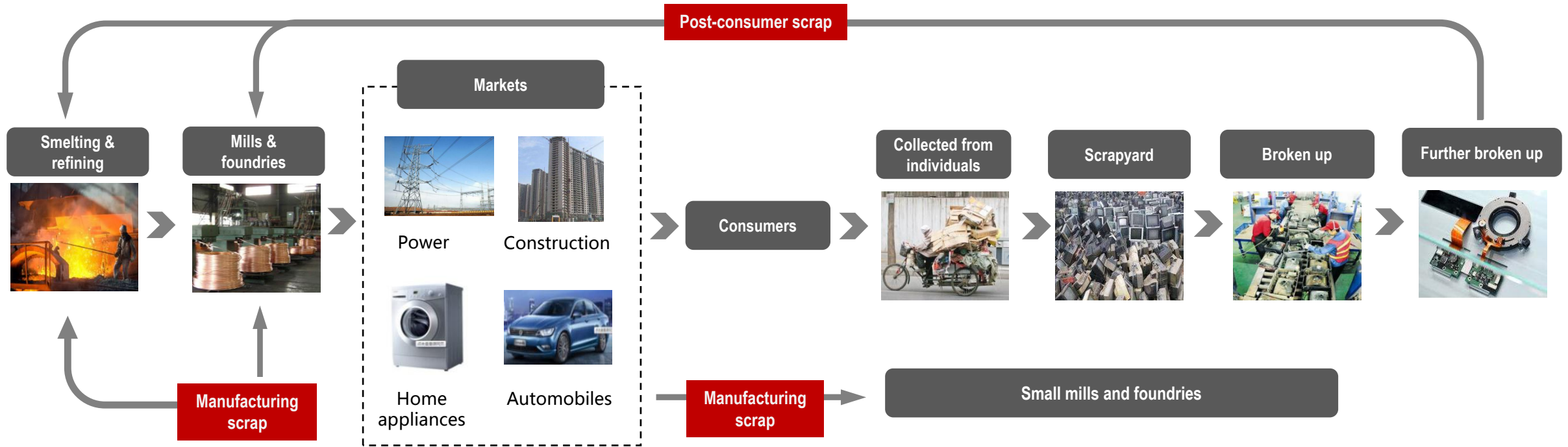




# Copper scrap in China

Apr, 2019

# What is copper scrap?

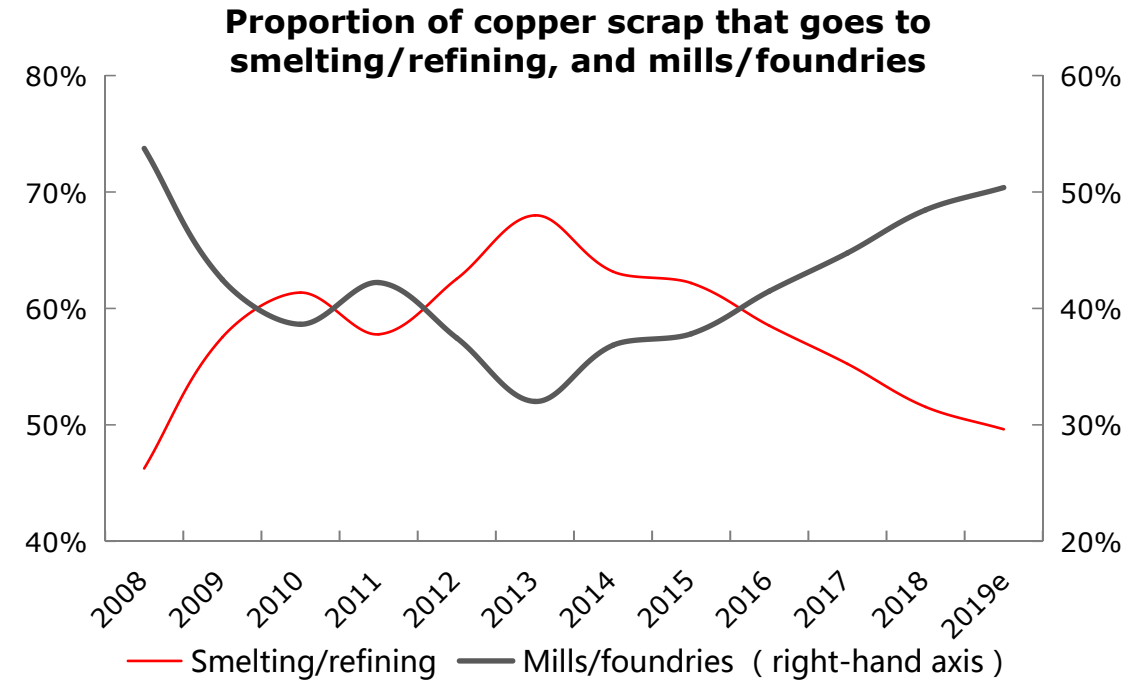


■ **Copper scrap in China comprises recyclable materials left over from manufacturing and consumption. About half is new manufacturing scrap, and the other is old post-consumer scrap.**

