

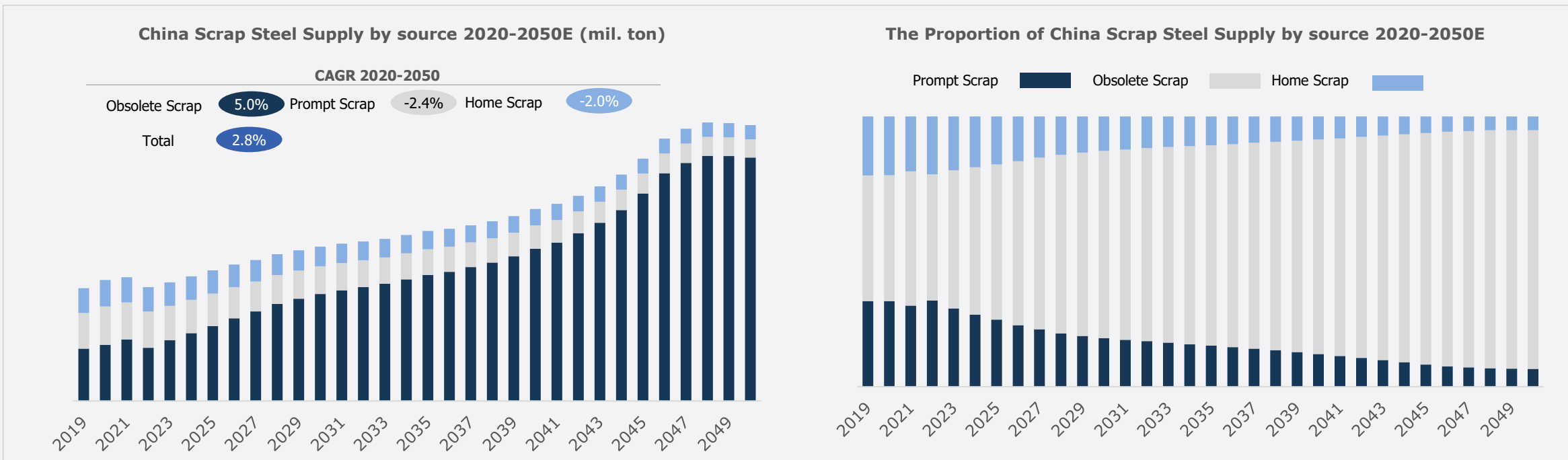


03

China Scrap Steel Supply

Overall market is expected to growth rapidly, the main source is obsolete scrap, and the proportion is gradually expanding, CAGR from 2020 to 2050 is expected to 5%

➤ China Scrap Steel Supply by source 2020-2050E



- With the rapid growth of crude steel production in China, a large amount of steel has been accumulated in the society. In recent years, in order to stimulate economic development and other reasons, the government has issued various policies, such as the transformation of shanty towns and the exchange of old household appliances, which have promoted the emergence of scrap steel. At present, in the context of decarbonization, the government encourages the recycling of waste resources, which will further accelerate the generation, recycling and utilization of scrap steel.
- Obsolete scrap with the largest proportion at present, and its supply will be further increased in the future. With the end of a large amount of steel service life accumulated in the past, obsolete scrap will increase significantly in the next 30 years.
- With the rapid progress of processing technology has rapidly reduced the yield loss rate, resulting in a decrease in the production of prompt scrap. Similarly, with the improvement of processing technology and the more accurate production plan, the home scrap produced by steel mills will be less and less

Yield loss, service life, collection rate and recycling rate are the key parameters affecting the supply of scrap steel

