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China Wire and Cable Industry Chain Report, 2009

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2.1 Power Market

2.1.1 Power Grid Investment and Reform

Power grid reform is mainly driven by the following factors:

1) Speed-up Industrialization

The main contributors to press ahead with the future demand of wire and cable industry rely on the enhanced industrialization and economic growth in China. According to the experiences from developed countries, the power demand peaks when one country is in its industrialization era; in the later stage of industrialization, the installed capacity of power will reach roughly 1 KW per person on average. By the end of 2008, the installed capacity of power in China only stood at ** KW, approximately ** KW per person. Therefore, to realize per capital ** KW of installed capacity of power in the further, the power demand should increase above ** KW at least. During the period between 2000 and 2008, China had increased its generating capacity from ** kwh to ** kwh, with annual rise of ** kwh. China has long been making major investments in electric power construction which gave rise to mushrooming rise of generating capacity. This move aimed to cope with the short supply of electric power, driving the development of China's industrialization.

China's Electric Power Generating Capacity, 2000-2008 (Unit: TWH)

Figure (Omitted)

Source: National Bureau of Statistics of China

Investment Structure of Electric Power Industry by Country

Figure (Omitted)

Source: State Grid

Investment in Power Grid, 2007-2010

Investment (RMB 100 million)		2007	2008	2009	2010
Original Plan	State Grid	2254	**	**	**
	China Southern Power Grid	414	**	**	**
	Sum	2668	**	**	**
Additional Investment	State Grid	0	**	**	**
	China Southern Power Grid	0	**	**	**
	Sum	0	**	**	**
Present Plan	State Grid	2254	**	**	**
	China Southern Power Grid	414	**	**	**
	Sum	2668	**	**	**

Source: CHINA ELECTRICITY COUNCIL

In 2008, the total investment in capital construction of electric power nationwide realized RMB **, an increase of ** year on year. Of these, the investment in power supply and power grid was respectively RMB ** and RMB **, a decrease of ** and ** an increase of ** respectively. The proportion of power grid investment rose to **, which indicated that the imbalanced investment in power supply and power grid is turning around. According to the planning made in 2009, the investment proportion of power grid in China will further enhance and will be close to **. It is expected that the efficient national grid with reasonable structure, safety and reliability will be shaped in 2010.

Power Transmission & Distribution Construction in Major Cities during "Eleventh Five-Year"

Figure (Omitted)

Source: CHINA ELECTRICITY COUNCIL

HVDC transmission project has speeded up its construction According to the planning from NGC and China Southern Power Grid, ±**kV HVDC transmission project which projected to put into operation before 2011 will expand its scale. In addition, The Eleventh Five-year plan stipulated that the two power grid giants will lavish RMB ** for Ultra high voltage grid construction, of which RMB ** for AC and RMB ** for DC. This move is undoubted that it needs more demanding requirement for the overall high-end electric transmission and transformation equipments.

The specific construction scale of power grid from middle- and western- cities , State Grid is available for our reference: build and transform **-km 220kv circuit , with variable capacity **; build and transform **-km 110 kv circuit , with variable capacity **; build and transform **-km 35 kv circuit; build and transform **-km 10 kv circuit , with power distribution capacity of **; build and transform **-km 0.4 kv circuit.

Investment Structure of Major Cities by Voltage Level

Figure (Omitted)

Source: Ministry of Industry and Information Technology of PRC

According to the planning from the State Grid, 500 kv- variable capacities will double and ** transmission lines will be increased in 2010 as compare to 2005, while the 200 kv-variable capacity will be close to double and ** transmission lines will be increased; 110 kv electric transmission and transformation scale will also be enlarged, and another ** 110 kv substations will be build with an increase of ** variable capacities and ** transmission lines. China has limited production capacities of high-end products, being less than ** crosslinked cables with voltage level above 110 KV. There are only ** enterprises possessing powercable production capacity with voltage level above 220 kv, with annual output capacity less than ** km.

