Your Power Our Care
SGCC always on your side

Corporate Social Responsibility Report
2014
This CSR report is dedicated to illustrating State Grid Corporation of China’s aspiration, action, and performance in maximizing the integrated economic, social and environmental value, as well as its implementation of social responsibilities in 2014 and the commitment for 2015.

Statement

State Grid Corporation of China (SGCC) declares that all information of the CSR report is substantiated, balanced, and comprehensive. It systematically illustrates SGCC’s aspiration, action, performance, commitment and future improvement in maximizing the integrated economic, social and environmental value. We ensure its authenticity, objectivity and promptness. We hope, by means of publishing the CSR report, to strengthen the communication with stakeholders and the society, establish mutual trust and cooperation based on the same value recognition, and promote sustainable development.

January 2015
Explore, Practice, Test and Improve a Scientific Outlook on CSR

Responsibilities Originate from Mission and Arise from Strategy
Responsibilities are Rooted in Management and Accomplished through Mechanism

Economic Performance
Social Performance
Environmental Performance

Comprehensive Analysis of Key Indicators
Commitments for 2015 and Fulfillment in 2014
Commitment & Fulfillment of Provincial Companies
Commitment & Fulfillment of Subsidiaries
Corporate Responsibility to Employees
Employees’ Responsibility to the Society
UN Global Compact: Initiatives and Performance

Ensure Reliable & Trustworthy Power Supply
Deal With Each Stakeholder Responsibly
Become a Model of Green Development
Develop Overseas Business with Responsibility
Guarantee Operation Transparency and Be Open to Public Supervision

The Aspiration
The Performance
The Commitment
Performing Subject

Scan the QR code for more contents.
CSR is the fundamental expectation and requirement from all walks of life. CSR is the starting point as well as the ultimate goal of the company’s operation.

Build a responsible, reliable and trustworthy SGCC

Corporate Social Responsibilities of SGCC

1. Ensure reliable and trustworthy power supply
   - (The key to create maximum integrated value)
   - Realize utmost contribution to sustainable development

2. Be responsible for each stakeholder
   - Be responsible for everyone involved in the corporate operation

3. Become a role model of green development (be responsible for the environmental effect caused by corporate operation)

4. Develop overseas business with responsibility (social responsibility is the company’s eternal pursuit no matter where it operates)

5. Ensure transparent operation and be open to social supervision
   - (Transparency and social supervision make social responsibility trustworthy and sustainable)

Embed CSR into corporate operation

Provide safer, cleaner, more economical and sustainable energy supply with minimum economic, social and environment costs

1. Fulfill the responsibility for scientific development and push for optimal allocation of the energy resources
2. Fulfill the responsibility for ensuring power supply and maintain public social security
3. Fulfill the responsibility for management excellence and guarantee operational efficiency
4. Fulfill the responsibility for technical innovation and lead independent industrial innovation
5. Fulfill the responsibility for global vision and deepen global resource integration
Message from the Chairman

2014 has been an extraordinary year for SGCC. Under the strong leadership of the CPC Central Committee and the State Council, SGCC further promoted the development pattern transformation of both the company and power grid, sped up the construction of a modernized company with “A Strong Power Grid, Excellent Assets, Services and Performance”. While pursuing the maximized integrated economic, social and environmental value, the company has ushered in a new age of fulfilling its social responsibilities and promoting its sustainability.

Always prioritize safe power supply. Under the complex circumstances of large-scale integration of new energy, mass operation of new equipments, frequent natural disasters and damages from external forces, SGCC still ensured the grid’s safe operation and reliable power supply. Even during the flood season, Fufeng, Jinpu and Binjin UHV DC lines were operating at full capacity, transmitting electricity of 21.6GW to East China, an increase of 69%, and accommodating 90TWh of hydropower from Southwest China, increased by 85% and both made record high. They have ensured the export of hydropower in Southwest China and reliable power supply in East China. The trans-regional and trans-provincial power transmission via UHV reached 136.7TWh, increased by 88%. UHV’s advantages in mass transmission over long distance and energy optimization were fully utilized to promote the smog governance in East China and the development and utilization of clean energy in West China. The company also successfully guaranteed the power supply of major events such as APEC, CICA and the Youth Olympic Games.

Insisting on law-compliance as the essence to implement social responsibility. Employees should always keeping in mind the concept of governing by laws and study the knowledge of laws and regulations. Incorporate the ruling by law concept into the enterprise management, covering various levels, businesses and duties so as to ensure effective supervision. Moreover, standardize working procedure and realize close-loop and efficient decision making mechanism and management and supervision mechanism. In search of building a law-abiding company with complete coverage, whole-process supervision and employee total involvement.

Promoting sustainable energy development is the core task to fulfill our social responsibility. A new round of energy revolution centered around new energy is rising across the globe since the 21st century. Large-scale development and exploitation of clean energy has become the common choice for various countries to ensure energy supply, protect the ecological environment and cope with climate change. SGCC strictly implements the strategy of One Belt And One Road (OBOR), accelerating the cross-border interconnection between power grids and coming up with the strategic concept of Global Energy Interconnection which is to build a globally interconnected strong and smart grid with UHV grid as the backbone and delivery of clean energy as the priority to ensure clean replacement and decarbonization. The Global Energy Interconnection connects the power grid in different countries and regions with different time zones and seasons to stimulate the development, exploitation and coordination of new energy in large capacity in a larger scope so as to push for the energy revolution and sustainability. Eight UHV projects were included in the Air Pollution Prevention and Control Action Plan. Three UHV projects including Huainan-Nanjing-Shanghai UHV AC project began construction. Other UHV projects such as Southern Hani-Zhengzhou UHV DC project began operation. UHV projects have entered a new stage for large-scale construction and rapid development. SGCC has built the grid with the world’s largest integrated capacity of wind power and the fastest growth of PV generation.

Scientific management and S&T innovation is the basic guarantee to enhance the capacity of fulfilling our social responsibility. “3HSG” system (Intensive Management on Human Resource, Materials and Finance and Grand Planning, Construction, Operation, Maintenance, and Marketing) and three centers (control and dispatching center, operation monitoring center and call center) were built. SGCC also speeds up the construction of an integrated governance system, setting up 1,300 core business flows, and releasing 484 corporate standards, and 452 universal systems. The company has made record high, making great contribution for consecutive growth. It has been rated as an A-Class enterprise by SASSAC evaluation on operation performances for 10 consecutive years and ranked 7th on Fortune Global 500 for 4 consecutive years. Its S&T innovation capability has been greatly enhanced. The world’s first five-terminal flexible HVDC transmission project- Zhejiang Zhoushan Flexible HVDC Transmission Demonstration Project was put into operation. Smart grid innovation project won the first prize for Science and Technology Progress. SGCC’s technical standard has won the highest prize of China Standards Innovation and Contribution Award for three consecutive years. And let’s not forget that the number of patents we own ranks first among all SOEs.

Treat every stakeholder responsibly. Be responsible for customers. Improve work efficiency and services. The company spares no effort in solving “the last kilometer” problem, which significantly enhanced the customers’ satisfaction. Be responsible for agriculture, countryside and farmers. Keep solving the undervoltage problem in rural areas. SGCC has solved this problem for 3.36 million households and brought electricity access to 870 thousand people in 210 thousand households. Be responsible for employees. Place staff training and democratic management as the core for the strategy of vitalizing the company by human resource development. Ensure employees’ right to know, to participate, to speak, and to supervise. Be responsible for partners. Stick to transparent operation, promote responsible procurement and push for the independent innovation and upgrade of the equipment manufacturing industry. Be responsible for the community. Build public welfare brands such as UHV Scholarship Fund and other programs to assist students and the poor. Implement “Young Volunteers Action” for 12 consecutive years which has benefited more than 700,000 people.

Implement international business responsibly. Leverage our advantages in technology and management to deploy the win-win concept and advance in international energy cooperation and overseas business operation in a responsible way. SGCC won the bid for auxiliary transmission project of Belo Monte hydropower in Brazil. UHV transmission technology is going global. The company successfully acquired 35 percent stake of CDP Reti. Besides, SGCC has signed energy cooperation agreements with Rossetti, Kazakhstan SK Fund, and the Ministry of Electricity and Energy of Egypt. Now the company is operating the backbone energy networks in the Philippines, Brazil, Portugal, Australia, Italy and Hong Kong. Its overseas assets reach $29.4 billion, 17 times higher than that of 2009.

A brand new year starts with brand new expectations. An innovative development steps into a new journey. In 2015, we will implement the spirit of the 3rd and 4th Plenary Sessions of the 18th CPC Central Committee and the Central Economic Work Conference to adapt to the economic “new normal”, speed up the coordinated development between UHV and grids at all levels, improve operation and management, ensure safe power supply and quality service, deepen the sustainable development, promote the sustainable utilization of energy sources, and make positive contribution to the building of a moderately prosperous society and the realizing the Chinese dream of the great rejuvenation of the Chinese nation.
SGCC was established as a state-owned enterprise on December 29, 2002. It has been ranked as an A-Class enterprise by SASAC evaluation on operation performances for 10 consecutive years. As the largest utility in the world, SGCC ranked 7th on Fortune Global 500.

SGCC is the largest power grid constructor and operator in the world. Our mission is to provide safer, cleaner, and more economic and sustainable power supply. As a super-large state-owned enterprise crucial to national energy security and economic life line, SGCC operates as a group with 200 billion registered capital and 1.86 million employees. SGCC serves 1.1 billion people in 26 provinces, autonomous regions and municipalities, covering 88% of the national territory. SGCC also operates overseas assets in the Philippines, Brazil, Portugal, Australia and Italy, etc. with good performance.

**Corporate Profile**

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- SGCC serves 1.1 billion people in 26 provinces, autonomous regions and municipalities, covering 88% of the national territory.
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**Organizational Structure—the Headquarters**

1. Administration Office, SGCC
2. General Office, SGCC
3. Research Office, SGCC
4. Dept. of Development and Planning, SGCC
5. Dept. of Finance & Asset, SGCC
6. Dept. of Safety Supervision, SGCC
7. Dept. of Operation & Maintenance, SGCC
8. Dept. of Marketing, SGCC
9. Dept. of Public Relations, SGCC
10. Dept. of Science & Technology (Department of Smart Grid), SGCC
11. Dept. of Construction, SGCC
12. Dept. of AC Transmission Project, SGCC
13. Dept. of DC Transmission Project, SGCC
14. Dept. of Information and Communication Technology, SGCC
15. Dept. of Procurement (SGCC Bidding Management Center), SGCC
16. Dept. of Affiliations Management, SGCC
17. Dept. of Public Relations (SGCC Brand Building Center), SGCC
18. Dept. of International Cooperation, SGCC
19. Dept. of Auditing, SGCC
20. Dept. of Legal Affairs, SGCC
21. Dept. of Personnel, SGCC
22. Dept. of Human Resource, SGCC
23. Restructuring Office, SGCC
24. Dept. of Retirement Affairs, SGCC
25. Dept. of Logistics, SGCC
26. Dept. of Corporate Culture (Youth League and Party Committee), SGCC
27. Superintendence Office, SGCC
28. Labor Union, SGCC
29. National Power Dispatching & Control Center
30. SGCC Operation Monitoring Center
31. SGCC Power Exchange Center
32. SGCC Association of Enterprise Management

**Organizational Structure—Divisions**

<table>
<thead>
<tr>
<th>Division</th>
<th>Office/Center</th>
<th>Total Assets (RMB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beijing Electric Power Company, SGCC</td>
<td>2,900.9 billion</td>
</tr>
<tr>
<td>2</td>
<td>Tianjin Electric Power Company, SGCC</td>
<td>2,096.1 billion</td>
</tr>
<tr>
<td>3</td>
<td>Hebei Electric Power Company, SGCC</td>
<td>3,469.4 billion</td>
</tr>
<tr>
<td>4</td>
<td>Jilin Power Grid Company, SGCC</td>
<td>99.967%</td>
</tr>
<tr>
<td>5</td>
<td>Shanxi Electric Power Company, SGCC</td>
<td>99.878%</td>
</tr>
<tr>
<td>6</td>
<td>Shandong Electric Power Company, SGCC</td>
<td>99.878%</td>
</tr>
<tr>
<td>7</td>
<td>Jiangsu Electric Power Company, SGCC</td>
<td>99.967%</td>
</tr>
<tr>
<td>8</td>
<td>Zhejiang Electric Power Company, SGCC</td>
<td>99.878%</td>
</tr>
</tbody>
</table>

**Organizational Structure—Branches**

SGCC is divided into branches in different regions:
- **North China Branch**
serving 88% of the national territory
- **East China Branch**
- **Southwest China Branch**
- **Northwest China Branch**
- **Central China Branch**

**Electricity Sales**

- **3,469.4 billion**
- **2,096.1 billion**
- **2,900.9 billion**

**Revenue (RMB)**

- **99.967%**
- **99.878%**

**Line Loss**

- **6.81%**

**Reliability of Urban Power Supply**

- **99.967%**

**Reliability of Rural Power Supply**

- **99.878%**

**Additional Data (billion RMB)**

- **1.86 million employees**
- **1,095,000 km**

**Honors and Prizes for CSR Fulfillment in 2014**

- **SGCC CSR Report 2014**

**A-Class Enterprise by SASAC Evaluation on Operation Performances for the 10th consecutive year**

**Revenues:**
- **SGCC North China Branch**
- **SGCC East China Branch**
- **SGCC Northwest China Branch**

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- **3,469.4 billion**

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The construction and operation of the extension project of SGCC’s 1000kV UHV AC Demonstration Project upgraded the independent innovation capability and core competitiveness of China’s electric power equipment industry and made a firm stance in leading the world’s UHV transmission sector.

It’s a hard journey for the last ten years. SGCC opened the door for the era of UHV in the world, shouldering it as a national responsibility and mission. Since its initiation in 2004, UHV has now sailed into a new phase of large-scale construction and fast development. SGCC staff have pioneered a strategic direction to transform energy development, ensure energy security, construct ecological civilization and serve socio-economic sustainability.

SGCC marched forward through difficulties and conquered obstacles to promote UHV and form a global consensus on this technology. China has organized a number of large-scale independent research and demonstrations on UHV, which was highly appreciated by senior state leaders, including Chinese President Xi Jinping. The praise was echoed among international peers. With local government backing it up, the development of UHV has been included into the national 12th Five Year Plan, the 12th Five Year Plan for Energy Development, Air Pollution Prevention and Control Action Plan, Mid and Long Term S&T Development Plan, and Action Plan for Energy Development Strategy (2014-2020). The concept of a Global Energy Interconnection backboned by UHV has triggered positive responses and wide praises from the international community.

The innovative march in the last decade has created new records one after another in the world history of grid construction in search of excellence and in pursuit of outperformance. SGCC adheres to independent innovation, makes firm strides forward, improves itself every year to a new level, exceeds itself with every power line, and makes innovative breakthroughs in UHV’s core technologies, key equipment, project construction, standard formulation and commercial operation. It has become a golden card of the country as it was “Created by China” and “Led by China”.

http://csr.sgcc.com.cn
**Explore, Practice, Test and Improve a Scientific Outlook on CSR**

Implement the requirements from the Central Government and the essence of a series of important speeches from President Xi Jinping.

**Effectuate the essence of the Fourth Plenary Session of the 18th CPC Central Committee, promote the rule of law in the country, and implement the social responsibilities of managing the corporate according to law.**

*Stick to the principle of governing and administrating by law, and build a law-based country, government and society. Ensure that a scientific approach is taken to legislation, law is enforced strictly, justice is administered impartially, and the law is observed by everyone. Promote modernization of governance system and competence of the state.*

*Stick to the principle of protecting property right, honoring contract, unifying market, fair exchange, fair competition and effective administration. Market will play a decisive role in resource allocation and government will be better functioned. Improve the laws and regulations for socialist market economy.*

*Strengthen legislation of enterprise's social responsibility. Strive to build a law-based enterprise to ensure that all staff abide by the law, covering all aspects and controlling all processes. Realize the management of human resource, power, business and the enterprise by law.*

*To apprehend, adapt to and lead the “new normal” is the basic logic for China’s socio-economic development for the time being and for the time to come. It’s also the general work guideline for CSR implementation.*

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**8 Key Points in the Corporate CSR Concept**

| CSR originates from the operation of the company. | It loses the substance for the shadow to pursue social responsibilities without taking into consideration the process and overall performance of grid construction and operation. |
| Identify the groundwork of CSR | Understand and recognize the social and environmental influence of company’s operation, both positive and negative. What specific influence entails what specific responsibility. |
| Connotation of CSR implementation | Manage the influence of company’s operation on the society and the environment by thorough communication and effective operation with stakeholders. Maximize positive influence while minimize negative influence. |
| Standard for responsible corporate action | Whether the company can keep a transparent and ethical business practice, including complying by the laws, regulations, moral bottom line, and business ethics, considering stakeholders' expectations and interests, being committed to sustainable development and promoting stakeholders’ participation. All the above-mentioned practices ensure operational transparency. |
| CSR is the integration of the aspiration, action and performance of the company to take responsibilities. | Aspiration arises from corporate governance, including the corporate mission, value, strategy, and organizational system, as well as external pressure and momentum. Action is the practices to implement the responsibilities assumed by the enterprise. Performance is the company’s contribution to sustainable development, that is, the creation of economic, social and environmental value, and the operational transparency to the satisfaction of stakeholders and the society. |
| The purpose of the company to implement its social responsibility | Go beyond the simple, narrow pursuit of maximized profits. Spare no efforts in realizing the unity and harmony between the corporate and social sustainability in the course of seeking maximized integrated economic, social and environmental value. Work for a reliable, trustworthy, responsible SOE brand in the masses. |
| The essence of building a responsible SOE is to achieve “value, transparency, and recognition”. | Value requires the company to go after the maximized integrated economic, social and environmental value. Transparency calls upon the superior design, institutional construction and communication innovation of the corporate transparency. Recognition addresses to the company’s understanding, awareness and guidance of the expectations from stakeholders and the society. |
| Social responsibility is the process of transformation for the company and its employees. | Social responsibility is the process to explore and practice employees’ new working method, and the new development mode, novel communication method, and contemporary management mode of the company. |

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*—— Chinese President Xi Jinping*  
*Speech at the panel discussion with a delegation from Shanghai during the “Two Sessions” in 2014*
Responsibilities Originate from Mission and Arise from Strategy

Corporate Vision
Build a World-class Grid and a World-class Enterprise

Corporate Mission
Delivery clean energy towards a harmonious society
Ensure safer, cleaner, more economical, and sustainable energy supply and push for a healthier development, more harmonious society and a better life.

Corporate Philosophy
Oriented to people, loyal to company and committed to serving the society

Corporate Tenet
To serve the country, customers, power generation enterprises and the socio-economic development

Corporate Spirit
In search of excellence In pursuit of outperformance

Core Values
Integrity, commitment, innovation and dedication

CSR Fulfillment Concept
Develop the company
Serve the society
Oriented to people
Seek mutual advancement

Strategic Approach
Transform the development mode of the power grid
Transform the development mode of the company

Goal
Build a modernized company with ‘A Strong Power Grid, Excellent Assets, Services and Performance’

Corporate Value
Value appreciation of state-owned assets
Fair and efficient power trade
Protect customers’ legal rights
Intensify anti-corruption and promote integrity

Advocate the sustainable development of the company, the industry and the society.

Ensure the sustainable operation of the enterprise.
Maximize the integrated value.
Strive for social recognition and trust.

Promote energy sustainability by focusing on constructing the Strong and Smart Grid.
Ensure reliable and trustworthy energy supply by efficient operation and S&T innovation.
Satisfy power demand for economic development with quality service.
Win over social recognition with transparent operation and supervision from all walks of life.
Promote the sustainable development of the industrial business with the company’s industrial driving force.
Stimulate the sustainable development of the society with the company’s social influence.

Accelerate the transformation of grid development mode, construct the Strong and Smart Grid, and modernize the grid development.
Accelerate the transformation of company development mode, ensure efficient running of “3I5G” system and modernize the company development.

Deploy the Strategy of Harmonious Development “13520” Build a Credible, Green, Vital, Safe and Civic Central SOE

One Core
Sustainable development

Three Goals
Notable enhancement of the capacity to create integrated economic, social and environmental value.
Distinct improvement on the brand reputation and influence.
Remarkable progress in social communication ability and operational transparency.

Five Characteristics of Central SOE
Build a credible central SOE
Build a green central SOE
Build a vital central SOE
Build a safe central SOE
Build a civic central SOE

Value appreciation of state-owned assets
Fair and efficient power trade
Protect customers’ legal rights
Intensify anti-corruption and promote integrity
Promote energy conservation and emission reduction
Develop circular economy
Protect the ecological environment
Innovate internal mechanism
Intensify democratic management
Promote well-rounded development of employees
Establish advanced corporate culture
Guarantee safe and reliable power supply
Stabilize the corporate running
Establish a safe, long-term mechanism
Implement macro-control policies
Accept supervision with transparent policies
Participate in social welfare undertakings
Develop together with partners with win-win cooperation
Build up a responsible SOE brand
Ensure law-abiding operations
Responsibilities are Rooted in Management and Accomplished through Mechanism

The “3I5G” system construction promotes management innovation

The “3I5G” system has refreshed operation and development and kept improving development quality and efficiency, which includes intensive and effective management, intensively shared resources, integrated and smooth businesses, unified and complete infrastructure. At the same time, it has brought about positive outward influence so that the company can better perform its CSR and construct a fine and healthy corporate ecosystem.