- **Old post-consumer copper scrap:** A type of copper waste produced by end-consumers. China now faces significant growth in scrap supply, as more copper products will be available for recovery once they reach their lifespan of 15 years.
- **New manufacturing copper scrap:** A type of copper waste from the manufacturing process, across smelting, refining, mills and foundries. This includes furnace slag, anode slime, off-cuts and defective products. Over 90% of manufacturing copper scrap returns into the usage cycle during smelting and refining and do not enter markets.
- SMM focuses on post-consumer copper scrap, as manufacturing scrap has little impact on the supply and demand for copper cathode.

# Where does copper scrap go?

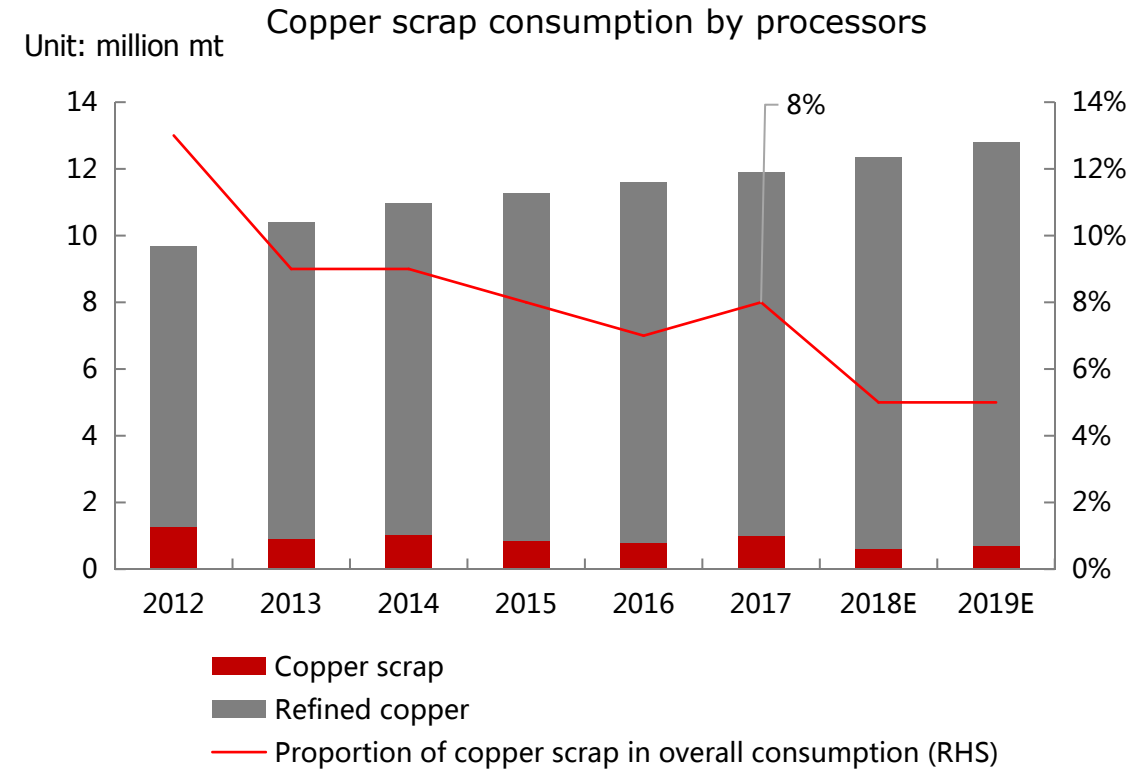
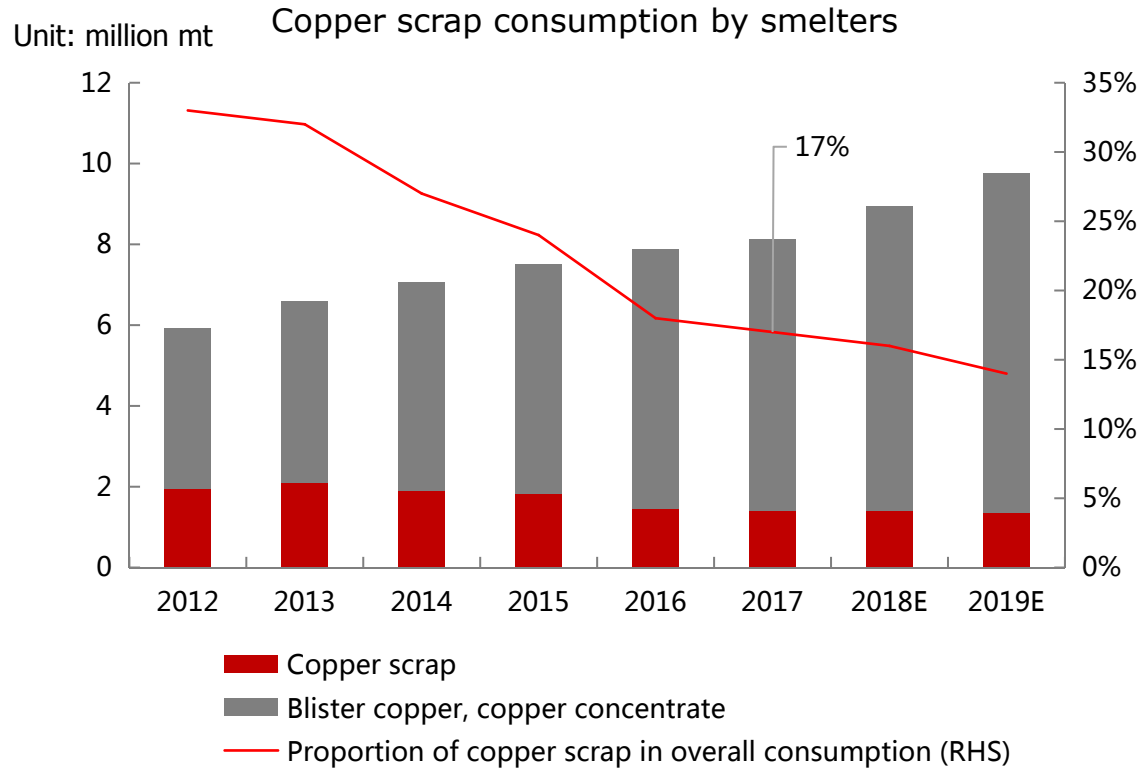
Where copper scrap goes			
	Smelting & refining	Mills & foundries	
		Copper rod	Brass bar
Type	1#copper scrap, 2#copper scrap, red copper scrap	Bare bright copper, granulated copper wire	Brass scrap
Source	Imports account for over 70%	Domestic materials account for over 95%	Imports account for over 60%
Grade	Cu>94%	Cu>98%	Cu 65%



