ALTA 2022 26
20-27 May | Perth, Australia | Online

NICKEL PRODUCTION-FUTURE AND CLARIANT CAPABILITIES

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ABSTRACT

Due to prevailing low carbon technology requirements prompted by global climate action has led to high demand for minerals raw materials for development of the clean and low carbon energy technology. Nickel being one of the required metals for manufacturing of electric vehicles batteries is among the metals that would see high market demand. The demand for nickel from the battery industry is expected to reach about 570 Kt by 2025 which is 10 times more than the demand in 2019. The clean energy transition towards electrification is expected to be much more mineral intensive. Traditionally 70% of nickel metal produced globally is used in stainless steel market dominated by ferronickel and nickel pig iron (NPI). The fast-growing use of nickel in rechargeable battery market such as electric vehicles (EVs) will push mining companies, battery manufacturers and original equipment's manufacturers (OEMs) to re-evaluate their strategies to meet the potential increase in market demand. However, the major driver for the high demand will be the new battery technologies which are not based on the existing battery technologies, major shifts in consumer preferences and changes in government regulations.

This paper discusses the future of nickel, time trend of nickel production, beneficiation of nickel ores, evolution of the annual nickel extraction according to ores, nickel demand dynamics and ore grade evolution in some leading nickel producing regions. In addition, Lab batch flotation results of Hostaflot M 91 and Hostaflot 7362 were discussed. The two chemistries were recently developed by Clariant Mining Solutions for selective flotation of nickel minerals from two different sulphide ores. Both products are more sustainable and show significant improvement in nickel flotation recovery and grade from tested sulphide ores compared to traditional xanthate collectors.

Keywords: Low carbon technology, Clean energy, Climate action, Nickel Ores, Flotation, Electric Vehicle, Batteries.