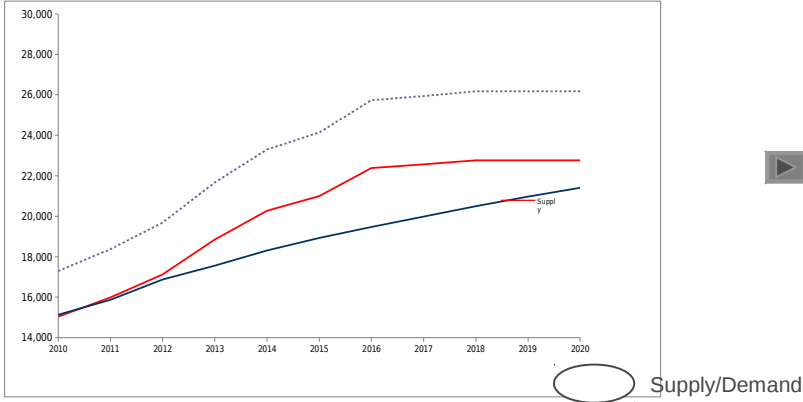




Manganese Ore– Supply x Demand and Concentration level

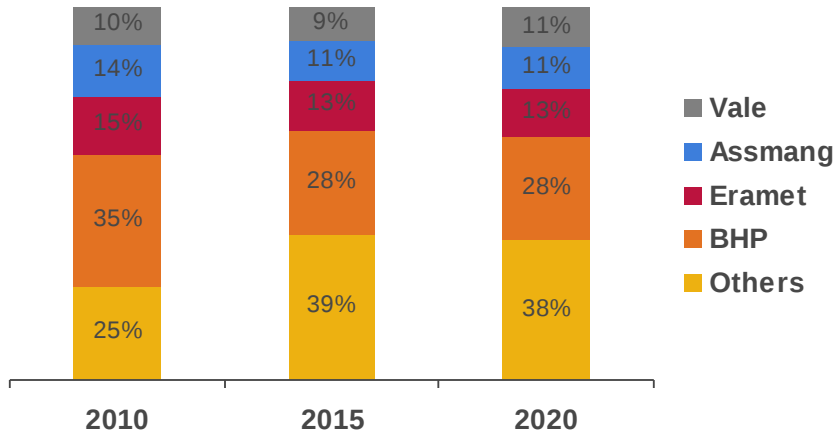
Supply x Demand x Capacity

Million tons



- China remains the main demand driver. Until 2020 Chinese imports of Mn Ore will almost double in relation to 2008 (~7Mtpy contained Mn).
- Increasing ferroalloy production in India consolidating the dependant on Mn imports. Poor domestic Mn reserves not enough to meet the demand.
- RSA output projects to bring on additional supply but logistics remains a constraint for these projects.
- Despite a nominal oversupplied market, high grade ore remains short in the long term
- A higher utilization of the installed capacity will be restricted by logistics constraints in the next years.

Concentration level – High Grade Mn Ore



- High grade Mn Ore remains a highly concentrated market, 4 players hold 77% of the market share.
- BHP still remain the market leader until 2020. Currently it holds 37% of share, followed by Eramet and Assmang with 16% and 15 % respectively.
- Due to Mn Ore high grade scarcity, new sources of ore will be also provided by expansion of the current operations.
- Driven by higher prices, new entrants should come from Asian and other African countries, increasing the share of other suppliers.