Legal Statement

The purpose of the information in this presentation is to guide ICA programs and provide members with information to make independent business decisions.
ANTITRUST GUIDELINES
FOR
COPPER INDUSTRY TRADE ASSOCIATION MEETINGS

The following guidelines with respect to compliance with antitrust laws of the United States, Japan and European Community are intended to govern the conduct of participants in copper industry trade association meetings, both at the meeting itself and in informal discussions before or after the formal meeting.

Price. Competitors should not discuss future prices (including terms of sale) of their products. There is no blanket prohibition against the mention of or reference to current or past prices but limits must be observed. Such references or mentions should occur only when necessary in connection with the development of association programs. For example, reference to a particular price level in comparing the cost of a copper product to a competing product is permitted. Whenever possible, such references should be discussed in advance with legal counsel.

Competitive Information. Competitors should not discuss the market share of a particular copper producer or copper fabricator’s products. Furthermore, nothing should be said at a meeting which could be interpreted as suggesting prearranged market shares for such products or producer production levels. The overall market share of copper products may be discussed with regard to competition with non-copper products and general market acceptance.

New Products. Competitors should not encourage or discourage the introduction of a new product by another competitor or reveal a particular copper company’s plans to change the production rate of an existing product or to introduce a new product. No company should disclose to another company whether it is in a position to make or market a new product. New products may be discussed in a technical manner or from the standpoints of competition with non-copper products and general market acceptance. In addition, proposed methods for and results of field and laboratory testing can be considered.

The Role of Legal Counsel. Legal counsel attends association meetings to advise association staff and other meeting attendees regarding the antitrust laws and to see that none of the matters discussed or materials distributed raise even the appearance of antitrust improprieties. During the course of a meeting, if counsel believes that the discussion is turning to a sensitive or inappropriate subject, counsel will express that belief and request that the attendees return the discussion to a less sensitive area.

A paper entitled “Copper Industry Trade Associations and the Antitrust Laws” is available upon request.

10/92, 5/93, 10/10

1 Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.
The Impact of China’s 13th Five Year Plan (FYP) on Copper Demand

Presented by Mr. Bin Li, Jiangsu Shangshang Cable Group Co., Ltd. on behalf of ICA and ACMR

April 2017
Jiangsu Shangshang Cable Group Co., Ltd. was founded in 1967 (with 50-year history), only focused on the design and production of wires and cables, and covers an area of 6,670,000 sq. ft. All subsidiaries locate in Liyang City, Jiangsu Province, China.

**Performance Data**
- Output value and sales volume is increasing year by year.
- Copper use was >200kt in 2016.

**Personnel Team**
- A staff of 3,400 employees.

**Product Scope**
- Products involve various fields, such as clean energy, power transmission and distribution, ports and ships, construction project, industrial manufacturing, airports, coal mines, rail transportation etc.
13th FYP – National and Industrial Plans

Copper Usage

Confirm the timeline of release of 13th FYP proposal:
- 2015 July

Summary

13th FYP was released and published:
- 2016 March

2016 June to Present
- Industry 13th FYP released gradually

Updates on Industrial 13th FYP

Total: 44
- Released: 41
- Release Soon: 3

<table>
<thead>
<tr>
<th>Industry</th>
<th>Released</th>
<th>Release Soon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Construction</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Power Infrastructure</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Transportation</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Home Appliances</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Electronic Information</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Nonferrous</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

As of Jan 2017
Interpretation of China’s 13th FYP

The development plan of the nonferrous metal industry (2016-2020)

- Domestic copper consumption is still maintained a certain growth during the thirteen five period (+30%)
- Total demand for copper increased by about 30%
- Apparent consumption in 2020: 13.5 million tonnes Cu
- The average annual growth rate during the thirteen five period: 3.3%
Impacts on Select Copper End Use Markets & Demand Forecasts

6 Major End Use Sectors
Representing about 60% of the China Market

- Building Construction
  - Electrical*
  - Non Electrical**
- Power Infrastructure
  - Power Grid
  - Power Generation
- Transportation
  - Auto/Trains /Ships
  - Infrastructure
  - NEV
  - NEV Charging facilities
- Home Appliances
  - Room Air conditioners
  - Refrigerators
  - Washing machines
  - Televisions
- Manufacturing
  - Industrial Motors
- Electronic Information
  - Mobile
  - Computer

*Electrical includes power cable, building wire, transformer
**Non-electrical includes HVAC, hardware, water/gas
Building Construction