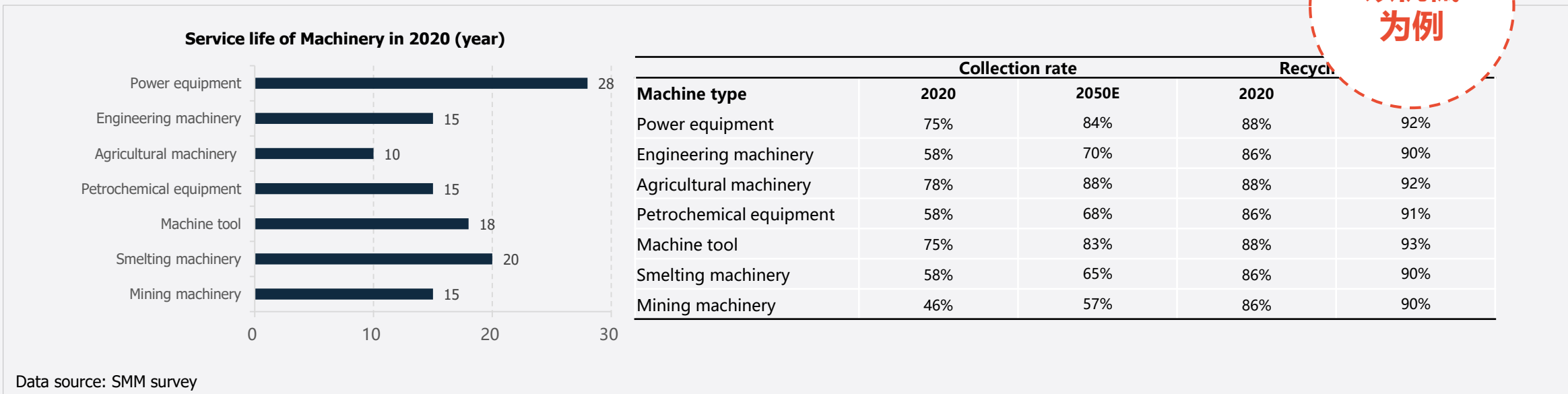
➤ Key Parameters Analysis

Key Parameters		Main Impact on Scrap Steel Supply
Prompt Scrap	Yield Loss	<ol style="list-style-type: none"> Customized steel products - Downstream enterprises can achieve low yield loss rate by customizing raw material size with steel mills Economy - Increasing cost efficiency to ensure the minimum yield loss Technology Evolution - Enterprises with advanced technology began to use computers to automatically typeset and to cut for relatively higher accuracy and yield rate Characteristics of end-of-use products - In general, smaller size or simpler structure products have higher yield rate
Obsolete Scrap	Service Life	<ol style="list-style-type: none"> Policy <ul style="list-style-type: none"> Mandatory service life of certain products More strict emission standards has shorten the service life of backward products City planning and renovation projects speed up the service life of construction Consumption Habits - Changing consumption habits may change the service life of certain products Technology Evolution - Improving quality has made service life longer, while frequently technique upgrading of products has shorten service life
	Collection Rate	<ol style="list-style-type: none"> Policy <ul style="list-style-type: none"> VAT and subsidy policy will push both dismantling and recycling enterprises to do the collection Circular economy will also promote the development of the recycling industry Recovery Benefits- If the scrap metal price is high enough, some hidden volumes (inventory and potential scrap capacity) will return to the market Maturity of Recycling System - If the recycling system is mature, people will get used to deliver end-of-use products to qualified recycling channels rather than idled or abandoned somewhere
	Recycling Rate	<ol style="list-style-type: none"> Policy - Production responsibility extension system improve the recycling efficiency Recovery Benefits - The increasing labor and waste disposal cost will decrease the recovery benefits and incentives for dismantling and recycling Technology Evolution - Mechanization of dismantling will increase the recycling rate Characteristics of end-of-use products - Complex products forms and structures add more difficulties to the dismantling process. Moreover, miniaturization of equipment and appliances might increase the difficulty for metal scrap recovery

Service life of machinery industry varies greatly, and collection rate is relatively low

