 hours, helping over 130 families of old people living alone and disabled families in help pairs. The "Red Waistcoat" young volunteers service team of the Jiangsu Zhenjiang Company established the "Volunteer Activity Month" mechanism, laid stress upon such activities as fault maintenance, propaganda of power utilization, donation for education, bone marrow donation and love twining, etc., and have subsidized in total 627 school boys and girls, donated bone marrow for 210 patients, helped 155 old red-army men, families of revolutionary martyrs and servicemen, elderly persons of no family, disabled persons and nearly one hundred needy peasant households by means of twining.

## Participation of Stakeholders — social participation

Type of participation		Content	Mode	Guarantee mechanism
Notification of information	Compliance operation (Company → Society)	<ul style="list-style-type: none"> <li>Information required by supervision authority to be disclosed</li> <li>Information reported by the Company</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Report</li> <li>Website information notice</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Establishing and perfecting the Company's compliance management system</li> <li>Working out and implementing the Company's strategy for public welfare undertakings</li> <li>Establishing effective mechanism for supporting the employees to conduct volunteer services</li> <li>Establishing the "Power Grid Foundation for Public Welfare"</li> <li>Intensifying the construction of organizational structure and organizing a special group for conducting the public welfare undertakings</li> <li>Choosing excellent volunteer service employees through public appraisal</li> <li>Releasing the CSR Report</li> <li>...</li> </ul>
	Public welfare undertakings (Company → Society)	<ul style="list-style-type: none"> <li>Disclosure of projects and their progress</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Website information notice</li> <li>Media disclosure</li> <li>News release conference</li> <li>Activity ceremony</li> <li>...</li> </ul>	
	Volunteer service (Company → Society)	<ul style="list-style-type: none"> <li>Disclosure of activities and their progress</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Community notification</li> <li>Activity ceremony</li> <li>Website information notice</li> <li>...</li> </ul>	
Receiving feedback	Compliance operation (Company ← Society)	<ul style="list-style-type: none"> <li>Related laws, regulations and other regulatory documents</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Meetings</li> <li>...</li> </ul>	
	Public welfare undertakings (Company ← Society)	<ul style="list-style-type: none"> <li>Find out about project progress and effect</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Project feasibility report, progress report and evaluation report</li> <li>Supervision report issued by a third party</li> <li>Media report</li> <li>...</li> </ul>	
	Volunteer service (Company ← Society)	<ul style="list-style-type: none"> <li>Learn activity progress and effect</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Notify related agencies</li> <li>Suggestion boxes at business centers and residential quarters</li> <li>...</li> </ul>	
Dialogue and communication	Compliance operation (Company ↔ Society)	<ul style="list-style-type: none"> <li>Find out about and determine regulatory details concerning the Corporation</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Regular report communication</li> <li>Symposia and discussion meetings</li> <li>Consultation and response</li> <li>...</li> </ul>	
	Public welfare undertakings (Company ↔ Society)	<ul style="list-style-type: none"> <li>Find out about and determine core topics such as the project objective</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Associations and forums</li> <li>Regular communication</li> <li>...</li> </ul>	
	Volunteer service (Company ↔ Society)	<ul style="list-style-type: none"> <li>Find out and determine core topics such as the objective of the activity</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Community visit</li> <li>Symposia at residential quarters</li> <li>...</li> </ul>	
Joint action	Compliance operation (Company ⊗ Society)	<ul style="list-style-type: none"> <li>Ensure the Corporation's operation in conformity with the laws and regulations</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Cooperate in law-making of the ministry/commission rules and other regulatory documents</li> <li>...</li> </ul>	
	Public welfare undertakings (Company ⊗ Society)	<ul style="list-style-type: none"> <li>Maximize social benefits after guaranteeing equity, transparency and standardization of the project</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Establish a grid public welfare fund</li> <li>...</li> </ul>	
	Volunteer service (Company ⊗ Society)	<ul style="list-style-type: none"> <li>Concern for community construction together, push forward community civilization and harmony</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Joint construction of community</li> <li>Joint construction of electric power villages</li> <li>...</li> </ul>	



So far, there are different opinions in the society about the donation of state-owned enterprises and their participation in public welfare undertakings. What does SGCC think about the donation by SOEs?

Proper donation of SOEs and their support for the public welfare undertakings both help with the construction of a harmonious society and play an active role in building the brand image of SOEs and optimizing environmental development.

SGCC holds that SOEs should upgrade their ability and level of participation in public welfare undertakings under full conformity with the Circular on Reinforcing Management of Donation by SOEs recently issued by the State-owned Assets Supervision and Administration Commission under the State Council.

First, we should adhere to the scientific corporate social responsibility. Donation to the outside does not only involve moral motives and readiness to perform responsibility, but also the criterion for gauging how the social value is created to measure the public welfare behaviors of SGCC by whether they enhance the optimized configuration of social resources. It is necessary to determine the detailed method to support public welfare projects and ensure that both the donation method and the receiver are capable of configuring the love resources in the right way.

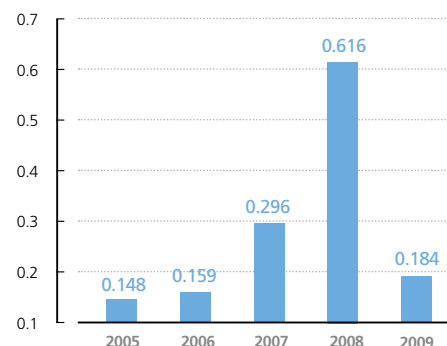
Second, we should stick to the "eight elements" in participating in public welfare work. That is, strategy: deciding the public welfare strategy of SGCC according to the corporate nature and the Corporation's development strategy; budget: determining the limitats for public welfare expenditure of the year in advance; studies: studying the feasibility of each of the public welfare projects proposed; procedures: ensuring that all public welfare projects undergo necessary approval procedures; management: providing full-process management of public welfare projects; feedbacks: keeping informed of the progress of the Corporation's public welfare projects, result and problems; supervision: receiving internal and external supervision in connection with public welfare expenditures; improvement: making timely conclusion of the public welfare projects undertaken.



The Corporation's employees are donating clothing for children in impoverished areas

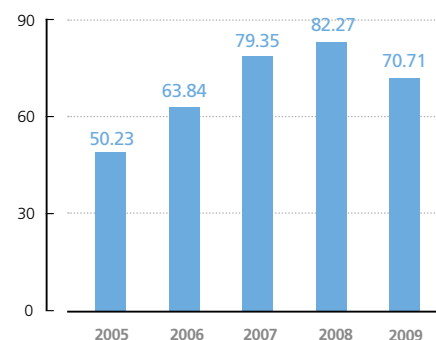
#### Donation from SGCC

Unit: RMB billion yuan



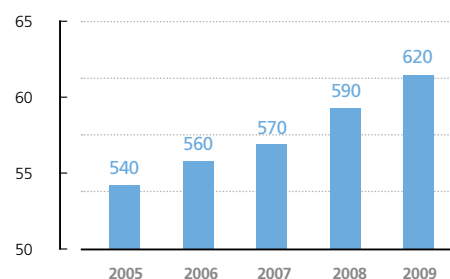
#### Taxes paid

Unit: RMB billion yuan



#### Volunteer service from Corporation employees

Unit: thousand man-times







## Responsibilities on Environmental Protection and Energy Conservation







In December 2009, the first 10 GW level wind power base constructed in China—Jiuquan Gansu Wind Power Base was officially connected to the grid with an installed capacity of over 2000 MW.

SGCC is always devoted to serving the construction of a resource-conserving and environment-friendly society, strictly performs its responsibility on environmental protection and energy conservation, implements all-green management, speeds up building a strong & smart grid, creates a green platform for energy configuration, responds to the global climate change and carries forward social ecological civilization.