## ■ Copper scrap goes to the smelting and refining stages or mills and foundries.

- **Mills & foundries:** Some copper scrap can be re-melted by brass mills, wire rod producers and foundries. Wire rod producers rely on domestic bare bright copper, with an average copper content over 98%. Brass bar producers rely on brass scrap, with an average copper content of some 65%. Imports account for some 60%.
- **Smelting & refining:** Some copper scrap returns to the cycle at the smelting and refining stages and is produced into copper cathode. 1# copper scrap, 2# copper scrap account for the majority of such materials, with a copper content over 94%.
- Stricter environmental standards and control over scrap imports have reduced the proportion of copper scrap to smelting and refining, and grown the proportion of copper scrap to mills and foundries.

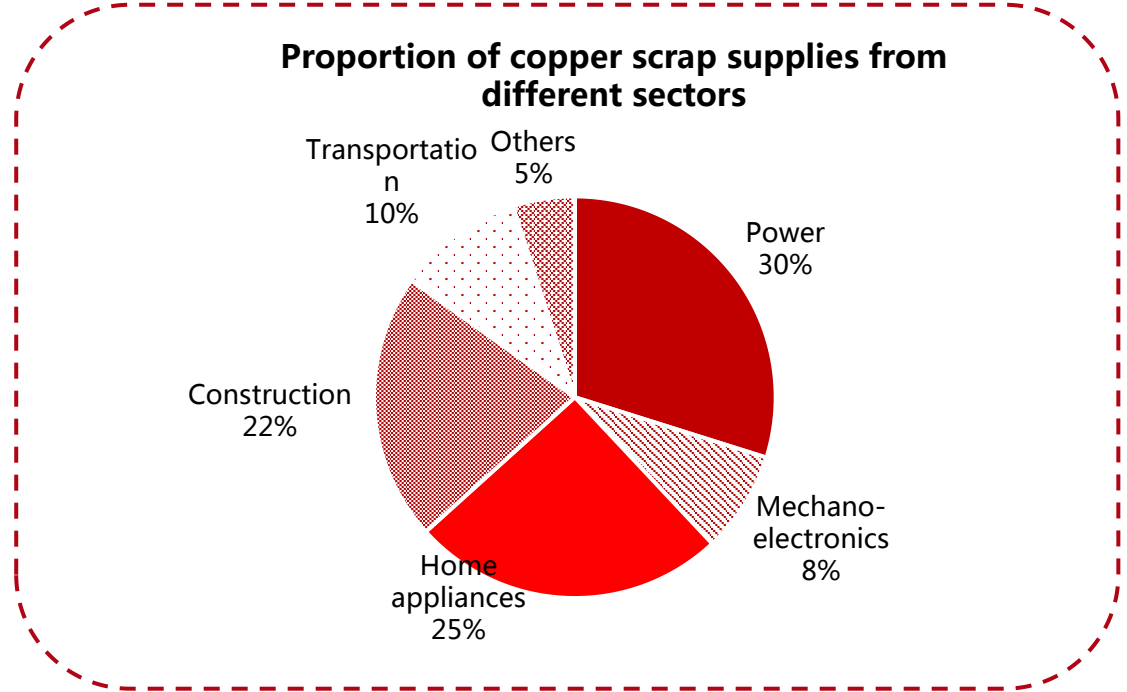
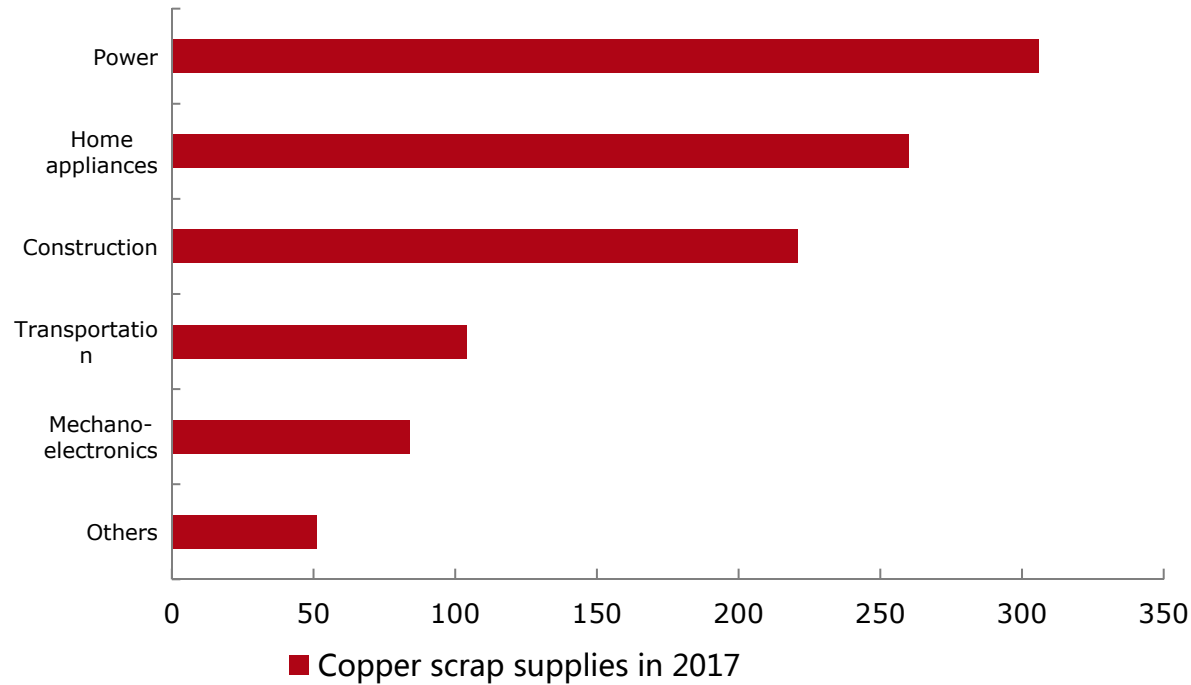
# Trends in copper scrap consumption