➤ Key Parameters Analysis - Obsolete scrap from Machinery

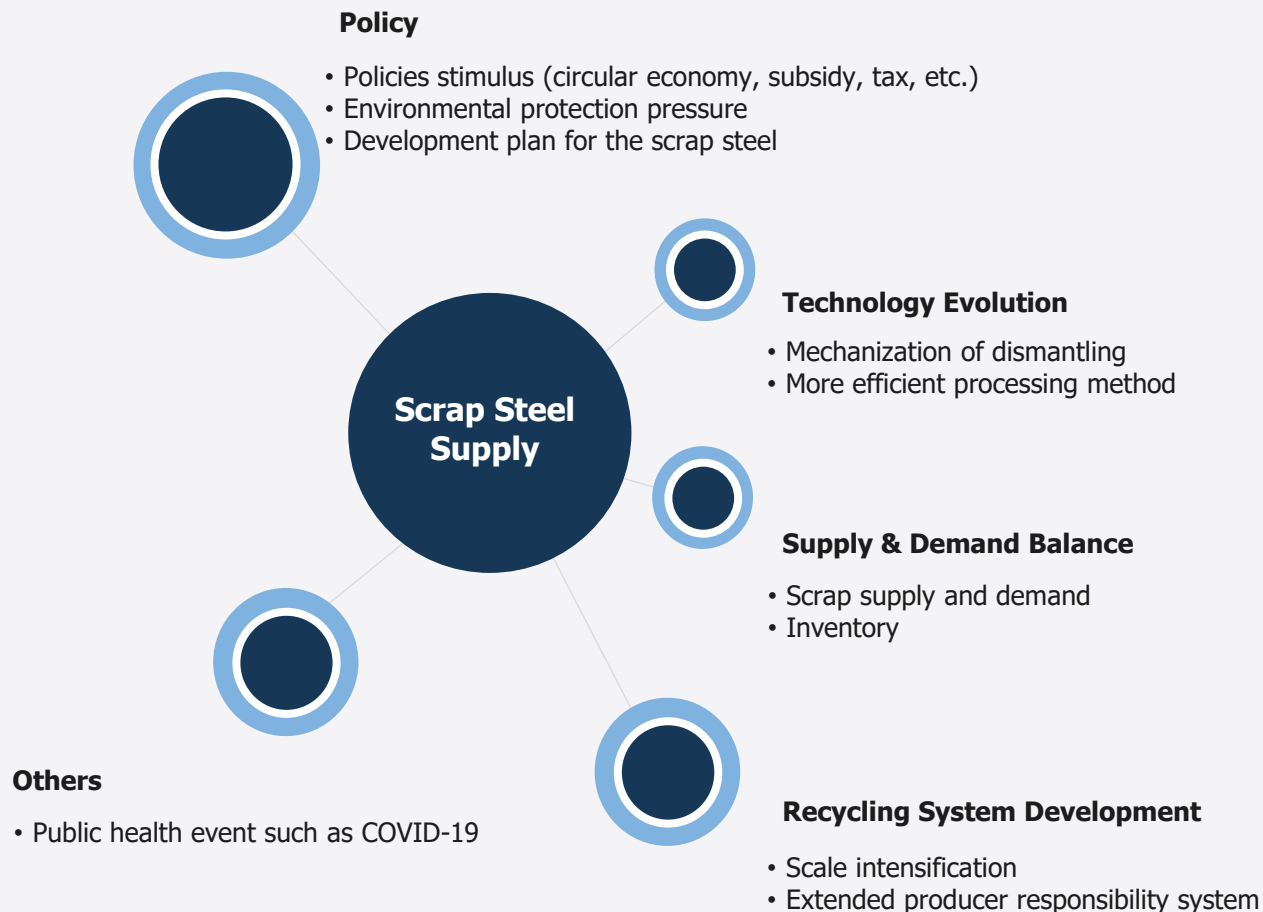
以机械为例



- The service life of different equipment types in the machinery industry varies greatly. Among them, power equipment has the longest service life of about 28 years, while agricultural machinery has a short service life of about 10 years. The difference in service life is mainly affected by the use environment, product technical structure, and later maintenance and other factors.
- Compared with other downstream industries, machinery has lower collection rate because 1) heavy machine is normally of high capital investment, frequent maintenance can extend the service life 2) some scrapped machines flowed into the secondary market after repairing 3) lack of political supports except for agricultural machine 4) immature recycling system.
- The recycle rate of machinery was high, and disassembly recovery operation is not complicated. In addition, according to the feedback of enterprises, although there are many kinds of equipment in the machinery industry, the quality of recycled steel is the best, mainly shredded scrap and sheared scrap. Therefore, dismantling enterprises are more interested in the obsolete scrap produced by the machinery industry.

Policy support, technology evolution and recycling system development level work together to influence the supply of scrap steel

