Company Profile

According to the Precept of Reform to Power System promulgated by the State Council, China Southern Power Grid Co., Ltd. (CSG) was duly established on December 29, 2002 and has started his operation since then. With business scopes covering five Provinces, Guangdong, Guangxi, Yunnan, Guizhou and Hainan, CSG mainly takes charges of the investment, construction and management of China Southern Power Grid and the relevant transmission and distribution; participates in the investment, construction and management of cross-region power transmission and transformation, interconnection; undertakes the power purchase and sale, transaction and dispatch; engages in the investing and financing in home and abroad; explores the foreign trade, international cooperation, overseas project contracting and labor cooperation; and so on.

In headquarters, CSG sets up 11 departments or bureaus, China Southern Power Grid Dispatch & Communication Centre, Power Trade Centre, Technical Research Centre and Information Centre. Within his organization, CSG also owns Extra-High Voltage Transmission Company, Finance Company as his two filiales, and Guangdong, Guangxi, Yunnan, Guizhou and Hainan Power Grid Companies as his 5 solely-owned subsidiary companies. By the end of 2004, CSG possesses 245.3 billion yuans of total assets, 130,000 of staff, and achieves 155.7 billion yuans of main business income and 4.088 billion yuans of total profit in the year of 2004.
China Southern Power Grid operated by CSG covers five Provinces with a west-to-east distance of about 2000 km. In the Grid, there exists of various power sources of hydro, coal-fired, nuclear, pumped hydro storage, oil-fired, gas-fired and wind power plants with total installed capacity of 79,540 MW (excluding that in Hong Kong and Macao). The transmission lines span 41,005 km with the voltage of 220 kV or higher and substation capacity of 138,400,000 kVA. At present, a “West-to-East Power Transmission” channel has been structured by 5 AC and 3 DC 500 kV lines with the capacity of 11,500 MW. Having the world leading technologies of DC electric trigger, light trigger, thyristor controlled series capacitors and super-conduct cable, CSG features the Grid as long-distance, heavy capacity, ultra-high voltage and combined operation of AC/DC. CSG initiates the power supply to Viet Nam since September of 2004, that makes him the pioneer of grid in China to "step forward to the world". The Grid is not only the most complicated, compacted and technically advanced one in China, but also the largest-scaled in "West-to-East Power Transmission", most optimized and most potential contained.

By the end of 2004, China Southern Power Grid has accumulated to transmit power from West to East area up to 139.7TWh, among which Guangdong Province had received 103.2 billion kWh with an average landing electricity tariff of 0.309 yuan/kWh, Guangxi Province 36.5 billion kWh, while Yunnan Province had sent 21.9 billion kWh and Guizhou 33.8 billion kWh. Therefore, the "West-to-East Power Transmission" plays an important role in ensuring power supply to Guangdong Province and promoting economic and social development, and contributes positively to turning the resource advantages of western Provinces (regions) into economic ones.

As the executor of the Greater Mekong Sub-region power cooperation appointed by the State Council, CSG has been actively pushing on the process of Greater Mekong Sub-region power cooperation and successfully supplied 49.43 million kWh power to Viet Nam in 2004, which marks the beginning of supplying Chinese electric power in large scale to the neighboring countries. As the pioneer of grid in China to “step forward to the world”, China Southern Power Grid will optimize its power resources allocation in a broader space.
China Southern Power Grid Company

Website: http://eng.csg.cn
Address: Huasui Road, Zhujiang Xincheng, Tianhe District, Guangzhou, Guangdong Province
Postcode: 510623
Fax: 86-020-38120189
Tel: 86-20-38121080, 38121082
E-mail: international@csg.net.cn
Welcome to China Southern Power Grid