## ■ Environmental factors, smaller price advantage lower copper scrap consumption

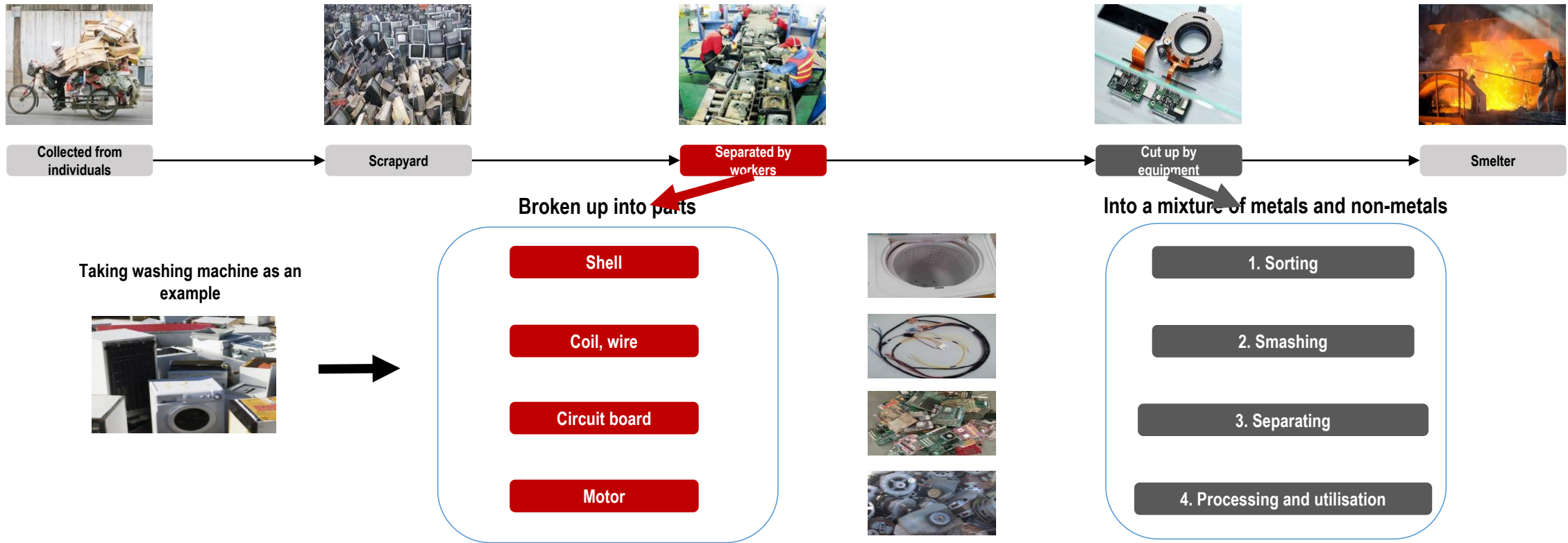
- Across smelting, some 17% of domestic copper cathode was produced from copper scrap. In processing, around 8-10% of the copper products used scrap as raw materials.
- In recent years, the proportion of scrap copper in overall consumption dropped significantly in smelting and processing. Stricter import policies and environmental curbs affected the consumption of copper scrap across smelters.
- The smaller price spread between refined and scrap copper, as well as the environmental impact, deterred processors from using copper scrap as raw materials.

# Where does post-consumer copper scrap come from?



- **Post-consumer copper scrap comes from the power, home appliances, construction, transportation and mechano-electronics sectors.**
