

# The status-quo and prospect of the Chinese wire & cable industry

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Professor Gao is the Chairman of the Wire and Cable Branch of the China Electrical Equipment Industrial Association, and he is also the President of the Shanghai Electric Cable Research Institute.

Professor Gao is not a stranger to ICF. Many of you will remember that at our ICF congress in Hong Kong three years ago, he as a guest speaker informed us about the situation and future development of China's wire & cable industry.

**Prof. Gao Qingguo**

Good morning ladies and gentlemen!

The title of my presentation is: The Status-quo and Prospect of the Chinese Wire and Cable Industry.

The sustained and steady growth of the Chinese economy for the past 20 years has brought about opportunities for the Chinese wire & cable industry.

The share of the output of wire & cable as a percentage of GDP rose from 0.8% at the end of the 1980's to 1% in 2000.

China is now the world's second largest cable producing country with its production of wire & cable second only to USA.

Some facts on the situation in the wire & cable industry in China can be seen here.

Now, I will focus my presentation on the characteristics of the Chinese wire and cable industry and the market trends.

# I. Status-quo and Insufficiencies

## 1 Basic data

The basic data of the Chinese wire & cable industry in 2001 is as follows:

Total production	RMB ¥120bn
Total sales	RMB ¥115.7bn
Total employees	345 200 persons

**The growth of over ten years resulted in a business with the following characteristics:**

**(1) A large scale wire and cable industry with a full range of products has been formed**

In general, the locally wire & cable products meet the needs of the domestic market.

Over 90% of the Chinese market is supplied by the domestic manufacturers.

## **(2) The product structure has been changed in respect to that in the 1980s**

Table 1 Individual products expressed as a percentage of total output

Products	Mid-1980s	Present(about)
Bare conductor	12.8	13
Wire & cable for electr. Equip.	37.3	29
Power cable	18.6	25
Telecommunication cable & optical fiber cable	10.9	22
Winding wire	21.4	11

## **(3) Modest but increasing exports of wire and cable**

In 1990, imports of wire and cable in China amounted to US \$180 million while exports amounted to US \$84 million. In 1999 and 2000, the imports rose to respectively US \$1.1 billion and 1.3 billion and the exports rose to respectively US \$1.26 billion and 1.8 billion.

#### **(4) The structure of investment has been changed**

In 1988 wire and cable production of the state-owned enterprises took 48% share of the business total.

Towards the end of the last century, it decreased to only 13% of the business total, while the non-state-owned enterprises (including stock companies, joint-venture companies and collectively-owned enterprises) took 60% share.

## **2 Main problems and insufficiencies**

### **(1) The business is too large in size as a whole while the individual enterprises have unreasonably sized economy**

The utilization of facilities is only 30% to 40% of the capacity.

Except for the optical fiber and cable, large group companies have not been formed.

The ten largest enterprises in terms of output take only 15% share of the national business.

## **(2) Low productivity and low return on investment**

The per capita output of the business has now amounted to RMB ¥335 200, an increase of five times compared to that in 1990

As the production consumes too much raw material, it is hoped that the production cost be further lowered by technical renovation in facilities and improvement in production management.

## **(3) Insufficient R&D and absence of innovation system**

The assets and manpower put in R & D of product remain greatly insufficient for the business as a whole. The framework of innovation system with the enterprises as the main participants in product R & D has not really been established.

## **II. Trends of the Chinese Wire & Cable Market**

The annual growth in China during the Tenth Five Year Plan, which started in 2001, is predicted to be 7%~8%. As a developing country, growth in demand for wire and cable in practice stays in pace with that of the national economy.

Those sectors with great demand for wire and cable are information industry, electric power, construction and household appliance.

### **1 Effect of the information industry on the wire and cable industry**

The output of the Chinese information industry is predicted to be doubled within the future eight to ten years.

Both the years 2000 and 2001 saw a growth of 40~50% in the consumption of optical fiber cable. This rapid growth began to slow down in 2002, but a trend growth of 15% will be maintained.

Table 2 shows the demand prediction of optical fiber in China.

**Table 2 Demand prediction of optical fiber**

*Unit: million fiber km*

Year	2000	2001	2002	2003	2004	2005
Demand for optical fiber in China	8	12	14	16	18	20

Up to the first half of 2001, the intensity of use of telephones reached 23.7 sets per 100 population, of which that of the fixed telephones reached 13.85 sets per 100 population.

According to the long-term plan of the Ministry of Information Industry of China, China will have 500 million subscribers of telephone in total with an intensity of use of 38 sets per 100 population in 2010.

To fulfill the plan, the intensity of use of fixed telephones shall have an annual growth of 1.3%, higher than the figures during the 1990s.

It is predicted that the local telephone cables will continue to grow steadily during the next few years, reaching 90~100 million pair km.

China has the largest CATV network in the world with a relatively high technological level.