<table>
<thead>
<tr>
<th>Sitemap</th>
</tr>
</thead>
<tbody>
<tr>
<td>About Us</td>
</tr>
<tr>
<td>Company</td>
</tr>
<tr>
<td>Profile</td>
</tr>
<tr>
<td>Power Development Plans</td>
</tr>
<tr>
<td>Planning for the Ultra-high Voltage Power Grid</td>
</tr>
<tr>
<td>Construction of the West-to-East Power Transmission</td>
</tr>
<tr>
<td>Power Market &amp; Trade</td>
</tr>
<tr>
<td>Category</td>
</tr>
<tr>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Electricity dispatching system</td>
</tr>
<tr>
<td>International exchange &amp; cooperation</td>
</tr>
<tr>
<td>Power grid technological research</td>
</tr>
<tr>
<td>Branches &amp; Subsidiary Companies [EHV]</td>
</tr>
<tr>
<td>Help Center</td>
</tr>
<tr>
<td>Branches &amp; Subsidiary Companies [EPF]</td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Branches &amp; Subsidiary Companies [Guangdong]</td>
</tr>
<tr>
<td>Branches &amp; Subsidiary Companies [Yunnan]</td>
</tr>
<tr>
<td>Branches &amp; Subsidiary Companies [Hainan]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production &amp; Operation</th>
<th></th>
</tr>
</thead>
</table>

Page 8 of 40
Teams of Administrators

Yuan Maozhen
Chairman
The Strategies of the CSG

Since his establishment on December 29, 2002, CSG has attached much importance to the strategy development. Through constant exploration and practice, a framework of strategic system on general development has been formed and will be deepened and enriched continually. The strategic system can be resolved into such factors as strategic orientation, tenet, strategic goal of development, managerial ideology, working guidelines, developing goals of power grid and so on.

**Strategic Orientation:** as an oversize state-owned enterprise administrated by the central government, CSG engages in base industry of national economy and public undertaking of people's livelihood, which is related to the national economic vitals, energy safety and social stability, and play crucial roles in the national economic and social development. CSG directly serves five Provinces (Region); plays a dominant part in the development of South China Power network and power resource planning and even the optimized allocation of energy resources; shoulders the responsibilities of implementing the strategies of "Western overall Development Program" and "West-to-East Power Transmission"; assists the government in adjusting the power structure; ensures a rapid, persistent and healthy development of the power industry. CSG is the operator of power grid; is the principal body of regional power market deal. CSG, under the government's supervision, undertakes the functions of actively fostering the power market, assisting the government to maintain the market order and realizing the standardization of the market.
Welcome to China Southern Power Grid

**Tenet:** to be responsible for the Central government, to serve the five Provinces (Region).

**Strategic Goal of Development:** to build a national leading and international famous enterprise aiming to market, emphasizing on service, integration and modernization.

**Managerial ideology:** to center on the management of Grid, to be guided by the market, to act under the tenet of service, to make the foundation on safety, to realize the maximum of social and economic benefits

**Working Guidelines:** "Six More Attentions"

- While ensuring the security of the power grid, pay more attention to the technological progress, so as to improve the technological constituents of the network and enhance the ability to operate it.

- While ensuring the electric power supply, pay more attention to the establishing scientific developing ideology, planning as a whole the optimization of utilizing local resources, getting along well with different parties of various interests, so as to promote the dynamic interaction of the eastern and western parts and the formulation of the win-win pattern;

- While ensuring the development in its strength, pay more attention to consolidating foundation and management, enhancing managerial ability for the management optimization;

- While increasing the benefit of the company, pay more attention to social benefit, leave no stone unturned to ensure the electric power supply for people's livelihood, serve all users, companies that generate electricity and contributes to the economic and social development of the five Provinces (regions);

- While combing relations and consolidating results, pay more attention to the reform deepening. Set up modern corporate system, realize the innovation of the system and mechanism, manage large enterprises well while ease control over small ones,
make clear the managerial interfaces and mobilize each party to act positively;

While developing the company, pay more attention to the individual development: adhere to "People First" ideology, attach importance to the cultivation, introduction and function of persons with abilities; stress cultural construction of the company, improve administrators' abilities to lead and make decisions, exert fully the political leading role of the party organization.