➤ Key Driving Factors



The Importance of Key Driving Factors

Policy



Technology Evolution



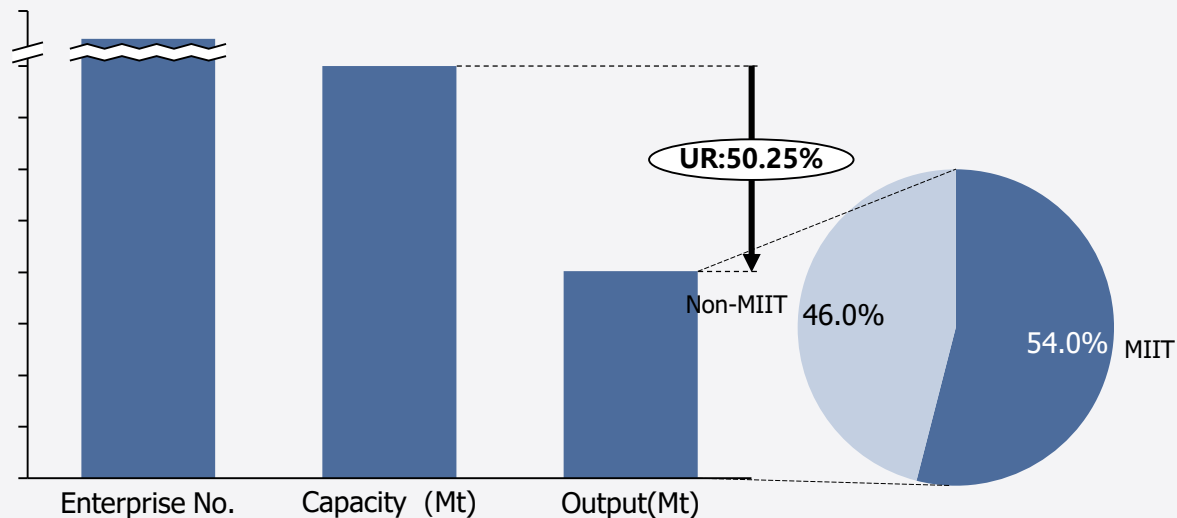
Recycling System Development



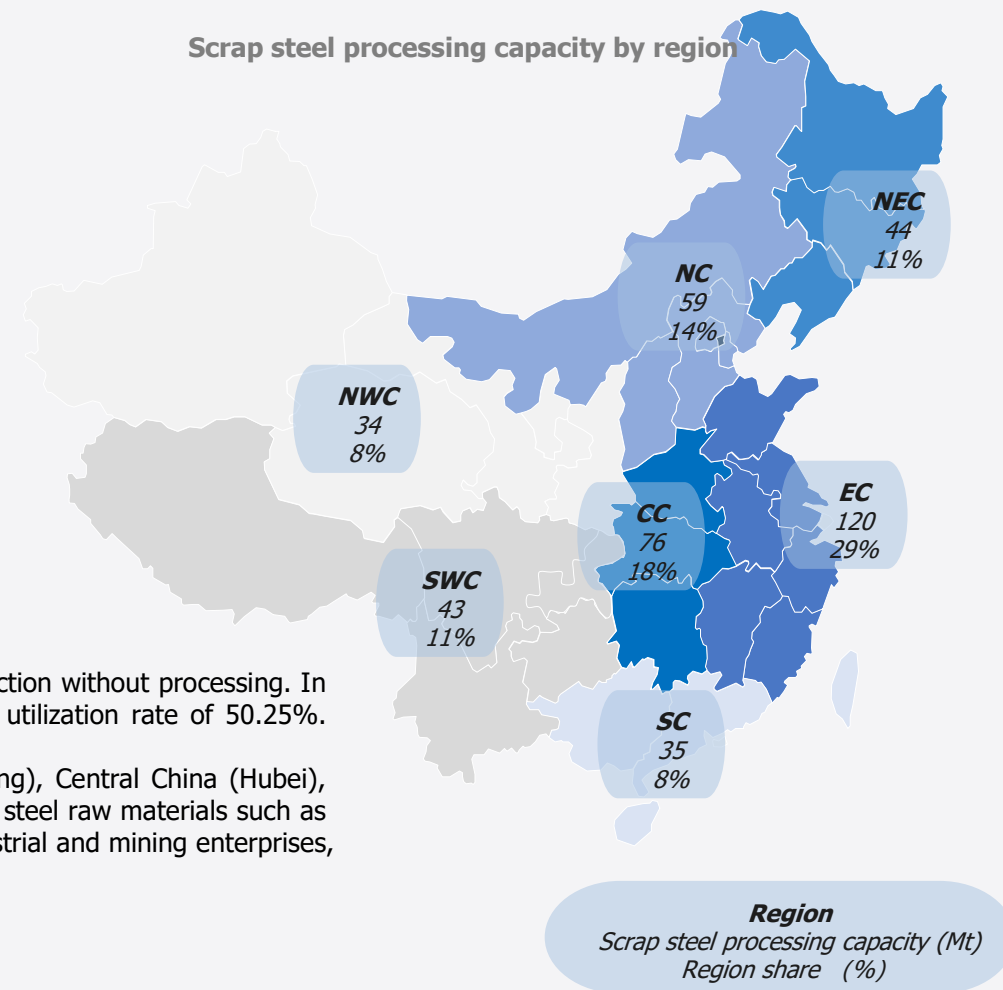
- Severer environmental pressure restricts the operation rate thus to reduce scrap supply
- Value-added tax rebate reduces tax burden and increases production enthusiasm
- Industry standardization helps to improve scrap quality
- Increasing mechanization level improves production efficiency
- The improvement of processing technology has led to an increase in the variety of scrap steel products
- Various downstream recycling systems are under developed, and will lead to a higher scrap supply volume