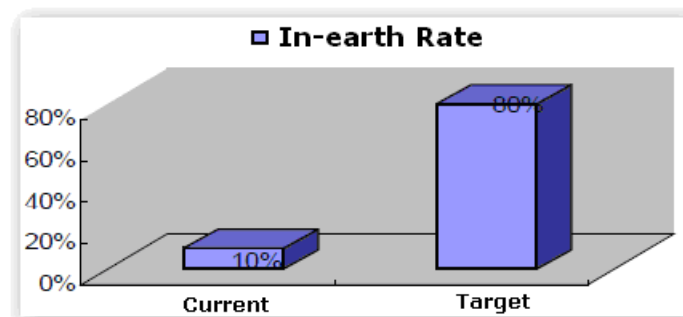
2) Raising Environmental Standard

Environmentally-friendly cable products have gradually held the position in international cable industry. To embrace the 2008 Olympic Games and 2010 World Expo, the Government has launched relevant laws and regulation to enforce the application of environment-friendly cable products. At present, non-environmentally-friendly cables have been forbidden. Furthermore, related department in rail and communication industry have unveiled reverent regulations in this regard.

With the increasing and demanding restriction of the application of non-environmentally-friendly cable products in construction, transportation, communication as well as power supply divisions in all big- and middle- cities, we are pretty sure that environment-friendly cable products will predominate our society in near future.

Still, urban power supply in developed countries is increasingly employing underground cables instead of overhead lines, in a bid to build much healthier living environment by saving more room. This is not only energy-saving and safe, but also is helping for a fine appearance of the cities. Comparing to the wide cable application rate as high as ** in developed countries, China only realized ** on average. A majority of city in China pay attention to apply 110kv-above underground cables in their central areas when drawing up the city planning, some of the cities even included it into local laws and regulations. It is predictable that the popularity of underground cables will bring about a broad market space in the power cable industry in a long run.

Target of China's Wire and Cable In-earth Rate



Source: State Power Information Center

3) Urbanization

The improvement of urbanization is accompanied with the advance of industrialization. The total labor force in western developed countries reaches less than **. China's surplus labor force in rural areas exceeds ** and is increasing by ** annually; in the future, 80% of the labor force will migrate from rural regions to urban areas. At present, in China, more than 10 million people migrate from rural areas to urban areas each year, so it is estimated that China's urbanization will last as long as three decades or so. China's population urbanization ratio was ** in 2004, while it will be ** in 2020. The continuous elevation of urbanization and industrialization will bring long-term rigid demand for wire and cable industry, and ensure the sustained development and growth of the industry.

China's Urbanization Rate, 2004-2050

Figure (Omitted)

Source: China National Development and Reform Commission

Causes for Development of China's Power Grid and Status Quo of It

Figure (Omitted)

Source: State Power Information Center

4) UHV Power Grid

"UHV power grid" refers to the high-voltage power grid composed of 1000 kV AC system and ± 800 kV DC system. UHV power grid represents the future development direction. It has six advantages, namely considerable transmission capacity, long transmission distance, little line loss, limited project investment, high corridor efficiency and strong networking capabilities. It is calculated that 1-loop UHV DC power grid power can send ** of electricity, ** to ** times that done by the existing 500kV DC power grid; transmission distance done by the former is ** to ** longer than that done by the latter. When conveying the same capacity at the same power, 1,000kV lines can save ** of land resources compared to 500kV lines. But, the technology is not yet fully mature, and it needs huge investment. The main equipment includes transformers, controllable reactors, switching equipment, casing, power lines, rheological equipment, protective relaying and power grid automation equipment.

Demand of 110kV-above Power Grid Construction for Crosslinking Cable in China, 2003-2008

Figure (Omitted)

Source: State Power Information Center

At present, people have realized the importance of developing 1000kV UHV electricity transmission. During "Eleventh Five-Year" period, in addition to enhancing the transmission capacity of the existing 500kV power grid, China will accelerate the implementation of Southeastern Shanxi-Jingmen 1000kV UHV Transmission Demonstration Project, so as to support the development of hydropower, coal power and nuclear power projects in the period of "Twelfth Five-Year" and "Thirteenth Five-Year" as well as enhance resources allocation capability in larger scale. UHV power grid will help China power equipment manufacturing improve independent innovation capability to reach the peak of power equipment manufacturing technology.

China's Power Grid Investment Direction

Figure (Omitted)

Source: State Power

It is expected that the transmission capacity of UHV and cross-regional power grid will be ** by 2020, including ** of \pm 800KV HVDC and another ** which will be completed by AC transmission lines. From a perspective of investment, China will invest ** in UHV power grid by 2020, including ** for DC and ** for AC.