The Development Goal of the Power Grid: construct the South China Power Grid into an open, modern and unified power grid of reasonably structured, technical advanced and reliable security.

Important Research Issues on the Development Strategies: initiate sub-strategies, such as "West-to-East Power Transmission", "Rejuvenate the Network through Science and Technology", "Marketing Strategy", "Strengthening the enterprise by Elites", "Managerial Innovation", "Information Strategy", "Open Up to the World", the Cultural Construction of the Company and so on. Furthermore, it is advocated that branches and subsidiary companies establish their tailor-made strategies in accordance with real conditions.

The management on the strategies of the company is a systematic project, to realize each goals, the company will hold scientific ideology of development, advocate "happy work for everybody", be active in building up a "harmonious South China Power Grid", and promote the interaction and sustainable development of the strategies, so as to contribute to the construction of a harmonious society.
In headquarters, CSG sets up 11 departments or bureaus, China Southern Power Grid Dispatch & Communication Centre, Power Trade Centre, Technical Research Centre and Information Centre. Within his organization, CSG also owns Extra-High Voltage Transmission Company, Finance Company as his two filiales, and Guangdong, Guangxi, Yunnan, Guizhou and Hainan Power Grid Companies as his 5 solely-owned subsidiary companies. By the end of 2004, CSG possesses 245.3 billion yuans of total assets, 130,000 of staff, and achieves 155.7 billion yuans of main business income and 4.088 billion yuans of total profit in the year of 2004.
According to the economic developing program of five Provinces (regions) on fully constructing well-off society, the company divides their goal into phases:

**Phase One:** by 2005, 9 major transmission passages, namely 6 AC and 3 DC transmission loops would be built for the major network and the transmission capacity from the West to Guangdong Province would be 10.88GW. The power plant used for peak load and frequency regulation would be initiated. The installed capacity of five Provinces (regions) would reach 86.82GW; The total electrical use of the whole society would reach 429.4 billion kwh. Improvement and optimization would be made on the power grid for each Province (region), to solve the problem of bottle neck

**Phase Two:** from 2006 to 2010, start the project of Ultra-high voltage transmission with sufficient argumentation to meet developing demands. Set up the second loops of DC and AC electric power transmission between the west and the load center of Guangdong power grid, and increase 11.5 GW to the capacity transmitted to Guangdong on the basis of the capacity prescribed in the tenth 5-year-planning. In accordance with the need of the power grid, invest in peak load power plants meet an emergency. In 2010, the installed capacity of five Provinces (regions) reached 147.48 GW, the total electric consumption of the whole society reached 671.1 TWh. Along with the load and the power supply, the power grid in each Province (region) develops accordantly, which has turned into a backbone grid of
reasonable structure guaranteeing the sending out, stepping down and using availably of the electric power.

**Phase Three:** from 2011 to 2020, together with the exploration of western resources, especially the hydropower resources in drainage areas of Lantsang River, Wujiang River, Jinsha River, Nujiang River and so on, enhance further "West-to-East Power Transmission", and promote the network between South China Power Grid and that of Southeast Asia to establish a great power grid running through the east and the west and connecting the south to the north. The major grid of South China power network and other power grids of distribution and transmission in each Province (region) are suitable for constructing fully a well-off society, and therefore play the role of "the pioneer".
The South China power grid covering five Provinces (regions) (namely Guangdong, Guangxi, Yunnan, Guizhou and Hainan) with a long west-to-east distance has special regional and geographic advantages. The construction of power grid is featured by its own characteristics: it includes not only exploration and construction by each Province (region) to their local conditions, but also large scaled optimization of utilizing resources "West-to-East Power Transmission", and cooperation with neighboring countries and regions. In the development strategies of the company, it aims at constructing South China power grid into a modern, integrated and open power grid of reasonably structured, technically advanced with reliability and security. According to the development strategies, we divide the construction into 3 phases:

**Phase One:** from 2003 to 2005, near ninety billion yuan is invested in the construction of the power grid, which, a transforming capacity of about 83,430,000 kva and near 140,000 km of transmission lines have been set up. 6 AC and 3 DC transmission loops have been built for the main 9 transmission passages, with the capacity of 10.88GW transmitted to Guangdong. Among these, ±500 kv-DC-transmission project from Guizhou to Guangdong started operation with bi poles on October 24, 2004, which marked an accomplishment 15 months ahead of schedule for the task of adding 10GW to the capacity transmitted to Guangdong, as prescribed in "West-to-East Power Transmission" of the "tenth five years" plan. In June, 2005, four-loop 500kv electric power transmission from
Welcome to China Southern Power Grid

Tianshengqiao to Guangdong was put into operation in advance, as the first project in the "West-to-East Power Transmission" of the "eleventh 5 years" plan. 1200MW has been added to the capacity transmitted from Yunnan to Guangdong. Besides, the company arranges a series of keystone projects, gradually solve the problem of insufficient transmission capability, so as to improve the power grid and its structural optimization.

**Phase Two & Three:** the company will set up Ultra-high AC and DC transmission project, join Hainan into the major power grid, invest in peak modulated power plant to meet an emergency, establish the interconnection of the power grid among China, Thailand and Viet Nam, by doing so, the South China Power Grid would become a great power network running through the east and the west and connecting the south to the north
West-to-East Power Transmission

A strategic decision of the state to optimize the energy collocation and the implementation of "The grand western development" program, "West-to-East Power Transmission" is a win-win strategy to promote the macroeconomic benefits and the common development of both the east and the west. As the southern channel of "West-to-East Power Transmission", South China Power Grid explores the electric power resources of southwest Provinces and regions (such as Guizhou, Yunnan, Guangxi and so on), send them to Guangdong which they are badly needed. In this way, the company turns the advantages of rich resources in the west into economic benefits, provides clear, high-quality, reliable and cheap electric power to the east through the strength of the wide South China power grid.

So far, the company has invested about thirty billion yuan in "West-to-East Power Transmission", added 10GW to the capacity transmitted to Guangdong 15 months earlier than prescribed in the "tenth five years" plan. As channels for the "West-to-East Power Transmission", a total of 6 AC and 3 DC electric power transmission lines have been formed, such as four-loop 500kv AC electric power transmission project from Tianshengqiao (Natural Stone Bridge) to Guangdong, ±500kv DC electric power transmission project from Tianshengqiao to Guangdong, two-loop 500kv AC electric power transmission and converting project from Guizhou to Guangdong, ±500kv DC electric power transmission and converting project from Guizhou to Guangdong, ±500kv DC
Welcome to China Southern Power Grid

electric power transmission project from the Three Gorges to Guangdong and so on.

According to the "eleventh five years" plan which intended to add a capacity of 11.5GW to 13.5GW to that sent to Guangdong, each transmission channel is being programmed and implemented, four-loop 500kv AC electric power transmission project from Tianshengqiao (Natural Stone Bridge) to Guangdong has been set up ahead of schedule and put into operation, and the capacity transmitted from Yunnan to Guangdong has been increased recently by 1,200,000 kw. The second-loop ±500kv DC electric power transmission project from Guizhou to Guangdong, is under construction in a tight schedule, and will enter the application phase in 2007. With a view to the characteristics of the South China power grid, the company decides primarily to adopt Ultrar-high AC and DC technology in the channel from Yunnan to Guangdong with the voltage up to DC±800 kv and AC 1000kv. In June,2005, the finalizing of framework agreements on transmitting the electric power from Guizhou and Yunnan to Guangdong in the" eleventh five years", embodies the demands of regional harmonious development, interaction of the central ,west and east part, and optimizing resource utilization, has an important practical meaning and a long-term historic significance.
International exchange & cooperation