In 2021, China's scrap steel processing capacity and output was 400 million mt and 201 million mt, with a utilization rate of 50.25%

Scrap steel processing capacity and output in 2021



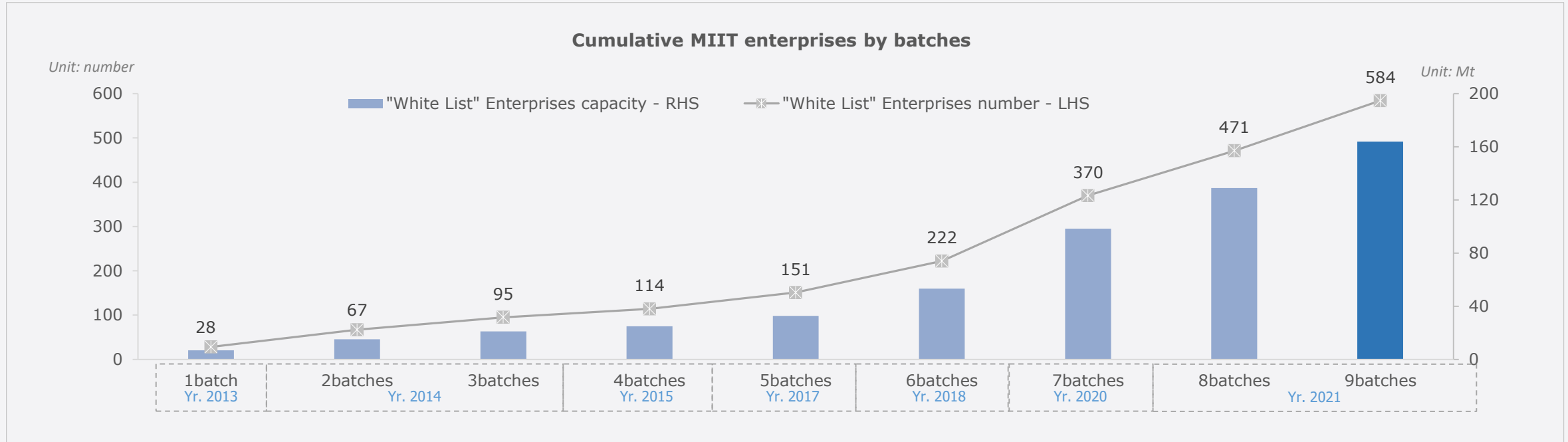
Scrap steel processing capacity by region



- Scrap steel processors mainly process prompt and obsolete scrap, home scrap is basically used for re-production without processing. In 2021, China's scrap steel processing capacity and output was 400 million mt and 201 million mt, with a utilization rate of 50.25%. Among them, MIIT ("White List") enterprises produced 108 million mt of scrap steel, accounting for 54%.
- By region, scrap steel processing capacity is mainly located in East China (Jiangsu, Shandong and Zhejiang), Central China (Hubei), North China (Hebei, Tianjin and Beijing). In East China, due to the developed economy, there is more scrap steel raw materials such as automobiles, household appliances and construction. In North China and central China, there are many industrial and mining enterprises, so there is a large number of scrap machinery and plants.

584 scrap processing enterprises in the "white list" in 2021, with a total capacity of 164 million mt

➤ Cumulative MIIT ("White List") Enterprises Distribution in 2021



- MIIT ("White List") enterprises refers to the enterprises that meet the access requirements of the scrap steel processing industry and approved by MIIT. Enterprises on the list can enjoy a 30% VAT refund. In recent years, with the increasing supply and widespread use of scrap steel, more and more scrap steel processing capacity are added, incl. new-built and expansion.
- From 2013 to 2021, nine batches of "white lists" have been announced. There are 584 enterprises with a total capacity of 164 million mt that meet the "Access Requirements for Scrap Steel Processing Industry" of the MIIT. The approval process of the MIIT has accelerated in 2020 and 2021 encouraged by policy, the seventh to ninth batches were successively approved, with a total of 362 enterprises, exceeding the total number of the first six batches.