- Consumers of copper cathode are sources of copper scrap. The power sector, as the top consumer of copper cathode, is the biggest source of copper scrap. This is followed by home appliances and construction. The three top consumers account for some 80% of copper scrap.
- The recovery rate of copper recycling in China is relatively low at 60%. The recycling chain that starts from construction, auto, machinery or shipbreaking sectors is relatively simple, while waste home appliances and electronic products go through a more complicated recycling process.
- Supplies of copper scrap in China are expected to expand after 2019, as outdated copper products available for recovery will grow when they reach an average of 15 years of service.

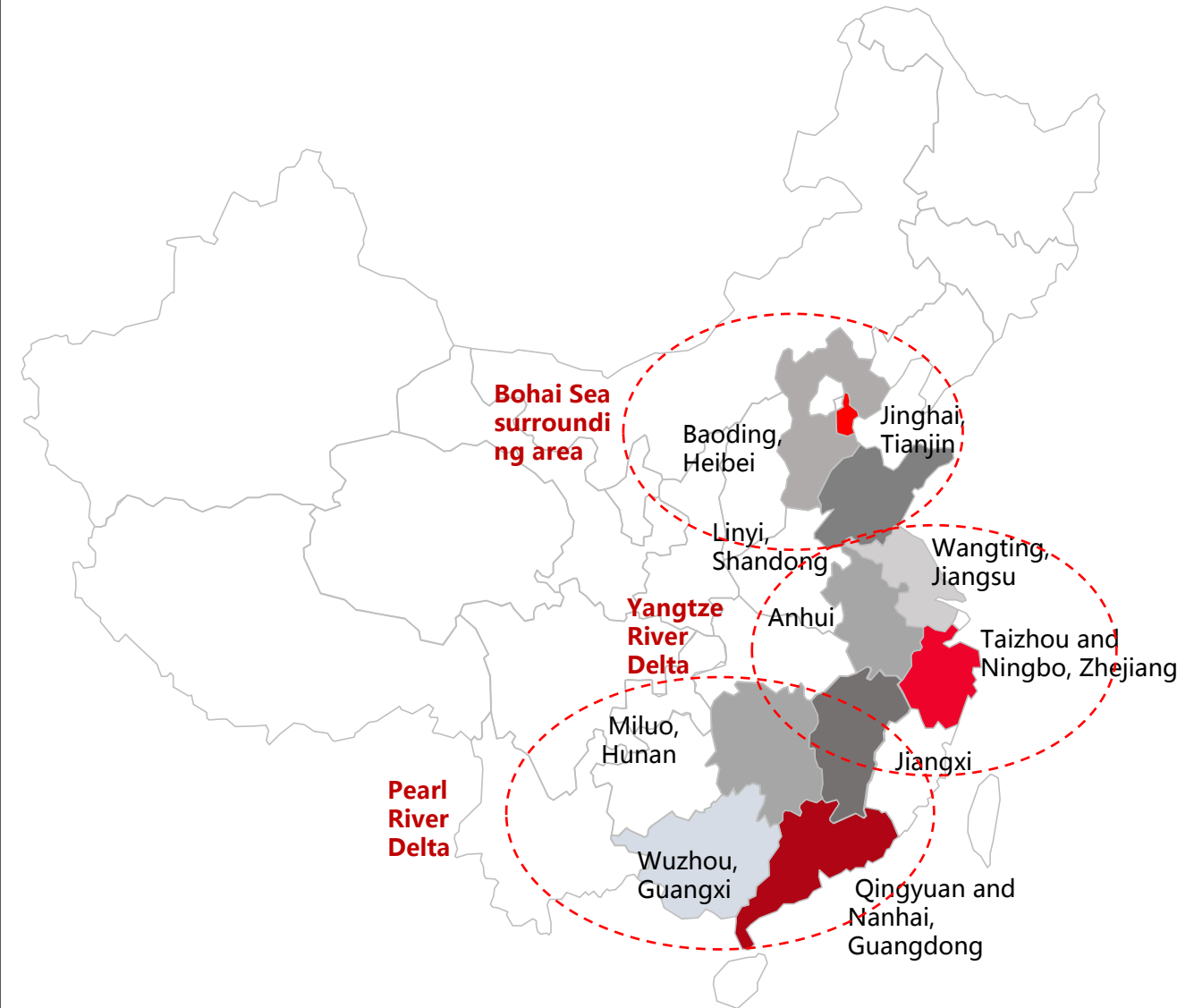
# Copper scrap breaking industry in China