A world-class power grid and a world-class enterprise

Promote the value of the enterprise and its customers
Enhance corporate management efficiency, economic benefits and services
Strengthen corporate headquarters
Upgrade provincial companies
Cultivate prefecture (city) companies
Improvement Approach

Intensive material management
Intensive financial management
Intensive PR management
IT Communication Branding System Standardization Corporate Culture
Integrated Construction of the Headquarters and Branches
Security Guarantee
SGCC Call Center Business Operation Monitoring Center
S&T Support Team-Stability Logistics Auditing Staff Participation

Build a strong supporting and guarantee system

Collaborative mechanism integrating responsibilities, standards, appraisal, institutions and processes

Improve the Contents of CSR Fulfillment

Categorized by functions of integrated value creation

Ensure Reliable & Trustworthy Power Supply
Become a Model of Green Development
Guarantee Operation Transparency

Categorized by stakeholders’ responsibilities

Standards for power supply reliability specified by laws and regulations
Compulsory responsibility
Safeguard the legitimate rights and interests of employees
Compulsory responsibility
Ensure fair and just treatment to employees
Obligatory responsibility
Ensure fair and just treatment to employees
Voluntary responsibility
Career cultivation

Optimize the Action of CSR Fulfillment

Maintain transparent and ethical behavior of the company and its employees

Take the initiative to consider real and potential influence of decisions and activities on the society and environment
Initiate communication with stakeholders
Pursue the maximization of the integrated economic, social and environmental value

Minimize negative impact while maximize positive influence
Ensure stakeholders’ right to know, to participate, and to supervise
Make the most contribution to sustainable development through decisions and activities

Fortify institutional construction
Build a long-term effective mechanism to ensure transparent and ethical behavior of the company and its employees
**9-Step** Mechanism of CSR Implementation

**Stakeholders’ Participation**

- Information Disclosure
  - Disclose important information such as tariff standards, pricing policy, service channels, and service standards.
- Popularize knowledge on safety and electricity: electrical shock first aid, and power facility protection.
- Disclose trade plans, prices, procurement information and policies.
- Bulletin information on safe production and project quality.
- Publish important information on public welfare and electricity poverty alleviation.
- Feedback Acceptance
  - Listen to customers’ opinions, suggestions and expectations.
  - Carry out service satisfaction survey and feedback to customers.
- Dialogue and Communication
  - Panel discussion with customers.
  - Discuss together about topics on serving Agriculture, Countryside and Farmers.
  - Ensure the implementation of philosophy and strategy on prioritized topics.
- Joint Action
  - Formulate power supply solutions with customers.
  - Joint-promote new countryside construction.
- Stakeholders’ Participation
  - Promote the coordinated development of power source and power grid, and solve the problems in design and construction.
  - Jointly develop key equipment.
  - Jointly conduct public welfare activities.

**Channels**

- Information Bulletin on website
  - Notice in business hall
  - Hand out publicity material
  - Hold press conferences
  - Press conferences on dispatching information
  - Press conferences on bidding information
- Coordination of public welfare activities
  - Report on electricity poverty alleviation
  - Media reports
- SGCC CSR Report 2014

**“9-Step” Mechanism of CSR Implementation**

**Identify performance standard:**
Clarify the indicator system and effective standard for measuring and monitoring the performance of CSR topics.

**Regularly benchmark and feedback:**
- Timely keep informed and monitor the topic progress, achievements, existing problems and challenges.
- Ensure operational transparency:
  - Ensure stakeholders’ right to know, to participate, and to supervise.
  - Improve constantly:
  - Topics that are more scientifically chosen, better implemented and more effectively communicated.

**Choose prioritized topics:**
Comprehensively consider resource and capability and choose the CSR topics which contribute most to sustainable development.

**Determine implementation concept:**
Consider the factors of economy, society, and environment and ensure transparency and stakeholders’ participation.

**Formulate implementation strategy:**
Decide the strategic roadmap to maximize the integrated economic, social and environmental values.

**Improve institutional guarantee:**
Ensure the implementation of philosophy and strategy on prioritized topics.

**Plan the implementation action:**
Plan and carry out major CSR action projects and ensure sufficient resource input.

**Promote CSR Penetration: All Employees’ Participation, Full-Process Blending, and All-Round Coverage**

A comprehensive and profound reform of organizational management mode is in need to promote thorough implementation of CSR in activities of the organization within its influence and maximize its contribution to the sustainable development.
Let Innovation Be the New Engine

The Action
Embedded in mind and actualized in action

- Leverage the conglomerate advantages and various social forces. Hold 300 important themed discussions and organize 30 domestic and foreign academicians, 300 professors and professors of engineering, 800 senior engineers and Ph.Ds, 500 construction companies, and 170 domestic equipment manufacturers to conduct various work on UHV, such as scientific research, experiment, demonstration, planning, designing, construction and operation.

- Yield a new business card for China’s S&T development. Accomplish important key technological researches and obtain 705 authorized patents. Build world-class test bases and R&D centers and develop a full range of UHV key equipment and components. Successfully solve a series of difficulties, such as big-span construction, heavy-cargo transportation, and intensive installation and commissioning of a large number of new equipment. Lead the formulation of 40 national standards and the release and implementation of 6 international standards.

- Build and put three AC and four DC UHV projects into operation. Create multiple world records, such as the first commercial operation of the UHV AC/DC projects, project systematic design, double-circuit UHV AC transmission on the same tower, and ultra-large-capacity AC transmission. These lines have withstood harsh weather and natural disasters such as lightning, high winds, high and low temperatures and snowstorms. They have also undergone strict tests of various operation modes and different faults and maintained safe and stable operation consistently.

On January 18, 2013, “UHV AC transmission key technology, system equipment and engineering application” won China’s highest award for science and technology—the National Award for S&T Progress (Special Prize). Project leader SGCC Chairman Liu Zhenya received the award from state leaders.
Ensure Reliable & Trustworthy Power Supply

Fulfill the responsibilities of scientific development, excellence management, safe power supply and technical innovation

- **Unleash grid’s function to optimize resource allocation**
  - UHV enhances cross-regional resource allocation capacity
  - UHV promotes the Global Energy Interconnection
  - Promote the coordinated development of power grids at all levels

- **Ensure safe and reliable power supply**
  - Accomplish important power supply tasks
  - Reinforce grid risk control
  - Strengthen emergency response capability

- **Maximum load in 2014**
  - 659.95 GW

- **Management innovation ensures quality and benefits**
  - “3I5G” system improves operational efficiency
  - Promotes overall corporate operational capability
  - Improve corporate management performance

- **S&T innovation supports grid development**
  - Construct the strategy of S&T support and development
  - Complete first-class S&T innovation system
  - Push forward major projects of the big grid and S&T demonstration projects
  - Carry out major S&T innovation

- **Patents owned by SGCC**
  - 40,646

- **Grid investment in 2014**
  - RMB 385.5 billion

- **Trans-regional power delivered via UHV**
  - 136.7 TWh

- **Safer, cleaner and more economical power supply**
  - Accelerate the construction of smart grid
  - Accommodate power generation fueled by new energy
  - Promote the construction of energy bases

- **Electricity sales in 2014**
  - 3,469.4 TWh

- **Maximum load in 2014**
  - 659.95 GW
UHV promotes the optimal allocation of energy resources

UHV has entered a new phase of large-scale construction. SGCC’s four AC and four DC UHV projects were listed in the Action Plan for Air Pollution Prevention and Control of China. UHV grid has become the strategic focus of the national energy development and clean development. These projects have built fourteen UHV substations, 8 converter stations, and 12,000km lines with 130GW/GW transforming and converting capacity, which will be put into operation by 2017.

UHV promotes the Global Energy Interconnection. To cope with the global energy problem, SGCC brought up the strategic concept of building a Global Energy Interconnection with overall breakthrough in UHV transmission technologies, which is to connect grids between energy bases and load centers across or within the continents. The Global Energy Interconnection also fits the strategic concept of “One Belt And One Road (OBOR)”. Accelerating the interconnection of infrastructure, including power grids, is in line with the development needs of various countries. SGCC has signed a strategic power cooperation agreement with Kazakhstan to promote the interconnection of power grids between two countries, work on building large-scale coal-fired integration and new energy bases in Kazakhstan, transmit large-capacity electricity over long distances to China and other neighboring countries via UHV technologies. It is of economic complementarity and pragmatic significance.

Trans-regional power transmission capability of UHV grids

<table>
<thead>
<tr>
<th>Rated transmission capability</th>
<th>Accumulative transmitted electricity since operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jinjingnan-Jingmen UHV AC project</td>
<td>In operation in January 2009 6.6GW 66.609TWh</td>
</tr>
<tr>
<td>Xianggaba-Shanghai UHV DC project</td>
<td>In operation in July 2010 6.4GW 62.2TWh</td>
</tr>
<tr>
<td>Jingping-Sunan UHV DC project</td>
<td>In operation in July 2012 7.2GW 62.7TWh</td>
</tr>
<tr>
<td>Huainan-Zhebei-Shanghai UHV AC project</td>
<td>In operation in September 2013 6.75GW 56.05TWh</td>
</tr>
<tr>
<td>Hamitan-Zhenzhou UHV DC project</td>
<td>In operation in January 2014 6.8GW 50.2TWh</td>
</tr>
<tr>
<td>Xilaidao-Zhen UHV DC project</td>
<td>In operation in July 2014 5GW 13.6TWh</td>
</tr>
<tr>
<td>Zhebei-Fuzhou UHV AC project</td>
<td>In operation in December 2014 5GW 25.1TWh</td>
</tr>
</tbody>
</table>

The Action Plan for Air Pollution Prevention and Control on Scientific Development

Social Concern

- Value Creation
- Management innovation drives the development of the power grid and the enterprise
- Smart grid forges an energy allocation platform.
- Topics of guaranteeing reliable and trustworthy power supply

UHV promotes the strategic transformation of energy development, promotes the national energy security, and provides safe, reliable, clean, and quality power for the social and economic development.
UHV transmission enhances trans-regional resource allocation capacity. The "1U4L" strategy will intensively promote the construction of energy bases. SGCC has built three AC and four DC UHV transmission channels for energy bases to transmit the power out from coal-fired power bases in Shanxi, Huanan and Huabei, and the hydropower bases in Southwest China. SGCC’s four AC and four DC UHV projects are included in the Action Plan for Air Pollution Prevention and Control and the Jaun-Hunan UHV DC project will transmit the electricity out which is produced in energy bases in Shanxi, eastern Inner Mongolia, Ningxia, and northern Shaanxi.

UHV promotes large-scale development and exploitation of clean energy. China has abundant clean energy resources. Exploitable hydropower reaches 570GW and the exploitable wind power and solar power is over 2,500GW and 5,000GW respectively, equivalent to 2500GW of conventional thermal power. SGCC plans to construct the UHV synchronous grids in Southwest China to transmit hydropower out via 16 loops of UHV DC channels. The wind power and solar power in West and North China will be delivered out via UHV DC channels in ways of bundling wind and coal-fired power, bundling wind, PV and coal-fired power, and complementing hydro and PV power.

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Smart grid forges a new energy allocation platform

Grid intelligent transformation realized its leapfrog development. The demonstration expansion project of the new-generation smart substation was constructed with major breakthroughs in core technologies, such as overall integrated design, smart equipment development and testing, and modularization construction. All of these have greatly improved the intelligent transformation of substations. SGCC has launched the construction of 50 new-generation smart substations and accomplished the intelligent transformation upgrade of 200 substations. A total of 1,550 smart substations have been built and helicopter and smart inspection robot have been popularized.

Smart grid projects have been widely applied. SGCC began the construction of the second phase of the National Wind/PV/Energy Storage and Smart Transmission Demonstration Project, the first of its kind in the world to integrate wind power generation, solar power generation, power storage system and smart transmission. The company also initiated 41 smart grid innovation demonstration projects of 6 categories. Now SGCC has constructed 385 smart grid pilot projects and 35 national smart grid projects. In 2014, 218 EV charging and battery swapping stations and 5,007 charging poles were constructed. The quick charge network covering Beijing-Shanghai Highway, Beijing-Hong Kong-Macao Highway, and Qinghai-Yinchuan Highway (two vertical and one horizontal) has basically come into being. Smart grid promotes the revolution of energy production and consumption. Smart grid has diversified the ways for energy production, ensured the exploitation of clean energy and promoted the transformation of energy allocation from on-site balance to trans-regional optimal allocation in a large scope. Smart grid can be used as a platform to optimize resource allocation. The focus used to be strengthening smart grid. Now it should be shifted to promoting the revolution of energy production and consumption and serving the social-economic development.

Smart grid promotes the development of new industries and promotes the development of new energy industry, enhances the production of new energy equipment and drives the advancement of new materials, smart equipment, EV, and smart power supply facilities. Smart Grid bolsters the integration and interaction of EV and the power grid, explores how to serve smart city construction and carry out cooperation to build demonstration districts of smart grid innovation.

Smart grid "1U4L" Strategy

SGCC CSR Report 2014 • The Action Responsibility on Scientific Development
Promote coordinated development of grids at different levels

Scientifically plan the construction of grids for the 13th Five Year. Launch the strategic planning of grid development for the 13th Five Year and its medium-and-long-term development in line with the Grid Implementation Program for the Action Plan for Air Pollution Prevention and Control. Take into consideration the need for large energy base construction and regional economic development and optimize the planning for UHV grids and grids at different levels.

Promote the coordinated development of grids at different levels. With safe, qualified, efficient and large-scale construction of UHV grids as the emphasis, coordinate the construction of UHV and grids at different levels, improve the Northwest 750kV main grid, and advance the construction of pumped storage power stations. With the improvement of urban power supply reliability as the focus, optimize distribution grid planning and adapt to the rapid development of distributed generation and EV.

Upgrade rural grids and improve power supply capability.

Promote key grid projects at all levels. In 2014, SGCC put one AC and two DC UHV projects into operation and started constructing another two AC and one DC UHV projects. The Sichuan-Tibet Interconnection Project was put into operation six months in advance. The Northwest 750kV main grid, auxiliary project to supply power to electrified railway, and pumped storage power stations like Xianju Project in Zhejiang, are progressed in an orderly way. SGCC has started the construction of 50,000km lines of 110(66) kV and above with a transformation capacity of 320GVA and put into operation 52,000km lines of 110(66) kV and above with a transformation capacity of 280GVA.

Tap on the grid transmission capacity. Depending on the realities of power grids in different areas, SGCC conducted thorough analysis on the constraints on power grid transmission capacity in five aspects, namely, simulation technology, control technology, transmission technology, management reinforcement, and equipment upgrade. The company organized projects to improve grid transmission capacity.

<table>
<thead>
<tr>
<th>Voltage level (kV)</th>
<th>Number of accomplished projects</th>
<th>Improvement on transmission capacity (GVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>29</td>
<td>614.0</td>
</tr>
<tr>
<td>220</td>
<td>33</td>
<td>574.9</td>
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<tr>
<td>330</td>
<td>6</td>
<td>3000</td>
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<td>750</td>
<td>9</td>
<td>6600</td>
</tr>
<tr>
<td>1000</td>
<td>7</td>
<td>12,401.3</td>
</tr>
</tbody>
</table>

Sichuan-Tibet Interconnection Project serves the development of Tibetan areas

This is a key project for SGCC to implement the Fifth Party’s strategic plan on Tibet and to serve the social-economic development and long-term stability of the Tibetan areas in Sichuan and Tibet. The project will greatly enhance the economic and social development in the Tibetan areas of Sichuan and Tibet, and improve the living conditions of the people there. It is of great significance to maintain social stability and national security and promote national unity. State leaders have attached great importance to this project. Yu Zhengsheng, Member of Politburo and Chairman of CPPCC, has affirmed the project’s significance on multiple occasions. The provincial governments of Sichuan and Tibet and SGCC co-founded a steering committee of Sichuan-Tibet Interconnection Project, led by SGCC Chairman Liu Zhenya. Related leaders from these two provincial government and SGCC were deputy leaders of this organization.

The project starts at Sichuan Xiangcheng 500kV substation in the east and ends at Tibetan Changdu 500kV substation in the west. The Sichuan Xiangcheng-Betang 500kV line, Tibetan Bangda-Yulong 220kV substation, Changdu-Yulong and Changdu-Bangda 220kV lines were in construction at the same time. The project has newly constructed 1,521km lines with a dynamic investment of RMB 6.63 billion. It’s by far the most challenging UHV AC transformation/transmission project on the plateau in the world. The construction was extremely difficult. Four stations were in high altitude. For example, the altitude of Bangda and Yulong stations was over 4000m, which suffered from severe cold and was lack of oxygen. The construction efficiency was greatly set back. There were no railways or highways along the construction sites, which resulted in the difficulty in transporting main equipment. All transformation facilities and materials were transported on No. 318 and No.214 national roads or local roads.

<table>
<thead>
<tr>
<th>Status of projects to enhance grid transmission capacity in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage level (kV)</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>110</td>
</tr>
<tr>
<td>220</td>
</tr>
<tr>
<td>330</td>
</tr>
<tr>
<td>750</td>
</tr>
<tr>
<td>1000</td>
</tr>
</tbody>
</table>

Promote key grid projects at all levels.
Distribution grid construction guarantees people's livelihood

Complete the standardization system for distribution grid construction. Compile all-process and all-system management policies and technical standards for distribution grid from 10kV to 0.4kV on the corporate level. Release 6 general institutions including the operation and maintenance of distribution grid and cable, emergency repair for distribution grid, and distribution automation construction and maintenance. Issue other 4 specifications regarding the operation, maintenance and repair of distribution grid and cable. Publish a series of standardizations such as typical design and general engineering cost for 10kV and 0.4kV distribution grid and Updated Description for 10kV Distribution Grid's Typical Design and Standard Materials. The application rate of typical design in newly built projects was over 90%. Finish the software development and test for distribution grid's standard design. The standardization rate for material procurement in SGCC's units was over 95%.

Improve quality service of the distribution network. Advance “full” distribution and standardized repair. Integrate the operation and distribution data of 10kV lines in all prefecture-level companies. Exemplify connection was established among stations, lines, transformers and households to effectively support the repair of distribution grid. Fully knowing situations of low voltage within SGCC's system and utilize 95598 orders and marketing to collect data. Strengthen the monitoring of undervoltage problems in all key areas and supervise the implementation of control measures. Follow complaints on distribution grid repair, supervise improvement measures and constantly improve power supply quality.

Strengthen distribution grid's capability to ensure livelihood. Expand the scope of urban power grid construction and upgrade, continuously improve distribution lines of high failure rate, promote live work of distribution grid and live equipment testing, and enhance the power supply quality of distribution grid. SGCC performed 278,000 live assignments throughout the year, with an increase of 40% year on year. Popularize easy, convenient and effective live detection measures and solve the problem of seasonal heavy load on rural grids. Accomplish the formulation of 5 technical standards, including Technical Guide for Distribution Automation. Formulate the technical standards for the bidding of master station, terminal, and fault indicator. Finish the evaluation system of distribution automation operation and orderly advance the application of distribution automation.

The average radius for repair services is 4.89 km. Newly-added emergency repair spots is 353. The action of scientific development includes: SGCC Tianjin Electric Power Company enhanced the capacity for 5 substations in light of the power consumption situation in Wuqing. After the upgrade, eleven 20MVA transformers were added to ease the tension of power supply and facilitate the development of local industrial zones, new energy vehicles, e-commerce and aquaculture. 88,000 customers were provided with safer and more stable environment for power consumption. SGCC Fengtai Power Supply Company completed 78,000 live assignments throughout the year, with an increase of 40% year on year. Popularize easy, convenient and effective live detection measures and solve the problem of seasonal heavy load on rural grids. The power grid can take the initiative and reduce power cut time in the operational district by 13.8 minutes. The company uses visual power supply programming so that it can rapidly respond to customer demand. The average time for power access is shortened by 5 days. Power grid troubleshooting and customer power demand can be truly interactive.

SGCC Ma'anshan Power Supply Company spared no efforts in renovating the power supply for aging communities. Right now the power supply facilities in 18 communities have been upgraded, eliminating outdated distribution equipment and safety issues in these residential areas. The company replaced distribution transformers, added new consumption branch boxes, and rectified external lines. The company planned to finish the renovation of distribution facilities for all 46 old communities by the end of 2015.
Build “3I5G” system

Power grid has distinct economies of scale and scope. Most businesses are highly homogenous. Large grid companies should adopt strategic operation and management mode, strengthening the intensive management of various resources and core businesses, and promoting the upward centralization of core business management, thus to form the economics of scale in production and organization management, and realize maximized overall efficiency of the conglomerate.

SGCC spent 5 years in promoting the integration of the Headquarters and its branches, strengthening the intensive control of its human resources, financial resources, materials and core resources and the operation and management of its core businesses. The company finished the construction of “3I5G” system in 2014, accomplishing an intensive, flattening, professional, new mode of grid business operation.

Problems targeted by “3I5G” System

**Problems to be solved** | Traditional methods | Constraints
--- | --- | ---
Decentralized grid management holds back the development of the Strong and Smart Grid. | The connection between different grid management regions was weak. Electricity was on-site self-balanced in different regions and different provinces. The traditional grid management system was decentralized according to geographic scope and voltage levels. | Constrain the implementation of unified balance of electricity nationwide; Constrain UHV planning and construction. The coordinated development of grids at different levels; Constrain the company to exert its overall strength, to support the highly intensive and intensive construction, highly stable operation, and high quality maintenance of the big grid.

Decentralized operation management can hardly satisfy the company’s demand for sustainable development. | Multiple levels of property ownerships result in a long chain of management, and they are small, all-inclusive and scattered. SGC can hardly bring its conglomerate and scale advantages into play or implement standardized and lean management, which results in low efficiency and benefit. | The operation management with production as its focus can hardly adapt to the increasing demands for services. Production is emphasized while services are ignored. Businesses are segmented and managed in a decentralized way. Customer service quality is not highly acknowledged. The operation management with unclear responsibilities and management supervision can hardly meet increasing stringent regulatory requirements. Traditionally, SGC Headquarters had inadequate control over its core resources and businesses. In face of inadequate supervision and evaluation, executive efficiency is weakened by level. SGC has many subsidiaries with unclear functional organization and responsibilities. It results in the redundancy of organizational structure, overlapping functions and repeated responsibilities. Business end lacks control and supervision and they abound with operational risks. It hinders the company from realizing a world-class grid and a world-class enterprise and the objective of “A Strong Power Grid, Excellent Assets, Services and Performance”, incompatible with the macroenvironment of strengthened industrial and social supervision.

Outcomes of “3I5G” System

**Core Values**

SGCC can hardly bring its conglomerate and scale advantages into play or implement standardized and lean management, which results in low efficiency and benefit. Build a unified management system and technical standard by focusing on various operational activities, specifying the boundary of responsibilities, and optimizing business procedures. Construct an operational system that penetrates into all levels and covers the entire business area so as to improve its control over businesses, exert the advantage of scale operation and improve the company’s core competitiveness.

**Solutions**

**How to do**

1. **Intensive Management**
   - Integrate various kinds of production elements scattered in different subsidiary companies, and allocate, integrate and optimize them in a unified way within SGCC’s system so as to realize the collaboration of scale economy, improvement on management and control, and various businesses.
   - Integrate all production elements and core businesses of the group for unified allocation and optimized combination to enhance efficiency and benefits as the value orientation in principle of being cost-saving, restricted and efficient, so as to manage skillfully, lower the cost and gain sustainable competitive company.

2. **Fusing Management**
   - Reduce the level of corporate legal persons and managements and shorten the management chain. Clarify the position of each managerial level in a scientific way and strengthen the Headquarters’ (mother company) control to lower the cost for conglomerate coordination.
   - The management chain and business procedures will be simplified by conforming the boundaries of property ownerships and managements and reducing non-core institutions so as to achieve a new grid and lean organization, intensive and powerful control, smooth information communication, quick response, and efficient decision and management.

