Specific Impacts of China’s 13th FYP on 5 Selected Copper End Use Markets

Maggie Yang, Vice Director, ACMR
17th of November, 2016 Shanghai
The purpose of this presentation is to guide ICA programs and provide members information to make independent business decisions.

1. National 13th FYP – Outline of national 13th Five Year Plan of China
2. NBS - National Bureau of Statistics of China
3. NEA - National Energy Administration
4. MOT – Ministry of Transport of the People’s Republic of China
5. CAAM – China Association of Automobile Manufacturers
6. China IOL – China Industry Online
7. ACMR – All China Marketing Research Co., Ltd.
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\(^1\) 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 standpoint 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.

\(^{1}\) Other foreign competition laws apply to International Copper Association, Ltd. (ICA)s activities worldwide.
Agenda

✓ Updates on China’s 13th FYP
✓ Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast
✓ Summary
Updates on China’s 13th FYP – National and Industrial Plans

2014 April - Announcement on 13th FYP compilation

2015 October - 13th FYP proposal was released and published

2016 March - 13th FYP was released and published

2016 June to December - industry 13th FYP will be released gradually

National 13th FYP

Updates on Industrial 13th FYP*

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<th>Industry</th>
<th>Total</th>
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<th>Release Soon</th>
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<td>Power Infrastructure</td>
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<td>3</td>
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<tr>
<td>Transportation</td>
<td>12</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Home Appliances</td>
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<td>4</td>
<td>1</td>
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<td>Manufacturing</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>Nonferrous</td>
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<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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<td>30</td>
<td>9</td>
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</tbody>
</table>

*By the end of Nov 2016
Updates on China’s 13th FYP – Planned Achievements

Planned Achievements for 13th Five Year Period

- GDP Growth > 6.5%
- Double GDP in CNY by the end of 2020
- Double personal income by the end of 2020

Source: National 13th FYP
Updates on China’s 13\textsuperscript{th} FYP – Key Takeaways

✓ Messages contained in 13\textsuperscript{th} FYP are mostly positive to copper.

✓ This implies growth opportunities for copper in the future.

✓ Over 14\% growth for the copper demand from 5 selected end use markets between 12\textsuperscript{th} FYP and 13\textsuperscript{th} FYP timeframe.
Agenda

✓ Updates on China’s 13th FYP
✓ Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast
✓ Summary
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Schematic

5 Major End Use Sectors Representing over 50% of the China Market

- Building Construction
- Power Infrastructure
- Transportation
- Home Appliances
- Manufacturing

Electrical*: Power cable, building wire, transformer
Non-Electrical**: HVAC, hardware, water/gas

*Electrical includes power cable, building wire, transformer
**Non-electrical includes HVAC, hardware, water/gas
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Building Construction

China’s Urbanization Ratio 2011, 2015 and 2020

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

+9.4% in 2015 vs 2011
+7.0% in 2020 vs 2015

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

- Residential buildings
  - 12-5: 12.7B
  - 13-5E: 15.4B
- Commercial buildings
  - 12-5: 3.3B
  - 13-5E: 4.1B
- Industrial buildings
  - 12-5: 2.72B
  - 13-5E: 2.70B

Unit: sq.m

Source: NBS, ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Building Construction

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

12-5: 12.6Mmt Cu

5 yrs Growth: +1.8Mmt Cu

13-5E: 14.4Mmt 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: ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Power Infrastructure

**Growth on Installed Capacity – Power Generation**

- **Accumulative Installed capacity**
  - 1,530GW
  - ~2,000GW

- **The 13th five-year new capacity by type**
  - Wind, 17%
  - Solar PV, 14%
  - Thermal, 56%
  - Hydro, 6%
  - Nuclear, 7%

- **Newly installed capacity at 470GW**

**Power Grid Investment**

- **Unit: CNY**
  - Transmission: 0.9T (12-5), 1.3T (13-5E)
  - Distribution: 1.2T (12-5), 1.7T (13-5E)

Source: NEA, ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Power Infrastructure

**Aggregated Copper Demand – Power Infrastructure 12-5 vs 13-5E**

- **12-5**: 4.0Mmt Cu
- **5 yrs Growth**: +1.4Mmt Cu
- **13-5E**: 5.4Mmt Cu

**13-5E Copper Demand – Power Infrastructure Breakdown**

- **Power grid**: 91%
- **Power generation**: 9%

*Power generation includes wind and solar PV*

Source: ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Transportation

**Newly Constructed Transport Infrastructure 12-5 vs 13-5E**

- **Road**: 562 vs 430 000’ km
- **Railway**: 30 vs 29
- **Urban transit**: 2 vs 3

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

- **Conventional Auto**: 104 mln vs 122 mln
- **Trains**: 286k vs 178k
- **Vessels**: 330 mln vs 230 mln

**China’s NEV Market**

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

Source: MOT, CAAM, ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Transportation

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

4.5Mmt Cu

+0.2Mmt Cu

4.7Mmt Cu

13-5E Copper Demand – Transportation Breakdown

Source: ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Home Appliances

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

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

Unit: mln units

Source: NBS, China IOL
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Home Appliances

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

- 12-5: 3.33Mmt Cu
- 13-5E: 3.46Mmt Cu
- 5 yrs Growth: +0.13Mmt Cu

**13-5E Copper Demand – Home Appliances Breakdown**

- Air cons: 83%
- Refrigerators: 4%
- Washing machines: 7%
- TVs: 6%

Source: ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Manufacturing

Demand Comparisons of Industrial motors
12-5 vs 13-5E

<table>
<thead>
<tr>
<th></th>
<th>12-5</th>
<th>13-5E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand</td>
<td>912GW</td>
<td>961GW</td>
</tr>
</tbody>
</table>

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

- High efficiency promotion in the manufacturing sector will drive industrial motors market over the next five years.

Source: ACMR
Impacts on 5 Selected Copper End Use Markets & Copper Usage Forecast – Manufacturing

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

1.16Mmt Cu
+0.07Mmt Cu

12-5
5 yrs Growth

1.23Mmt Cu

13-5E

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

- 70% Mid & Small sized
- 30% High voltage & low voltage high power

Source: ACMR
Agenda

✓ Updates on China’s 13th FYP
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Summary – Aggregated Copper Demand on 5 Selected End Use Markets between 12-5 & 13-5E

Aggregated Copper Demand
12-5 vs 13-5E

- It is estimated that over 14% growth for the copper demand between 12th FYP and 13th FYP timeframe.

Source: ACMR
One-Stop Shop for Business Information Needs in China

Thanks!

For more information please contact:
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