China's Investment in Power Grid, 2006-2010

Figure (Omitted)

Source: State Power, Southern Power

The AC ultra high voltage system of state power grid will be orientated in North China, Central China and East China around the year of 2020, connecting with China's major regional power grids, large coal bases, large hydropower bases and major load centers. West Inner Mongolia, northern Shaanxi, southeastern Shanxi, Inner Mongolia Mengxi, and Ningxia coal electricity base will be access to north-south backbones dispersedly. Some capacity of Sichuan hydropower will transmit to Central China and East China via east-west AC ultra high-voltage channels. In addition, it will build power source support in the east, mainly coastal nuclear power. Except switches adopting Sino-foreign R&D, the other parts of ultra high-voltage AC equipments should be made domestically, and restricted to domestic-fund companies. Duing Shanxi Southeast-Nanyang-Jingmen 1,000 KV ultra high-voltage AC pilot demonstration project, the research for double-million single-type power transformers was the first time in the world, and the quota capacity of 320KW per unit was the highest in the world as well. In the meantime, all switches adopted gas insulated full-closed combined appliances, which was the highest in the world's power transmission technology.

The investment for high voltage in constructions of transmission grid and distribution network is with obvious tendency, plus the demand brought by the developments such as large-scale power plant 500kV Lead-out, large-scale construction projects, steel, and petrochemical, so the demand for power cable with 100KV and above will increase significantly, and it is expected to surpass **.

Cable Application Industries by Voltage Level

Figure (Omitted)

Source: Bank of China International Securities

The number of domestic 110kV and above XLPE cables is less than **, and not all of which has achieved designed output capacity yet, and ** of which are capable of producing 220kV and above power cable, while the annual output capacity is less than ** km. According to statistics in 2008, the 220kV power cable market sale was more than ** km, far beyond the expectations, while domestic output capacity can not meet market demand. In addition, the real demand of XLPE cable exceeded **km as well, beyond the market expectations.

Future Demand of Power Grid Subscribers

Demand Trend	Industry Development Room	Benefit Varieties
Power Grid Investment	The total investment will be more than RMB* trillion during the 11th Five-year Period	**
Cable Ground-lead Rate	It is * in developed countries, while it is only *in China	**
Urbanization	The urbanization rate in China was * in 2004, and it is expected to reach * in 2020, and * in 2050.	**

Source: National Development and Reform Commission

3.1 Wanma Cable

Wanma Cable is mainly engaging in R&D, production and sales of power cables, including XLPE cable, plastic power cables, and overhead lines.

Main Products and Application Scope of Wanma Cable

Figure (Omitted)

The ratio of XLPE cable sales was as high as ** in 2008. The cable product specifications can be divided into three categories, **, ** and **, and the ratios of the above three respectively accounted to **, ** and **, and the sales revenue of 110KV high-voltage cable grew especially rapidly. In addition, the order of 110KV XLPE cable had been scheduled to 2009. It was expected that 220KV would obtain pre-qualification test report by the end of 2009Q3, and then the qualifications of bidding for state power grid. The high-voltage cable, 110KV and above, has a higher technology barrier compared to medium and low-voltage cable market, and in China, it is monopolized by oligarchs, the market to be further developed in the future.

Sales Revenue of Wanma Cable by Product, 2006-2008 (Unit: RMB100 mln)

Figure (Omitted)

Source: Wanma Cable

Covering the ratio of **, ** was the biggest region by sales, and ** and ** were the other two important regions. In recent years, Wanma has been focused on building a nationwide direct-sales network, and a direct-sale team throughout China has established, and it is expected to further expand market and broaden sales channel.

Sales Revenue of Wanma Cable by Client

Figure (Omitted)

Source: Wanma Cable

Wanma's operation revenue has achieved rapid growth, and the growth margin in recent three years has respectively reached **, and net profit also has increased separately **, ** and **.

Operating Achievements of Wanma Cable (Unit: RMB mln)

Figure (Omitted)

Source: Wanma Cable

Around ** of its main clients are from industries like power system and petrochemicals, which are with strong fulfilling ability, and less risk that default occurs.

Sales Proportion by Clients of Wanma Cable, 2006-2008

Figure (Omitted)

Source: Wanma Cable

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