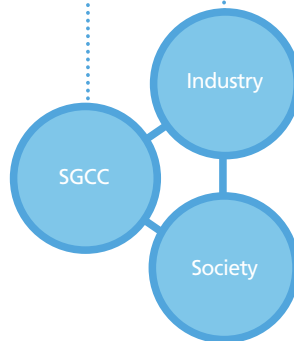
## Environmental protection and energy conservation responsibility

Type of responsibility	Specific content	
Basic responsibility	 <p><b>Legal responsibility</b> (Performing legal obligations)</p>	<ul style="list-style-type: none"> <li>Comply with the national environmental laws and regulations</li> <li>Comply with relevant international conventions and agreements signed by Chinese Government</li> <li>Accept supervision and management of environment authorities</li> <li>Prevent environmental pollution and other public damages</li> <li>Perform legal environmental assessment obligations</li> <li>...</li> </ul>
	 <p><b>Moral responsibility</b> (Sticking to the moral basic)</p>	<ul style="list-style-type: none"> <li>Improving energy utilization efficiency, resource conservation and environment friendliness</li> <li>Increase input in environmental protection, reduce environmental disturbance, and protect biological diversity</li> <li>Advocate green office and green life, support green development and promote green culture</li> <li>Actively respond to climate change and challenges in ecological environment, make overall planning for environmental capacity and make intensive use of land resources</li> <li>...</li> </ul>
Mutual-win partnership responsibility	 <p><b>Win-win responsibility</b> ( Society / Company mutual win )</p>	<ul style="list-style-type: none"> <li>Recommend the supply chain and users to use safe, energy-saving and environment-friendly equipments, technologies and processes</li> <li>Push forward clean and efficient development of coal-fired power bases</li> <li>Promote large-scale and intensive development of clean energy</li> <li>Promote conservation and efficient use of power resources</li> <li>...</li> </ul>
	 <p><b>Multi-win responsibility</b> (Stakeholders' win-win partnership)</p>	<ul style="list-style-type: none"> <li>Support the government and relevant authorities to take important measures for resource conservation and environment friendliness</li> <li>Push forward environment-friendly and resource-conserving technical innovation and promote energy development and reform of utilization mode</li> <li>Supporting all relevant parties to carry forward the ecological civilization and promulgate the concept of environmental protection, energy saving and environment friendliness</li> <li>Actively promote international cooperation in the field of energy source, and make use of resources to improve sustainable development</li> <li>...</li> </ul>

## Understand the impact of the corporate operation on the environment

### Promote green development of the Company and social ecological civilization

- **Realize optimum configuration of energy resources**
  - Build a strong and smart grid, create a green platform for energy configuration
  - Operate the national grid efficiently and raise the efficiency of the power resources allocation
  - Expedite the development of the power market, realize optimum cross-regional configuration of power resources
  - ...
- **Use resources in the most efficient way**
  - Optimize the planning of the national grid, economize the installed power capacity
  - Advocate lifecycle management, extend the service life of equipment
  - Carry through standard construction, save steel and cement materials
  - Optimize power supply distribution, use the environmental capacity and land resources in an intensive way
  - Advocate circular economy, ecological economy and resources recycling
  - ...
- **Adhere to the environmental-friendly operation of the Corporation**
  - Ensure safe and stable operation of the grid, maintain social public security
  - Beautify the design of grid facilities, upgrade the community outlook and harmony
  - Protect biological diversity, avoid environment-sensitive objects
  - Control the impact of grid operation noises and the electromagnetic environment
  - Try to minimize environmental disturbances, reinforce vegetation recovery and soil protection
  - Prevent soil erosion, water pollution and geological disasters
  - Mitigate the "three wastes" emission, economize on water use and maintain clean air
  - Advocate green offices and green life
  - ...



### Push forward green development of the industry, increase social ecological civilization

- **Promote green development of power generation enterprises**
  - Promote clean and efficient development of coal-electricity bases
  - Promote massive and intensive development of hydropower bases
  - Promote clean and intensive development of nuclear-power bases
  - Promote massive, centralized and intensive development of wind power
  - Promote centralized and intensive development of solar power
  - Enhance development of other renewable energies and distributed energies
  - Enhance generation-side energy conservation and increase generation utilization efficiency
  - ...
- **Promote green development of suppliers**
  - Promote green procurement, upgrade resources conservation, energy efficiency and environmental protection on the supply chain
  - Research and publicize high-efficiency, environment-friendly and energy-efficient equipment and technologies
  - ...

### Promote green development of the society and elevate the eco-civilization of the society

- **Bring along all users in support of green development**
  - Increase the proportion of electric energy in the end consumption of energy, upgrade the energy conservation of the whole society
  - Push forward in-depth demand-side management, enhance demand-side energy conservation and consumption mitigation
  - Strengthen promotion of green power utilization among all users
  - ...
- **Exploit the function as a social example of green development**
  - Promulgate the concept of green development, spread about environmental knowledge
  - Vigorously advocate green life, enhance construction of an economical society
  - Support employees in their environmental volunteer services
  - Participate in environmental public welfare projects that have extensive social influence
  - ...



### Reduce greenhouse emission, combat global climate change

#### Utilize SGCC's own potential for mitigating greenhouse gases emission

- Reduce emission by increasing the efficiency of energy resources utilization
- Reduce emission by increasing the efficiency of power resources allocation
- Reduce emission by economizing resources under green production
- Reduce emission by advocating green office and green life
- ...

#### Reduce industrial and social greenhouse gas emission

- Reduce emission by expediting clean energy and accelerating development
- Reduce emission by expediting high efficient utilization of coal resources
- Reduce emission by expediting the upgrading of power generation utilization
- Reduce emission by enhancing social economization of resources and energies
- ...



## Effectively control impact of corporate operation on the environment

### Overall Guideline

- Hold to overall management, understand the close relationship between power grid development, corporate operation and the eco environment; establish an overall green management mechanism control environmental risks and create environmental values.
- Hold to full-process coverage, incorporate the idea of "consolidate green development forces, control environmental risks and create environmental values" into the full process of grid construction and operation.
- Hold to all-dimensional integration and instill the idea of "consolidate green development forces, control environmental risks and create environmental values" onto all parts of operation, including enterprise mission, development strategy, business programming, comprehensive planning, overall budget and performance management.
- Hold to all-staff participation and extend the idea of "consolidate green development forces, control environmental risks and create environmental values" from internal employees to external stakeholders, consolidate both the internal and external green development forces of the Company, exploit all the potential of the internal employees, the industrial chain and the whole society for green development.
- Hold to the advocacy of lifecycle asset management on the environment and cover the whole lifecycle of assets from procurement, service through to disposal with the idea of "consolidate green development forces, control environmental risks and create environmental values".
- Hold to constructing an all-green management system, expedite integration of green development with the existing corporate management system and push forward the innovation and continuous improvement of the Company's all-green management focused on reinforcing assessment of environmental management performance.

### Key fields

- Speed up building a strong and smart grid, ensure safer, cleaner, more economical and sustainable energy supply.
- Push forward environmental impact assessment of construction projects, effect environmental protection and resources conservation.
- Push forward technical innovation, develop and publicize efficient, economical and environmental-conserving technologies, equipment and processes.
- Enhance development of low carbon economy, and reduce emission of greenhouse gases to respond to the global climate change.
- Increase environment friendliness, maintain biological diversity to enhance ecological civilization.
- Push forward cycle economy, enhance three-waste treatment and recycling to enable resources conservation.
- Perform lifecycle asset management on the environment, and apply lifecycle approach to the effective management of assets from procurement, service through to disposal.
- Reinforce education on green development, and push forward ecological civilization oriented at employees, users, partners and the society.

### Completion of the first electric vehicle charging station in China in commercial operation.

The company has built the Caoxi Electric Vehicle Charging Station and open to the public and meet the demands for charging of electric vehicles such as plug-in hybrid electric vehicles and full electric vehicles.

Compared with conventional gas stations, an electric vehicle charge station can be built in conjunction with a parking lot and parking spaces without additional land occupation. With the existing battery technology, an electric vehicles takes an average of 3 hours to be fully charged and its cruising range after it is charged is about 200km.



### Develop grid CDM projects

SGCC cooperates with the World Bank in the Project of replacing the distribution transformer with CDM (Clean Development Mechanism) in which more than 150,000 10kV distribution transformers of high energy consumption are to be replaced by new-type transformers of low energy consumption. The Project deals with 26 provincial subsidiaries of SGCC and it is expected that the CO<sub>2</sub> emission may be reduced by 750,000t by the end of 2012 after implementation of the Project. Late December 2009, the design documents had been made public on the Website of the United Nations Framework Convention on Climate Change (UNFCCC) and onsite examination of the Project had been completed.