3. **Professional Management**
   - Focus on various operational activities, specify the boundary of responsibilities, and give play to the self-discipline advantages of modularization. Build thorough control capacity even to the margins of the businesses and effectively reduce the cost for coordination between different sectors.
   - Build a unified management system and technical standard by focusing on various operational activities, specifying the boundary of responsibilities, and optimizing business procedures. Construct an operational system that penetrates into all levels and covers the entire business area so as to improve its control over businesses, exert the advantage of scale operation and improve the company’s core competitiveness.

**SGCC CSR Report 2014**

**Responsibility on Management Excellence**

**The Management Reform for “3I5G” System**

**Construct a unified, strong support and guarantee system**

**Construct a unified, standard corporate organizational structure**

**Construct a unified, strong operational monitoring system**

**Construct a unified, intensive resource management and operation control mode**

**Construct a unified, effective business organization mode**

**Construct a unified, standard work flow system**

**SGCC’s conglomerate operation breaks new ground**

**Grids sustainability achieves new breakthroughs**

**The overall corporate efficiency is improved to a new level**

**The company’s brand value and soft power are boosted to a new level**

**Power supply service reaches a new height**

**The management team and the staff present a new image**

**The company presents a new image**
A new type of grid corporate management system basically comes into being.

- **Realize 2-tier legal persons and three-level management.** Condense the original five-tier legal person system (the Headquarters, region, provincial-level, prefecture-level, and county-level) to a two-tier legal person system (the Headquarters and provincial-level). The original five-level management was simplified into three-level management (the Headquarters, provincial-level and prefecture-level). The function of various levels is better clarified. The Headquarters’ status for strategic decision, resource allocation and management control center is more prominent. Provincial companies will enrich their management capacities and operational forces and play a key connective role as the middle-level management and business organizers. Prefectural-level and county-level companies will focus on implementation.

- **Positions are standardized in a unified way.** The functional departments of the headquarters for the provincial companies, prefecture-level companies and county-level companies will focus on implementation.

- **A unified, top-down process is built.** ARIS was introduced to achieve dynamic matching and synchronized adjustment among five management elements, namely, responsibility, process, system, standard and evaluation. Dynamic and unified management for these five elements can be realized. The Headquarters has accumulatively developed 1,300 universal procedures covering power supply stations in provinces, prefectures, counties and townships, promoting the transformation from functional management to comprehensive functional and process management.

- **A general institution based management mechanism is established.** Finish a new management system directory, including 452 general institutions, 254 non-general institutions, 95 operational procedures, and 59 other specifications. All job positions are covered and all processes are responded to. 49,330 standards and institutions were abolished, 1,203 business are managed in an institutional way among SGCC’s 1,300 businesses of different levels.

- **Take the lead to establish a unified technical standard system of full coverage in the electric power industry.** Publish SGCC Technical Standard System Table, which is revised every year. It gradually realized the dynamic integration between corporate standards with national standards and industrial standards. The Table includes 1,019 technical standards of SGCC and 3,600 core industrial standards and national standards.

Greatly enhance SGCC’s operational capability.

- **Improve planning efficiency.** In 2014, the average time for feasibility research and preliminary work of grid projects was shortened by 37% and 22%. The approval cycle for preliminary design was shortened by 33%.

- **Enhance grid construction capability.** According to professional assessment, SGCC’s overall grid construction capability was improved by 8.51%. The efficiency was enhanced by 8.52% and the comprehensive benefits were elevated by 6.14%.

- **Strengthen grid dispatching & monitoring capacity.** Regulation and control integration realized an integrated operation of scheduling and equipment monitoring. The coverage of centralized monitoring in substations reached 99.95%. The qualification rate of substation monitoring information was improved by 15.5%, compared with that in 2013.

- **Enhance grid operation and maintenance efficiency.** The efficiency for power transmission personnel, transformation personnel, and distribution personnel is 34km/person, 33.7MVA/person and 30 units/person, increased by 2km/person, 13.6MVA/person and 9 units/person respectively after the system construction.

- **Sales businesses are integrated according to different levels and categories.** All businesses in all grids are integrated in 95% within SGCC’s business area. According to professional assessment, SGCC’s overall grid construction capability was improved by 8.51%. The efficiency was enhanced by 8.52% and the comprehensive benefits were elevated by 6.14%.

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Ensure safe and reliable power supply

Accomplish important power supply tasks. Ensure the power supply for big events, such as the NPC, the CPCC, the Fourth Plenary Session of the 18th CPC Central Committee, the Central Economic Work Conference, Shanghai CIJCA Summit, Nanjing 2014 Youth Olympic Games, and Beijing APEC. No mistake, accident or complaint has occurred.

Strengthen safety risk control of the power grid. Build an early warning platform for grid operational risks, covering 5 branches, 27 provincial companies and 394 prefecture-level companies. SGCC released 3,494 early warnings within the system and ensured the safe implementation of 3,693 maintenance tasks. SGCC had no grid or equipment accident at levels of ordinary or above. There were 3 personal injuries, 13 five-level grid accidents, 2 six-level grid accidents, 1 five-level equipment accident, and 2 six-level equipment accidents.


Guarantee the power for the success of big events

During Beijing APEC, SGCC has mobilized 17,698 employees in power emergency repair, line inspection, transformation operation, and security guard, 1,309 automobiles and 64 emergency generation vehicles. It mobilized 142,400 man-times and 10,805 vehicle-times to safeguard 108 key substations (including switching stations) and 513 transmission lines to ensure safe and reliable power supply for 16 important venues such as the Olympic central area, Beijing Capital International Airport, as well as 130 sites where officials stayed.

The power supply for Nanjing 2014 Youth Olympic Games involved 96 substations and 738 lines. SGCC Jiangsu Electric Power Company totally invested RMB3.05 billion in grid construction. During the Games, it mobilized 70,700 man-times and 7,775 vehicle-times and carried out 29,200 inspections on transformation equipment and 16,000 visits to various customers to ensure successful power supply.

During the 2014 Summer Davos Forum, the emergency command center of SGCC Tianjin Electric Power Company was on duty 24 hours for the safe and reliable power supply for big events, VIP Customers and key venues. There was no flicker on the grid, no mistake on power supply and no complaint from customers. SGCC has provided strong support for the success of the event.

Innovation drives scientific development

Optimize S&T support and scientific development strategy. Complete the Framework of Major Specific Research on the Key Technologies and Equipment of Global Energy Interconnection. Come up with technical implementation approaches and research contents to clarify the direction for major research. Enhance the capability for basic and prospective research. Propose 98 topics in 5 directions and organize demonstrations and arrange SGCC’s first batch of key basic and prospective scientific projects. Optimize superior design of technological planning and identify 6 major research branches and 18 technical fields. In 2014, the company invested RMB7.08 billion in R&D.

Improve first-class S&T innovation system. Enhance the S&T innovation system. Speed up the construction of overseas research centers. European branch of State Grid Smart Grid Research Institute was established and the first batch of research projects in the U.S. research institute was launched. A guidance mechanism was constructed so that SGCC’s directly owned research institutes worked together with provincial research organizations to carry out scientific and technological development and support services. The lab elimination mechanism started implementation and 52 labs within SGCC’s system were assessed. Release the Guide for Sharing SGGC Laboratory Resources.

Make major S&T innovations. Conduct themed research on “Smart Grid Undertakes and Promotes the 3rd Industrial Revolution”. Organize NAIR Group and other 41 enterprises to establish Smart Electricity of Industry Alliance. Organize China EPR and NAIR Group to jointly conduct key technical research on grid development, making world-leading progress in IGBT component development, ±1000kV converter transformer and wall bushing technology.

Promote the construction of specific big grid projects and S&T demonstration projects. Zhejiang Zhoushan Flexible HVDC Transmission Demonstration Project was put into use according to schedule. Fujian-Xiamen Flexible HVDC Transmission Demonstration Project started construction. Advance the big grid research in 44 topics of 6 areas and obtain periodic progress in six areas, such as big grid emergency control. 12 projects have been successfully declared to be the National “183” Program, National “973” Program, and supporting projects. The evaluation on smart grid efficiency was applied as an ECP project. Experts will supervise 226 key S&T projects.

Flexible HVDC Sets Sail

On June 27th, 2014, the world’s first five-terminal flexible HVDC transmission project—Zhejiang Zhoushan ±200kV/1GW Five-Terminal Flexible HVDC Transmission Demonstration Project began to trial run. The project has a line of 141.5km, of which submarine cable is 128km. It will effectively promote the accommodation of new marine energies, such as offshore wind power and tidal energy. The electricity among the islands in northern Zhoushan can be swiftly exchanged and complementary, providing a strong support for the development of the new district of Zhoushan islands. The project is a major S&T demonstration project whose intellectual property rights are fully owned by SGCC. It has the most terminals and the highest voltage level among world’s multiple-terminal flexible HVDC projects. This project signifies that China is leading in the world in this regard, and it provides an effective solution for the construction of the ‘Strong and Smart Grid’.

Some S&T Results in 2014

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
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<td>Authorized patents</td>
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</tr>
<tr>
<td>China Excellent Patent Award</td>
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<tr>
<td>Commercialized</td>
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</tr>
<tr>
<td>New technologies</td>
<td>88%</td>
</tr>
<tr>
<td>Released national and industrial standards</td>
<td>143</td>
</tr>
<tr>
<td>Released corporate technical standards</td>
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</tbody>
</table>

On-site operation to ensure the power supply for the Opening Ceremony of Nanjing 2014 Youth Olympic Games.

On-site operation to ensure the power supply for the Opening Ceremony of Nanjing 2014 Youth Olympic Games.
Deal With Each Stakeholder Responsibly
Be responsible for each stakeholder

Implement the responsibility on quality service, the responsibility in Agriculture, Countryside and Farmers, the responsibility on win-win partnership and the responsibility as a corporate citizen

Be responsible for customers
The responsibility on quality service is rooted in every business
- Improve power quality and reduce interruption time
- More convenient 95598 call center services
- Seamless service

Reliability rate of urban power supply in 2014
99.967%

Be responsible for agriculture, countryside and farmers
Be responsible for serving agriculture, countryside and farmers, rooted in obligation
- Urban-rural power supply integration supports modern agriculture
- Provide quality power for building a beautiful countryside
- Improve power construction projects in areas without electricity access and ensure their basic living conditions

Bring power to
870,000 people without access to electricity in 2014

Be responsible for partners
Be responsible on win-win partnership and rooted in every co-operation
- Serve power generation companies
- Propel independent innovation of the equipment industry
- Promote responsible procurement

Centralized tendering volume reached in 2014
RMB 3690 billion

Be responsible for communities
Be responsible for corporate citizen and rooted in every good deed
- Establish “UHV Scholarship Fund”
- Carry out employee volunteer services
- Persist on assisting Tibet, Xinjiang and Qinghai

Donated in 2014
RMB 114 million
Be Responsible for Customers

### Topics on quality service
- Safety management
- Smart metering
- Customer service
- System operation
- Power quality

### Satisfaction rate of call center service
- 99.42%

### Voltage qualification rate
- 99.999%

### Install smart meters
- 66 million

### Serve customers on 95598 platform
- 378 million

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**Serve customers on 95598 platform**

- Customers' concern
  - High
  - High
  - Low
  - Low

- Minimize system interruption time
- Ensure accurate metering
- Build a diversified payment platform
- Improve 95598 call center services
- Further improve power quality
- Accelerate service layout
- Popularize knowledge on using electricity safely
- Protect customer information

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**Operate work of uninterruptible power supply**

- Times: 278,000
- Established emergency repair points: 26,416

**Effect on integrated value creation**

- Different measures were taken to reduce outage time
- SGCC CSR Report 2014

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**Improve power quality and reduce system interruption time**

- Carry out uninterruptible power supply on distribution grid. In 2014, the company carried out uninterruptible power supply on distribution grid for 278,000 times, reduced outage time by 19 million hours/household and enhanced power supply reliability by 0.032%. Average failure and outage time was lowered to 4.8 minutes among core customers in 30 important cities including Beijing and Qingdao. Other cities’ average failure and outage time was lowered to 19.8 minutes.

- Improve operation and management of distribution grid. SGCC has optimized the grid structure and enhanced its automation with standardized and serialized equipment. Standardized achievements have been applied in distribution grid and automation was orderly promoted. The company started to test the terminals’ special performances and developed automatic index evaluation system to monitor system application effects in real time.

- Form a professional first-aid repair crew. The company established an efficient repair and recovery mechanism by arranging near resources that could offer timely help and 24-hour response to “make the light on first”. A gridding emergency repair mode covering all voltage levels was built and prefecture-level and county-level power companies founded 26,416 repair points. Average annual power outage time for urban and rural power users decreased by 24.99% and 17.57% separately on a year-on-year base.

- Improve electricity demand-side management. The company pushed forward the construction of “National Demand-side Power Management Platform” and analyzed the power supply and demand situation in advance. The priority was to ensure residential power consumption and control those companies with high-energy consumption, high emission and over capacity. SGCC launched comprehensive check of potential dangers of high-risk and important customers and public places.

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**Operate work of uninterruptible power supply**

- 278,000 times

**Established emergency repair points**

- 26,416

**SADI for urban users decreased from**

- 3.854 hours per household to 2.891 hours per household

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**SGCC Zhejiang Electric Power Company**

- Formed a convenient service map and took the administrative village as one unit to execute aiding formulation of business extension plans, repair distribution grid and deliver outage notices. These measures provided support for fault repair and business consulting service and linked the operation and distribution data from the power source to customers. 95598 repair orders fell by more than 20%. 

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**SGCC Heilongjiang Electric Power Company**

- Insisted on live work without power cut and carried out 36,000 times of live work on distribution grid, reducing the outage time by 105,200 hours per household. It strengthened the professional management of grid operation and maintenance in county level and in 2014, the average annual outage time in county level was less than 10 hours per household.
More convenient 95598 call center services

95598 call center is a centralized service platform offering full-fledged businesses. It provides 7/24 online services and real time control, which is the world’s largest public service center with most functions and customers. It offers full-fledged businesses and 24-hour professional services to 1.1 billion people. Service time for repair, complaint and report decreased by 71.11%, 13.90% and 31.81% separately. Service awareness and efficiency were significantly improved.

Unified professional service standards. Through centralized personnel management, service control and performance assessment, 95598 call center has unified the standards of service acceptance, business classification, order processing, quality inspection, customer feedback and service evaluation. It recruits and trains service representatives in batches in order to improve their business and service skills. According to the customer satisfaction survey, in 2014, the company’s overall customer satisfaction increased 2.55% year on year.

Widen smart service channels. SGCC has built up China’s first intensive and professional utility service platform – 95598 customer service information system and call center. The average daily login volume is 720,000 times. Average daily marketing orders are more than 2 million pieces. It serves 378 million electricity customers. Through the highly integration of 95598 platform and production and marketing information system, the company can monitor the distribution grid in real time from all dimensions and bi-directionally drive fault warning for active repair and 95598 customers’ request for repair at the same time. Thus the average repair time fell by 71.11% in 2014.

Preliminary establish the service integration mechanism. Through the comprehensive implementation of smart meters promotion and electricity information collection system construction, SGCC has built up an all-in-one collaborative mechanism of business extension and application for installation to strengthen business cooperation between departments. It also established a fair, open and unified service evaluation mechanism, strengthened online information monitoring and issued 31 general rules.

Improved quality guarantees better services

Improve the level of standardization. The company revised SGCC Service Quality Standards of Power Supply, SGCC Customer Service Quality Standards and clearly pointed out the service channels, projects and standards. It revised the State Grid Interim Procedures of 95598 Business Management to formulate 95598 services. It released SGCC Rewards and Punishment Regulations for Power Supply Service to regulate employees’ services and improve the standardization.

Increase transparency of power supply services. Released the electricity price and references, charging standards, business process, service projects, 95598 hotline, power outage notice, position discipline, service promise and the telephone number for complaints on the official website, Weibo and Wechat. Responded the customers’ concerns and requests at first time.

Carry out power supply service investigations. There were totally four investigations to verify 170 complaints, interviewed 66 customers with complaints, interviewed 104 customers with complaints through telephones, investigated 214 urban business halls and 107 rural power substations, visited 153 residential areas, 113 villages and towns, 58 new installation households and randomly talk with 1,152 customers. These investigations helped us understand the forefront situation of power supply services and verify the actual situation of business expansion and review. 151 problems were found and all were rectified.

Organize skill competitions of power supply. The company organized the second competition of power supply skills and awarded 6 excellent groups, 30 professional individuals and 6 excellent organizations. Taking the competition as an opportunity, the company fully implemented specialized and standardized services, and put fine requirements into every customer service.
Actively protect the legitimate rights of customers

Strictly implement the national electricity pricing policy. SGCC puts priority on the execution of environmental protection policies in electricity tariff, such as standard adjustment of additional subsidy of the renewable energy, electricity pricing policy for denitration and dust extraction, electricity pricing of electric vehicles, and varied prices for cement industry. It strictly follows the pricing standards according to the national and provincial authorities, and carries out screening, measuring and charging tasks of relevant companies and production lines. SGCC strengthens supervision by using information techniques such as marketing business application system to carry out inspection and general investigation on electricity pricing.

Ensure accurate metering. The company issued Handbook of How to Identify and Deal with Electric Meters’ Faults to enhance the monitoring of fault meters, establish a database for meter operation and carry out spot check on meters for controllable and in-control quality of meters. It implemented broken metering boxes maintenance project, changing 16.5962 million smart meters and collected information from 256 million customers. The company also strengthens supervision and management of metering boxes, and explored new non-standard means of meter detection, enhancing its technical and work level. In 2014, SGCC deployed 66 million smart meters and collected information from 256 million customers.

SGCC Qinghai Electric Power Company enhanced the communication with the government, owners in residential compounds and property management companies to implement meter reform and auxiliary projects construction. 120,000 households finished the “One Meter for One Household” upgrading in 2014, which solved the problems of under voltage, low reliability and high tariff for customers who used to share one meter together. Now they can enjoy tiered pricing, operation and maintenance service, long distance charge promotion and supportive payment channels.

Transformation of “One Meter for One Household” helps customers better understand power consumption.

Heart to heart quality service

Speed up service layout. SGCC accumulated invested RMB497 million to deploy 46,700 self-served payment terminals, 653,000 payment spots and 147,000 rural payment spots. Urban customers can pay their electricity bills in 10 minutes wherever they are. Billing spots are available in every village in rural areas. SGCC Lingzhou County and Jiashan County Power Supply Companies could provide power supply service in every village through building payment spots and village convenient service stations.

Establish diversified payment platform. The company vigorously promoted the interactive channels of 95598 website, mobile APP and WeChat and has expanded the payment methods to 25 kinds including business hall, advance payment, online banking, self-served payment terminal and recharge card. It set up a third party payment platform and the Internet financial trading platform including public utility payment, life service and e-commercial.

Improve business efficiency. SGCC simplified the application materials of business extension and application for installation; low voltage residents were reduced to 2 pieces from 4 pieces; low voltage non-residents were reduced to 3 pieces from 6 pieces; high voltage customers were reduced to 4 pieces from 9 pieces. Installation time was shortened by 20% and the average accessing time was shortened by 3.5 days.

Construct a collaborative service mechanism. The company streamlined the process and procedures and constructed a collaborative and all-in-one service mechanism; low voltage residents could access to the electricity the second day of application; design, construction and installation of key projects were started at the same time, which could reduce seven procedures and the time needed is 20% less than the promised maximum time.

Provide more convenient payment

SGCC Fulding Power Supply Company noticed the residents’ trouble when separately paying the public service bills of water, electricity and gas every month and actively teamed up with water and coal enterprises to establish a platform reading the three meters together; which was China’s first remote and automatic platform reading water, electricity and gas meters at the same time.

SGCC Weihai Power Supply Company cooperated with China Mobile and China Unicom and added over 500 payment terminals with RMB11 million investment. The city now has 4,288 payment points with each point serving 204 households. The average payment distance is within 1 km. Thus the company was awarded as the first in local moral evaluation for 14 consecutive years.

Little bulb lights a great life

SGCC Chengchan Power Supply Company carried out the “little bulb lights a great life” candlelight lighting project. As of October 2014, it has benefitted more than 427.9 thousand households.

SGCC Tianjin Company served the construction of “6 Beautiful Towns” and lighted the street lamps in old communities. In 2014, it finished the inspection and rectification of lamps in 306 communities, involving over 6,500 street lamps.

SGCC Yinchuan Company carried out the public welfare activity of “lighting the way home” and finished the rectification of “black corridors” in 35 communities, benefiting more than 12,000 households.
Be Responsible for Agriculture, Countryside and Farmers

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<thead>
<tr>
<th>Topic</th>
<th>Level</th>
<th>Effect on integrated value creation</th>
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<tbody>
<tr>
<td>Construct modern management of rural power companies</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Guarantee emergency supply for agriculture</td>
<td>Low</td>
<td>High</td>
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<td>Construct smart rural grid</td>
<td>Low</td>
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<tr>
<td>Speed up the power construction in areas without access to electricity</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Transform power grid to ensure the masses’ power safety</td>
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</table>

**Invest in rural power grids:** RMB 46.45 billion

**Reliability of rural power supply:** 99.878%

**System average annual interruption for rural power users:** 10,687 hours per household

**Voltage qualification rate for rural users:** 98.808%

Urban-rural power supply integration supports agricultural modernization

Advance in the rural grid upgrade: 2014 is the fifth year of upgrading the rural grid. SGCC focused on speeding up rural grid construction, increasing rural power supply guarantee and better adapting to new socialist countryside and new-type urbanization construction to solve the pressing problems, improve project risk control, standardize project management, impel standardization and raise the development quality of rural distribution grid. In 2014, over 90% rural grid projects were excellent.

Enhance management of county-level power supply companies: SGCC started to improve the management of power supply companies in towns and villages. Through longitudinal comparison of history data and lateral comparison of the differences among all units, SGCC popularized the best practices of 80 county-level companies and 170 township-level companies. With enhanced operation and maintenance management, township-level distribution grid failure decreased by 10.8%.

Jiangxi Xunwu has abundant hydropower with over 160 hydropower stations. In the remote villages between Jiangxi, Fujian and Guangdong, 1,793 rural households of Xiangshan Town, Xunwu County and other six towns were directly powered by small hydropower stations, which was tough, expensive and unstable. SGCC Xunwu Power Supply Company upgraded the power grids in a comprehensive and standardized way in mountainous areas. Power grids in 16 villages of 7 towns have been through the transformation. Thanks to the grid reinforcement and expansion, many hidden problems have been solved for this small and aging hydro-grid which is poorly operated, such as high tariff, low supply reliability and voltage instability. Those 1,793 households could access to the large grid and about 7,700 villagers could use safe and affordable power like residential customers in urban areas.