Home > International exchange & cooperation > Foreign affairs

Foreign affairs
Welcome to China Southern Power Grid
Guizhou Power Grid is a sole subsidiary of China Southern Power Grid Co., Ltd. which is in charge of Guizhou Power Grid, manages the fund of the state-owned power grid in Guizhou and undertakes the planning and construction of power development in Guizhou. It has 24 electric power units of marketing, designing, construction, scientific research,

In 2004, Guizhou Power Grid had a padding power-generation capacity of 56.8 billion kWh with a power-selling capacity of 38.2 billion kWh in Guizhou Province and 12.98 billion outside Guizhou, among which "West-to-East" transmission capacity amount to 56.8 billion kWh, the power-selling capacity keeps an increase by more than 10% in the successive 12 years. By the end of 2004, Guizhou Power Grid padding installed broke through 10 million kW and reach 10.649 million kW, among which thermal power installed was 7.447 million kW and hydroelectric power 3.202 million kW.

Ever since China's carrying out the great exploration strategy of west electric power, in the leadership of China Southern Power Grid Co., Ltd as well as Guizhou provincial Party committee and provincial government, Guizhou Power Grid has based on security production, emphasized on the speed-up of the development of power grid in Guizhou, the promotion of power construction and the exploration of energy resources, aimed at
ensuring the "West-to-East" and the power supply requirement of the development of economy and society in Guizhou Province, and taken effective measures in electric power supply. In 2003, the maximum load of transmission to Guangdong was 1.8 million kW with an annual power capacity amounting to 5.764 billion kWh, while in 2004 the max transmission load and power capacity reached 2.8 million kW and 9.137 billion kWh respectively. The power-selling capacity of 2003 in the province was 33.393 billion kWh, increasing by 17.84% compared with the same period of 2002, and that of 2004 reached 38.201 billion kWh with an increase by 14.4% compared with the same period of 2003. It supported and propelled the GDP of the entire province with an increase of 10.1% and 11.4%. At the same time, the development of power grid is further speed up. Since 2000, the investment of the construction of power grid has been in excess of RMB 15 billion Yuan, forming a 500 kV backbone power grid which centralizes on "口" style loop grid in the middle region and extends towards north and east. The province has 17 500kV channels of a total length of 1507km, with 6 electric substations amounting to a total capacity of 6.5 million kwa, and 105 220kV channels of a total length of 4857km, with 35 electric substations amounting to a total capacity of 7.73 million kva. The reconfiguration of 220kV network frame in the province formed the regional operation of loop grid, greatly increasing power supply reliability of regional power grid. In the construction of power grid, the company widely uses the advanced scientific new achievements of electric power industry, constantly promoting secure, economic and reliable operation. Under the overall arrangements of the China Southern Power Grid Co., Ltd., the Guizhou-to-Guangdong 500kV "Two AC, One DC" transmission project has been completed in September, 2004, realizing two poles of DC transmission one year ahead of schedule and providing guarantee of transmission channel to ensure the completion of transmitting 4 million kV to Guangdong during "Tenth Five Year".

In recent years, Guizhou Power Grid invested a large amount of fund to reconstruct, in a large scale, the city power grid of 9 regions (states, cities) across the province, with an accumulated investment close to RMB 3
billion Yuan. In accordance with the deployment of Department of State, the reconstruction and construction of the 1st and 2nd phase of the countryside power grid with an investment of RMB 7.5 billion Yuan has been fundamentally completed, greatly promoting the development of the countryside power grid, propelling the technological progress of countryside power grid enterprises as well as establishing a good foundation for the countryside economic development and social progress. By 2004, 19 county power supply enterprises held in trust had been classified into the subsidiaries under direct administration. Among the 87 counties (cities) all over the province, 83 had completed the reform on the village and town power administration station, initially realizing "same grid same price" to residents in both cities and villages. The installation rate of "one family one ammeter" in the countryside had been further increased, with an ammeter rata of 72.3%, increasing by 15.15% compared to 2003.
South China Power Grid Company attaches great importance to the safety of production, adheres to the principle that the safe and stable operation of the power grid is the lifeline of the company, gives a dominant privilege to the security of the production, which is embodied in the means as follows:

1. Promote managerial standardization of the safe production

In the early days of its establishment, the company studied in advance the problems South China power grid might be facing with in the security of its operation, and after the consideration of the situation it issued Safe Production No. 1 Rule, as a fundamental guideline on the stability of the power grid and the security in production. Within two years, 45 regulations and technological criterions on safe production management were established and issued, such as Temporary Regulation on South China Power Grid Operation, Electric Operation Instruction and Rules, and Work Order Technological Criterion and so on, all of which have laid a solid foundation for safe production standardization.