- **A lack of regulation accounts for the low recovery rate of copper scrap**
- Scrap is usually broken up in two stages. Scrap is separated into parts before parts such as motors and circuit boards are smashed into a mixture of metals and non-metals.
- Most large scrapyards only take the first step, while small components that are difficult for workers to dismantle will be sent to small dismantling plants.
- The *Regulations for the Administration of the Recovery and Treatment of Waste Electric and Electronic Products* took effect in 2011. Under this, scrap firms that dismantle electronics have to obtain operation permits and receive subsidies from government funds. This policy significantly promoted the development of the scrap breaking industry in China.
- A financing gap, however, deterred scrap breaking firms from receiving subsidies, and prompted them to cut waste procurement. Scrap collectors had to dismantle home appliances on their own, resulting in pollution and the rise of small, illegal dismantling plants.



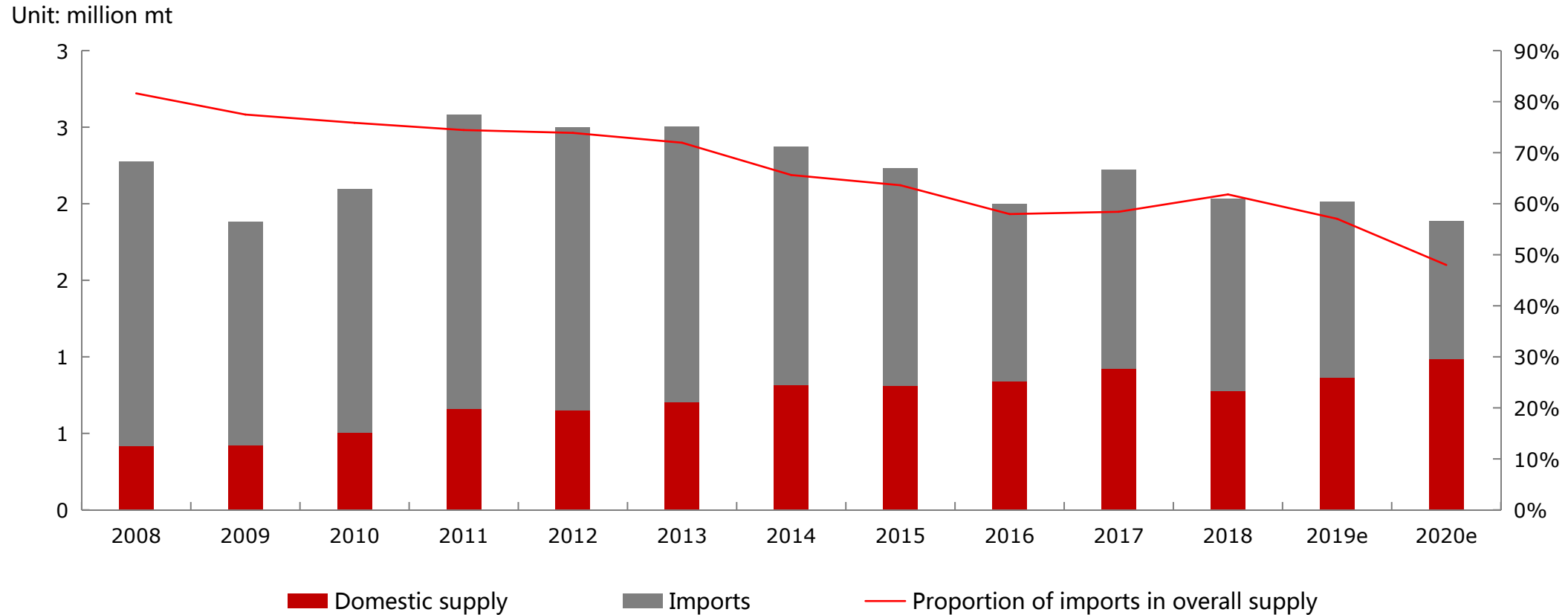
# Major copper scrap markets in China



## ■ China's copper scrap markets are located in the Yangtze River Delta, Pearl River Delta and Bohai Sea area.

- Copper scrap is dismantled, processed and then consumed, in these three regions. Copper scrap recycled across the three regions accounts for 80% of the total in China.
