

Press Release

A growing demand for energy efficient grinding in processing of iron ore

Baden, Switzerland, 11th of August 2022 – The most used industrial metal in the world is iron ore with steel production being the key driver of global iron ore demand. According to Fitch, global iron ore production will accelerate in the coming years with output increase to average 2.7% over 2022-2026. However, the steel industry is also one of the biggest producers of carbon dioxide and steel producers need to implement decarbonization strategies.

One trend in recent years is the increased use of DR (Direct Reduction) pellets, with the requirement to grind iron ore finer to increase Fe grade and minimise silica in the final product. STM Minerals has participated in this trend due to the requirement for energy efficient grinding, with a significant share of mills in STM's installed base supplied for iron ore concentrators.

For energy efficient grinding, STM supplies two types of vertical stirred mills, namely VRM mills and VPM mills, which can be used in a wide range of applications, varying from ultra-fine, fine to secondary and primary grinding duties with feed size up to 6 mm. STM supplies mills in the range from 75 to 11000 kW, from small pilot mills to the world's largest stirred mills.

With the recent award for the supply of one VRM 6500/50000 (6500 kW / 50000 litre) mill for a Magnetite regrinding application, STM adds to its market leading position for large vertical stirred mills with a total of 11 mills for Iron Ore grinding in the range of 5000 to 6500 kW installed power.

Latest developments in HPGR technology and fine crushing lead to a trend to replace the energy intensive conventional SAG/Ball mill circuits with comminution circuits not applying horizontal mills at all. In this case, the STM vertical mills can be used for primary or secondary grinding duties which would allow total energy savings up to 40%.

One of the key advantages of the VRM/VPM technology, perfectly complementing to iron ore applications, is its ability to operate in open circuit without any recirculation loads. It becomes possible due to the unique VRM/VPM grinding mechanism arrangement which results in a steep product particle size distribution where the target grind size is achieved in one pass through the mill.

Operation in open circuit allows significant capital and operating cost saving as there is no need to process large recirculation loads in the grinding circuit. Especially when screening is applied, the number of downstream classification screens is greatly reduced while achieving high Fe grade and minimising silica grades in final product, producing DR pellets. The use of DR pellets results in significant energy savings and carbon footprint reduction in steel production.

STM Minerals as the leading manufacturer of vertical stirred mills always stays at the forefront of comminution technology. Our aim is to provide a strong support to our customers in iron ore and other mineral sectors, ensuring the most energy efficient and feasible grinding technology is selected and successfully implemented.

Swiss Tower Mills Minerals AG (www.stmminerals.com) is an innovative company for energy efficient grinding in the mineral industry. – *The Art of Grinding*

For more information please contact:

Ralf Hesemann
Managing Director
Tel: +41 58 590 3519
Email: ralf.hesemann@stmminerals.com



Schematic impression of a VRM mill