Each year, the company constitutes safe production goals for each unit in the whole system, centering on which, all units carry out safe production: through fulfilling the responsibility of the staff of all levels, ensure the accomplishment of the annual safe production goals; through intensifying continuously the management and examination of
safe production, enhance the process control and put into effect the responsibility system of safe production. From the high to the low level in the company system, a safety supervision system has been set up, the force of supervision on safe production has been strengthened, and as for the accidents happened and hidden trouble discovered, the company seriously investigate them and be rough in their punishment, so as to help the units and the staff of all levels to learn from the lessons and adopt in time the preventing measures.

Intensify the managerial mechanism on operating and maintaining equipments of the power grid with "Defect Management" as its core: through strengthening patrolling while operating equipments, deal in time with the defects discovered in the equipments, to guarantee a sound state of the equipment. Besides, the company consolidates the management of professional technology. As to the obvious problems revealed in the accidents of the power grid and its equipment, the company studies and sets down 10 major anti-accident measures, stresses the professional management, such as preventing dirt and lightening, preventing thunders and relay protection and so on. Stress the basis of safe production and the management of basic units.

In basic units, the company pushes forward fully the estimation on safety, carries out research and experimenting work on CAP, explores and establishes the modern responsibility system for safety in production in accordance with the status of South China power grid to link up to the world. The company also confirms 3 basic experiment units.

2. The emphases of safe production are on ensuring personal safety and the stability and security of the power grid.

On the occasions when the electric power is in a serious shortage, note to deal well with the relation between the power grid security and electric power supply, adhere to the fact that the security of the power gird is the base of ensuring electric power supply. That is why proper measures should be taken, such as overall operation, strict management on standby capacity, strengthening control of tidal current and voltage, improving the level of security & stability control system, relay protection and its management, by all of which measures, could be ensured the safe and stable operation of South China power grid. Because of the features of South China power grid in "West-to-East Power Transmission", namely, super-high voltage, great capacity, long distance and poor main network, much importance should be attached to the secondary system, especially the operation of the
security & stability control system and relay protection equipment, in case of accidents caused by malfunction of the secondary system.
Application of Science & Technology

1. Strengthen the Research of Power Grid Security
Concentrating with South China Power Grid Company's implementation of far-distance and huge capacity "West-to-East Power Transmission", as well as the parallel operation of AC and DC lines, we will promote the research of problems associated with power grid security, develop the research on problems such as on-line analysis of power grid stability, interconnection of DC, RTDS, stable control of the operation of multi-fed DC, hybrid operation of AC and DC, the influence of DC grounding to AC system. The research on secondary system will be strengthened, in a bid to provide a stable platform for power grid security.

2. Make out a middle-long term plan for the development of science and technology
We have constituted Scientific Development Plan of South China Power Grid, developed science and technology planning, made out a middle-long term plan for the development of science and technology, nailed down the aim and task of science development and technology reconstruction, in a bid to continuously enhance the technology level of power grid.

3. Promote the qualification of equipment.
Increase the investment; actively adopt advanced technology and equipment, in a bid to
reconstruct of main equipment that influences the safe and stable operation of power grid. Increase the upgrading of aging equipment, solve difficult Power Grid problems, promote secondary system, which includes relaying protection, communication and transformer substation, in a bid to enhance the security and reliability of the grid. Through the enhancement of equipment level, a stable foundation for the safe running of power grid has been laid.