- Zhejiang's Taizhou and Ningbo in the Yangtze River Delta, Guangdong in the Pearl River Delta and Tianjin, Hebei and Shandong in Bohai Sea surrounding area are the top hubs. Taizhou's Luqiao, Hebei's Anxin, Guangdong's Qingyuan, Jiangsu's Yixing and Suzhou are major copper scrap markets, with large trading and dismantling volumes.
- The copper scrap markets in Guangdong, Zhejiang and Tianjin rely on imported copper scrap, while those in Shandong's Linyi, Hebei's Baoding and Hunan's Miluo depend on domestic materials.
- China's copper scrap industry is often concentrated in an industrial park, governed by the local government. Examples include the Tianjin Ziya Circular Economy Area, Guangdong Qingyuan Huaqing Circular Economy Park and Hunan Miluo Tongli Circular Economy Industrial Park.

# China's copper scrap supply

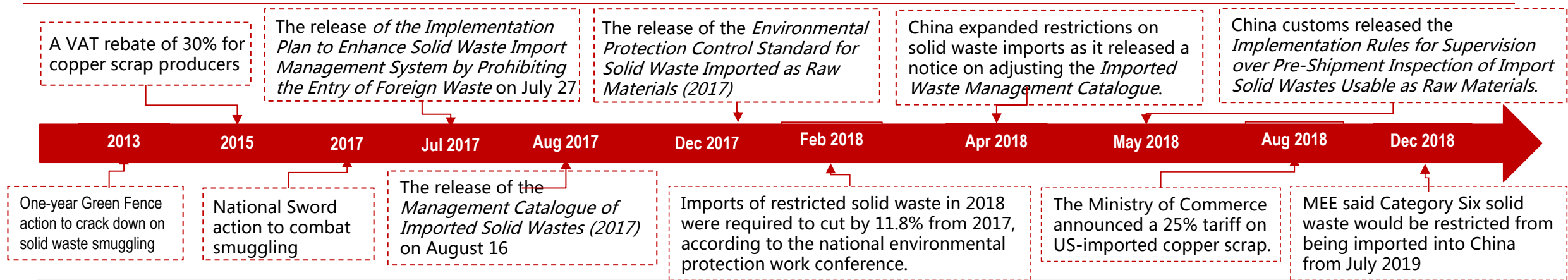


## ■ Growth in domestic supplies at lows, imports trend downwards

- Imports of copper scrap declined yearly after China Customs launched the Green Fence crackdown in 2013. A surge in copper prices at the end of 2016 drove downstream demand to cheap copper scrap, and bolstered copper scrap supply in 2017.
- Domestic supplies of copper scrap grew at limited rates in recent years, lowered by fewer waste disposal projects from the State Grid, limited dismantling of mechanical and electrical products, and lower-than-expected dismantling of automobiles.
- While China depended on seaborne copper scrap to meet domestic demand, stricter restrictions on waste imports and an improving domestic copper scrap market are expected to lower the proportion of imported copper scrap in overall supplies to 50% by 2020, from around 80% in 2008.