#### Built the first large rooftop solar power station system in China

SGCC Zhejiang Company has built a single-phase 5kW 220V PV grid-connected trial power station, a 250kW 10kV PV high voltage grid-connected pilot power station and a 60kW 3-phase 400V PV grid-connected power station, and successfully developed a multipurpose experimental platform of the grid-connected PV generation system to conduct overall and careful experimental researches into the safety performance and operation efficiency of the PV grid-connected generation system, having established technical specifications for safe and stable operation of power grids specific to the solar generation. It is estimated that this system has an annual power generation capacity of approximately 300MWh and will reduce CO<sub>2</sub> emission by about 170,000t each year.



Zhejiang Electric Power Company's 250kW grid-connected rooftop solar PV pilot power station

#### Strategic actions

- Operation in compliance. Carry through the national energy strategy, environmental policies and provisions and the Company's environmental management policy.
- Strategy guided. Push forward the "One Ultra and Four Larges" energy development strategy, accelerate construction of a strong and smart grid, boost the construction of large coal-fired power, large hydropower, large nuclear power and large renewable energy bases and expedite the historic transformation of energy production and utilization.
- Excellent management. Implement standardized construction, publicize "resource-efficient, environment-friendly and industrialized" substations and "resource-efficient, environment-friendly, new technology, new material and new process" transmission lines, advocate cycle economy and ecological economy, increase energy efficiency and push forward sustainable resources utilization.
- Technical innovation. Research on critical technologies for a green grid, develop energy-efficient, economical and environmental technologies, promote research and application of new technologies like grid energy storage, electric heat pumps, electric vehicles, clean coal burning and recycling of SF<sub>6</sub> gas, publicize green construction methods and increase the resource allocation capability and efficiency of the existing grid.
- Culture oriented. Carry forward the corporate culture of green development, upgrade the awareness, ability and long-term mechanism of all the employees in connection with green development and serve the construction of a "resource-efficient and environment-friendly" society.
- Exert an exemplary role. Enhance sustainable development on both the generation side and the demand side, encourage energy-efficient and low coal-consuming units and renewable energy generators to access to the grid, lead users to use electricity in a scientific, economical and efficient manner, strive to raise the proportion of electricity use in the end-use energy consumption, and expedite the whole society toward energy conservation and emission reduction.



New scenery of solar courtyard lamp



## Probe into all-green management

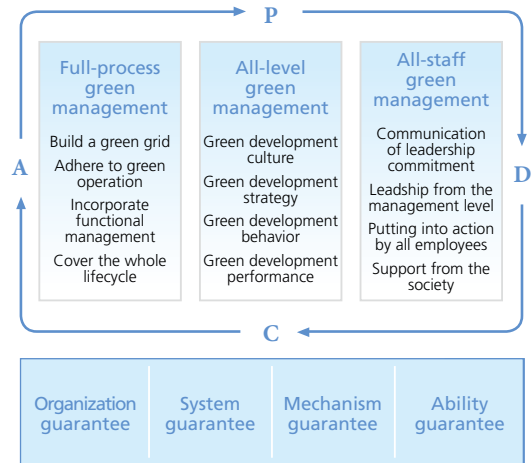
**Expedite full-process green management.** Implement the requirement to “control environmental risks, create environmental value, consolidate green development forces” throughout the whole process of the grid development strategy making, engineering construction, grid-connection service, transmission service and power use service. Intensify management of human resources, financial resources, technical resources, information resources, corporate values and risks management, and support SGCC’s green development with system, resources and staff competence. Perform asset lifecycle environmental management, fulfill safety and health, environmental protection and resources conservation in the full process of asset purchase, asset operation and asset disposal.

**Expedite all-dimensional green management.** Incorporate the concept of green development into the Corporation’s mission and the core value as a significant part of the Corporation’s development strategy. Carry forward the corporate mission of “safer, cleaner, more economical and sustainable energy supply”, expedite the sustainable development strategy to build a strong and smart grid, speed up creating a green platform for energy allocation, and maximize the integrated economic, social and environmental value. Establish an all green management acceleration mechanism, incorporate green development into the corporate management flow, continue to expedite systematic optimization in strategic programming, integral planning, overall budget, performance assessment and performance management systems.

**Expedite all-staff green management.** Uphold the guiding role of the executives who serve as a good example. Establish the idea of green development, fulfill our commitments for green development, plan for green development, work as a model of green development, support green development reforms. All the staff devote themselves to green development, upgrade their ability for green management, and take actions for green development. Improve stakeholder participation mechanism, strengthen communication, form consensus on green development, consolidate green development forces and enhance sustainable development together.

**Sustained improvement of green management.** Regard all-round green management as an endless and ever-improving process of management innovation, upgrade management standard, improve the management system, management process and upgrade the management performance.

**Guarantee green management.** Make systematic arrangements and strengthen guarantee for green management in the organization, system, mechanism and ability. Set up an energy conservation leadership team and work office, improve the Corporation’s decision-making system, execution system and supervision system, complete the green management work mechanism and the assessment mechanism.



The first 220kV 6-circuit-on-one-tower transmission line in China was put into service

The Fujian Baihua-Bili 220kV Transmission Line Project involved a total investment of RMB 53 million yuan, covering a total line length of 21.5km and including 2-circuit 220kV and a 4-circuit 110kV lines. Compared with the conventional 2-circuit-on-one-tower installations, the project performs remarkably with less land occupation and less consumption of materials and resources with its innovative electrical arrangement of conductors and design of the tower, reducing the crossover of 25 civil buildings, 172mu of land occupation, over 120m of corridor width, and 13% of steel and increasing the unit corridor transmission capacity by 235%, thus bringing down the total investment by RMB 5.32 million. Besides, with its V-composite insulator strings and anti-wind drag post insulators, the project is well strong against insulator flashover caused by wind drag from typhoons.



#### Accelerate associated study on wind power development

Organized and completed research on accommodation of wind power, access plan and transmission plan of 750/330kV grid in West China, and initiated the *Research on Adaptability of West China Grid to Large-Scale of Wind Power Development*, which enhanced the wind power development in West China and the supporting outgoing transmission project construction.



## Support renewable energy development

Accelerate construction of a strong and smart grid and provide a powerful energy allocation platform for the large-scale development, long-distance transmission and expansive accommodation of renewable energies. Our unbalanced local economic development and resources allocation that is suitable for intensive development and the indispensability of conversion of primary energies into electric power for massive use. All these determine that China has to develop renewable energies by “building large bases, integrating into large grids”. As the only carrier for power transmission, the power grid is the prerequisite and guarantee for the large-scale development, long-distance transmission and expansive accommodation of renewable energies.

Establish the National Wind Power Research & Testing Center and the National Solar Energy Research & Testing Center to enable in-depth research on renewable energy development and grid-connection technologies, keep up with the latest advancement in research on wind power outside China, and conduct substantial researches on the planning, testing and operation.

Compile technical specifications on grid-connection of wind power and solar power generation. SGCC published *the Technical Rules of SGCC on Connection of Wind Farm Generation to the Grid (Revision)* and *the Detailed Regulations of SGCC on the Contents of Detailed Design of the Connection System of the Wind Farm (Revision)* in April 2009, and *the Technical Rules of SGCC for Connection of the PV Power Station to the State Grid (Trial)* in July 2009. SGCC also actively cooperated in the amendment of Renewable Energy Law.

In July 2009, SGCC invited principal wind generator manufacturers and new energy power generation enterprises to a meeting on enhancing wind power, solar energy generation and other new energies.

Multiple initiatives to create conditions for grid connection of renewable energies, guarantee timely grid connection of renewable energies and purchase at full price. As of the end of 2009, the installed wind power capacity in SGCC's service areas amounted to 12,438 MW, accounting for 77% of China's total capacity.