SGCC CSR Report 2014 - The Action Responsibility on Agriculture, Countryside and Farmers

- Transform power grid to ensure the masses’ power safety
- Serve large fruit-growing households
- Be Responsible for Agriculture, Countryside and Farmers
- Advanced in the rural grid upgrade
- Enhance management of county-level power supply companies
- Jiangxi Xunwu has abundant hydropower with over 160 hydropower stations

**Newly built or upgraded low voltage lines of:** 99,744 km

**Upgraded power meters for:** 1.896 million households
3.36 billion

Promote county-level integrated management platform. SGCC has promoted marketing system in 170 escrow counties. The centralized monitoring rate of 35kV substations has increased from 81% to 90%. SGCC promoted safety supervision and management integrated platform. The online application was used in 70% direct-supply, direct-management and stake-holding counties, and 30% escrow counties.

Comprehensively solve undervoltage problem in rural areas. According to monitored data, undervoltage users account for 0.75% rural households. SGCC established a normalized working mechanism of comprehensive control, issued A Notice of Carrying out Normalised Dynamic Governance of Undervoltage in Rural Areas. By strengthening voltage quality monitor and governing, ensuring financial support and intensifying supervision and assessment, SGCC urged all industries to establish a mechanism to govern rural undervoltage and conduct normalized management. In 2014, investment of rural undervoltage transformation reached RMB13.03 billion, solving the undervoltage problem for 3.36 million households.

Solve the undervoltage problem for rural households

RMB 13.03 billion

Upgrade rural power grids

Provide quality electricity for a beautiful countryside

Strengthen the management of rural grids’ power quality. In light of the rural grids’ upgrade, SGCC has optimized grids’ structure, layout, supply reliability and power quality. SGCC also strengthened the process control of rural power supply. Power supply reliability has reached 99.879%, up by 0.026 percent point. Cumulative interruption time was 10.687 hours/household, down by 2.278 hours/household, with a year-on-year decrease of 17.57%. Voltage qualification rate for rural users reached 98.088%, up by 0.241 percent point. Voltage failure time declined by 16.82%.

Ensure power supply at important time. A total of RMB11.135 billion was invested to guarantee rural power supply during the Spring Festival. 67,900 distribution transformers were upgraded, together with 16,5 thousand kilometers of 10kV lines and 57.8 thousand kilometers of low-voltage lines. SGCC established 16,900 emergency repair teams, with 193,700 employees for repair and on duty. During festivals, emergency repair teams were dispatched to 27,900 times, with 98,800 employees per time, which guaranteed power supply for rural households during the Spring Festival.

Ensure power supply actively when fighting against droughts

Henan Province suffered a severe drought in the summer of 2014. SGCC Henan Electric Power Company, which coordinates its 18 power supply subsidiaries, shoulders the responsibility as setting up 900 anti-drought teams with a total of 12,000 employees. The company temporarily set up 495 irrigation distribution transformers, and 100kV of 10kV lines, and eliminated 1,000 hidden dangers. Electricity for water supply and irrigation was ensured to the greatest extent, making sure of a harvest.

Help irrigate farmland

56918 square km

To solve the problem of post-meter-installation service, SGCC Jiaxing Electric Power Supply Company established a service mode. Under this mode, the meters will be purchased by the local government, and community service centers will be set up by third-party entities. This mode therefore has a clear division of responsibility for both the utility company and service centers by the time of meter-installation. Meanwhile, the company expanded platform for service by connecting 96345, community service hotline, and 95598, power supply service hotline. The total number of sending farmers contacting cards, filling at the reception rooms in town and promulgation in village service centers to have a seamless connection between demand and supply.

Anti-drought power service teams

9,430
Serve rural safe power use

Launch the project to consolidate the foundation of safe rural power consumption. SGCC constructed a service mechanism for safe rural power use led by the government, implemented by villages, participated by the general public, and constructed by jointed forces, and explored new measures accordingly. SGCC standardized management of safe power consumption, power supply facilities and temporary electricity supplies, provided warning, marking, labeling and other material measures, and also increased installation of level-3 RCDs. SGCC also promoted Risk Identification and Control Manual for Rural Distribution Grid Construction to strengthen management of on-site safety.

Popularize knowledge of safe power use. Conduct and popularize safety education in rural primary and secondary schools. By considering seasonal and popular actualities, SGCC compiled General Knowledge on Safe Power Consumption in Rural Areas and Safe Power Consumption in Rural Areas—for Primary and Secondary Students (bilingual version of Tibetan and Chinese) for areas without electricity access, including Tibet and Tibetan areas in Sichuan and Qinghai. It was distributed and promoted to popularize safe power consumption knowledge and skills among Tibetan residents. SGCC also issued 85.809 million copies of posters, sent 117 million RMAs, and promoted safe power use on mainstream medias for 13,400 times. Moreover, SGCC organized examinations on safe use of rural power to enhance management and technical skills of grass-root employees.

Power project construction to guarantee livelihood in areas without electricity access

Most non-electrified areas within SGCC’s business area are mainly in southern Xinjiang, Ganzi, Aba and Liangshanzou in Sichuan Province where minority groups reside, and the Tibetan areas in Qinghai and Gansu and other remote areas. With advance of the power projects construction, the remaining areas are more remotely distributed where natural conditions are harsh and construction is more difficult.

SGCC reinforced project coordination and supervision, as well as safety inspections onsite to urge the progress. The company also utilized 35KV distribution and hybrid power supply of single-phase and three-phase to enhance efficiency. In 2014, SGCC invested RMB 874 billion in power project construction in areas without electricity access, put in use 4,716 kilometers of transmission lines of 35KV (and above), 104 substations with a transmission capacity of 573MVA. SGCC also built 11,028 km-long 10KV lines, 7,557 distribution transformers and 15,652 kilometers of undervoltage lines. The company provided power for 570 thousand people of 210 thousands households and solved isolated operation of 10 county-level grids and the weak links between 38 county-level grids with the main grid.

Accelerate the electric power construction in areas without electricity access in Qinghai

Areas without electricity access managed by SGCC Qinghai Electric Power Company are in remote areas and Tibetan areas with harsh natural conditions. Most electric power constructions are conducted at the altitude above 4000 meters and transmission lines would cross mountain ridges and above areas. Difficult conditions, short effective construction period, huge investment and limiting power consumption have all affected the construction. In 2014, SGCC Qinghai Electric Power Company invested RMB 874 million to construct 183 power construction projects in areas without electricity access in 17 counties of 5 sites, bringing electricity to 50,000 people of 12,700 households in the service areas of Qinghai grid. Farmers and herdsmen changed their traditional lifestyle and production methods after their access of electricity. Their cultural lives have been enriched, their efficiency and life quality has been improved.
Serve power generation companies

Promote the coordinated development of power generation and grid. SGCC has vigorously promoted UHV technology and "One Ultra and Four Large (1U4L)" strategy to provide a reliable transmission channel for power generation. Meanwhile, the company has also insisted on appropriate advance grid construction to ensure the coordinated development of power source and grid. The integration process of wind power and PV power has been optimized and streamlined to accelerate new energy’s integration.

Prioritize dispatching management and receive supervision from all parties. SGCC organized symposiums on open, fair, and just dispatching and supervision for comments and suggestions to improve dispatching management process. Meanwhile, the company has implemented the power generation control objectives, reasonably arranged the generation schedule, and fairly deployed the auxiliary services. The power dispatching and transaction information has been disclosed in compliance with the regulations to be inspected by the government and the society.

Orderly advance the construction of a unified national power market. SGCC has established a technical support platform which is nationally unified for the power market to provide a transparent and efficient passage for power generation companies. The transaction rules, model contracts, access rules, and cross-regional and inter-provincial transaction rules for big customer direct power purchase have been formulated to improve the regulation system of the primary unified national power market. The company has also steadily promoted pilots for big customer direct power purchase and launched the technical support platforms for the Headquarters, branches and 8 provincial-level companies.

Actively cooperate with power generation companies to conduct environmental protection renovation. According to the Time-bound Treatment on Atmospheric Pollution Towards the Key Industries in Beijing-Tianjin-Hebei and the Surrounding Areas issued by the Ministry of Environmental Protection, SGCC has sorted out the environmental renovation progress of each generator and constantly updated generators’ outage schemes for environmental renovation. All the renovation applications of the power generation companies have been arranged appropriately.

Serve direct power trades of big customer

SGCC Anhui Electric Power Company and Shanxi Electric Power Company have successfully organized the initial direct power trade of large users through the trading platform, reaching the amount of 5.27TWh and 751GWh respectively, and the average price for power generation companies was reduced by RMB26.5/MWh and RMB11/MWh.

Jointly develop with design and construction companies

Ensure law-abiding operations of construction companies. A project constraint management mechanism has been established to select the superior and eliminate the inferior. Meanwhile, the supervision on construction companies has been strengthened to ensure the quality of construction projects as well as the safety and health of the employees in construction companies. SGCC has insisted on cooperation and mutual benefits to guarantee the reasonable profit and sustainable development of the construction companies.

Serve construction companies to participate in grid construction. In 2014, SGCC revised the tendering document template for design, construction and supervision and lowered the bidding threshold to expand the competition of potential bidders and attract more social construction companies to participate in project construction.

Enhance innovation capability of design firms. SGCC conducted annual credibility evaluation for design contractors and organized quantitative evaluation for all Class A and Class B design firms which participated in the design of power transmission and transformation projects. SGCC also enhanced the innovation of power design institutions and stimulated the innovative capability of the technicians by launching design competitions.

Be Responsible for Partners

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<thead>
<tr>
<th>Degree of concern</th>
<th>Topics for win-win partnership</th>
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<tbody>
<tr>
<td>High</td>
<td>Sustainable development of local power industry</td>
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<td></td>
<td>Protect the industry Serve power purchase</td>
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<tr>
<td>Low</td>
<td>Centralized procurement of goods and materials</td>
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<td></td>
<td>Responsible procurement rate</td>
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<tr>
<td>High</td>
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</table>

Total on-grid electricity: 3,650 TWh
Centralized procurement of goods and materials: 100%
Centralized bidding: RMB369 billion
Responsible procurement rate: 100%
Propel the independent innovation of the equipment manufacturing industry

By releasing SGCC Application Directory for Standardization Construction Achievement (General Design and Equipment) and publishing SGCC 1000kV Fascicle of General Equipment for Transmission and Transformation Project and SGCC ±800kV Converter Station Fascicle of General Equipment for Transmission and Transformation Project, the company has intensified the application of general equipment, enhanced their consistency and generalization, as well as the efficiency of project construction to optimize and innovate the technology of equipment manufacturers and to raise the level of China’s equipment production.

UHV propels the independent innovation and upgrade of the equipment manufacturing industry

— China XD Group Ltd. has successfully developed the world’s first 1000kV stepped control-boost reactor (SCB) with globally leading technical performance. Meanwhile, the company has successfully researched and developed China’s first 1000kV/1000MW load voltage-regulating transformer applied to HV AC transmission projects.

— Tianjin Electricity Apparatus Stock Co., Ltd. has obtained 11 granted patents in the process of developing 1000kV UHV transmission and transformation products, including 7 invention patents. These already have been authorized with international licensing patents. Supported by the national key research and development independent breakthrough in UHV transmission and transformation technology and possessed the world's commanding height of the overall technical innovation in the field.

— Having mastered the design, manufacture and experiment technology for control & protection devices and converter valves, Raig Group Corporation independently developed its 1100kV/1120A UHV DC converter valve with the world's highest voltage and the largest rated current, as well as a 520kV/1000MW VSC-HVDC converter valve with the world's highest voltage and the largest rated current, as well as the overall technology in leading the world.

— As one of the first batch of construction companies to participate in UHV projects, Pinggan Group Co., Ltd. has successfully developed 1100kV fully-buried GIS, 1100kV bypass circuit breaker, 1100kV bypass circuit disconnector and 81kV HV DC disconnectors, to break the technical monopoly of overseas companies with core technologies of UHV switchgear.

Promote responsible procurement

Promote professional supervision and carry out honest procurement. SGCC has published and updated Material Management and Supervision Measures covering the whole process of supply chain and organized supervisors to inspect all the processes of bidding in an all-round way. The company has also organized training programs of material management as well as theme party lectures of honest practice, enhancing the sense of honesty and discipline of the employees.

UHV switchgear.

Improve procurement organization mode and enhance procurement efficiency. SGCC has released Standard System Framework for Procurement in 2014 to propel standardized construction. The company has solidified ID application by using technical specifications and promoted procurement efficiency by “selection comes first and compilation second” of the technical specifications. Meanwhile, it has improved IT construction and assisted decision-making function and promoted e-commerce procurement by improving the efficiency and benefit of the group’s procurement.

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Enhance suppliers’ satisfaction

In 2014, supplier service center has set up a WeChat public account named “SGCC Supplier Service” through which suppliers can acquire the latest business updates and check business processes and FAQs, greatly improving work efficiency for the purpose of promoting supplier satisfaction. Supplier service center has enlarged the business hall from 50 square meters to 800 square meters, increased service seats from 4 to 30, expanded service team members from 3 to 20, and varied means of services from single innovation to diversified collaborative applications. Its function is to be simply answering bidding questions/challenges it has been expanded to provide one-stop services covering the entire supply chain. The service network was extended from the headquarters to 27 provincial companies, which has been fully acknowledged by the general suppliers.

Strengthen communication and realize a win-win partnership: SGCC hold supplier symposiums regularly to make clear the main measures and requirements in the perspective of material management and control by informing the product quality problems and the penalty to suppliers’ misconduct, leading the suppliers to bear a sense of “quality concern, honest cooperation and joint development”. The company has also provided an efficient and convenient channel for the suppliers to express their claims, query and complaints on the e-commerce platform.

Develop with suppliers: While collecting and verifying the suppliers’ qualification, SGCC has sent expert teams to the production lines of the general suppliers to provide manufacturing and technical solutions and advice, supervise on the rectification of workmanship, management and safety deficiencies, as well as to increase suppliers’ awareness of improving the management system as soon as possible, eliminating security vulnerabilities and cutting off quality defects. TBEA and China XD Group, Ltd. have passed system certifications of ISO9001 quality management, ISO14001 environmental management and ISO18001 occupational health and safety management.
Initiate the establishment of UHV Scholarship Fund

To encourage the majority of students to scale new heights in the world's electric power industry, expand their space for growth and dedicate themselves to UHV and the career of electric power, SGCC Chairman Liu Zhenya advocated and initiated the establishment of UHV Scholarship Fund together with 19 electric power companies and industrial organizations. He personally donated RMB3 million, the first scholarship fund in the energy sector, raised RMB23 million in 2014, after three months' nomination, observation and selection according to comprehensive performance, ability of scientific research and other indicators. The Fund granted RMB10,000 scholarship per person to 160 electric power undergraduates from 17 universities after the review of the UHV Scholarship Fund Council. The event has left a vivid mark among universities, media and the masses.

Advocated by SGCC Chairman Liu Zhenya and participated by the electric power sector, the UHV Scholarship Fund will definitely become a public welfare project with industrial characteristics and good reputation as an independently operated special fund. The Fund will become a collective memory for all students majoring in electric power.

--- Liu Zhongxiang, Deputy Director of the Grassroots Organization Administration Bureau of the Ministry of Civil Affairs

The establishment of UHV Scholarship Fund reflects how the electric power industry concerns the students and supports the cause of education. It is also a banner of "Created by China" and "Led by China" for this industry, showcasing how we scale the heights of the electric power development in the world. UHV is an important milestone in China's electric power development and a golden business card for China's independent innovation and globalization.

--- Gao Peng, Deputy Director-General of Department of Finance, Ministry of Education

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Testimonials from students

I'd like to extend my sincere gratitude to SGCC Chairman Liu Zhenya and the UHV Scholarship Fund Council. Your endearment has given me the courage to strive for new progress and the hope to pursue excellence.

- Zhang Peng, Class 14, Department of Electrical Engineering, Tsinghua University

Winning the UHV Scholarship has encouraged us to dedicate ourselves to the career of UHV and electric power with more enthusiasm. Moreover, it has imprinted us with the spirit of UHV, inspiring us to create new and greater achievements.

- Jang Zexin, Grade 2011, Shandong University

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SGCC CSR Report 2014 - The Action Responsibility as Corporate Citizen
Edu-aid programs light up students’ dreams

In Ningxia, SGCC Ningxia Electric Power Company has been cooperating with Ningxia Youth Development Foundation since 2007. Every year, the company sponsored “Achieving Goals” Program for underprivileged freshmen in the area as the biggest social welfare program of the year, has donated about RMB10 million to help 1,650 freshmen from poor families.

In Qinghai, SGCC Qinghai Electric Power Company launched a public welfare program “Chinese Dream, SGCC Love: Edu-Aid Action to Realize Dreams” for 12 poor primary schools in 10 counties of the province. It has been helping schools in poverty-stricken areas and stay-at-home children for a long time by improving teaching facilities, setting up a third class for stay-at-home children, soulful love and affection program, and one-to-one education sponsorship.

In Hebei, SGCC Hebei Electric Power Company started “Love: Hand in Hand 1+1” edu-aid program in Shunping County, Banding City since 2009, donating over 4,000 books and 1,000 sets of stationary and office supplies. It teaches children about common knowledge on power use and conservation on an irregular basis and pairs up with primary students for better interaction.

care comes along with hope.

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SGCC Beijing Electric Power Company held “Electric power love” classes to popularize knowledge on safe power consumption and conservation during semesters, holidays, or as the first lesson of the semester, which were taken by 3,000 junior high and primary school students. It cooperated with the education commissions and the children’s palace to construct classrooms, unify teaching materials, teaching aids, teaching plans, and set up a team of part-time lecturers. As of the end of 2014, the “Electric power love” classes have covered all districts in the city.

SGCC Fujian Electric Power Company has raised more than RMB10 million through various means since 1995 to donate 13 Hope primary schools of electric power, benefiting 28,000 students in mountainous areas throughout the province. To help dropouts or almost-dropouts from poor families continue their education, it has carried out pairing aid actions in SGCC’s system, like “Light up Hope: Aid Education with Love”, “One-to-one Assistance”, “Love Comes Along with Hope”, “Hand in Hand”, and “Edu-Aid in Autumn”, assisting 2,700 underprivileged students in total from Hope primary schools.

Point-to-point assistance promotes local stable development

Support Tibet: RMB 84.4 billion has been invested in Tibet. The company started the construction of Schuan-Tibet Interconnection Project and a bunch of key transmission and transformation projects. Promote the electric construction in areas without access to electricity. The coverage of the big grid has expanded to 51 counties, bringing electricity to 94,000 population in 26,000 households. The company allocated RMB2.5 million to support Cojen County. All Prefecture and prioritized to arrange projects that concern people’s life such as junior high and primary schools, and disinfection rooms of the county hospital.

Support Xinjiang. The investment in Xinjiang was RMB13 billion. Put into operation a bunch of high voltage transmission and transformation projects like Weibei-Wuxiawan 750kV transmission and transformation project. Upgrade the rural grids in 81 counties from 13 prefectures throughout Xinjiang. Accelerate the power construction in areas without access to electricity and bring power to 428,600 population in 107,700 households. Implement the strategic layout of “One Belt And One Road” and the essence of the second Central Work Conference of Xinjiang. Come up with 20 suggestions to support the stable development of Xinjiang grid.

Support Qinghai: RMB 1.015 billion has been invested in fixed assets in Qinghai. RMB1.08 million was used to support Maqiu County, Golgo Prefecture to construct outdoor drainage system and auxiliary facilities of ethnic primary boarding schools, renew public transformation facilities of counties, and electricity the residential communities for herdsmen.

Committed to the poverty-relief work and enhance local self-sufficiency capacity

Innovation the methodology and enhance the strength to implement a solid work on poverty-relief in the new situation. Carried out 231 poverty alleviation projects and invested 36.56 million RMB in 2014.

Sincere poverty alleviation for 20 years

SGCC has organized poverty-relief work in Zigui County, Changyang County, Boding County, and Shenongjia Forest of Hubei province since 1995. A total of RMB11.2 billion has been invested in the grid construction poverty relief, which attracted RMB32 million local matching fund, carried out 285 poverty alleviation projects to solve problems of access to electricity, transportation and water, improve health care, sanitation and school conditions, and proceed with industrial development. Enhance people’s skills to get out of poverty. With the help, the net income for peasants in Zigui County, Changyang County, Boding County, and Shenongjia Forest has risen from RMB648 per person in 1995 to RMB1,000 per person in 2013. The GDP per capita reached RMB11,561. A total of 591,000 people overcame poverty. Leaders from the State Council Leading Group Office of Poverty Alleviation and Development affirmed its efforts by acknowledging SGCC’s great emphasis on and enormous efforts in point-to-point poverty-relief assistance, which provided tremendous support to the masses in three-four counties out of poverty and become better of SGCC shared its experience in the regard for many times in conferences held by the State Council Leading Group Office of Poverty Alleviation and Development and SASAC. Also won the title of “Advanced Organisation for Point-to-point Poverty Alleviation Among Central State Organ”.

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Areas for poverty-relief

Major practices

Achievements

Mianzhu County, Sichuan Province

Plant 1.13 square kilometers’ industrial crops in 15,000 chickens and 670 pigs. Work-out poverty-relief plan during 2014 and 2016 and implement assisting programs in industry, education, labor and transportation in Gaoshitou Village, Mianzhu County.

Help the locals’ average annual income reach RMB80,000 in 2016.

Xiangxi County, Jangxi Province

Set up 11 agricultural cooperatives and establish standardized sheep breeding base. Help build modern agricultural demonstration garden, industrial park, ecological farm, and efficient vegetable base of approximately 7 square kilometers. Support the training class for new professional farmers.

Invest RMB8.0 million in 2014. The Jangxi Provincial Party Committee fully affirmed the project’s influence on enhancing the local self-sufficiency capacity.

Yulin County, Shaanxi Province

Lead 9 organizations in the province to establish a poverty relief group to engage a county and a township to help a village. Carry out terrace and bank projects, and construct facilities for solar lighting, flood control and pumped irrigation.

Invest RMB2.7 million in 27 point-to-point assistance projects. Promote local economic growth by over RMB4 million.

Hefei, Anhui Province

Implement free electricity policy for poor families. Purchase all surplus on grid electricity in addition to self-used power generated by distributed generation of the rural family. The project’s property right and generation proceedings all belong to the underprivileged family.

Promote energy conservation and emission reduction and benefit poor families at the same time. Till the end of 2014, the poverty relief project “PV in villages” has benefited 1,100 rural households.