Now output of CATV cables in China amounts to 0.8~1 million km. Output will grow at an average rate of 5~8% p.a. during the next three to five years.

## 2 The construction of power grid stimulates sales of overhead conductors, power cables and OPGW

The current Tenth Five Year Plan is as follows:

Focusing on the construction of power grids, actively developing hydraulic power generation, optimizing thermal power generation, properly developing nuclear power generation and developing new energy power generation in the light of local conditions.

Within the future five to eight years, a plan called *West Power transmitted Eastward* will be implemented with the Three Gorges Power Station as the center and the individual power grids will be connected.

It is estimated that the output of overhead conductors will grow from 600 000 tons in 2000 to 0.9~1 million tons in 2005. The ACSR, AS and aluminum alloy conductors with large size and long length will find more and more applications.

As power cables will be used instead of overhead conductors in cities from the aesthetic point of view, MV power cables of 10~35kV will have a growth of 10% p.a.. HV cables 110kV and above and large size MV power cables of 10~35kV will find more and more applications.

By 2005, a national primary optical fiber network for electric power communication will be formed, which consists of three longitudinal lines and four horizontal lines.

The secondary and third-order networks under the primary network will also be included in the plan. The resulting demand for OPGW and ADSS is predicted as shown in Table 3.

**Table 3 Predicted demand for OPGW and ADSS**

*Unit:km*

<i>Year</i>	<i>2000</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
ADSS	11500	15000	15000	15000
OPGW	5000	15000	17500	20000

### **3 The strong growth in construction market provides opportunities for applications of many kinds of cables**

During 2001~2005, 5.7 billion square meters of buildings will be built in cities and countryside of China, an increase of 15% compared to the figures in the late 1990s.

Wiring wires are predicted to grow at an average rate of 15% p.a.

The use of flame retardant and fire resistant cables will increase.

Branched cables have a national annual sales of 10 000~15 000 kilometers now. This level will be maintained or decreased a little in the future.

Category 5 plus and category 6 cables will find more and more applications.

Elevator cables will grow steadily.

#### **4 Development of winding wires, wires for electric equipment and wire harness will be stimulated by the household appliance industry**

A third peak is going to show up in the development of the household appliance industry in China.

**As a result, the following wire and cable products will grow.**

**(1) More use of winding wires**

At present, 45~50% of winding wires produced in China are used in the household appliance industry. The 8% p.a. growth of household appliance industry within the future three to five years will promote a steady growth of winding wires.

**(2) Ecological wires will find use first in household appliance products**

**(3) Wire harness will grow considerably**

The output of wire harness processing has now reached RMB ¥10 billion. Cars, household appliance and computers are the three main applications of wire harness.

In addition to the four above mentioned businesses , there are railway and urban rail traffic. Development of them will bring opportunities for applications of contact wires (trolley wire), wire and cable for rolling stock and power cables, and the automotive industry, whose strong growth will provide opportunities for automotive wires.

**In summary, individual wire and cable products will grow within the next three to five years as follows:**

- Bare conductors represented by overhead conductors will grow at a rate of 10% p.a.
- Wires for electric equipment will grow at an average rate of 5~8 % p.a., of which building wire, automotive wire and wire harness for household appliance will have respectively more than 10% growth, higher than the average
- Power cable will still grow at a rate of over 8% p.a.

- For telecommunication cables and optical fiber cables, local telephone cables will grow at a rate of 4~5% p.a., while optical fibers and cables will grow at a rate of 15% p.a.

- Winding wires will grow steadily at an average rate of 4%.

In conclusion, as the largest developing country in the world, China attracts the world by its potential for development and the vastness of its market. Now that China has joined WTO, it will participate in worldwide economic co-operation with more open attitudes. I am honored to present to every representative here the development of the Chinese wire & cable manufacturing on behalf of the trade association of the Chinese wire & cable manufacturing. I hope that through the ever-deepening understanding and co-operation between ICF and its Chinese members, we may contribute to the sustained and healthy development of wire & cable manufacturing.

**Mr. Hans Meiring**, Chairman of ICF Standing Commission

Thank you Professor Gao for giving us this very detailed inside as well as overview of the Chinese wire & cable industry. I am sure our fellow members can agree that this is a very exciting market in China. Secondly, with the tremendous growth prospect in China and a liberalization of the trade as explained by Professor Xue, I believe the shortage that Professor Gao indicated in his overview on the skills and technology, that might be lacking in China, will be overcome. You will find suitable partners from the rest of the world by joining the wire & cable industry to tackle some of the productivity problems in China. Thirdly, I would like to thank personally Professor Gao for his contribution in getting some of the Chinese members to join ICF.

As of yesterday, we now have 7 Chinese members in ICF. We thank the Chinese members, who participate here for the first time in our congress. We hope that ICF can give something positive back to the members and to the wire & cable industry in China.

Again, we give our sincere thanks to the keynote speakers from China this morning. Thank you!