#### UHV grid resource allocation starting to show its advantages

The 1000kV UHV AC pilot project has been under successful operation for nearly a year, completing transmission of 8.863 TWh of power with mutual complement of hydropower and thermal power between the South and the North, showing the advantages of UHV transmission in the water-coal resources allocation. During the dry seasons, the UHV grid sent an aggregate of 5.548 TWh of power to the Central China Grid from the Shanxi Grid; in the flood season of the South, the UHV grid brought the clean hydropower from the Central China Power Grid to the North China Power Grid, transmitting an total of 3.315 TWh. The “North-to-South transmission” over the UHV line has accommodated the surplus coal-fired power of the Shanxi Grid, and relieved the pressure on coal transportation by highway and railway. The 3.315 TWh “South-to-North” transmission over the UHV line is equivalent to reduction of standard coal consumption by 1.13 million tons of CO<sub>2</sub> emission by 2.94 million tons.



## Perform green construction and green operation

**Continue to manage energy conservation and loss reduction on the grid.** Since 2004, SGCC's line loss has been reduced by an average of 0.2 percentage point every year. In 2009, the Corporation's line loss was reduced by 0.08 percent point, saving 1.94 TWh of power and 663,000t of standard coal.

**Conduct generation rights transactions.** The Corporation completed generation rights transaction of 144.3 TWh, which saved 12.375 million tons of standard coal.

**Publicize energy-efficient and consumption-reduction equipment, technologies and processes.** SGCC designed and built resource-saving, environment-friendly, industrialized substations and resource-saving, environment-friendly transmission lines using new technology, new materials and new techniques, thus reducing land occupation by about 2%~3%, and investment by over 5%. SGCC also applied compact lines, multi-circuits on one tower, large-section conductors, heat-resistant conductors and other new technologies, increasing the unit corridor capacity of the lines by 20%~200%, and saving the corridor width by 50%~75% on year-on-year basis. The use of the high-strength steel saved 6%~8% steel. And with new energy-efficient clamps, vibration dampers and one-point grounding of strained sections, SGCC reduced nearly 1000 MWh of line loss per 100km of the 500kV line every year.

**Adhere to environment friendly construction of the power grid.** Implement green construction processes, apply unequal legs and undisturbed subsoil to reduce earthwork and protect vegetation; control the construction noises and restore the environment upon completion of construction. Publicize landscape architecture of transformer stations and lines to beautify the communities.

**Actively enhance recycling of resources.** The Company organized the SGCC Anhui Company and 6 technical pilot units to reclaim, treat and reuse SF<sub>6</sub> gas, which will recycle an estimated 25t of SF<sub>6</sub> gas every year, equivalent to a reduction of 600,000t of CO<sub>2</sub> emission.

**Implement demand-side power management.** SGCC helped the National Development and Reform Commission issue the *Measures for Demand-Side Power Management*, which filled up the blank in the demand-side management system at the national level. With compilation of the *Manual of Execution for Power Demand-Side Projects*, the Corporation summarizes the implementation approaches for demand-side management projects. SGCC also issued a promotion plan for energy-storing technologies and enhanced demand-side management projects construction. The Corporation promoted 501 energy-storing technical programs over the year, which enabled 566.5 MW load of peak load shedding and valley filling.

**Raise energy utilization efficiency.** Implement the annual heat pump promotion program to promote heat pumps, power replacing coal, electric heating with ceramic kilns and other alternative energy technologies. Over the year, we implemented 6,872 substitution programs, added 19.16 million square meters of a floor area with heating (cooling) supply and increased power sales by a total of 2.133 TWh. We implemented 75,418 projects in green lighting, efficient motor, reactive power compensation equipment and other technologies, saving 3.131 TWh in total.

**Formulate and implement a plan for electrical vehicles promotion.** Strengthen internal application inside the industry, determine the pilot construction plan for 75 electric vehicles charging stations and 6,209 charging piles, and establish solutions for the energy supply and operation of electric vehicles.



What concrete regulations are provided by the state concerning the height of conductors of transmission lines over buildings? Will the transmission line construction and operation negatively affect the public safety?

The *Technical Code for Designing 110~500 kV Overhead Transmission Lines* provides definite stipulations on the conductors of transmission lines over buildings: the minimum vertical clearance between the line and the buildings under it shall be 9 meters for the 500kV line, 7 meters for the 220kV line, and 5 meters for the 110kV line. SGCC strictly abides by the national standard in all its transmission projects and none of the actual clearances is lower than these specifications.

The power frequency electric and magnetic fields generated from the transmission lines are very low at merely 50Hz and are independent from each other, which are much smaller than the electric/magnetic fields of ordinary domestic electric appliances or visible lights (e.g. a mobile phone has an electromagnetic frequency of 800~900MHz), and send no energy to the distant spaces. For the public exposure of the power frequency electric field and magnetic field, the WHO assumes no harm to health when they are within the limits (5kV/m for the electric field; 0.1mT for the magnetic field). As the transmission lines of SGCC follow standards that are all above the health standards specified by the WHO, they will not impair the public safety or health.



As the central link of energy industry and an important infrastructure industry, power grid plays an important role in improving the energy utilization efficiency and developing clean energy sources. How will SGCC push forward the energy saving and emission reduction and implement green development?

SGCC understands its important task of promoting the energy saving and emission reduction, and actively push forward green development of the Company, industry and society.

Firstly, as a powerful green platform for energy allocation, the power grid is extremely important for enhancing clean and efficient coal resources utilization, large-scale intensive development of clean energies, efficient and economic utilization of energy resources as well as planning the eastern and western environment capacity of the country as a whole.

Secondly, as a supersize SOE owning nearly RMB2, 000 billion worth of operation assets and requiring immense resources for further development, the Corporation plays a very important role in building a resource-efficient and environment-friendly society by actively implementing green construction and green operation, and building and operating a strong and smart grid with the minimal resources input and at the lowest environmental cost.

Thirdly, as an important energy backbone that significantly enhances the optimum resource allocation of downstream partners, the Corporation is able to drive and boost the energy industry, and motivate the potential in the energy industry for green development. This is extremely significant for building a green energy industrial chain and expediting energy conservation and emission reduction in the energy industry.

Fourthly, as the largest utility in the world that manages 1.5 million employees and serves over 1 billion people, SGCC carries forward green development, publicizes the production and living style of green development, fully plays an active part in expediting energy conservation and emission reduction in the society, and enhances the construction of an ecological civilization in the whole society.

## Actively respond to climate change, firmly push forward green development

Enhance emission mitigation of greenhouse gases by operating the UHV grids, reducing the line loss, dispatching the energy-saving generation, expediting the generation rights transaction, and implementing the demand-side management pilot projects. According to incomplete statistics, the company had saved 19.363 million tons of standard coal and reduced 48,272,000t of CO<sub>2</sub> emission.

- The UHV grid transmitted clean hydropower from Central China to North China, and completed transmission of a total of 3.315 TWh, saving 1.134 million tons of standard coal.
- Q420 high-strength steel of 410,000t has been used for tower, which saved steel consumption of about 33,000t, equivalent to 20,000t of standard coal
- The line loss rate was reduced by 0.08 percentage points, which saved 1.94 TWh and 663,000t of standard coal.
- SGCC optimized reservoir dispatch and generated 12 TWh more power with less water, saving 4.1 million tons of standard coal.
- SGCC conducted generation right transaction and achieved an aggregated 144.3 TWh of power transaction, saving 12.375 million tons of standard coal.
- Implement demand-side power management projects, saving 3.13 TWh of power, 1.07 million tons of standard coal.
- Promote 692 electric vehicles, which saved 1,350 tons of standard coal.

(Calculated by 342g/KWh of standard coal consumption for average power supply in 2009, and saving 1t standard coal is equivalent to reduction of 2.493t CO<sub>2</sub> emission)

### Implement the "One-ultra and Four-larges" strategy and combat climate change

In 2020, the capacity transmitted by the UHV grid will reach 265 GW, which will reduce 6 TWh of spillage loss, saving 1.89 million tons of standard coal and reducing about 5.254 million tons of CO<sub>2</sub> emission.

Assume that large-capacity and high efficient units are to be used for all newly built coal units of China in 2020, approximately 180 million tons of coal consumption for power generation will be reduced per year, and about 500 million tons of CO<sub>2</sub> emission will be reduced.