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Investment in Tibet

RMB 5.04 billion

Investment in Xinjiang

RMB 13 billion

Investment in fixed assets in Qinghai

RMB 5.015 billion
Volunteer services within SGCC
2,220,000 man-times

Conduct employee volunteer service

Conduct employee volunteer service

Conduct employee volunteer service

Conduct employee volunteer service

Conduct employee volunteer service

Luneng's enthusiastic sport spirit

Adhere to the law and operate business with integrity

Volunteer service warms power customers

SGCC Chongqing Electric Power Company began its youth volunteer service program “SGCC Houses of Spring Seeding” since 2009.It has built 100 “SGCC Houses of Spring Seeding” covering 33,000弱势儿童 in rural areas from 38 county-level districts (21 municipal districts, 12 counties and 4 autonomous counties) of Chongqing.A management mode consisting the company, the youth league, schools, and volunteers has been set up to build and maintain these houses with joint efforts.

To better serve customers around the scenic spot of Yinghu Lake, SGCC Ankang Power Supply Company provided non-stop services to 62,000 people from 62 administrative villages of 5 townships relying on a 3-dimensional service system, that is, by water, on land, and in the air.Every month, the service team will drive the “Business Hall on Water” into 10 villages on time to collect electricity fees, accept businesses, and promote knowledge on safe power use.Services are delivered to every island by water.On important occasions, such as the market day in the township, the company will provide temporary power supply services in a simple tent.The team leader has to receive visiting customers for no less than 4 days in a month, which has been implemented as a working mechanism.

Volunteer service projects organized by SGCC’s Youth League Committee stood out.5 projects including the “Red Cell” Project from SGCC Sichuan Electric Power Company won the gold prize 4 projects including the “Small Kindness to Realize Dreams” Action from SGCC Shandong Electric Power Company won the silver prize.3 units including SGCC Henan Electric Power Company won the prize of “Excellent Group”.SGCC Jiangsu Electric Power Company won the honor of “Loving Enterprise”.

In 1998, commissioned by the Shandong provincial government, SGCC Shandong Electric Power Company took over the provincial football team, establishing Shandong Luneng Taishan Football Club.2006, the company took over the former Table Tennis Team of Shandong Province, establishing Shandong Luneng Tornado Table Tennis Club. Luneng Sports sticks to strict management, training and competition and it dares to think, to try, and to succeed.It has achieved outstanding results in major contests home and abroad.

In 2014, Luneng Football Team won the champion of FA Cup and the Luneng Table Tennis Team won the men’s and women’s team championships in China Table Tennis Super League.Luneng Football Team has won four championships of the National League of Level A, four championships of Chinese Football Association Cup, and one championship of Chinese Super League Cup.The table tennis team has won 5 women’s team championships and 3 men’s team championships in China Table Tennis Super League World champion Zhang Jike and Li Xiaoxia both came from Luneng Sports.

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The achievements Luneng Sports has made so far are so profound and extensive that it has greatly enhanced the company’s brand value.”Luneng” was rated as “most recognizable trademark in China”.

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Become a Model of Green Development

Responsibility on Environmental Protection and Low Carbon Emission

Promote clean replacements
- Trans-regional clean energy accommodation
- Serve the integration of distributed generation
- Promote bulk hydropower and bulk nuclear power

Accommodate 921.8 TWh of clean energy in 2014

Urge for a resource-conserving and environmental-friendly development
- Boost the EV industry development
- Promote comprehensive environmental management
- Construct a resource-conserving and environmentally-friendly project

618 EV charging & battery swapping stations have been built

Promote electricity replacement
- Replace coal with electricity to lower emission
- Replace oil with electricity to promote transportation electrification
- Conduct generation rights transaction to conserve energy

6,948,000 tons of standard coal saved by generation rights transaction in 2014

Boost social energy conservation in an all-round way
- Conduct social energy-conservation service
- Set up a power efficiency service team
- Construct power service management platform

Organize 118 environmental training sessions in 2014

Combat global climate change
- Promote energy conservation and emission reduction from the company
- Encourage industrial energy conservation and emission reduction

Energy conservation reconstruction projects in 2014 saved 2.25 TWh of electricity
Promote the green transformation of energy development

Promote energy revolution by establishing a Global Energy Outlook. Insist on coordinated development of energy, politics, economy and environment. Insist on coordinated development of centralized and distributed generation. Stick to clean replacement and electricity replacement. Coordinate the development, allocation and utilization of global energy resources to guarantee safe, clean, efficient, sustainable energy supply by constructing a Global Energy Interconnection.


Active promote green development, cyclic development and low-carbon development. Explore a win-win scientific path for the social-economic development and ecological environment protection. Strengthen ecological construction with systematical framework. Guarantee the “ecological red line” by institution construction. Comprehensively improve resource conservation.

Focus on solving environmental problems which are harmful to people’s health. Strengthen ecological environment protection with the implementation of the strictest regulation.

UHV transmission is included in Air Pollution Prevention and Control Action Plan. It has been widely agreed that UHV transmission plays an important role in guaranteeing energy safety, solving smog problem, improving efficiency, and supporting social-economic development. 8 UHV projects have been included in Air Pollution Prevention and Control Action Plan. In May 2015, the state approved to carry out 12 key transmission channels as parts of Air Pollution Prevention and Control Action Plan. 11 of them are in the business area of SGCC. Clean energy such as wind power and solar power can be accommodated in a wider range.

Make the best effort to accommodate clean energy. Initiate new institution for coordinated development of wind power, PV generation and the grid. Optimize workflow and service standard with emphasis on new energy integration problem which is of great social concern. Guarantee projects that meet criteria can be fed into grid in time. Make the best use of trans-regional and trans-provincial transmission channels with the support of UHV technology. Improve accommodation of clean energy such as hydropower from southwest and the wind power from the Three Norths.

Support the accommodation of clean energy such as wind power and PV power.

SGCC Qinghai Electric Power Company is conducting thorough research on key technologies such as integration of PV stations, electricity accommodation and grid’s safely operation. It provides “one-stop service” for grid integration procedure, “tracking service” for project construction, all-round service for technology support and personalized service for integration inspection in 2014. It has ensured the accommodation, accommodation and transmission of over 1GW newly added installed PV capacity.

SGCC Gansu Electric Power Company has strengthened its new energy integration service. SGCC Qinghai Electric Power Company is conducting thorough research on key technologies such as integration of PV stations, electricity accommodation and grid’s safely operation. It provides “one-stop service” for grid integration procedure, “tracking service” for project construction, all-round service for technology support and personalized service for integration inspection in 2014. It has ensured the accommodation, accommodation and transmission of over 1GW newly added installed PV capacity.

SGCC Gansu Electric Power Company has strengthened its new energy integration service. It helped Gansu Energy Supervision Office with the publication of Provisions for Monitoring and Managing Newly Constructed Energy Integration into Power Grid in Gansu (trial), which illustrates the process of grid integration and time limit for each procedure to improve management of the whole process of new energy integration service.

SGCC Jibi Electric Power Company is conducting thorough research on key technologies such as integration of PV stations, electricity accommodation and grid’s safely operation. It provides “one-stop service” for grid integration procedure, “tracking service” for project construction, all-round service for technology support and personalized service for integration inspection in 2014. It has ensured the accommodation, accommodation and transmission of over 1GW newly added installed PV capacity.

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Promote clean replacement

Make the greatest effort to accommodate hydropower. Take advantage of the transmission channel to export hydropower in Sichuan, increase trans-regional and trans-province power transmission to maximize hydropower accommodation. Total hydropower accommodation reached 60.1 TWh in 2014, increased by 14.64% than last year. The trans-regional hydropower accommodation from Sichuan accounted for 40% of the total amount.

Support wind/PV power integration.

Establish over 10 management systems and service regulations to construct a comprehensive integration service system including working procedure, time limit, service mode and regulation. Construct and promote consulting service platforms such as 95598 call center, website, and WeChat. Appoint personal customer managers and provide service for wind/PV power technology consultancy and integration generation. In 2014, the installed capacity of wind power within SGCC's service area is 87.9GW and that of PV generation was 24.45GW.

Strengthen R&D and standardization system construction.

SGCC has invested RMB8 billion in conducting research on new energy integration, operation, and control technology. The Wind/PV/Battery Storage and Smart Grid Demonstration Project, which is the largest in the world, has been constructed. World-leading National R&D and test center for large-scale Wind Power Integration has been established. The company has led the compilation and revision of 39 industrial standards and 53 enterprise standards, and participated in the compilation or revision of 7 standard coal facilities, promotion of the all-rounded way.

New energy generation shows remarkable benefit

Beijing Lupuahan Waste-to-Energy (WTE) Power Plant is the largest WTE project in Asia and generated 420,000 kWh of electricity annually, which saved 130,000 tons of standard coal each year. To support new energy development, SGCC Beijing Electric Power Company has timely constructed integration infrastructure for 6 biomass power generation projects including Lupuahan. Meanwhile, it has promoted the integration process of 7 planned or under-construction projects such as Nangong in Daqing District. In 2014, electric generation capacity of new energy like wind, PV, biomass power reached 512,000 kWh in areas where new energy is fully accommodated, which saved 158,700 tons of standard coal and reduced 415,700 tons of CO₂ emissions.

Xiamen Pioneer Park Rooftop PV Station is the first rooftop-level PV station in Fujian Province. Its installed capacity reached 1,000kW. The station covers 14,000 square meters of roof area. It generates 1,050 kWh of electricity annually, which could help save 11 tons of standard coal and reduce 279 tons of CO₂ and 279 tons of dust emissions each year. SGCC Xiamen Electric Power Supply Company provides a full chain of door-to-door services including policy consultancy, technology support, business process, procedure simplification, integrator service, along with regular return visits and meter reading and checking to meet customers' needs in an all-rounded way.

Actively promote electricity replacement

Replace coal by electricity to reduce direct coal-fired emission. According to the state’s requirement on regulating the use of small coal-fired boiler and pursuing negative coal consumption growth, SGCC prioritized 2,106 projects of replacing coal-fired boilers by electric boilers, and promoted 1,300 projects of electric furnace renovation.

Replace oil by electricity and promote transportation electrification. SGCC tries to promote electricity replacement in transportation. In coastal areas such as Tianjin, Shandong, Jiangsu, Zhejiang, and Fujian, handling facilities fueled by oil have been replaced by electric equipment on docks. Over 900 projects have been carried out and 36,000 tons of fuel has been substituted.

Replace coal by surplus hydropower. During rainy season in Sichuan, replace coal by surplus hydropower to generate self-used electricity in power plants. Shut down 468MW coal-fired only self-owned generators, which reduced 710,000 tons of coal consumption.

Unleash the potential of electricity replacement. Promote construction of eco-civilized city. Encourage replacing traditional ways of energy consumption by using electric cookers, electric water heater and decentralized electric heaters. Advocate a lifestyle with “zero emission”.

Support the industry and the society to carry out electricity replacement project

SGCC Hebei Electric Power Company is constructing the demonstration project of “charging boat by shore power” on the dock of Huanghe Port. 2000 tonnage of the dock has been constructed as low-voltage shore power demonstration projects. According to volume estimate, the project is expected to consume 0.445 GW of power annually, which might reduce 420 tons of CO₂ emissions. It is estimated that in 2020, the comprehensive Huanghe Port can reduce 239,000 tons of CO₂ emissions by carrying out this project.

SGCC Tongliao Electric Power Supply Company is actively promoting wind power heating project. In 2014, SGCC Tongliao Electric Power Supply Company invested RMB175 million in wind power heating project in Jarud Banner in Tongliao City. The project includes the construction of heating resource, power grid and transmission lines. The Phase I project that has been put into use has provided clean, stable wind power heat to over 50,000 residents in Linhe County in Jarud Banner.

Uphold ecological civilization

Conduct resource-saving and environment-friendly project. In 2014, SGCC has invested RMB4.3 billion in environmental protection. All projects in planning scored 100% in environmental impact evaluation. Biological diversity, noise control, water pollution prevention, harmony among power supply facilities, urban landscape, residential environment and human settlement are all considered in the process of planning and construction. The Sichuan-Tibet Interconnection Project has considered a good example in environmental protection. It constructed an environment and water protection management system, reasonably planned construction paths for forest and grassland, and restored green vegetation. RMB188 million has been invested in environment and water protection management.

Reduce the impact of grid operation on environment. Reduce the impact of transmission and transformation facilities on environment. Improve operation and maintenance of environmental protection facility. Orderly promote CDM project. Comprehensively reinforce the construction of provincial-level SF₆ recycling and disposal centers. 14 provincial-level centers have been put into use. They have recycled and disposed 46.6 tons of SF₆, which is equivalent of reducing 1.14 million tons of CO₂ emissions.

Adocate “green and low-carbon office”. Video and tele conferences in SGCC have increased by 200%, which account for 50% in the total number of conferences. The company is also working on reduce paper consumption by using the internet to deal with official documents, mails and faxes.

Strengthen management on waste and used material disposal. Standardize the process to recycle, hand over, dispose, and sell waste and used material, and regulate the return of funds. The disposal of hazardous waste, chemical and environmental pollutants are under the guide of national laws and regulations such as Environmental Pollution Prevention and Control Law of Solid Wastes and Hazardous Chemicals Control Ordinance.

Strengthen environmental protection awareness and training. Compile and publish a brochure named “ABC of Grid Environmental Protection”. Organize a series of activities such as “June 5 World Environment Day” and publicity program for grid environment protection. Organize a series of trainings about environmental protection for managements, operational staff, and environment inspection staff. In 2014, SGCC has organized 118 training programs involving 6,730 employees.
### Serve the development of EV industry

Support the construction of EV charging and battery swapping facilities. According to the requirement of national policy, which asks for a fully open EV charging/swapping facility market and supports social capital to invest in construction, SGCC issued a series of principles including Advice on Power Use Application for EV Charging/Swapping Facility Installation and SGCC’s guideline on Procedure Simplification of Business Expansion to Improve Efficiency and Better Serve the People. The company simplified business procedure and shortened the application process for installation. The company has processed 3,140 households’ applications for charging/swapping facility installation. The applied installed capacity reached 113.9 MW; 2,826 households have been electrified with power connection capacity of 95.7 MW.

### Guarantee power supply for EV charging/swapping facility

Ensure its coordination with the grid’s overall planning and the construction of new urbanization. Ensure its adaption with the development of distributed power and electric vehicle. Improve the structure of distribution grid and eliminate weaknesses.

### Improve standardized system of charging/swapping facility

Promote the revision of national standards on charging interface. Insist on popularizing the Chinese standard to raise China’s voice in standardization system, and benefit the national industry development. Until the end of 2014, SGCC has compiled 78 standards for charging/swapping facilities, including 13 national standards, 18 industrial standards and 47 enterprise standards.

### Promote comprehensive energy conservation in society

Actively provide energy conservation service. Keep on strengthening construction of energy conservation service system centered on energy conservation service companies, energy efficiency assessment institutions and energy efficiency service network. SGCC has set up State Grid Energy Conservation Service Co., Ltd. and 27 provincial-level energy conservation companies. Until the end of 2014, it has signed 433 contracts on energy conservation projects, which involved 192 energy management projects and a total investment of RMB 1.25 billion. These projects are expected to save 2.25 TWh of electricity annually.

Set up energy efficiency service group. Set up 659 energy efficiency groups in prefecture and county level companies, which attracted 5834 members from industrial enterprises to form an energy efficiency service network covering SGCC’s business area. It organized 1,659 activities such as policy seminars and energy conservation exchanges. The energy conservation renovation projects carried out by enterprises in the society have helped save 120 GWh of electricity.

Establish electric power service management platform. According to the guideline of “two-level deployment and multi-level application”, SGCC is constructing the electric power service management platforms in the Headquarter and 26 provincial-level companies, realizing the application of 7 function modules such as responsibility assessment in power demand-side management objectives, energy conservation business management, customers and energy consumption management, and energy collection management.

### Deal with global climate change

It is roughly estimated that in 2014 SGCC has helped the industry and the society reduce over 800 million tons of CO₂ emissions.

Serve the development of clean energy. The accommodation of clean energy reached 921.82 TWh, equivalent to 300 million tons of standard coal, reducing the emission of 740 million tons of CO₂.

Conduct generation rights transaction and efficient generation and dispatching. The promotion of generation rights transaction helped save 6,948,000 tons of standard coal. The pilot projects of efficient generation and dispatching in three provinces helped save 3,702,000 tons of standard coal. They serve to reduce 26.55 million tons of CO₂ emissions in total.

#### Encourage energy conservation and emission reduction on the generation side

**Lower the line loss rate to save 17.11 TWh of power, equivalent to 530,000 tons of standard coal and reducing carbon dioxide emission by 13.21 million tons.**

**Boost cross-regional and inter-provincial power transaction:** The cross-regional and inter-provincial power transaction amounted to 725.216 TWh, of which 136.719 TWh was transmitted by UHV projects.

#### Encourage grid-side energy conservation and emission reduction

**Recycle resources:** A total of 46.6 tons of SF₆ gas was purified and recycled, which equals a reduction on emission of 1,114 thousand tons of carbon dioxide.

**Push for standardized construction:** The typical energy-saving and environmentally-friendly line design with new technologies, materials and techniques saved 200 thousand tons of steel, equivalent to 120 thousand tons of standard coal, reducing carbon dioxide emission by 300 thousand tons.

#### Promote user-side energy conservation and emission reduction

**Construct an energy-saving service system:**, which has saved 23.84 TWh of power, equivalent to 7.39 million tons of standard coal, and reduced carbon dioxide emission by 18.4242 million tons.

**Implement electricity replacement strategy:** Substitute 50.3 TWh of power, which equals to reducing the direct burning of 21.83 million tons of coal in the load center; it also reduced CO₂ emission by 38.8733 million tons.

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**SGCC CSR Report 2014 • The Action**

**Responsibility on Environmental Protection and Low Carbon Emission**
Develop Overseas Business with Responsibility

Establish a global vision

Advance internationalization strategy with responsibility
- Coordinate energy development strategy with a global vision
- Develop overseas business with responsibility
- SGCC has won the bid of UHV transmission project in Brazil

SGCC's overseas transmission lines in operation are 106,608 km

Operate Australian assets with responsibility
- Operates power grids safely and efficiently
- Actively improve community environment
- Encourage stakeholders' cooperation

SGCC's Australian assets serve 2.2 million people

Operate State Grid Brazil Holding Co. (SGBH) with responsibility
- Stick to sustainable and harmonious development
- Boost cooperation among stakeholders
- Continuously participate in social welfare undertakings

SGBH supplies power to an area of 2.9315 million square kilometers

Jointly cope with the major global issues and challenges
- Initiate to establish a Global Energy Interconnection
- Participate in the international standard formulation
- Communicate and cooperate with international organizations

21

*The statistical cutoff ranges slightly varied by different countries' fiscal year scope due to the various forms of company's overseas assets, including wholly-owned subsidiaries, holdings, joint-stock, and etc.
Advance internationalization strategy with responsibility

Coordinate energy development strategy with a global vision. Ensuring safer, cleaner and more efficient energy supply is a common challenge faced by human beings. SGCC has established a Global Energy Outlook to exert its technological and management advantages to import avant-garde technologies and talents and go global in a large scale. It extensively participates in global competition, strives to enhance communication and maintains operational transparency. While upgrading its value creation capability of the industrial chain, it also builds up a responsible, international corporate image.

Advance in global energy cooperation.

On July 17th, 2014, the cooperation agreement on Brazil’s Belo Monte Hydropower UHV Transmission Project was signed by SGCC Chairman Liu Zhenya and Eletrobras CEO Costa Carvalho Neto at the Brazilian presidential palace. The cooperation agreement was signed under the witness of Chinese President Xi Jinping and Brazilian President Dilma Rousseff. It is the first overseas UHV DC transmission project of SGCC.

On December 14, under the witness of Chinese Premier Li Keqiang and Kazakhstan Premier Massimov, SGCC Chairman Liu Zhenya signed a strategic cooperation agreement with Mr. Omirzak Shukeyev, Chairman of the Management Board of Samruk-Kazyna (SK) Fund to promote the interconnection of the grids in two countries and implement the “One Belt And One Road” (OBAOR) Strategy.

<table>
<thead>
<tr>
<th>Country</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Purchase a 60% stake in Singapore Power International (Australia) Assets (SPIAA) and 19.9% stake in SP AusNet.</td>
</tr>
<tr>
<td>Italy</td>
<td>Acquire 35 percent stake of Italian state-owned lender Cassa Depositi e Prestiti (CDP)'s energy grid holding company CDP Reti.</td>
</tr>
<tr>
<td>Russia</td>
<td>Supply 3.38TWh of power to China</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Purchase a 20% stake in Hong Kong Electric Co., Ltd.</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Sign the MOU on three ±800kV DC transmission lines</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Sign a Joint Cooperation Agreement with EDF, ELETROBRAS and ESKOM, which are stockholders of MPNK hydroelectric project.</td>
</tr>
</tbody>
</table>

SGCC’s overseas projects: 435

SGCC’s overseas assets: 29.8 billion US dollars

The overseas transmission lines of State Grid Brazil Holding Co.(SGBH) are 6,748 km.

NGCP built cooperative partnership with 278 electric power customers.

Understand the synchronistic tendency of importing high-level technologies and talents and going global in a large scale. Improve the efficiency and quality of furnishing positions, integrate industrial linkages, and promote competitive industries to go global in order to establish a new system of open economy.

Unleash technological and management advantages. Operate overseas business with responsibility and enhance the value creation capability of the industrial chain. Serve to establish win-win partnerships in the context of new international relations. Promote a harmonious development with the community and the environment at where it operates.
Operate State Grid Brazil Holding Co. (SGBH) with responsibility

Stick to sustainable and harmonious development. SGBH complies with local laws and regulations, respects local religious practices and national culture, taking long-term localized development as its strategic objective while oriented to people and strives to build an international team with mutual integration, complementation and promotion among Chinese and Brazilian personnel. The company also protects employees’ interests, cares for their development and has completed the construction of production office building and the second phase of integrated control center.

Boost cooperation among stakeholders. The company has strengthened the exchanges of visits with senior officials from the Brazilian Ministry of Mines and Energy, ANEEL, ONSI and EPE. The company has also promoted technical communication and cooperation with industrial counterparts and participated in the bidding and construction of the transmission greenfield concession projects to take root in Brazil and stick to long-term development.

Support the sustainable development of ElectraNet and SP AusNet

Operate SGCC's Australian assets with responsibility

Founded in January 2014, SGPMA runs gas transmission and distribution, power distribution, water supply and infrastructure service for the States of Victoria, Queensland, New South Wales and Sydney area, covering more than 2.2 million people.

Emphasise on safety-health-environment management. Departments and committees of health-safety-environmental quality have been established to review the related system, plan and operational performance, to promote “Best Practices” and to recruit environmental protection specialists from the staff.

Promote measures of conserving and recycling. The company has conducted strict safe processing and recycling towards hazardous material generated in the operational process of the power grid. Moreover, green design has been applied to workplace in order to reduce energy consumption, increase recycling and get full accreditation of ISO 14001.

