KALLANISH COMMODITIES

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CHINA SCRAP MARKETS

SCRAP SUPPLY IN 2020 AND AN OUTLOOK TAKING ACCOUNT FOR HOME, PROMPT, AND OBSOLETE SCRAP.

IMPORTS, EXPORTS, AND A CLOSE LOOK AT THE INTERPLAY BETWEEN CHINESE AND OVERSEAS MARKETS

DETAILED ANALYSIS OF CHINA'S TRANSITION TO AN IMPORTER OF FERROUS SCRAP AND IT'S AFFECT ACROSS THE GLOBE.

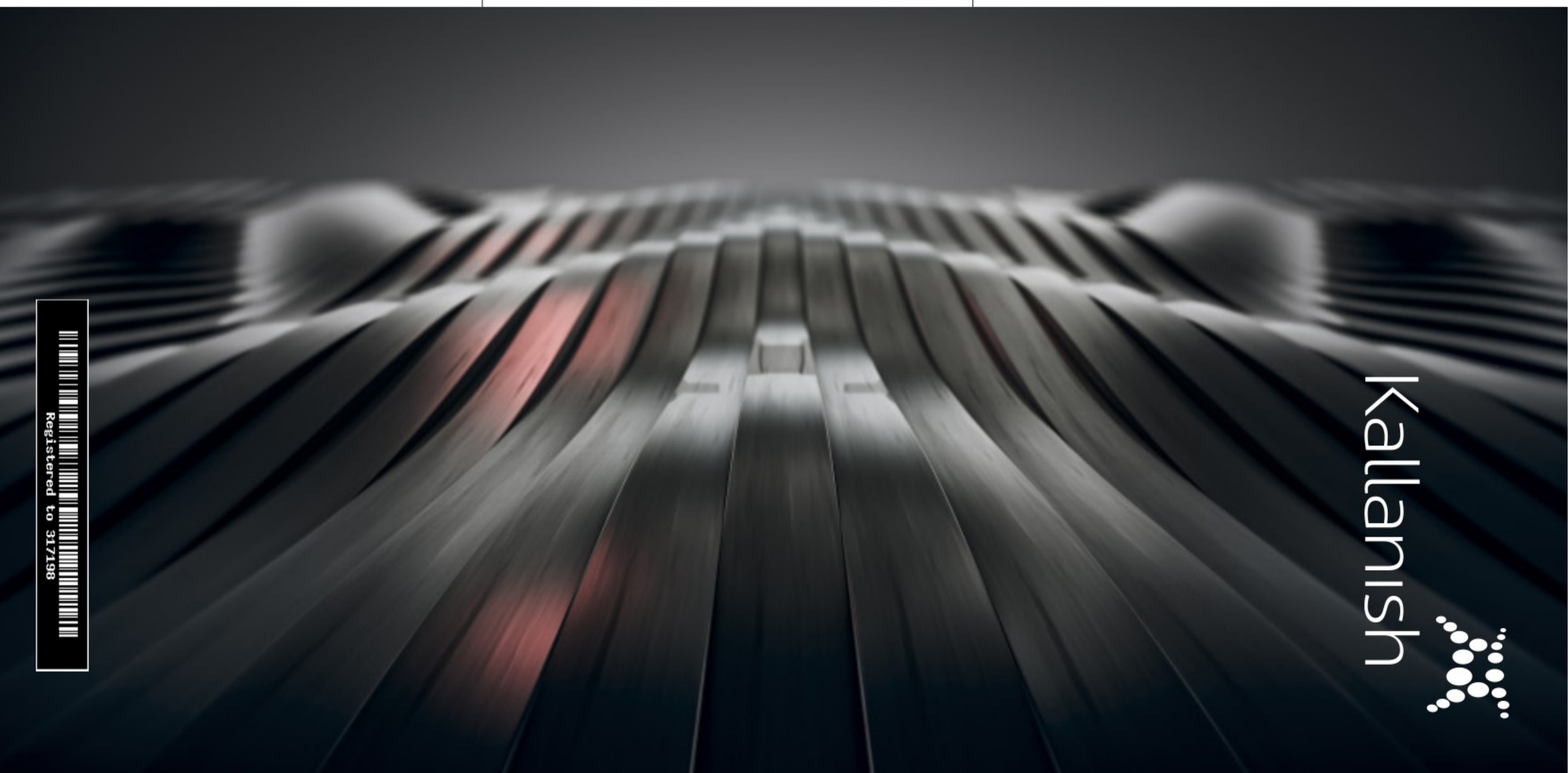

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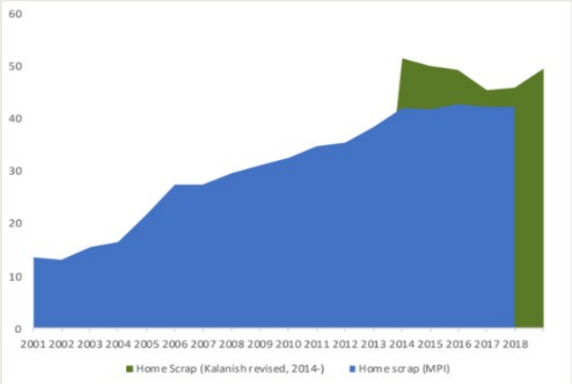
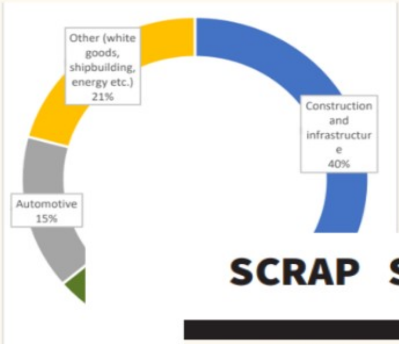
FIGURE 1. CHINA'S HOME SCRAP GENERATION 2001-2019