By 2020, the installed hydropower capacity will reach 350GW in SGCC's service areas, which will reduce about 955.69 million tons of CO<sub>2</sub> emission.

In 2020, the newly installed capacity of nuclear generation will be 35 GW in SGCC's service area, which will reduce about 297.68 million tons of CO<sub>2</sub> emission.

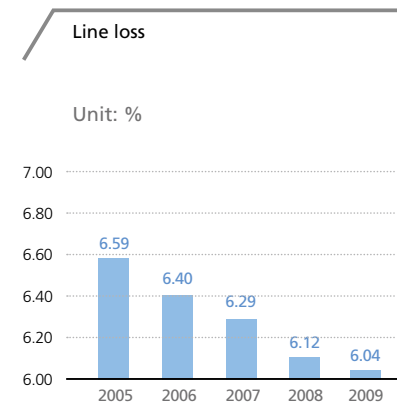
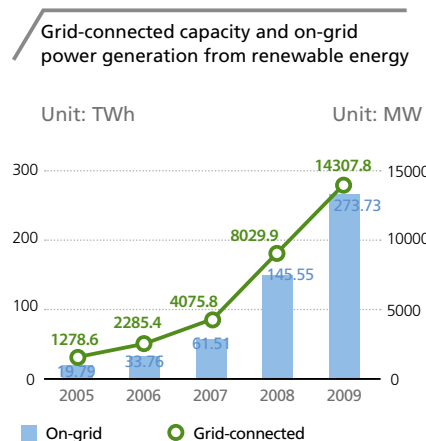
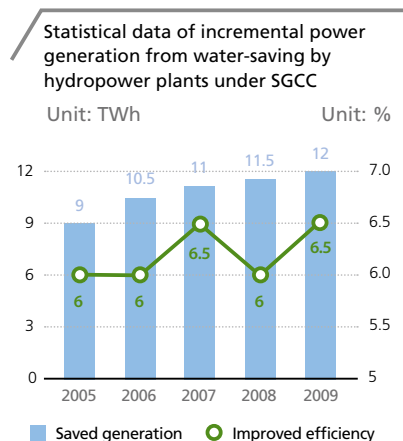
By 2020, the grid-connected capacity of wind power will be 100 GW in SGCC's service area, which will reduce about 150.66 million tons of CO<sub>2</sub> emission.



## Stakeholder participation — environmental participation

Type of participation	Content	Mode	Guarantee mechanism
<b>Notification of information</b> (Corporation → Public)	<ul style="list-style-type: none"> <li>Environmental impact of the Corporation</li> <li>Environmental policies and environmental standard of the Corporation</li> <li>Significant environmental initiatives of the Corporation</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Issue the white book on green development</li> <li>Issue a CSR report</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Establishing and implementing the Corporation's green development strategy</li> <li>Establishing the Corporation's all-round green management system</li> </ul>
<b>Accepting feedbacks</b> (Corporation ← Public)	<ul style="list-style-type: none"> <li>Environmental supervision required by the state and the society</li> <li>External environmental impact assessment</li> <li>Environmental emergencies</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Reinforce environmental acceptance of project</li> <li>Benchmark Reference to environmental management benchmarking</li> <li>Expert consultation</li> <li>Public discussion</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Establish an all-green management enhancement mechanism</li> <li>Formulate an all-green management enhancement program and plan</li> </ul>
<b>Dialogue and communication</b> (Corporation ↔ Public)	<ul style="list-style-type: none"> <li>Find out about and determine prevailing significant environmental topics</li> <li>Determine environmental actions to be taken presently</li> <li>Establish technical standards for environmental protection</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Hold working conferences on enhancing new energy development</li> <li>Participate in forums on environmental development</li> <li>Push forward environmental impact assessment</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Arrange for a special green management budget to ensure input of the project in environment</li> <li>Initiate environmental result assessment and performance management</li> </ul>
<b>Joint action</b> (Corporation & Public)	<ul style="list-style-type: none"> <li>Boost new energy development</li> <li>Boost energy-saving technology development</li> <li>Respond to global climate changes</li> <li>Build a green industry chain</li> <li>Advocate green development civilization</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Cooperated research and publicity</li> <li>Push forward transaction of generation rights</li> <li>Optimize power dispatch</li> <li>Push forward green procurement</li> <li>Reinforce demand-side management</li> <li>Initiate public welfare activities and volunteer services related to environmental protection</li> <li>...</li> </ul>	<ul style="list-style-type: none"> <li>Push forward construction of the green development culture, reinforce training of employees on environmental protection</li> <li>Releasing the CSR Report</li> </ul>

Year	EIA rate of power grid construction projects of 110kV and above (%)	Environmental acceptance rate of completed projects of 110kV and above (%)
2005	86.4	65.9
2006	85.7	85.5
2007	92.8	96.9
2008	99.1	97.1
2009	100	99.2



## Looking back at 2009

## Prospects for 2010

Responsibilities on Scientific Development	<ul style="list-style-type: none"> <li>→ Build a strong national UHV grid as the backbone with coordinated development of its subordinate networks</li> <li>↻ Complete 52,000 km of 110 kV and above transmission lines and 260,000 MVA transformation equipment with a total investment of RMB 250 billion Yuan</li> <li>↻ Ensure safe operation of the UHV AC Pilot Project and push forward the development of UHV DC Transmission Project.</li> <li>→ Continue to implement the projects for improving the transmitting capacity of power grid</li> <li>↻ Complete trade power of 270 TWh in the National Power Exchange Center</li> </ul>	<ul style="list-style-type: none"> <li>↻ Facilitate overall planning, technical research, standard system and application pilots of a strong smart grid</li> <li>↻ Keep the UHV AC pilot project under safe operation, speed up the construction of the UHV DC transmission project, and expedite the approval of the subsequent UHV projects</li> <li>↻ Invest RMB227.4 billion in grid construction, put into operation of 47,000km of 110kV and above transmission lines, 220,000 MVA of 110kV and above transformation equipment capacity, 4,118km of DC lines, 25,800 MW of inversion capacity as well as 900 MW of pumped storage.</li> <li>↻ Expedite clean energy on-grid generation and enable 322.5 TWh of national power market transaction</li> </ul>
Responsibilities on Power Supply Safety	<ul style="list-style-type: none"> <li>→ Establish and perfect standard production safety management flow system</li> <li>→ Identify, prevent and appraise risks for the power suppliers to ensure safety</li> <li>↻ Identify and resolve hidden risks for high-risk and important customers</li> <li>↻ Improve emergency response mechanism with an emergency command center to better address emergencies</li> <li>↻ Avoid large-area blackout</li> </ul>	<ul style="list-style-type: none"> <li>↻ Coordinate and expedite construction of safety management, quality management and emergency management systems</li> <li>↻ Speed up standardization of regulations, safety supervision and safety facilities</li> <li>↻ Implement safety risk identification, prevention and evaluation in an all-round way</li> <li>↻ Initiate special activities concerning production safety</li> <li>↻ Avoid large-scale blackout</li> </ul>
Responsibilities on excellent management	<ul style="list-style-type: none"> <li>↻ Set up a inter-department coordination mechanism based on business process</li> <li>↻ Establish an integrated budget cost quota system</li> <li>→ Push forward the establishment of asset life-cycle management system</li> <li>→ Carry out responsible purchasing and establish an integrated materials management system</li> <li>→ Further enlarge the centralized bidding scope</li> <li>→ Implement intensive management of capital, realize unified deposit reservation and centralized settlement</li> <li>↻ Realize annual operating revenue of over RMB 1,200 billion Yuan</li> <li>↻ Overall Productivity RMB 286,000 Yuan/(person · year)</li> </ul>	<ul style="list-style-type: none"> <li>↻ Expedite the Company's compilation of the "12th Five Year" plan</li> <li>↻ Overall productivity of RMB 331,000 Yuan/(person · year)</li> <li>↻ Annual operation revenue of over RMB 1,400 billion Yuan</li> <li>↻ Establish the primary form of a centralized fund pool system under unified control</li> <li>↻ Accelerate standardization and informationization construction on intensive material management</li> <li>↻ Accelerate construction of SG-ERP, ensure the safety of network and information</li> <li>↻ Continue to expand centralized tendering and bring primary procurement up to above 85%</li> </ul>
Responsibilities on Technical innovation	<ul style="list-style-type: none"> <li>→ Further implement the sci-tech development strategy of "One First-class, Four Larges", deepen the construction of innovative enterprise</li> <li>→ Continue to integrate the scientific research resources, improve the input-output efficiency in scientific research</li> <li>→ Establish and perfecting the medium and long-term sci-tech development planning</li> <li>↻ Invest up to RMB 13.5 billion Yuan in science and technology of the whole year</li> </ul>	<ul style="list-style-type: none"> <li>↻ Study and compile the Corporation's "12th Five Year Plan" and mid and long-term technical development plan</li> <li>↻ Invest up to RMB14.9 billion Yuan in technical outlay of the whole year</li> <li>↻ Set up 50 technical research teams, introduce 100 leading technical talents</li> <li>↻ Complete the national wind power technology &amp; testing research center, the solar energy generation R&amp;D (experiment) center, expedite construction of the national wind and PV generation storage and transmission project, increase the input-output efficiency of scientific research</li> <li>↻ Achieve overall breakthrough in core technologies, technical standards and test capability</li> </ul>
Responsibilities on communication and cooperation	<ul style="list-style-type: none"> <li>→ Intensify communications with the government, users, partners and other relevant parties</li> <li>→ Implement the minutes of meeting between SGCC and provincial governments</li> <li>↻ Hold 16 press conferences in the Headquarters</li> <li>↻ Release 500 times of power dispatching information</li> </ul>	<ul style="list-style-type: none"> <li>↻ Push forward value recognition with stakeholders</li> <li>↻ Put into effect minutes of conversations between the Corporation and the local governments</li> <li>↻ 18 news releases held by the headquarters</li> <li>↻ 540 issues about dispatch transactions</li> </ul>
Responsibilities on global vision	<ul style="list-style-type: none"> <li>→ Promote energy cooperation with Russia and Mongolia</li> <li>→ Set up an international purchasing platform, establish a systematic and high efficient materials supply system</li> <li>→ Strengthen international exchanges and cooperation, continue to promote overseas management and exchanges of executives</li> <li>→ Participate in formulation and promotion of international standards</li> </ul>	<ul style="list-style-type: none"> <li>↻ Actively expedite international energy cooperation</li> <li>↻ Operate the national power grid of the Philippines in a responsible manner</li> <li>↻ Build an international procurement platform, establish an international material procurement and supply system</li> <li>↻ Reinforce international exchange, with overseas management exchanges of senior management personnel up to 75 man times</li> <li>↻ Participate in the formulation and promotion of international standards concerning the ultrahigh voltage transmission technology, the smart grid and social responsibility</li> </ul>