**13th FYP**

China’s Urbanization Ratio

- 2011: 51.3%
- 2015: 56.1%
- 2020: 60.0%

**Copper Usage**

Comparisons on Completed Floor Space by Type of Building 12-5 vs 13-5E

- Residential building: 12.7B vs 15.4B
- Commercial Building: 3.3B vs 4.1B
- Industrial building: 2.72B vs 2.7B

Unit: sq.m

**Summary**

Aggregated Copper Demand - Building Construction 12-5 vs 13-5E

- 12-5: 12.6 Mmt Cu
- 13-5E: 14.4 Mmt Cu

13-5E Copper Demand – Building Construction Breakdown

- Electrical 75%
- Non-Electrical 25%

*Electrical includes power cable, building wire, transformer
**Non-electrical includes HVAC, hardware, water/gas

Source: NBS, ACMR
Power Infrastructure

13th FYP

Accumulative Installed capacity

2,000 GW

1,530 GW

2015

2020E

The 13th five-year new capacity by type

Wind, 17%

Solar PV, 14%

Nuclear, 7%

Hydro, 6%

Thermal, 56%

Power Grid Investment

Unit: CNY

Planning impact

Transmission

Distribution

0.9 T

1.3 T

1.2 T

1.7 T

13-5E Copper Demand-Power Infrastructure Breakdown

Copper Usage

Aggregated Copper Demand – Power Infrastructure

12-5 vs 13-5E

4.0 Mmt Cu

12-5

5.4 Mmt Cu

13-5E

13-5E Copper Demand includes wind and solar PV

Summary

Power generation 9%

Power grid 91%

Source: NEA, ACMR
## Transportation

### Aggregated Copper Demand – Transportation 12-5 vs 13-5E

<table>
<thead>
<tr>
<th>Type</th>
<th>Unit: 000' km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>12-5</td>
</tr>
<tr>
<td>Railway</td>
<td>30</td>
</tr>
<tr>
<td>Urban transit</td>
<td>2</td>
</tr>
</tbody>
</table>

### Conventional Transports Comparisons 12-5 vs 13-5E

- **12-5**:
  - 104mln
  - 286k
  - 330mln

- **13-5E**:
  - 122mln
  - 178k
  - 230mln

### 13-5E Copper Demand – Transportation Breakdown

- Transport Infrastructure: 44%
- Auto/Train/Vessel: 48%
- NEV: 8%

### China’s NEV Market

- **No. of NEV on road**:
  - 2015: 481k
  - 2020: 4,510k
- **Charging stations**:
  - 2015: 2k
  - 2020: 12k
- **Charging piles**:
  - 2015: 4,560k
  - 2020: 240k

### Source:
- MOT, CAAM, ACMR
Home Appliances

13th FYP

Copper Usage

Summary

Demand Comparisons of 4 Types of Home Appliances 12-5 vs 13-5E

Unit: mln units

<table>
<thead>
<tr>
<th></th>
<th>12-5</th>
<th>13-5E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air conditioning</td>
<td>330</td>
<td>346</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>264</td>
<td>243</td>
</tr>
<tr>
<td>Washing machine</td>
<td>231</td>
<td>209</td>
</tr>
<tr>
<td>TVs</td>
<td>382</td>
<td>433</td>
</tr>
</tbody>
</table>

Aggregated Copper Demand – Home Appliances 12-5 vs 13-5E

13-5E Copper Demand – Home Appliances Breakdown

Source: NBS, China IOL, ACMR
Demand Comparisons of Industrial motors
12-5 vs 13-5E

912GW
12-5

961GW
13-5E

Aggregated Copper Demand - Manufacturing (Industrial Motors)
12-5 vs 13-5E

1.16 Mmt Cu
12-5

1.23 Mmt Cu
13-5E

Energy Efficiency Grade Comparisons
12-5 vs 13-5E

IE1 25.0%
IE2 40.0%
IE3 30.0%
IE4 5.0%

IE1 7.3%
IE2 40.4%
IE3 30.0%
IE4 5.0%

IE1 25.0%
IE2 40.0%
IE3 30.0%
IE4 5.0%

13-5E Copper Demand – Manufacturing (Industrial Motors) Breakdown

High voltage and low voltage
Mid and Small sizes 70%
High power 10%

Planning impact

Source: ACMR
Electronic Information

Sales of Electronic information
12-5 vs 13-5E

2011:
9,300B

2015:
15,400B

2020:
20,800B

Demand Comparisons of Electronic information
12-5 vs 13-5E

2.4Mmt Cu
12-5

3.12Mmt Cu
13-5E

Source: ACMR
The copper demand of 6 copper end use markets is about 32.3 million tonnes.

It is estimated that over 15.6% growth for the copper demand.

Note: The copper demand calculation results are based only on the study of the six industries and do not take into account any changes of copper density.