# Development of copper scrap import policies in China



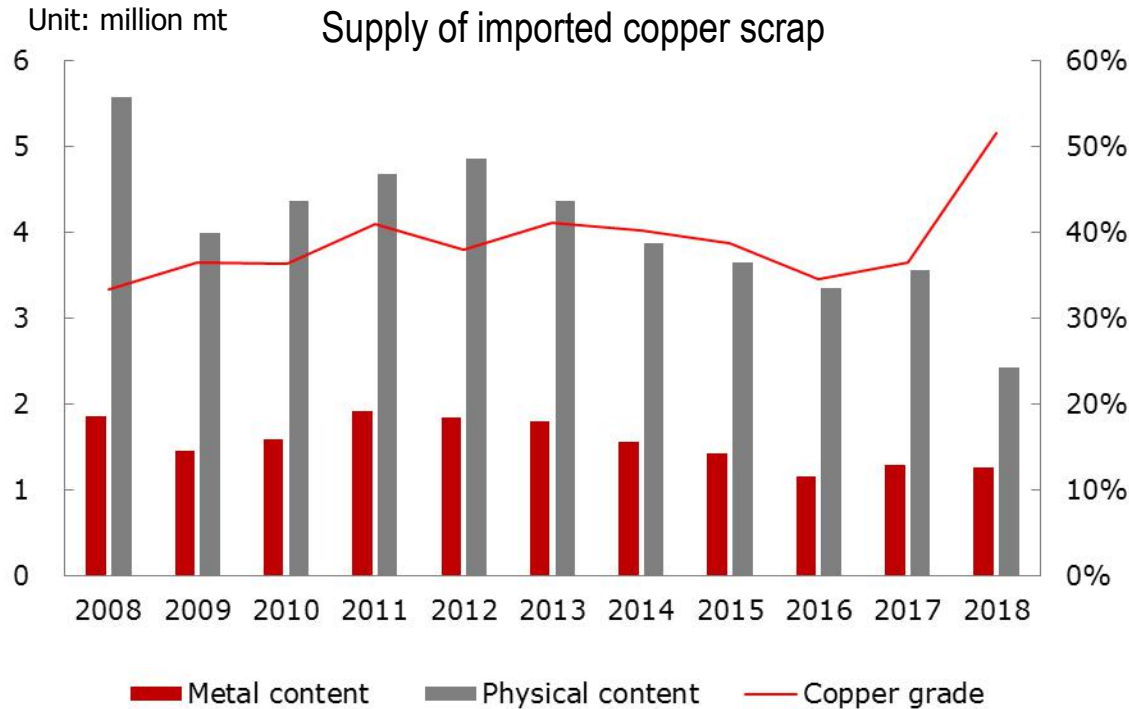
## ■ Policies on copper scrap imports in 2017-2019

- China aimed to stop importing solid waste by the end of 2019, according to the *Implementation Plan to Enhance Solid Waste Import Management System by Prohibiting the Entry of Foreign Waste* released in July 2017.
- China banned imports of Category Seven copper scrap from December 31, 2018, according to a notice in April 2018 in the *Imported Waste Management Catalogue*.
- In August 2018, the Ministry of Commerce announced a 25% tariff on US-imported copper scrap, in a trade war with the US.
- China recategorised Category Six copper scrap from a non-limited import category into restricted imports that can be used as raw materials, effective from July 2019, said the Ministry of Ecology and Environment (MEE) in December 2018.

## ■ SMM' s analysis of future policies

- Imports of solid waste, including Category Six copper scrap, will be cut to zero by 2020, after China stops importing solid waste that can be replaced by domestic resources by the end of 2019.
- Environmental authorities are likely to recategorise some Category Six materials as renewable resources to allow those imports amid the ban on solid waste imports. The key question is at what grade level that recategorisation will happen.
- China will strengthen supervision on the copper scrap industrial chain, and improve the recycling system for domestic scrap.

# Will China see short supplies of imported copper scrap?



Category of copper scrap imports		
Difference	Category Six	Category Seven
HS code	7404000090	7404000010
Average Cu content	76%	24%
Product name	Other copper waste and scrap	Waste wire, cable, motor, hardware
Major type	Copper cable scrap, #1 copper scrap, 2# copper scrap, brass scrap, PCB board	Scrap water tank, waste motor, scrap copper cable
Whether need to be dismantled	No, it can be fed into furnaces directly	Yes
Consumer	Smelters, processing plants	Dismantling plants
Policy	Recategorised from non-restricted imports into restricted imports on July 1, 2019.	Recategorised from restricted imports into banned imports on January 1, 2019.

## Higher grade of imports prevent shortage of seaborne supply in Cu content

- While China's imports of copper scrap in 2018 stood 36.7% lower than 2017 in physical content, the average Cu content of copper scrap imports climbed to some 56% from 37% in 2017, as restrictions on imports of Category Seven copper scrap bolstered imports of Category Six copper scrap. This resulted in a dip of 30,000 mt, in metal content, in 2018's copper scrap imports.
- In January-February 2019, the physical content of China's copper scrap imports declined 27% on the year, but copper content of the imports increased 11% from the same period in 2018.
- In the short term, SMM believes that domestic companies can establish dismantling plants in South-east Asia and import Category Six copper scrap, after dismantling Category Seven copper in scrap materials.
- From 2020, the key question is what scrap grade is reclassified as a resource and still allowed to be imported. Once this policy is clearer in the middle of this year, Chinese investors will start to look at establishing facilities overseas to upgrade to the required grade or blister. While these investments take place it is quite likely that there will be some tightness from a lack of scrap imports in 2020.

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