## Looking back at 2009

## Prospects for 2010

Responsibility on quality service	<ul style="list-style-type: none"> <li>↻ Maintain a fulfillment rate of the “Ten Commitments” for supply service up to 99.99%</li> <li>→ Fully implement the “Ten Prohibitions” for employees’ service</li> <li>↻ Outage duration per urban household is reduced than that of 2008</li> <li>↻ Urban voltage qualification rate is not less than that of 2008</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations and strictly follow the relevant national regulations on power supply and consumption services</li> <li>↻ Hold to the moral basic, maintain fulfillment of the “Ten Commitments” for supply service up to 99.99%, fully implement the “Ten Prohibitions”</li> <li>↻ Innovate approaches to delivery of service, provide extended service</li> <li>↻ Improve industrial practice supervision network</li> <li>↻ Build smart business centers</li> <li>↻ Publicize green energy conservation</li> </ul>
Responsibilities in serving agriculture, countryside and farmers	<ul style="list-style-type: none"> <li>→ Reinforce rural electrification construction and the “Power for All” Project</li> <li>↻ Electricity outage duration per farmer household is less than that of 2008</li> <li>↻ Overall qualification rate of rural voltage is not less than that of 2008</li> <li>→ Deepen the standardized management of agricultural power enterprises</li> <li>↻ Input in training for agricultural power groups is not less than that of 2008</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations, strictly follow the “one grid one tariff” mechanism, lawfully manage rural power facilities, and carry out new national strategies in reconstruction and upgrading rural power grid</li> <li>↻ Hold to the moral basic, implement the “power for every household” project, help the government tidy up the rural power management system in our service areas</li> <li>↻ Expedite rural electrification, promote safe, scientific and economical power utilization</li> <li>↻ Standardize the rural power sector, train rural power teams with an investment no less than 2009</li> </ul>
Responsibility on Employee Development	<ul style="list-style-type: none"> <li>→ Safeguard employees’ legitimate rights and keep the stability of the workforce</li> <li>→ Ensure the employees’ safety and health</li> <li>↻ Ensure that input in employee’s training is not less than that of 2008</li> <li>→ Improve employees career plans and increase input in employees training</li> <li>→ Perfect the worker representative patrol inspection and President’s contact officer system, and implement democratic management in the enterprise</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations, maintain employee’s legal rights, safeguard their occupational safety and health</li> <li>↻ Hold to the moral basic, improve employees’ occupational growth passage, complete the channels for employees to participate in corporate management</li> <li>↻ Stabilize the employee team</li> <li>↻ Train employees with investment no less than 2009</li> <li>↻ Encourage employees in their volunteer activities</li> </ul>
Responsibilities on win-win partnership cooperation	<ul style="list-style-type: none"> <li>→ Fully carry out “Open, Fair and Just” dispatching transaction</li> <li>→ Boost the localization of electric power equipment</li> <li>→ Research and tackle key technical problems together with business partners</li> <li>→ Intensify the cooperation with banking institutions</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations and operation</li> <li>↻ Hold to the moral basic, adhere to the open, fair and just principle, ensure square deal</li> <li>↻ Push forward localization of critical power equipment</li> <li>↻ Establish long-term cooperation, conduct joint technical researches</li> <li>↻ Deepen bank-enterprise cooperation</li> <li>↻ Increase corporate transparency</li> <li>↻ Build a responsible value chain together</li> </ul>
Responsibilities as corporate citizen	<ul style="list-style-type: none"> <li>→ Run the business in compliance with laws and regulations, be credible, honest and self-disciplined</li> <li>→ Launch the poverty-relief and Tibet-aiding program with respect to power supply</li> <li>→ Observe our commitment as a partner of 2010 Shanghai World Expo</li> <li>→ Implement the second phase of the “SGCC Loving Care Fund” Project</li> <li>↻ Encourage the employees to take part in voluntary activities. It is estimated that voluntary services throughout the whole year will be up to 600,000 person-times.</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations, adhere to lawful tax payment, ensure credibility and probity</li> <li>↻ Hold to the moral basic, deepen poverty-relief, Tibet-aiding and counterpart support programs, actively organize donations for significant events</li> <li>↻ Carry out public welfare donations</li> <li>↻ Implement phase II projects to support the elderly, the school dropouts and the disabled</li> <li>↻ Deepen partnership cooperation for the 2010 Shanghai Expo</li> <li>↻ Employees’ volunteer service of the year is up to 620,000 person-times or so.</li> </ul>
Responsibilities on Environmental Protection and Energy Conservation	<ul style="list-style-type: none"> <li>↻ Line loss is declined from 6.10% in 2008 to 6.05%</li> <li>↻ EIA rate of 100% is maintained for 330 kV and above power grid construction projects</li> <li>↻ Promote energy conservation and consumption reduction by performing generation right transactions of over 100 TWh</li> <li>→ Implement the energy-saving power generation dispatching</li> <li>→ Actively promote the energy conservation and environmental protection technologies such as “replacing oil by electricity” and electric heat pump, etc.</li> <li>↻ Offtake all generation of renewable energy</li> <li>→ Increase the proportion of electricity in the end energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>↻ Perform legal obligations, comply with the environmental laws and regulations, perform environment assessment obligations, purchase all renewable power</li> <li>↻ Hold to the moral basic, maintain a line loss rate of not exceeding 6.04% and advocate the idea of green environment</li> <li>↻ Dispatch energy-efficiency generation, optimize reservoir dispatch</li> <li>↻ Expedite clean and efficient development of coal-electricity bases</li> <li>↻ Implement green procurement</li> <li>↻ Enhance clean energies and energy-efficient and environment-friendly technologies</li> <li>↻ Increase the proportion of electricity use in the end-use energy consumption</li> <li>↻ Initiate public welfare activities on environment protection</li> </ul>

# UN Global Compact: Initiatives and Performance

In 2009, SGCC fulfilled its “Quality Service” tenet, supported the ten principles under the UN “Global Compact”, explored CSR management, and continued to upgrade the Corporation’s economic, social and environmental performance.