Source: MPI, Kallanish. Unit: Million tonnes

FIGURE 2. PROMPT SCRAP GENERATED BY SECTOR IN 2019



Source: Kall

SCRAP & COVID -19

Estimates of underlying scrap generation over the year are premised on trends in key sectors. As such they do not fully account for the unique impact of Covid-19 on the sector. Furthermore, as the figures are annual, they do not convey the extreme volatility that occurred within the year. The sudden impact over the whole year can be seen most clearly in the gap between supply and demand. In the first quarter, collection rates dropped to almost zero during the brief period of full lockdown, but collection recovered very rapidly after that and there were few further interruptions. Scrap demand meanwhile likewise slumped very rapidly but very briefly, before recovering as lockdown was eased. Underlying scrap generation does not equate to actual supply at a specific moment. This is because the sectors that generate scrap may be active but actual collection rates may still have to catch up, and the processing rates may be slower to catch up again.

Home scrap generation may have slumped in Q1 but record high steel output through the rest of the year means generation is expected to be up 2.6% this year to 51mt. Unlike other kinds of scrap generation, home scrap is also unaffected by issues around collection. For prompt scrap, construction and engineering (including manufacturing construction equipment) is expected to drive a 3.28% growth in underlying supply to 111.5mt. Prompt scrap has fewer issues around collection than obsolete as manufacturers collect the scrap for sale. At smaller manufacturers however there have been logistics and other issues which may limit actual delivery of some scrap. Obsolete scrap generation meanwhile continues to expand rapidly through demolition and recycling activity. In 2020, obsolete scrap is expected to eb up another 11.5% to 77.6mt. That means that in total, underlying scrap supply in 2020 is expected to be up around 5.6% to just under 241mt.

Demand has been more directly impacted by the crisis. Despite higher overall steel output, the share of EAF output has been hit hard. While crude steel output is expected to grow to 1.02 billion tonnes in 2020, EAF output is expected to end the year down 8.9% to 94mt. That will use just 62mt of scrap, the lowest level since 2017. BF-BoF producers have also slightly reduced their scrap utilization ratios in 2020 due to the continued high cost of scrap. BoF scrap rations are expected to average below 15% in 2020 for the first time since 2017, with BoFs consuming around 134mt of scrap.

While underlying generation has increased again in 2020, scrap demand has been hit by both the pandemic and the high cost of scrap. This has led to a sharp shift in the nominal scrap supply balance. Excess scrap supply surged in 2017 after induction furnaces began to be closed en-masse, but

COMBINED WITH SCRAP USE FROM FORGING, TOTAL CHINESE SCRAP DEMAND IN 2020 IS EXPECTED TO TOTAL JUST OVER 221MT, DOWN 8.14% Y-O-Y.

KALLANISH CHINA SCRAP MARKETS REPORT

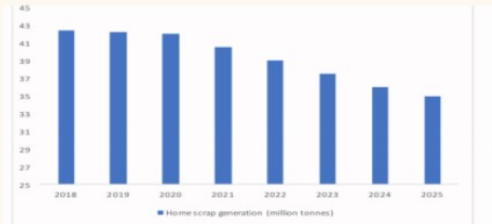
SCRAP SUPPLY OUTLOOK

SUPPLY OUTLOOK: HOME SCRAP

The outlook for home scrap depends on Chinese steel output and assumptions on yield loss efficiency going forward. After home scrap generation rates fell sharply in the early 2000s, rates have stabilised at around 5% and are likely to remain at that level in the medium term. While some efficiencies may be found, these will be offset by greater levels of processing, such as a higher proportion of cold rolling, which will generate more scrap. The other factor is total steel production. The year of coronavirus has interrupted China's attempts to reform its economy away from investment-led growth and towards services and technology. Ongoing discussions about the next five-year plan however suggest that it is committed to restricting investment and promoting consumption over the coming years. This will necessarily make the economy less steel-intensive. Kallanish sees crude steel production topping out at around 1.02 billion tonnes in 2020-2021, before steadily falling alongside demand. China's plan for 2025 drawn up by the Ministry of Industry and Information Technology had targets which implied around 780mt of crude steel production in 2025. However, this was before the major revisions to crude steel production data over 2017-2018. Government figures released in recent years have tended to undershoot production and capacity estimates significantly. Taking revisions into account and looking at production as a factor of domestic steel demand, Kallanish now expects crude steel production to sink steadily to around 900mt by 2025.

FROM AROUND 51MT IN 2020, HOME SCRAP GENERATION IS THEREFORE EXPECTED TO FALL TO AROUND 40.5MT IN 2025.

FIGURE 5. ESTIMATED HOME SCRAP GENERATION TO 2025



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