Organize employees to participate in volunteer services and social welfare activities. The company organizes employees to participate in the environmental protection and social welfare activities in Australian Capital Territory, New South Wales, Queensland, Tasmania, and Victoria. Meanwhile, the company also jointly organizes activities with 11 NGOs and projects, including basketball games for the disabled, fire insurance service in rural areas, cross-cultural youth centre as well as Australian engineers without national boundaries.

Cooperate with stakeholders to improve community environment. Under the emergency management procedures, the emergency coordination center and an emergency management team have been established to professionally conduct disaster warning, rescue and relief and to protect personal and property safety of the local residents. The company also has a long-term partnership with Landcare, an Australian environmental protection organization, to promote plant diversity it has donated and planted over 13,500 trees, and helped reconstruct the “green corridors” in the urban area of Melbourne and Sydney.

Operate NGCP with responsibility

Improve the safe operation and management of power grid. Take full advantage of management experience, technical strength and R&D capability, the company exports power grid planning and construction, operates and maintains advanced technology and experience to propel power grid’s development and upgrade. Meanwhile, throughout the Philippines, the company popularized the knowledge on safe power transmission to residents in communities covered by its 76 assets.

Enhance customer satisfaction. NGCP established cooperative partnerships with 278 electric power customers through partnership forums and regular interactive communications. In total, it held 63 customer meetings, and visited about 50% clients nationwide.

Continuously participate in social welfare undertakings. The company actively carried out social assistance and built 44 schools while restoring power supply in the areas affected by typhoons, and cooperating with University of the Philippines to organize related seminars, establish scholarships, provide internships, and share training laboratories.
Support the sustainable development of REN

Rede Energeticas Nacionais (REN), Portugal’s only national energy transmission company, is an energy transmission operator providing comprehensive services, which includes electricity and natural gas. Since SGCC’s investment in REN in 2012, it has been promoting REN to provide reliable, safe, efficient and economical public services to Portugal and local customers. It pays attention to innovation and environmental protection as an important practice of sustainable energy development in the international market. It is actively involved in social welfare activities to support the cause of health, family, environment, education and social aid. It has won the Best Corporate Award for Social and Environmental Sustainability from International Best Business Award (REN) obtained a B+ rating for its sustainability performance from OEKOM, one of the leading international rating agencies for the social responsibility field headquartered in Germany.

Global Energy Interconnection

The Global Energy Interconnection includes cross-border interconnection, intercontinental interconnection and global interconnection. The emphasis is to develop large energy bases at the North Pole and the Equator, construct global UHV backbone network, promote the replacement. We need to establish a Global Energy Outlook, construct a Global Energy Interconnection, and coordinate the development, allocation and utilization of global energy resources, so as to ensure a safe, clean, efficient and sustainable energy supply.

Propose to build a Global Energy Interconnection.
On May 2014, SGCC Chairman Liu Zhenya came up with the strategic concept of Global Energy Interconnection at the 2014 GSEP Moscow Summit. In July, Chairman Liu Zhenya further pointed out at the 2014 IEEE PES General Meeting held in the U.S. that the only way out for human society to tackle the challenges of energy security, environmental pollution and climate change was to promote clean replacement and electricity replacement. We need to establish a Global Energy Outlook, construct a Global Energy Interconnection, and coordinate the development, allocation and utilization of global energy resources, so as to ensure a safe, clean, efficient and sustainable energy supply.

Participate in international standard formulation.
- The microgrid project proposed in IEC was approved. SGCC took the lead in establishing the microgrid system evaluation team.
- The IEC White Paper “Internet of Things: Wireless Sensor Networks”, led by SGCC, was published.
- Establish two international standards regarding EV battery swapping in EC.
- Submit two IEC standard proposals “EV charging stations - monitoring system” and “EV conductive charging system - two way DC electric vehicle charging station”.
- Publish three UHV AC international standards in IEEE, such as “Overvoltage and Insulation Coordination of Transmission Systems at 1000 kV AC and Above” and “Guide for Voltage Regulation and Reactive Power Compensation at 1000 kV AC and Above”.
- CIGRE working committee of “Systematic Framework Design for Power System Stability Control” was officially established.
- Won 2014 IEEE-SA Corporate Award.

Establish overseas research institutions.
The U.S. research institute Established the U.S. branch of State Grid Smart Grid Research Institute at the Silicon Valley to mainly conduct research on smart chips, semiconductors, and power grid big data application; it is to develop important and original S&T achievements in the field of electric power and forge an internationally renowned expert team in the industry to lead and guide the development of the power sector.

European research institute: Establish the European branch of State Grid Smart Grid Research Institute in Berlin, Germany. Relying on rich talent pool in Europe, the institute mainly conducts research on new energy storage, smart distribution, new energy integration, smart metering, and common technology of large-capacity converter, working on important and original S&T findings.

Strengthen the exchange and cooperation with international organizations.

Major participated international organizations:
- UN Global Compact, business participant
- GSEP, member
- WBCSD, member
- IEEE, member
- CIGRE, member
- Good-neighbourly and Friendly Cooperation Committee, SSCI, corporate member
- APEC China Business Council, member
- ICOLD, corporate member

Key international conferences in 2014:
- UN Climate Summit 2014: made a keynote speech of “Global Energy Interconnection Promotes Green, Low-carbon Development”
- Global Sustainable Electricity Partnership (GSEP) Moscow Summit: raised the concept of “Global Energy Interconnection”
- IEEE PES General Meeting: illustrated the concept of “Global Energy Interconnection” and the strategy of “Two Replacements”
- Launch of APEC Energy Ministers and Entrepreneurs made a keynote speech “Global Energy Interconnection Promotes the Sustainability of Human Society”
- APEC China Business Council: made a speech at the sub-forum “Accelerating trans-regional interconnection, investment, infrastructure construction, and prioritized policies”
- IEC: organized and participated in senior management meetings for China to better participate in and exert its influence on IEC strategies and policies.
- Africa Smart Grid Forum: participated and made a keynote speech
- CIGRE Session 2014: made technical presentations and released a number of high-level papers.
Guarantee Operation Transparency and Be Open to Public Supervision

Implement Responsibility on Communication and Cooperation

- Continue giving advice on sustainable energy development
  - Give advice on the National “Two Sessions”
  - Discuss on grid construction with all walks of life
  - Strengthen the communication with government bodies

- The delegates and members of the National “Two Sessions” from SGCC brought up 75 proposals in 2014

- Encourage stakeholders’ participation
  - Develop stakeholder engagement strategies
  - Improve managing mechanism for stakeholders’ participation
  - Establish a long-term mechanism for stakeholders’ participation

- Open 623 corporate Weibo accounts in SGCC system

- Strengthen social communication
  - Release annual CSR report
  - Strengthen communication on topics of great public concern
  - Innovate communication methods

- Be the first one to release CSR reports for 9 consecutive years

- Be open to social supervision
  - Accept the supervision from higher authorities
  - Be open to social supervision
  - Strictly implement corporate regulations according to the law

- Hold 580 press conferences
Strengthen management in corporate communication to ensure the transparency of company’s operation.

Integrate social responsibility into the communication with stakeholders and adhere to the concept that trust built on communication can enhance cooperation to create value. Explore and establish a systematic and institutionalized social communication mechanism. Enhance system construction and establish a long-term mechanism to ensure transparent and ethical corporate behaviors. Transform the ways to communicate and enhance the company’s operation transparency to win the interest, emotion and value recognition from stakeholders.

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Make suggestions on sustainable energy development

Come up with energy proposals on the National “Two Sessions”. During the 2014 National “Two Sessions”, SGCC Chairman Liu Zhenya made a speech on the Second Session of the 12th National Committee of the Chinese People’s Political Consultative Conference (CPPCC) and published a signed article on the newspaper, calling out to seize this opportunity in the third industrial revolution, and promote the strategic transformation of energy development. There were 75 proposals and suggestions on UHV from the delegates of the two “Sessions”, including 16 from SGCC delegation: “The Development of UHV Grid” was listed as the key proposal of both the NPC and the CPPCC.

Form a consensus on grid development. On May 15th, SGCC Chairman Liu Zhenya held discussions on “developing UHV transmission and optimizing electric power layout” with relevant guests at the biweekly consultation meeting of the National Committee of CPPCC, to illustrate the importance of UHV on governing the smog and the significance of electricity replacement.

Strengthen communication and reporting. SGCC strengthens communication on the key obstacles of grid development. It has submitted 198 issues of SGCC Special Report to the General Office of the CPC and the General Office of the State Council. 168 issues were adopted by higher authorities. 12 issues were commented by leadership from the central government and ministries.

Deepen specific research. Undertake over 30 research and consulting projects from the National Development and Reform Commission, the National Energy Administration, and the SASAC. Accomplish the preliminary research on major problems like changes in energy demand and non-fossil energy source development for the Thirteenth Five-Year Plan of the national energy. Strengthen the policy research on distributed PV generation and electricity replacement. Carry out specialized research on the Thirteenth Five-Year Plan for electric power companies, the internationalization strategy for SOEs and the scientific development strategy, and obtain a series of important achievements.
Intensify social communication

Release CSR Report for 9 consecutive years. It is the first SOE to ever disclose concrete practices in implementing comprehensive CSR management and promoting CSR penetration, giving a more prominent role to the requirements from the central government, the spirit of the times and the CSR work deployment for SOEs. It also gives more weight to the substantiality, comprehensiveness and comparability of the disclosed information in the report.

Take the initiative to strengthen communication. Respond to social and media concerns in time. Conduct the research on the topic of KOLs’ operation and maintenance. Build a database for media materials, experts, and views. Hold seminars with renowned experts. SGCC has been interviewed by the media and given lectures at external forums for more than 50 times.

The publicity for major topics gets remarkable results. Deepen themed publicity. Invite various media to report on SGCC’s key themes. The concepts of UHV, Global Energy Interconnection, “Two Replacements” and serving new energy development are rooting in the public’s mind. Innovate communication methods and use animation, posters, and artistic works to carry out “Perceiving SGCC” series publicity campaign.

Themed series promotion activities become the platform for communication with various parties.

The series promotion activity “New urbanization and first-class Distribution Grid” set up a communication platform to promote SGCC’s achievements in constructing first-class distribution grids, and making the public better understand their importance in serving the people’s livelihood. It created a favorable environment of public opinion to support the development of distribution grid. Over 800 people from the government, power supply companies, research institutes, power clients, equipment manufacturers, and mass media, participated in this event. Over 600 pieces of news could be found online regarding this event, including on Xinhuanet.cn and people.com.cn.

Print UHV grid on the mind of the public.

The film “Perceiving Chinese Companies” sets UHV grid as the only content for “Created by China” The film was broadcast at New York’s Times Square as well as at major European airports for a month.

The first episode “Chinese Wonders Amaze the World” of CCTV’s National Day special program “China in 65 Years” gave an elaborated introduction on UHV grid.

Economic Daily published a cartoon series “Mao Mao Explores UHV,” in which Mao Mao, the main character, tells us about the history, the present and the bright future of UHV grid.

On January 31, CCTV News broadcast a piece of news of the first Spring Festival with electricity access for villagers in Huangniba Village, Muli County, Sichuan Province. Villagers were singing and dancing to show their gratitude to electric constructors.

On June 12th, “Investigation: Is Power Meter Accurate?” answered the social concern about the accuracy of power meters. It cleared the rumors online and made the truth surfaced.

Major Reports

Journal of the CPPCC dedicated a four-page feature report on “Strong and Smart Grid” illustrating the achievements SGCC has made on UHV development and the significance of electricity replacement strategy. The report says, “Accelerating UHV development is a fundamental solution to the smog problem. China has fully mastered the core technology of UHV and is able to produce the full range of key equipment. It is created and led by China. Electricity replacement can greatly enhance our energy efficiency and will lead a revolution of end energy consumption in the society.”

S&T Daily published two articles, namely, “Why SGCC Leads” and “Replace Coal by Electricity, Right Now!”, emphasizing that UHV is the only thing that is publicly acknowledged to be led by China in this industry in the world so far and that it is a model of China’s innovation-driven development.
Govern the enterprise by law and be open to social supervision

Implement the long-term mechanism construction requirements strictly according to the law. 43 audit groups were organized to continue the comprehensive examination of the company’s 64 units. Major efforts were made to complete the HR management special audit, the economic responsibility audit and the internal and external audit and to rectify the related problems. No major audit problem was detected in the whole year.

Be open to social supervision: By inviting media, industry supervisors and ordinary citizens and our customers to tour power plants, the activity was held in many units to help people understand the power enterprise’s operation mode.

Encourage stakeholders’ all-round participation

Normalize press conference. The press conference normalizing mechanism was applied to further communication between the company and media as well as the society, reaching their concerns. A four-tier spokesman system consisting 2,032 persons has been set up and over 580 various kinds of news conferences have been held.

Build a new media platform to facilitate the stakeholders’ participation. Explore the dissemination laws of new media, such as Weibo (microblog) and WeChat, to enhance communication with all walks of life and to release information to the public, for example, electricity supply services and common knowledge on power use, and to promote the stakeholders’ participation in the company’s management.

Number of press conferences held in 2014 by SGCC

<table>
<thead>
<tr>
<th>Month</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
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<tr>
<td>Total</td>
<td>37</td>
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<td>40</td>
<td>43</td>
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<td>57</td>
<td>50</td>
<td>57</td>
<td>67</td>
<td>42</td>
<td>60</td>
<td>58</td>
</tr>
</tbody>
</table>

Main Associations and Organizations SGCC Participates

<table>
<thead>
<tr>
<th>Type</th>
<th>Associations / Organizations</th>
<th>SGCC’s Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Organization</td>
<td>China Enterprise Confederation</td>
<td>Vice Chairman</td>
</tr>
<tr>
<td></td>
<td>China Federation of Industrial Economics (CFIE)</td>
<td>Chairman</td>
</tr>
<tr>
<td></td>
<td>China Business Council for Sustainable Development</td>
<td>Councillor</td>
</tr>
<tr>
<td></td>
<td>China Association for the Promotion of Industrial Development</td>
<td>Councillor</td>
</tr>
<tr>
<td></td>
<td>China Association of Work Safety</td>
<td>Councilor</td>
</tr>
<tr>
<td></td>
<td>China Accounting Society</td>
<td>Standing Councilor</td>
</tr>
<tr>
<td>Industrial Associations</td>
<td>China Electricity Council</td>
<td>President</td>
</tr>
<tr>
<td></td>
<td>China Society for Electrical Engineering</td>
<td>President</td>
</tr>
<tr>
<td></td>
<td>China Electric Power Promotion Council</td>
<td>Vice Chairman</td>
</tr>
<tr>
<td></td>
<td>China Electric Equipment Management Association</td>
<td>Vice Chairman</td>
</tr>
<tr>
<td></td>
<td>China Society for Hydropower Engineering</td>
<td>Vice President</td>
</tr>
<tr>
<td></td>
<td>China Electric Power Construction Association</td>
<td>Vice Chairman</td>
</tr>
</tbody>
</table>

Up to now, there are 623 official Weibos of different purposes, such as customer service or corporate activities, 20 of which belong to provincial companies and 491 to the prefecture-level ones. There are altogether 10 million followers. Two WeChat official accounts “Grid Pioneers” and “Your Power, Our Care” have already been put into operation.

Power WeChat provides fingertips’ platform for customers

Since its opening in August 2013, over 2 million users registered on the official WeChat of Jiangsu Electric Power Company SGCC. This platform is oriented to public service, providing one-stop services such as real-time check of consumption & tariff, as well as on-line rate payment, ultimately providing convenient, accurate and secure “fingertip services” to customers.

Meet the needs of stakeholders and the public’s right to know

Heilongjiang Electric Power Company, SGCC, has established official Weibo matrix, which covered two-tier structure (provincial and prefecture level), consisting of 20 grass-root subsidiaries. This platform discloses power supply information regularly, answers customer consultation and popularizes ABCs of energy consumption. 20 thousand messages have been released, 400 customer consultation have been replied, and 240 thousand fans followed.

“Power Man” publicizes positive energy through Weibo

Since the establishment of official Weibos of Chongqing electric power company, SGCC, more than 30 theme activities have been broadcasted such as power supply during summer peak period and power failure maintenance etc. “Power Man” is an animated image at the Weibo, to conduct themed activities, which has attracted more than 1.3 million times of on-net reviews and 11 thousand message retransmissions or comments.
The Performance

Performance is the basics for sustainable development

By 2014, SGCC’s UHV transmission has reduced carbon dioxide emission by 217 million tons

“Wind power, hydropower and the solar energy are all not stable, sometimes even intermittent. Only by using strong interconnection network and some energy storage technology can we better bring forth the potential of the renewable energy. Applying higher transmission voltage such as UHV can increase the electricity transmission capacity and decrease loss and the infrastructure investment.”

—— CIGRE Secretary General Jean Kowal

— UHV transmission can bring noticeable economic benefits. The investment on UHV AC is only 70% of that of 500kV and the transmission loss is only 1/3 per unit transmission capacity. Assuming that 200TWh of electricity will be sent one year, UHV AC transmission can save electricity transmission loss by RMB5-6 billion.

— UHV transmission can bring noticeable environmental benefits. With 0.1TWh of electricity transmitted via UHV, the load center can reduce PM$_{2.5}$ emission, PM$_{10}$ and NO$_x$ by 7 tons, 17 tons and 450 tons respectively. By expanding the capacity to accommodate clean energy through long-distance trans-regional interconnected transmission, the exploitable wind power will be doubled, surpassing 0.2TWh.

— UHV transmission can bring noticeable social benefits. Over 90% UHV AC/DC equipment was domestically produced. China’s UHV AC voltage has become the international standard. Chinese electrical equipment manufacturers have broken the long-term monopoly of multi-national corporations.
## Economic Performance

### Financial Performance

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue (billion RMB)</th>
<th>Total assets (billion RMB)</th>
<th>Total profits (billion RMB)</th>
<th>Pre-tax profits (billion RMB)</th>
<th>Return on equity (%)</th>
<th>Asset-liability ratio (%)</th>
<th>SASAC Evaluation on Operation Performances (Class)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1531.8</td>
<td>2077.5</td>
<td>45.07</td>
<td>130.87</td>
<td>4.45</td>
<td>61.83</td>
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<tr>
<td>2011</td>
<td>1675.4</td>
<td>2211.6</td>
<td>53.78</td>
<td>137.11</td>
<td>4.54</td>
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<td>2012</td>
<td>1883.0</td>
<td>2333.5</td>
<td>109.03</td>
<td>210.15</td>
<td>8.36</td>
<td>57.02</td>
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<tr>
<td>2013</td>
<td>2049.8</td>
<td>2570.1</td>
<td>70.58</td>
<td>173.96</td>
<td>4.72</td>
<td>57.00</td>
<td>A</td>
</tr>
<tr>
<td>2014</td>
<td>2096.1</td>
<td>2900.9</td>
<td>81.21</td>
<td>203.48</td>
<td>4.98</td>
<td>56.20</td>
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</tr>
</tbody>
</table>

### Operation Efficiency

| Year | Overall productivity (RMB yuan per person per year) | Total asset turnover period (Day) | Line loss rate (%) | Transmission capacity upgrade over the years (GW) | Number of equipment accidents | Number of power grid accidents | Affected by Australia assets M&A and added assets from National Bio Energy Co., Ltd.
<table>
<thead>
<tr>
<th></th>
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</table>

### Grid Capability

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment in power grid construction (billion RMB)</th>
<th>Length of transmission lines (km)</th>
<th>Transformation capacity <strong>(GW)</strong></th>
<th>Integrated capacity (GW)</th>
<th>On-grid electricity of integrated capacity (TWh)</th>
<th>Technical R&amp;D input (billion RMB)</th>
<th>Total patents</th>
<th>Total National Science and Technology Awards</th>
<th>Annual UHV transmission volume. (TWh)</th>
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<tbody>
<tr>
<td>2010</td>
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<td>6528</td>
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<td></td>
<td>6.459</td>
<td>10506</td>
<td>36</td>
<td>9974</td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.046</td>
<td>16909</td>
<td>39</td>
<td>28112</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.367</td>
<td>28111</td>
<td>40</td>
<td>40466</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.986</td>
<td>40466</td>
<td>46</td>
<td>51698</td>
</tr>
</tbody>
</table>

### Power Supply Performance

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity sales (TWh)</th>
<th>Maximum load within SGCC’s service area (MW)</th>
<th>Number of customers (millions)</th>
<th>Reliability rate of urban power supply (%)</th>
<th>System average interruption duration for urban users (Hour/household)</th>
<th>Voltage qualification rate of urban users (%)</th>
<th>Reliability rate of rural grid power supply (%)</th>
<th>System average interruption duration for rural users (Hour/household)</th>
<th>Voltage qualification rate for rural users (%)</th>
<th>Electricity Trading Volume in the National Power Market (TWh)</th>
<th>Fulfillment rate for the “Ten Commitments” on power supply service (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3253.9</td>
<td>561200</td>
<td>309</td>
<td>99.941</td>
<td>5.18</td>
<td>99.824</td>
<td>37.7</td>
<td>23.21</td>
<td>98.074</td>
<td>692.9</td>
<td>99.99</td>
</tr>
<tr>
<td>2013</td>
<td>3522.7</td>
<td>654000</td>
<td>343</td>
<td>99.956</td>
<td>3.85</td>
<td>99.949</td>
<td>47.5</td>
<td>12.965</td>
<td>98.567</td>
<td>728.2</td>
<td>99.99</td>
</tr>
<tr>
<td>2014</td>
<td>3469.4</td>
<td>634600</td>
<td>378</td>
<td>99.967</td>
<td>2.9</td>
<td>99.998</td>
<td>60.7</td>
<td>10.687</td>
<td>98.808</td>
<td>768.9</td>
<td>99.99</td>
</tr>
</tbody>
</table>

### Note:
- The statistics for 2013 are final, which may differ from the ones in 2013 CSR Report.
- The statistics for 2014 financial performance are from the financial express reports, which may differ from the final statistics.