Ten principles of the UN “Global Compact”	Action performance
<b>Human rights</b> 1. Respect and safeguard international human rights provided under international conventions 2. Forbid any conduct of disregard or trample of human rights	<ul style="list-style-type: none"> <li>Abide by the international conventions, international practices signed or acknowledged by the Chinese government, respect the Universal Declaration of Human Rights, the UN International Covenant on Civil and Political Rights and the UN International Covenant on Economic, Social and Cultural Rights, and abide by the laws and regulations of the host countries</li> <li>Forbid any disrespect of human rights, safeguard employees’ dignity</li> <li>Provide barrier-free service to the disabled at business premises indiscriminately to disabled employees</li> <li>Expedite rural electrification, implement the “Power for All” Project, promote universal power services for remote areas, solve the power supply problems for 142,000 households and for 592,000 people</li> </ul>
<b>Labor</b> 3. Protect the freedom of association, acknowledge the rights to collective bargain 4. Eliminate any form of forced labor 5. Eliminate child labor 6. Reject labor discrimination and occupational discrimination	<ul style="list-style-type: none"> <li>Establish the Staff Congress and the President’s Liaison Officer systems, reinforce dialogue and communication between the Corporation and the employees, solve and respond to all the 132 proposals from the Staff Congress</li> <li>Establish labor unions at all levels, adhere to equal negotiation, reinforce democratic employee management and supervision, acknowledge freedom of association and rights to collective bargain</li> <li>Reject forced labor and child labor, attach importance to training and standardized management of the security personnel</li> <li>Establish open, fair and competitive employment mechanism, reject discrimination by nationality, gender, sex orientation, country, religion, area, family, age or disease</li> <li>Remuneration according to the relevant national laws and regulations, provide training to up to 91.2% of the employees</li> <li>59 city-level companies have implemented the occupational, safety &amp; health management standards</li> </ul>
<b>Environment</b> 7. Ready for environmental challenges 8. Undertake more responsibilities for environmental protection 9. Encourage development and popularization of harmless environmental technologies	<ul style="list-style-type: none"> <li>Implement sustainable development, develop a strong smart grid, allocate a larger range of installed capacity and environmental capacity, mitigate land occupation, economize social investment, reduce transmission losses</li> <li>Strictly follow the environmental approval procedure for grid construction projects, the 1000kV UHV transmission lines follow the same electromagnetic environmental standard for the 500kV lines.</li> <li>UHV grid has transmitted hydropower of 3.315 TWh from the Central China to North China, with line loss reduced by 0.08%, realizing water saving and electric energy output increasing by reservoir optimal operation of 12TWh; generation rights transaction of 144.3TWh, power saving under demand-side management of 3.13TWh and 692 electric vehicles promoted.</li> <li>Guide customers to use energy efficiently, encourage customers to give priority to green power purchase and support renewable energies</li> <li>Promote standardization, universal design, equipment, cost and standard processes, mitigate resources consumption</li> <li>Develop economical, environment-friendly and energy-efficient technologies, enhance research and application of new technologies such as grid energy storage, new sodium-sulfur battery, electric vehicles, amorphous alloy distribution transformer, and promote clean coal burning technology</li> </ul>
<b>Anti-corruption</b> 10. Fight against corruption, extortion and bribery	<ul style="list-style-type: none"> <li>Establish an open, fair and efficient corporate culture</li> <li>Release the <i>Instructions on Responsibility Breakdown by the Headquarters Departments for Implementation of the Corporation’s Construction of a Corruption Control &amp; Prevention System</i>, the <i>Integrity &amp; Self-Discipline Manual for SGCC Leaders</i> and the <i>Instructions on the Special “Anti-Peccancy” Work in the Anti-Corruption &amp; Integrity Advocacy Campaign</i>, strengthen construction of a corruption control and prevention system</li> <li>Enhance anti-corruption measures</li> <li>Formulate and implement <i>Instructions on Special Control of Commercial Bribery</i> and the <i>Implementation Plan for Self-Examination &amp; Self-Correction of Unfair Transactions</i>, fight against commercial bribery, by tenure auditing and efficiency supervision</li> <li>Analyze anti-corruption risks, and make sure that 100% of the employees receive education on anti-corruption and integrity</li> <li>Conduct 2,443 efficiency supervision programs, make 599 decisions and propose 11,860 suggestions in relation to supervision works</li> </ul>

# GRI index

	No.	GRI	Indicator	Index
1.Strategy and analysis	1	1.1	Top decision makers on the corporate strategy and sustainable development	P2~P3/P9~P15
	2	1.2	Description of significant impacts, risks and opportunities	P2~P3/P9~P15
2.Corporation Profile	3	2.1	Corporation name	Cover/P4
	4	2.2	Primary brands, products or services	Cover/P4/P50
	5	2.3	Organization structure	P6~P7
	6	2.4	Address of headquarters	Inside back cover
	7	2.5	Number of countries where organization operates and countries closely related to the Corporation's businesses and development	P6/P40~P43
	8	2.6	Nature of ownership and legal form	P4
	9	2.7	Markets served	P4/P40~P43
	10	2.8	Scale of the organization	P4
	11	2.9	Significant changes in size, structural or ownership	P4/P6~P7
	12	2.10	Awards received in the report period	P5/P32~P33
3.Report parameters	13	3.1	Reporting period	Report Overview
	14	3.2	Date of the latest report	Report Overview
	15	3.3	Reporting cycle	Report Overview
	16	3.4	Contact person for responding to questions related to the report	Report Overview
	17	3.5	Procedures for determining the report contents	Compilation Flow/Report Overview
	18	3.6	Reporting limits	Report Overview
	19	3.7	Note on limits of the report scope	Report Overview
	20	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations and other entities having remarkable influence	P6~P7
	21	3.9	Data measurement techniques and the basis for calculation	Report Overview
	22	3.10	Explanation for any restatement of the information contained in earlier reports	Report Overview
	23	3.11	Significant changes from previous reports in scope, boundary or measurement	Report Overview
	24	3.12	Location of the Standard Disclosure on the basis of chapter and section	Report Overview/P91~P94
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	27	4.2	Indication of whether the Chairman of the Highest governance body is also an executive officer	P7
	28	4.3	Number of independent and/or non-executive directors of the Highest governance body	P7
	29	4.4	Mechanism for the shareholder or employee to provide recommendations or direction to the Highest governance body	P58~P63
	30	4.5	Linkage between compensation for members of the highest governance body, senior managers and executives and the organization's financial, social and environmental performance	P7/P58~P63
	31	4.6	Process in place for the Highest governance body to ensure conflicts of interest are avoided	P2~P3/P7
	32	4.7	Process defining the highest governance body qualification and expertise	P7
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	49	EC7	Proportion of employees and management hired from the local community at the location of the significant operation	P58~P63
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	70	EN19	Total emission of ozone consuming substances	No statistics available
	71	EN20	NO <sub>x</sub> , SO <sub>x</sub> and other significant air emissions by type and weight	P78~P87
	72	EN21	Total water discharged by quality and destination	No statistics available
	73	EN22	Total weight of waste by type and disposal method	No statistics available
	74	EN23	Total number and volume of significant spills	Never happened
	75	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous, and percentage of transported waste shipped internationally	No statistics available
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	98	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	P58–P63
	99	HR4	Total number of incidents of discrimination and actions taken	Never happened
	100	HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	P58–P63
	101	HR6	Operations identified as having potential risk for incidents of child labor, and measure taken	P58–P63
	102	HR7	Operations identified as having potential risk for incidents of forced or compulsory labor, and measure taken	P58–P63
	103	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	No statistics available
	104	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	Never happened
<b>9. Society performance indicators</b>	105	SO1	Program and practices that manage the impacts of operations on communities	P70–P77
	106	SO2	Percentage and total number of business units analyzed for risks related to corruption	P70–P77
	107	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures	P58–P63
	108	SO4	Actions taken in response to incidents of corruption	P71–P72/P76
	109	SO5	Public policy positions and actions	P2–P3/P12–P15/P70–P77
	110	SO6	Financial contribution to political parties and related institutions	Never happened
	111	SO7	Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes	Never happened
	112	SO8	Total number of and monetary value of significant fines for non-compliance with laws	Never happened
<b>10. Product responsibility performance indicators</b>	113	PR1	Percentage of products and services that are assessed for life cycle health and safety impacts	P46–P51
	114	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety	P46–P51
	115	PR3	Percentage of product and service information required for assessment, and type of information	P46–P51
	116	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	Never happened
	117	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	P46–P51
	118	PR6	Programs for adherence to laws, standards, and voluntary codes concerning marketing communications	P46–P51/P70–P77
	119	PR7	Total number of incidents of non-compliance with laws, standards, and voluntary codes concerning marketing communications	P46–P51
	120	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	P46–P51
	121	PR9	Monetary values of significant fines for non-compliance with laws and regulations	P46–P51



No.	GRI*	Indicators	Index
1	EU1	Installed capacity of power generation**	P25/P69
2	EU2	Number of residential, industrial, and commercial customer accounts***	P94
3	EU3	Length of transmission and distribution lines	P4/P20~P21
4	EU4	Allocation of CO <sub>2</sub> emissions allowances by country or region	P78~P87
5	EU5	Program that ensures availability and reliability of short-term and long-term power supply	P12~P15/P18~P21/P40~P43/ P46~P51
6	EU6	Demand-side management projects covering residential, commercial and industrial users	P46~P51/P85~P87
7	EU7	Researches to improve capability and reliability of power supply and for sustainable development	P18~P21/P30~P33
8	EU8	Measures against decommissioning of nuclear devices	No statistics available
9	EU9	Planned installed capacity by country or region against projected electricity demand over the long term	P12~P15/P19
10	EU10	Installed capacity reduced due to demand-side management	P85~P86
11	EU11	Energy saved by residential, industrial and commercial users due to demand-side management	P78~P87
12	EU12	Average efficiency of generator units by country or region	No statistics available
13	EU13	Efficiency of power transmission	P78~P87
14	EU14	Description of biodiversity areas affected by operation	P78~P87
15	EU15	Rules to ensure continuous improvement of employee skills and qualities	P58~P63
16	EU16	Number of employees that have signed subcontracting agreements	P58~P63
17	EU17	Percentage of employees that have undergone relevant health and safety training	P58~P63
18	EU18	Stakeholder participation in the decision making process	P34~P39/P51/P56/P62/ P68~P69/P76/P87
19	EU19	Approach to managing the impacts of displacement	P70~P77
20	EU20	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	P22~P25
21	EU21	Number of people physically or economically displaced and compensation, broken down by type of project	P52~P57
22	EU22	Programs, including those in partnership with government, to improve or maintain access to electricity and customer support services	P52~P57
23	EU23	Practices to address disability-related barriers	P46~P51/ P70~P77
24	EU24	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases	No statistics available
25	EU25	Percentage of population unserved in licensed distribution or service areas	P46~P57
26	EU26	Number of residential disconnections for non-payment, broken down by duration of disconnection	No statistics available
27	EU27	Power outage frequency	P46~P51
28	EU28	Average power outage duration	P51/P57
29	EU29	Average plant availability factor by country or region	No statistics available

\*Electric utility supplement

\*\*Installed capacity in areas of operation

\*\*\*Up to end of 2009, the Corporation had directly served 244 million users including 7,319,300 industrial users, 218 million residential users, 9,065,600 thousand commercial users and 9,615,100 other users.

# Assurance statements



## ASSURANCE STATEMENT

### Introduction

Det Norske Veritas ('DNV') has been commissioned by the management of State Grid to carry out an assurance engagement on State Grid 2009 Corporate Social Responsibility Report ('the Report') against the AA1000 Assurance Standard (2008) ('AA1000AS 2008'). State Grid is responsible for the collection, analysis, aggregation and presentation of information within the Report. Our responsibility is to perform the assurance work in accordance with terms of reference agreed with State Grid. The stakeholders of State Grid are the intended users of this statement. The assurance engagement is based on the assumption that the data and information provided to us is complete and true.

### Scope of Assurance and Limitations

The scope of assurance work agreed upon with State Grid includes the following:

- The social, environmental and economic indicators presented in the Report, from January to December 2009.
- On-site verification at State Grid's Head Office without visiting any subsidiaries and external stakeholders.
- Verification criteria are based on compliance to Accountability Principles (Type 1) with a moderate level of assurance, according to AA1000AS 2008.
- Verification is conducted by DNV in January 2009, DNV has not observed significant factors to limit our assurance activities.

### Verification Methodology

DNV is a global provider of sustainability services, with qualified environmental and social assurance specialists working in over 100 countries. Our assurance engagement was planned and carried out in accordance with the DNV Protocol for Verification of Sustainability Reporting.

The Report has been evaluated against the following criteria:

- Adherence to the principles of Inclusivity, Materiality and Responsiveness.

### Conclusions

We have evaluated the Report's adherence to the following principles on a scale of 'Good', 'Acceptable' and 'Needs Improvement':

AA1000 AS 2009 principles:

Inclusivity: Acceptable. State Grid has established a systematic process for engaging stakeholders, and treats stakeholders in a responsible manner throughout State Grid's sustainable strategy.

Materiality: Acceptable. State Grid has disclosed core issues concerned by stakeholders by establishing carding mechanism to identify and evaluate critical issues concerned by stakeholders.

Responsiveness: Acceptable. State Grid has responded to stakeholder's expectations by action plan described in the section of "prospect for next year" in the Report.

### Opportunities for Improvement

The following is an excerpt from the observations and opportunities reported back to the management of State Grid. However, these do not affect our conclusions on the Report, and they are indeed generally consistent with the management objectives already in place.

- Improve transparency by disclosing the relevant data and information thoroughly according to the indicators of the Global Reporting Initiative sustainability reporting guidelines (GRI G3) and sector supplement.

### DNV's Independence

DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV maintains complete impartiality toward stakeholders interviewed during the verification process. DNV expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Verification Statement.

### For Det Norske Veritas

Signed:  Lead Verifier: ZHANG Jun	Signed:  Approver: WANG, Xuezhu, CR Services Manager, DNV China:
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Beijing, China, January 2010



AA1000  
Licensed Assurance Provider  
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In case of a contradiction between the Chinese and English version of the statement, the English version shall prevail.

## Feedback

## In Search of Excellence, in Pursuit of Out-performance

In order to improve our fulfillment of social responsibilities, we welcome your valuable comments on our performance and CSR Report:

1. 2009 CSR Report of SGCC is:  
☐ Excellent ☐ Good ☐ Fair
2. SGCC's performance in actively serving the government and customers is:  
☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Not well-informed
3. SGCC's effort in environmental protection and promoting sustainable development is:  
☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Not well-informed
4. The communication between SGCC and stakeholders is:  
☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Not well-informed
5. Do you think this Report can reflect the major influence of SGCC on the economy, environment and society:  
☐ Yes ☐ Fairly ☐ No
6. The clarity, accuracy and completeness of the information, statistics and indicators released in this report are:  
☐ High ☐ Relatively high ☐ Fair ☐ Relatively low ☐ Low
7. Do you think this Report is reader-friendly:  
☐ Yes ☐ Fairly ☐ No
8. We welcome your comments and suggestions on our performance and CSR Report:

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Note: Please tick "✓" in the "○" before the item that fits your opinion.  
Please send your online feedback to [CSR@sgcc.com.cn](mailto:CSR@sgcc.com.cn)

## Related Publications

*SGCC Guidance for the Implementation of CSR*

*State Grid News*

*Power News*

*State Grid Journal*

*Energy Review*

*Power Grid Technology*



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