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*Transmission lines of 110 (66) kV and above levels;**Transforming facilities of 110 (66) kV and above levels.***The on-grid electricity of integrated capacity in 2014 doesn’t include the capacity purchased and marketed by the state in a unified way from captive power plants. There is an increase of 2.12% if calculating with the same diameter.
### Social Performance

#### Employee Development

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct investment in employee training (billion RMB)</td>
<td>1.78</td>
<td>1.82</td>
<td>2.12</td>
<td>2.26</td>
<td>2.47</td>
</tr>
<tr>
<td>Training coverage rate (%)</td>
<td>92</td>
<td>93</td>
<td>93.5</td>
<td>94</td>
<td>94.3</td>
</tr>
<tr>
<td>Employee training Person-times (Thousand)</td>
<td>3120</td>
<td>3280</td>
<td>3350</td>
<td>3400</td>
<td>3600</td>
</tr>
<tr>
<td>Proportion of female employees</td>
<td>26.2</td>
<td>27.1</td>
<td>27.3</td>
<td>26.9</td>
<td>27.1</td>
</tr>
<tr>
<td>Labor unrest</td>
<td>0.175</td>
<td>0.126</td>
<td>0.074</td>
<td>0.072</td>
<td>0.065</td>
</tr>
</tbody>
</table>

### Environmental Performance

#### Comprehensive Power Conservation

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power saved by lowering the line loss (TWh)</td>
<td>4</td>
<td>2.3</td>
<td>1.1</td>
<td>1.8</td>
<td>17.1</td>
</tr>
<tr>
<td>Generation rights transactions (TWh)</td>
<td>175.12</td>
<td>230.6</td>
<td>322.96</td>
<td>334.3</td>
<td>369.0</td>
</tr>
<tr>
<td>Electricity replacement capacity (TWh)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14.0</td>
<td>50.3</td>
</tr>
</tbody>
</table>

#### EV Development

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total EV charging and battery swapping stations</td>
<td>87</td>
<td>243</td>
<td>353</td>
<td>400</td>
<td>618</td>
</tr>
<tr>
<td>Total EV charging and battery swapping poles</td>
<td>7000</td>
<td>13000</td>
<td>15000</td>
<td>19000</td>
<td>24000</td>
</tr>
</tbody>
</table>

#### Carbon Dioxide Emission Reduction

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission reduced by clean energy accommodation (Thousand tons)</td>
<td>449000</td>
<td>492654</td>
<td>552446.3</td>
<td>668201.3</td>
<td>727770</td>
</tr>
<tr>
<td>Emission reduced by lowering the line loss (Thousand tons)</td>
<td>3100</td>
<td>3900</td>
<td>4152</td>
<td>4200</td>
<td>4272</td>
</tr>
</tbody>
</table>

---

88
Comprehensive Analysis of Key Indicators

Economic Performance

Revenue Growth (%)

<table>
<thead>
<tr>
<th>Company</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average annual growth rate between 2009 and 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGCC</td>
<td>12.52</td>
<td>8.89</td>
<td>7.37</td>
<td>4.93</td>
<td>-0.93</td>
<td>2.69 8.86 4.26 -0.62 12.53</td>
</tr>
<tr>
<td>KEPCO</td>
<td>-7.22</td>
<td>28.04</td>
<td>15.2</td>
<td>10.99</td>
<td>12.52</td>
<td>9.34</td>
</tr>
<tr>
<td>E.ON</td>
<td>-10.52</td>
<td>9.85</td>
<td>25.58</td>
<td>8.09</td>
<td>-4.24</td>
<td>4.17</td>
</tr>
<tr>
<td>Kansai Electric Power Co.</td>
<td>-3.31</td>
<td>-3.53</td>
<td>-3.53</td>
<td>-4.24</td>
<td>-8.02</td>
<td>-11.06</td>
</tr>
<tr>
<td>ENEL</td>
<td>-0.75</td>
<td>8.79</td>
<td>13.76</td>
<td>-1.33</td>
<td>-2.00</td>
<td>-3.53</td>
</tr>
<tr>
<td>Iberdrola</td>
<td>-7.44</td>
<td>18.07</td>
<td>9.18</td>
<td>-0.12</td>
<td>-0.91</td>
<td>2.81</td>
</tr>
<tr>
<td>EDF</td>
<td>-9.82</td>
<td>3.88</td>
<td>1.73</td>
<td>-4.52</td>
<td>-6.57</td>
<td>-9.86</td>
</tr>
</tbody>
</table>

Asset-Liability Ratio (%)

<table>
<thead>
<tr>
<th>Company</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average annual growth rate between 2009 and 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGCC</td>
<td>57.00</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>KEPCO</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>E.ON</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Kansai Electric Power Co.</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>ENEL</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Iberdrola</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Chubu Electric Power Co.</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>SSE</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
<tr>
<td>EDF</td>
<td>52.53</td>
<td>67.66</td>
<td>74.5</td>
<td>76.0</td>
<td>76.0</td>
<td>76.0</td>
</tr>
</tbody>
</table>

Total Assets Turnover (Times)

<table>
<thead>
<tr>
<th>Company</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average annual growth rate between 2009 and 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGCC</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>KEPCO</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>E.ON</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Kansai Electric Power Co.</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>ENEL</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Iberdrola</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Chubu Electric Power Co.</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>SSE</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>EDF</td>
<td>1.47</td>
<td>0.98</td>
<td>0.69</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Social Performance

Power Consumption of Different Industries in 2014 (TWh)

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>19.44</td>
</tr>
<tr>
<td>Tertiary Industry</td>
<td>39.36</td>
</tr>
<tr>
<td>Secondary Industry</td>
<td>57.00</td>
</tr>
<tr>
<td>Primary Industry</td>
<td>75.52</td>
</tr>
</tbody>
</table>

Power Source within SGCC’s Business Area in 2014 (GW)

<table>
<thead>
<tr>
<th>Power Source</th>
<th>Integrated Capacity of Clean Energy (GW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power</td>
<td>738.55</td>
</tr>
<tr>
<td>Wind Power</td>
<td>196.82</td>
</tr>
<tr>
<td>Hydropower</td>
<td>21.18</td>
</tr>
<tr>
<td>PV</td>
<td>12.75</td>
</tr>
<tr>
<td>Nuclear Power</td>
<td>6.17</td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
</tr>
</tbody>
</table>

Environmental Performance

Ratio of Trans-regional and Trans-national Power Transmission (%)

<table>
<thead>
<tr>
<th>Company</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average annual growth rate between 2009 and 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGCC</td>
<td>16.36</td>
<td>15.24</td>
<td>12.7</td>
<td>5.96</td>
<td>2.07</td>
<td>2.07</td>
</tr>
<tr>
<td>France Grid</td>
<td>73.7</td>
<td>73.7</td>
<td>73.7</td>
<td>73.7</td>
<td>73.7</td>
<td>73.7</td>
</tr>
<tr>
<td>The UK Grid</td>
<td>15.1</td>
<td>15.1</td>
<td>15.1</td>
<td>15.1</td>
<td>15.1</td>
<td>15.1</td>
</tr>
<tr>
<td>Russia Grid</td>
<td>5.33</td>
<td>5.33</td>
<td>5.33</td>
<td>5.33</td>
<td>5.33</td>
<td>5.33</td>
</tr>
<tr>
<td>India Grid</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Japan Grid</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Integrated Capacity of Clean Energy (GW)

<table>
<thead>
<tr>
<th>Country</th>
<th>Integrated Capacity of Clean Energy (GW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>17.26</td>
</tr>
<tr>
<td>France</td>
<td>69.36</td>
</tr>
<tr>
<td>India</td>
<td>12.28</td>
</tr>
<tr>
<td>Japan</td>
<td>5.14</td>
</tr>
<tr>
<td>Russia</td>
<td>20.25</td>
</tr>
<tr>
<td>The UK</td>
<td>10.44</td>
</tr>
<tr>
<td>Germany Grid</td>
<td>17.26</td>
</tr>
<tr>
<td>France Grid</td>
<td>69.36</td>
</tr>
<tr>
<td>India Grid</td>
<td>12.28</td>
</tr>
<tr>
<td>Japan Grid</td>
<td>5.14</td>
</tr>
<tr>
<td>Russia Grid</td>
<td>20.25</td>
</tr>
<tr>
<td>The UK Grid</td>
<td>10.44</td>
</tr>
</tbody>
</table>
By 2017, we will complete the key transmission channels of the National Air Pollution Prevention and Control Action Plan. At that time, the UHV AC grid of North China Branch would be preliminarily formed, which adds a bearing capacity of 32GW in Beijing, Tianjin, Hebei and Shandong. A UHV AC loop will be formed in East China to increase a bearing capacity of 35GW in Yangtze Delta region. In addition, by reducing 530 thousand tons of SO2, 600 thousand tons of SO2 NOx and 100 thousand of smoke and dust emission every year, we plan to lower the PM2.5 density in East and Central China by 4%~5%.

By 2020, over 650GW of clean energy will be accommodated by our UHV grid, and the “Four Vertical and Seven Horizontal” UHV AC backbone grids and the 19 loops of UHV DC projects will be completed. By then, the cross-provincial power transmission capacity will reach 380GW to ensure that 650GW of clean energy will be sent out. Moreover, instead of using 714 million tons of standard coal, 2,100TWh of clean energy will be accommodated every year to eliminate the emission of 1.78 billion tons of CO2 and 840 thousand tons of SO2.

By 2050, grids will be internationally interconnected and the Global Energy Interconnection will come into being. We will develop large energy bases at the North Pole and the Equator, construct global UHV backbone network, and promote the application of smart grid worldwide. By replacing fossil energy that equals to 24 billion tons of standard coal, we aim to make renewable energy consumption account for 80% of the global total, thus reducing emission of 66.7 billion tons of CO2 and 580 million tons of SO2 and then effectively control the Greenhouse Effect.

“Talking about UHV, IEC is convinced that this kind of electricity transmission technology, to a large extent, is able to solve the future energy crisis. The reason is that it can transmit electricity in large capacity over long distances with high efficiency, which are the key of solving this problem.”

— Enno Liess, IEC Vice-President

In 2020, UHV project will transmit 650GW of clean energy
Commitments for 2014

Fulfilled commitments for 2014

Economic Performance

- Return on equity (ROE) is no less than 26.5%
- The asset-liability ratio is no less than 60%
- Grid investment was RMB86.63 billion
- Investment in smart grid construction and upgrade was RMB72.7 billion
- Investment in distribution grid construction and upgrade was RMB96.6 billion
- Upgrade 208 smart substations
- Put into operation 5230km AC lines of 110kV (and above)
- Put into operation 5.45km DC lines into operation
- Put into operation Wuji-Wulun and Fenghuang-Kalan-Dianshi (Datangrencheng) 750kV transmission and transformation projects.
- Lower the average household interruption time in 30 municipal downtown areas to 40 minutes
- Solve isolated operation of 10 grids and the weak links between 30 county-level grids with the main grid
- Invest RMB3.3 billion in R&D
- Overall productivity exceeds RMB690,000 per person-year
- Line loss is no more than 6.8%
- Launch the electric power market platform of 20 provincial companies within the year
- Accomplish the business conglomeration of HSU Call Center
- Staff training coverage rate is over 94.5%
- Complete the acceptance of provincial SF6 recycling centers.

Social Performance

- Prevent massive blackouts
- Provide electricity to 450 thousand households and 188 thousand people without access to electricity.
- Reliability rate of urban power supply reaches 99.975%.
- Reliability rate of rural power supply reaches 99.878%.
- Reliability rate of urban power supply reaches 99.967%.
- Reliability rate of rural power supply reaches 99.857%.
- The average gap between urban and rural annual interruption time is reduced to 6.57 hours per household.
- The average gap between urban and rural annual interruption time is reduced to 7.796 hours per household.
- Employees’ volunteer service is no less than 700,000 person-times.
- Invest RMB2.3 billion in staff training.

Environmental Performance

- Facilitate wind power and PV power grid-integration and ready-mass purchase in full amount.
- Accomplish 40.07TWh of electricity substitution.
- Build 107 EV charging and battery swapping stations within the year.
- Accelerate the construction of transmission channels for Southwest hydropower and new energy bases.
- Fulfilled commitments for 2014

Commitments for 2015

Economic Performance

- Keep the asset-liability ratio under 56.7%
- Invest over RMB80 billion in power grid construction
- Invest over RMB3 billion in smart grid construction and upgrade
- Build 5 new-generation smart substations
- Put into operation 4,030km AC lines of 110kV (and above)
- Put into operation 4,030km DC lines of 110kV (and above)
- Put into operation Wuji-Wulun and Fenghuang-Kalan-Dianshi (Datangrencheng) 750kV transmission and transformation projects.
- Achieve 210 thousand tasks with power uninterrupted on the distribution grid.
- Solve the weak links between 21 county-level grids and the main grid.
- Accomplish 310 thousand tasks with power uninterrupted on the distribution grid.
- Staff training coverage rate is over 94.5%
- Complete the acceptance of provincial SF6 recycling centers.

Social Performance

- Prevent massive blackouts and accidents and reduce security incidents.
- Provide electricity to 450 thousand households and 188 thousand people without access to electricity.
- Reliability rate of urban power supply reaches 99.975%.
- Reliability rate of rural power supply reaches 99.857%.
- The average gap between urban and rural annual interruption time is reduced to 6.57 hours per household.
- Solve the underoltage problems for 6.05 million rural households within the year.
- Solve the underoltage problems for 6.05 million rural households within the year.
- Solve the undervoltage problem for 5.05 million rural households within the year.
- Solve the undervoltage problem for 5.05 million rural households within the year.
- Employees’ volunteer service is no less than 2,500,000 person-times.
- Employees’ volunteer service is no less than 2,200,000 person-times.
- Invest RMB4.67 billion in staff training.

Environmental Performance

- Accomplish 61TWh of electricity substitution.
- Speed up the construction of 41 smart grid innovation demonstration projects of 6 companies.
- Employee volunteer service is no less than 2,500,000 person-times.
- Staff training coverage rate is over 94.5%
- Complete the acceptance of provincial SF6 recycling centers.

Accelerate the construction of pumped storage power stations in Jiangxi of Zhejiang, and Haining and Weining of Rizhao.
Complete the acceptance of provincial SF6 recycling centers.
## Featured CSR Fulfillment From Provincial Companies in 2014

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<thead>
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## CSR fulfillment in 2014 and commitment for 2015 from provincial companies

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<td>Zhejiang Electric Power Company, SGCC</td>
<td>Promote the plan of 500kV Generation in the region and integrate over 0.986 hours of new energy in thousands</td>
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<tr>
<td>Fujian Electric Power Company, SGCC</td>
<td>Constructing the plan of 500kV Generation in the region and integrate over 0.986 hours of new energy in thousands</td>
</tr>
<tr>
<td>Henan Electric Power Company, SGCC</td>
<td>Accomplish the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand</td>
</tr>
<tr>
<td>Jiangsu Electric Power Company, SGCC</td>
<td>Achieve the overall productivity of RMB 1.29 trillion per year in RMB, million</td>
</tr>
<tr>
<td>Sichuan Electric Power Company, SGCC</td>
<td>Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year</td>
</tr>
<tr>
<td>Chongqing Electric Power Company, SGCC</td>
<td>Solved undervoltage problem for over 3,400 households without power management in households</td>
</tr>
<tr>
<td>Liaoning Electric Power Company, SGCC</td>
<td>Solve the development of new energy and integrate over 0.986 hours of new energy in millions of households</td>
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### 2014 CSR Commitment

- **SGCC CSR Report 2014**
- **SGCC CSR Commitment and Fulfillment**
- **Featured CSR Fulfillment From Provincial Companies In 2014**
- **Featured CSR Commitment From Provincial Companies For 2015**

### 2015 CSR Commitment

- **SGCC CSR Report 2015**
- **SGCC CSR Commitment and Fulfillment**
- **Featured CSR Fulfillment From Provincial Companies In 2015**
- **Featured CSR Commitment From Provincial Companies For 2016**

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**Shanghai Electric Power Company, SGCC**

- Make public all the affairs of the enterprise for employees in %
- Maintain world-level reliability rate of power supply, keep the average interruption duration for urban users under 0.986 hours
- Accomplish the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year

**Jiangsu Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Achieve the overall productivity of RMB 1.29 trillion per year in RMB, million
- Integrate over 9GW of installed capacity of new energy in the region in GW

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**Zhejiang Electric Power Company, SGCC**

- Promote the plan of 500kV Generation in the region and integrate over 0.986 hours of new energy in thousands
- Constructing the plan of 500kV Generation in the region and integrate over 0.986 hours of new energy in thousands
- Accomplish the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
- Solved undervoltage problem for over 3,400 households without power management in households

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**Fujian Electric Power Company, SGCC**

- Constructing the plan of 500kV Generation in the region and integrate over 0.986 hours of new energy in thousands
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**Henan Electric Power Company, SGCC**

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- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
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**Jiangxi Electric Power Company, SGCC**

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- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
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**Shanxi Electric Power Company, SGCC**

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**Tianjin Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
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**Anhui Electric Power Company, SGCC**

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- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
- Solved undervoltage problem for over 3,400 households without power management in households

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**Henan Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
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**Beijing Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
- Solved undervoltage problem for over 3,400 households without power management in households

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**Xinjiang Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
- Solved undervoltage problem for over 3,400 households without power management in households

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**Guangdong Electric Power Company, SGCC**

- Implement the maintenance of MMR2.7 billion in electric power infrastructure in RMB, thousand
- Implement the maintenance and upgrade of power supply facilities in 150 thousand communities in millions per year
- Solved undervoltage problem for over 3,400 households without power management in households
CSR Fulfillment in 2014 and Commitment for 2015 from Affiliates Directly Managed by SGCC

### Fulfillment for 2014

- **China Electric Power Research Institute**
  - The accuracy rate of test reports issued for the third party reaches 100%.

- **State Grid Economic Research Institute**
  - Construct a nationally leading planning and consulting agency to serve the construction of the Strong and Smart Grid.

- **State Grid Energy Research Institute**
  - Release at least 1 fundamental research annual reports on energy and electricity.

- **SGCC Advanced Training Center**
  - Organize trainings of 10 million person-days.

- **State Grid Institute of Technology (Youth League School)**
  - The qualification rate of training quality is 99.99%.

### Commitment for 2015

- **China Electric Power Research Institute**
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Performing Subject

In search of excellence
In pursuit of outperformance

In 2014, SGCC Chairman Liu Zhenya advocated and initiated the establishment of UHV Scholarship Fund together with 19 electric power companies and industrial organizations. SGCC donated RMB3 million. The scholarship has promoted “UHV spirit” to become an important intangible heritage in the industry and for all walks of life.

— Great career makes a strong team. UHV construction has cultivated a very holistic, responsible, combative, hardy and dedicated team which highlights the enterprise spirit of “In search of excellence; in pursuit of outperformance” and promotes the core value of “integrity, commitment, innovation and dedication”.

— Great career cultivates lofty spirit. UHV spirit means to be responsible to repay the country with supreme loyalty, be scientific to seek truth from facts, be innovative to dare to be the first, be perseverant, and be cooperative to have team spirit.

— Great career needs hard work. SGCC Staff are sticking to and striving for value and significance of the cause of power grid, making contribution to the state and people by creation, and gaining the world’s respect and national dignity.
Corporate Responsibility to Employees

<table>
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<tr>
<th>Topics on corporate responsibility to employees</th>
<th>Investment on staff training (RMB)</th>
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<tbody>
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<td>2,467 million</td>
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<td>Ensure its employees to improve their living standards through safeguarded and decent job</td>
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<td>Corporate responsibility to employees is the basic guarantee for employees' responsibility to society.</td>
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<td>Good fulfillment of responsibility employees' responsibility to the society.</td>
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<tr>
<td>Ensure staff's health and safety</td>
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<td>Strengthen safety education for staff.</td>
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<td>Create a standardized, clear and safe operating environment and prevent them from being injured during operation.</td>
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<td>Care for employees' physical and psychological health.</td>
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<td>Carry out regular health checks for the staff and establish health archives. Ensure all employees can get health check once a year at least. Analyze staff's ideological dynamics through questionnaires, group discussions, targeted interviews, and field visits. Get to know the working conditions and mainstream claims of staff at the production line. Implement EAP psychological support plan, unify thoughts, raise awareness and ensure their mental health.</td>
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<td>Promote labor unions of all levels to build up “Staff Home” trusted by the staff.</td>
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Safeguard employees’ legitimate rights

Ensure decent labor.

- Stick to equality in employment. By the end of 2014, SGCC’s total employees account to 1,867,300. There are 424,400 retirees and 260,800 female employees. 21,200 people began to work for SGCC in 2014. Staff turnover rate is less than 0.7%. The company implements the policy of equal pay for equal work to men and women. Salary level is defined by job positions, performance and capability. All employees participate in the Labor Union.

- Fully implement welfare guarantee system. Establish a sound, scientific, standardized, reasonable and transparent employee welfare guarantee system under the law. Pay the pension, medical care, employment injury insurance, maternity insurance, unemployment insurance and housing fund for all employees in time and in full amount. Ensure all staff have social insurance and sign labor contract.

- Establish a reasonable paid leave system. 5 working days of annual paid leave for employees who have served over 1 year but less than 10 years accumulatively, 10 working days if they have served over 10 years but less than 20 years, and 15 working days for 20 years’ employment or longer. Protect employees’ rights for maternity leave/paternity leave.

- Protect staff’s privacy. Improve and implement confidentiality management.

Ensure staff’s health and safety.

- Strengthen safety education for staff. Raise their awareness and safety skills. Create a standardized, clear and safe operating environment and prevent them from being injured during operation.

- Care for employees’ physical and psychological health. Carry out regular health checks for the staff and establish health archives. Ensure all employees can get health check once a year at least. Analyze staff’s ideological dynamics through questionnaires, group discussions, targeted interviews, and field visits. Get to know the working conditions and mainstream claims of staff at the production line. Implement EAP psychological support plan, unify thoughts, raise awareness and ensure their mental health.

- Deliver special care to the staff. Promote labor unions of all levels to build up “Staff Home” trusted by the staff. During New Year’s Day and Spring Festival of 2014, the company paid a visit to 48,930 employees from the production line or in difficulty.

- Care for the retirees. Enrich their spiritual and cultural lives. SGCC has built 2,192 event venues and 56 retiree activity centers. The average daily number of participants reaches nearly 54,800.

It’s the company’s most important economic and social contribution to ensure its employees to improve their living standards through safeguarded and decent job. Corporate responsibility to employees is the basic guarantee for employees’ responsibility to the society. Good fulfillment of responsibility on employee development is the premise and foundation for other social responsibilities, as well as the key for SGCC to promote sustainable development and create maximized economic, social and environment value.

Lin Zhongliang
SGCC Fujian Transmission/ Transmission Co.
Staff of the 2nd Operation and Inspection Branch

He’s been working at the frontline of electricity production for over 30 years. He’s climbed electric poles and built electric lines. After all these years’ efforts, he has fought his way up from an ordinary worker to a grass-root expert. Now he’s become a line-work expert of the company, known as “the most beautiful worker at the production line”. He was given the honor of Master of Skills of Fujian Province.

Xu Qijin
SGCC Suzhou Power Supply Company
Line worker

He takes his ordinary post as a platform to realize and demonstrate his value of life. Known as a diligent person to serve the people wholeheartedly, in this new era, he has won many honors, such as the National Labor Award, SGCC Special Model Worker and Expert of skills, Model Worker of Anhui Province.
EAP psychological support plan help staffs build right and positive mindset.

The customer representatives from SGCC Call Center are mostly young people born after 1985. As the team gets younger and customer requests get varied, they tend to be more subject to negative emotions. In 2014, SGCC Call Center conducted psychological health survey on 3,764 employees, held 112 man-times talks, and 150 times one-on-one consulting. It also held 23 lectures themed at emotional release, psychological health and self-cognition, etc. 58 group activities were carried out for team cooperation, inter-personal communication, and sand table experience. SGCC Call Center effectively relieved work pressure for staffs and guided them to build a positive mindset by psychological health survey and analysis, EAP publicity, psychological consulting, psychological improvement training, group guidance, and the team building of EAP specialists.

Ensure employees’ development

Advocate the strategy of vitalizing the company by human resource development. In 2014, the company recruited 14 national talents, including 1 S&T top-notch innovative talent from “Ten Thousand Talent Program”, 3 talents from the Recruitment Program of Global Experts, 3 candidates from National Excellent Talent Project, and 3 young and middle-aged S&T innovative banner-bearers from “Innovative Talent Promotion Program”. 1 winner of Skills Awards of China and 3 winners of the title “National Technical Master-Hand”. The company also selected and recommended 33 candidates to be national talents. It selected 10 S&T top-notch talents, 506 professional banner-bearers, and cultivated and imported 1,000 talents in special fields, such as UHV and smart grid. 12 units and 8 individuals gained the honor of model group and individual in the national campaign “Dream and Contribution”. 2 units and 1 individual were awarded National Talent of Skills in special fields as operation, management, technology, skill and others. There are 3,194 subjects, 230 thousand test questions, 56 training books and 66 training materials. All these materials will be launched for application in the Headquarters, branches and all divisions.

Build an excellent corporate culture

Promote innovative practices for corporate culture project management. Execute the program of “implementing the socialist core values: Outperformance Practice” to promote the penetration of outstanding corporate culture.

Attach importance to employees’ career growth.

Construct a unified, efficient online university of the company, which consists of 13 colleges covering such fields as operation, management, technology, skill and others. There are 3,194 subjects, 230 thousand test questions, 56 training books and 66 training materials. All these materials will be launched for application in the Headquarters, branches and all divisions.

Build and promote outstanding corporate culture.

Promote innovative practices for corporate culture project management. Execute the program of “implementing the socialist core values: Outperformance Practice” to promote the penetration of outstanding corporate culture.

The staff recognition rate is over 95% according to a professional survey on corporate culture.

Deepen staff democratic management

Reinforce the construction of Staff Congress. Continuously strengthen democratic management and the construction of Staff Congress, and form an integral, standardized and effective democratic management system, to eventually ensure employees’ rights and interests. Enhance the work to handle proposals from staff representatives. Finish replying 200 proposals. All proposals have been responded to. Carry out 2 inspections for staff representatives to ensure key tasks of the company are completed.

Strengthen the construction of democratic management system

Draft Procedures for Employee Directors and Supervisors, and Staff Congress Proposal Procedures. Promote the implementation of the Outline of Democratic Management in grass-root level, and the establishment of democratic management system in which democratic management standard is promoted by institutional guarantee, democratic management is orderly deployed by organizational guarantee, and democratic management is driven by cultural guarantee. All these will be achieved through Staff Congress and operational transparency.

Conduct staffs satisfaction survey

Collect, analyze and respond to major claims of the staff via field investigations and questionnaire surveys, to ensure smooth communication channel.
**Construct the team of CSR penetration**

SGCC Shandong Electric Power Company started with basic teams, to incorporate team construction into professional management scope. The company separated irrelevant management work from the team so that the team could complete core tasks at full strength and were well relieved from their burden. The number of innovation achievements of the staff at production line grew like a rocket, including 2,820 patents. 360 outstanding technical innovation achievements are vigorously promoted and applied in the company.

SGCC Jiangsu Electric Power Company carried out CSR open classes for team leaders and directors during “the CSR Week” in the provincial and prefecture-level companies. It modified and optimized business process and work procedures for marketing and power distribution by means of the mini-ten of CSR fulfillment, open class, expert analysis, responsibility discussion, group discussion, and practical deduction, so as to promote thorough CSR penetration into the basic level and businesses. The company compiled typical teaching materials to be distributed in the province.

SGCC Hainan Island Electric Power Company established a social responsibility training system covering teams and groups. The PR department and relevant business departments organized CSR trainings, lectures and seminars for prefecture-level companies to strengthen social responsibility awareness of teams, promote associated combination of CSR management and business, and create a working environment to internalize external work.

SGCC Guangxi Electric Power Company takes improving employees’ CSR fulfillment awareness as a key point for team construction. It organized the activities of “CSR Week”, “Be a Pioneer in the Promotion Project”, “Outstanding Team Building”, “Footprint of Staff from SGCC Guangxi Electric Power Company”, “Inspirations Around You” and “Who’s the Most Beautiful Person in the Company” to promote CSR management achievements, such as the CSR Management Manual for Electricity Supply Enterprises in Townships.

**Collect 240,000 pieces of reasonable advice in the program of “Make a Suggestion for the Company”**

Eventually reduce burden of teams and groups. Study and formulate the Instructions of Strengthening Team Construction, and Reducing Their Burden and put forward 30 key requirements. Further reduce burdens of technology, management, equipment and quality. Eliminate 4,360 self-built information systems, cancel 6,028 assessment indexes, and simplify, clear and optimize more than 23,000 records. All these efforts have practically eased the burden for grass-root organizations.

Encourage the majority of the staff to make contributions.

- Labor contests can motivate employees to work.
- Organize meritorious competitions during the construction of Northern Zhijiang-Fuzhou UHV AC project and Sichuan-Tibet Interconnection Project, to integrate contests into major project management and throughout all processes, such as construction, supervision, equipment installation, and logistics.
- Collect suggestions in the campaign of “Make a Suggestion for the Company”. 618,000 employees took part in this activity and offered more than 240,000 suggestions which have helped enhance company management.

- Exert the effect of model worker innovation labs. Bring the conglomerate, radiating and developing effects of model workers into play. Establish model worker innovation offices, and promote their standardization, institutionalization and normalization. The company has established 1,100 model worker innovation offices in total, 76 of which were nominated as pilots, 5 were awarded as “Demonstration Model Worker Innovation Office of China’s Energy Chemistry Industries”, and 17 were honored as “National Demonstration Model Worker Innovation Office”.

**Enhance the organizational vitality of grassroots employees**

Enrich cultural construction for employees.

- Organize singing, calligraphy, painting, photography activities for the staff in construction sites together with grass-root teams so that workers can also enjoy cultural activities.
- Hold exhibition of staff’s literature and art works, on the theme of “Voice of SGCC”.
- Co-organize the 7th SOE “SGCC Cup” table tennis competition, and delegation of the company has been the collective winner for the 6th time.

- Conduct campaigns on excellent songs and mini dramas among the staff. These art works showcase the features of the power grid and also cater to employees’ taste, satisfying their spiritual and cultural needs.
- Strengthen the IT construction of staff library. Hold training classes for staff cultural construction and managers in the Labor Union to enhance their expertise and business performance.
Employees’ Responsibility to the Society

Actively explore and practice a scientific outlook on CSR, which combines superior design with grassroots innovation, pilot exploration with demonstration promotion, benchmark motivation with spontaneous advance, key breakthrough with comprehensive elevation, and coordinated planning with creation. Thoroughly penetrate CSR in every aspect of the company and enhance the employees’ fulfillment awareness and ability.

Four “Be” In Practicing CSR

Be staff’s new working method
Require employees to have the view of comprehensive value and stakeholders, and the concept of transparent operation and green development. Convert internal work into social contributions and social expectation into work requirement, so as to realize “externalization of internal work and internalization of external expectations”.

Be the company’s new development mode
Convert enterprise management goal from profit maximization into comprehensive value maximization. Change management object from internal part to external part and natural environment. Management mechanism shifts from optimized allocation of corporate resources to social resources.

Be the company’s new communication method
Require the company to convert work communication into value communication. It used to only pay attention to reporting to higher authorities and media publicity. Now, the company has to carry out overall communication with stakeholders and media. The old method of information output has to give way to the concept that trust built on communication can enhance cooperation to create value.

Be the company’s new management mode
According to requirement to maximize the company’s contribution to sustainable development, develop and improve the corporate value, development strategy, governance mechanism, institutional system, management process, and assessment mechanism. Build a harmonious relation with stakeholders and become an excellent organization pursuing maximized integrated value.

Σ (Business+Improvement ) Re=Work ∪ Value

Σ refers to every business and improvement.
Re is the abbreviation of Responsibility and Rethink.
∪ is the logic operator meaning “and”.

Σ (Business+Improvement ) Rel refers to rethink every business and improvement with the concept of CSR to collect and improve again and again.

Work ∪ Value means that business is employees’ work from the internal perspective and employees’ work is to create integrated value for the society and implement CSR from the external perspective.
CSR Practice is employees’ new working style

CSR Practice requires them to
Discover value: take the initiative to turn work into economic, social and environmental value.
Add value: Expand work from its financial dimension to the dimension of integrated value.
Enhance value: Upgrade work’s competence and quality of integrated value creation.
Popularize value: Advocate work’s contribution to stakeholders and the society.

SGCC Nanjing Electric Power Supply Company innovatively used “responsibility leverage” to fulfill its responsibility, and stakeholder management mechanism of “responsibility 1-N” to conduct CSR initiative “Provide Clean Energy with Responsibility; Build Our Beautiful Homeland Together”. The company signed the initiative together with 49 stakeholder representatives from the government, communities, customers and partners, including Nanjing municipal government, Sinpec Yangzi Petrochemical Co., Ltd., and Nanjing Affordable Housing Construction &Development Co., Ltd. They promised to create comprehensive value and make efforts for Nanjing’s development jointly by focusing on substantive issues like improving power supply quality, supporting the development of new energy industry, and building a beautiful and harmonious Nanjing.

SGCC Guangzhou Electric Power Supply Company established a work mode to improve internal work by external feedbacks. All connection dots were sorted out between the company and all stakeholders to diagnose the current situation of social responsibility. The company also did research on and interviewed with 7,015 people from village committees and regional Party committees and governments, 320 residential districts, 436 on-grid power stations, and 62 outsourced construction teams. By scoring satisfaction and expectation, the company evaluated the current situation of social responsibility and found the weakness in current practices. It prepared Diagnostic Analysis Report of Current Situation of Social Responsibility Management as a guideline for the enterprise to improve management.

SGCC Hainan Electric Power Company published White Paper On Serving the Socio-Economic Development at the provincial and prefecture level. It held informal meetings to serve the local economic and social development. Provincial leaders and experts, as well as KOLs were invited to the event.

SGCC Guangdong Electric Power Company has published White Paper Of SGCC Guangdong Electric Power Company to publish the first white paper on CSR fulfillment for county-level power supply companies. Its practice and performance was recognized by the provincial government.


SGCC Guangxi Electric Power Company has released The White Paper on Serving the Socio-Economic Development in Binhai New District to target at regional development, and push the government to set up compensation fund for electric power construction.

Sustainable Development Strategy of SGCC Shandong Electric Power Company

Promote two transformations, build two world-class
= Pursue maximization of comprehensive value = Form scientific development cosensus
= Fully implement social responsibility management = Contribute to sustained development
= Promote sustainable development of the company and society

SGCC Zhejiang Electric Power Company published the white paper Electricity Action For Clean Air in Beijing to disclose key deployment for the capital’s clean air action, for which totally 200 reports have been released on media.

With the guidance from SGCC Tianjin Electric Power Company, Binhai Power Supply Company released The White Paper on Serving the Socio-Economic Development in Binhai New District to target at regional development, and push the government to set up compensation fund for electric power construction.

SGCC Shandong Electric Power Company published Shandong Electric Power with Responsibility to present the achievements of the company in fulfilling its social response regarding delivering electricity from Shanxi via UHV and actively implementing its corporate citizen’s responsibility.

SGCC Jiangsu Electric Power Company published White Paper on Serving “Double Lead” (taking the lead in building a well-off society and achieving modernization) and Lighting Up a Beautiful Life at the provincial and prefecture level. It held informal meetings to serve the local economic and social development, and invited key stakeholders such as the government, media, VIP clients, power generation enterprises to offer advice and suggestions on providing better service for the local development.


SGCC Anhui Electric Power Company prepared and published White Paper on Green Development to comprehensively demonstrate its actions and performance in fulfilling its social responsibility and promoting green development.


SGCC Shandong Electric Power Company has published the white paper Electricity Action For Clean Air in Beijing to disclose key deployment for the capital’s clean air action, for which totally 200 reports have been released on media.

SGCC Shaanxi Electric Power Company published White Paper on Serving the Socio-Economic Development at the provincial and prefecture level. It held informal meetings to serve the local economic and social development, and invited key stakeholders such as the government, media, VIP clients, power generation enterprises to offer advice and suggestions on providing better service for the local development.

SGCC Shandong Electric Power Company has published White Paper on Serving the Socio-Economic Development at the provincial and prefecture level. It held informal meetings to serve the local economic and social development, and invited key stakeholders such as the government, media, VIP clients, power generation enterprises to offer advice and suggestions on providing better service for the local development.

SGCC Shandong Electric Power Company has published White Paper on Serving the Socio-Economic Development at the provincial and prefecture level. It held informal meetings to serve the local economic and social development, and invited key stakeholders such as the government, media, VIP clients, power generation enterprises to offer advice and suggestions on providing better service for the local development.

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SGCC Shangdong Province has built a moderately prosperous society in advance.
CSR practice is the company’s new communication method

Actively explore a systematic, standardized, structured and institutionalized communication mode. Sort out different communication requests, purposes and orientations from the government, community, media and staff. Determine the frequency and timing for communication, design differentiated processes, contents and methods, and formulate result evaluation process and indicators. Form a standardized and structured communication package targeting at different audiences and institutionalize it into a communication mechanism.

SGCC Beijing Electric Power Company carried out “CSR Promotion Month” for three consecutive years. It improved employees’ awareness on CSR management and their motivation to fulfill the responsibilities, expanded the communication methods and channels with key stakeholders. The company formulated the Action Plan of CSR Promotion Month at the beginning of every year to set the time, content, procedures, and coordination among grassroots organizations. While popularizing the CSR concept, it also realized intensive communication with stakeholders.

SGCC Chongqing Electric Power Company laid emphasis on socialization of expression, methods and contents. It shifted its corporate strategy into the work concept suitable for the local economic and social development. Its implementation practice was changed into topics of high public concern. The company business was changed into social, economic and environmental benefit. Technical terms were replaced by language understandable to the people. All these efforts have boosted the social understanding, trust and support to the company.

SGCC Jiangsu Electric Power Supply Company established a CSR index system to strengthen its connection with development layout and objectives of the company and the region. It discovered the CSR connotation in staff’s work, systematically manage core performances, and selected 37 A-class CSR indicators. Based on external perception and internal evaluation, the company filled in the blank of selected A-class indicators, and established 11 B-class CSR indicators. Based on CSR promotion requirement, the company further established 10 C-class CSR indicators according to the logic of CSR work.

CSR practice is the company’s new management mode

Comprehensive CSR Management is a brand new management mode to ensure full consideration of social and environmental factors, requirements for sustainable development, and to pursue maximized integrated value in the course of the corporate development.

SGCC Jiangsu Electric Power Supply Company focuses on building CSR organizational institution including six systems of capability construction, operation management, communication, indicators, and assessment to solve electric power suppliers’ problems in how to place themselves, assign jobs, advance and implement work, and finally evaluate the performance in CSR. Based on ISO 26000 Social Responsibility Guide and characteristics of power supply companies, the company pinned down 53 topics of 14 core subjects, and built a comprehensive CSR indicator pool of 276 detailed index to identify relevant quality and quantity and make the system operate in a more effective way.

SGCC Zhejiang Electric Power Company aims to serve as a reference for the assessment. The company has regulated grid staff’s detailed ledger, built standardization work manual for grid staff in rural area to keep a record of their daily job, which will be reported to the electrician team every week for a unified ledger. Besides, it has also strengthened training for grid staff on service process, responsibility scopes, work standard, and communication ability to improve their service capability.

SGCC Yichang Electric Power Supply Company explores the construction of the village and power grid together, and promotes standardized services on rural grid. It has built grid staff’s job responsibilities, work standards, management system, assessment methods to form a scientific grid management system. The annual assessment on grid staff is based on their fulfillment surveys, which are filled out by village leaders, key households, and business representatives within the grid. The annual assessment on grid staff is based on their fulfillment surveys, which are filled out by village leaders, key households, and business representatives within the grid to serve as a reference for the assessment. The company has regulated grid staff’s detailed ledger, built standardization work manual for grid staff in rural area to keep a record of their daily job, which will be reported to the electrician team every week for a unified ledger. Besides, it has also strengthened training for grid staff on service process, responsibility scopes, work standard, and communication ability to improve their service capability.
Sustainability Reporting Guidelines index

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**Human Rights**

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: make sure that they are not complicit in human rights abuses.

**Labour**

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: the elimination of all forms of forced and compulsory labour; and
Principle 5: the effective abolition of child labour and

**Environment**

Principle 7: Businesses should support a precautionary approach to environmental challenges; and
Principle 8: undertake initiatives to promote greater environmental responsibility; and
Principle 9: encourage the development and diffusion of environmentally friendly technologies.

**Anti-Corruption**

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.
ASSURANCE STATEMENT

Introduction

DNV GL Business Assurance Group (DNV GL) has been commissioned by State Grid Corporation of China (SGCC) to carry out an independent verification of the SGCC 2014 Corporate Social Responsibility Report (the Report) against the AA1000 Assurance Standard (2009) (AA1000AS 2009).

SGCC is responsible for the collection, analysis, aggregation and disclosure of information contained in the Report. Our responsibility in performing this work is to the management of SGCC only and in accordance with terms of reference agreed. The signatories of SGCC are the intended users of this statement. This assurance is based on the assumption that the data and information provided to DNV is complete and true.

Scope of Assurance and Limitations

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

- The economic, social and environmental data, as well as the social responsibility performance in the period January to December 2014, as presented in the Report.
- On-site verification at SGCC headquarters, and several subsidiary companies:
  - State Grid Power Company, SGCC
  - SGCC Advanced Training Centre
- Without visiting the external stakeholders
- Evaluation of Accountability, principles and performance information, as required for a Type 2, moderate level of assurance in AA1000AS 2009.
- The signed sustainability performance information includes:
  - Reported progress against the company’s targets specified in the “Commitment for 2014” as disclosed in the 2014 Report
  - Performance and information about the development of UN goals
  - The sustainability performance information which presented in the Report against GRI 3.1.
  - DNV GL has not obtained significant factors that limit our assurance activities
  - DNV GL has not verified the financial data disclosed in the Report
  - The verification was completed by DNV GL in January 2019

Verification Methodology

Our verification was planned and carried out in accordance with the DNV GL Protocol for Verification of Sustainability Reporting. The Report has been evaluated against the following criteria:

- Compliance with the principles of Inclusivity, Transparency and Accountability, as well as Reliability of specified sustainability performance information, as set out in the AA1000AS 2009.
- Adherence to additional principles of Completeness and Neutrality, as set out in DNV GL’s Protocol.

As part of the verification, DNV GL has challenged the statements and claims made in the Report and assessed the robustness of the underlying data management process, system flow and controls. For example, we have:

- Examined all relevant documents, data and other information made available to DNV GL by SGCC.
- Performed sample-based reviews of the mechanisms for implementing SGCC’s social responsibility policies, as described in the Report.
- Performed sample-based checks of the processes for generating, gathering and managing the qualitative and quantitative data presented in the Report.

Conclusions

In our opinion, SGCC’s Sustainability Report 2014 provides a credible and objective presentation of SGCC’s overall sustainability performance and perspective of the AA1000 Assurance Principles 2009. Within the scope of assurance, DNV GL has not observed any untrue statements of sustainability and materiality. We use “Good”, “Acceptable” and “Needs Improvements” to evaluate the Report’s adherence to the following principles according to Veribatim.

Initialisability Acceptable. The Report disclosed the engagement mechanism established by SGCC, and systematic methods to ensure stakeholders’ complete and objective participation by different ways, which has advanced the enrollment of SGCC's sustainable development strategy in a certain degree. The Report completely considered key stakeholders' expectation, including users, three rural (agriculture, countryside and farmers), employees, commercial partners and communities et al., which has been reflected in conveying and disclosing key social responsibilities issues in the Report.

Materiality Acceptable. SGCC has established a process on how to determine sustainable development materiality issues. The Report disclosed sustainable development background existed to corporation and disclosed materiality issues by the established process, also it disclosed dynamic and continuously improving management mechanism and performance result on implementation of these materiality issues. The Report demonstrated these key sustainability performance information transparently.

Responsiveness: Acceptable. Information disclosed in the Report was established by identification and analysis of different materiality issues which will impact on SGCC’s sustainable development strategy. By setting up a series of responding mechanism which includes sustainable development policy, objective and responsibility fulfillment action plan, adding context’s 3 years plus performance data and detailed description, SGCC’s social sustainability development issues concerned by key stakeholders on economy, society and environment, especially the development of UN power grid.

Reliability: Acceptable. DNV GL validated certain performance information disclosed in the Report during audit; SGCC demonstrated the collection and statistics process of sustainable development performance information to DNV GL, and there is no systematic errors found during audit. Therefore, certain performance data and information disclosed in “Report” is regarded reliable.

Conclusiveness: Acceptable. Within the reporting scope and boundary defined by SGCC, we believe that the Report does not omit relevant information that could significantly influence stakeholders’ decisions or that reflect significant sustainability impacts during the reporting period.

Neutrality: Acceptable. We consider the overall tone of the Report to be neutral and the presentation of information to be generally balanced. The emphasis on various topics in the Report is basically proportionate to their relative materiality.

Opportunities for Improvement

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

- It is suggested to enrich the CSR website, further define website related management obligation and management process.
- It is suggested to further define and regulate definitions, statistics scope and approaches of each performance data, and to amend data collection method timely.
- It is suggested to disclose responsibility fulfillment plan and performance more completely on identified key responsibility issues.

Statement of DNV GL’s Competence and Independence

DNV GL is a global provider of sustainability services, with qualified environmental and social assurance specialists working in over 170 countries. DNV GL was involved in the preparation of any preliminary data included in the Report except for this Assurance Statement. DNV GL maintains complete impartiality toward any people interviewed and the views expressed in the public media or elsewhere. DNV GL hereby expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement.

For DNV GL - Business Assurance Group

Dr. Wu
Lead Verifier

David Yuan
Sustainability Service Manager - Greater China

Beijing, China, January 2015