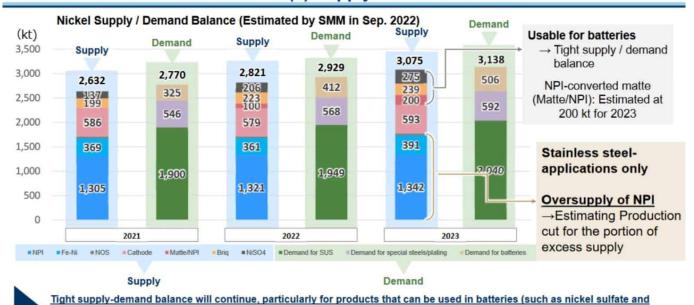
A look at the nickel sector and the leading companies as we head into 2023

written by Matt Bohlsen | December 23, 2022 Nickel prices have had a very good year in 2022, up 43% YTD to US\$28,199/t at the time of writing. This has been mostly due to a tight market with demand remaining strong and limited new supply.

2023 is forecast to be another tight year for the nickel market, although some analysts are concerned with potential new supply from Indonesia. Sumitomo sees a tight nickel supply/demand balance for the battery sector with some potential oversupply of nickel pig iron (NPI) in 2023. Nickel pig iron is a low grade ferronickel commonly used in China as a cheaper alternative to pure nickel for the production of stainless steel.

Sumitomo Metal Mining forecasts (as of Sept. 2022) small nickel deficits for 2022 and 2023

5. Nickel Business Environment (2) Supply / Demand Balance



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Demand for stainless steel will remain strong, but the outlook for NPI production increase and its conversion is unclear.

Source: Sumitomo Metal Mining (see page 11)

A huge demand wave ahead for nickel this decade and next

Looking out further, in 2021 the **IEA** <u>forecast</u> that nickel demand is set to increase by 7x to 19x from 2020 to 2040. This is driven by conventional demand from stainless steel plus surging demand from batteries, mostly to supply the electric vehicle boom. Not all batteries will use nickel; however nickel, manganese, cobalt (NMC) cathode batteries are set to remain as a dominant battery chemistry in Western markets due to their superb energy density, combined with a good long cycle life. In 2022, the IEA <u>forecast</u> that 60 new nickel mines would be needed by 2030.

Jessica Farrell, BHP's Asset President of Nickel West, recently was quoted as <u>stating</u>: "We anticipate demand for nickel in the next 30 years will be 200% to 300% of the demand in the previous 30 years".

The leading nickel companies

Vale S.A. (NYSE: VALE) is consistently in the top 3 global leading producers of nickel. In 2020 they ranked second producing 215,000t. In 2021, Vale was the world's largest iron ore and nickel producer with iron ore and pellets making up 81% of revenue in Q2, 2022, nickel making up 9%, and copper 3%. Vale has been working on expanding production capacity of both iron ore and nickel. Vale's key nickel assets are well located in Voisey's Bay in Canada. Vale has nickel supply agreements to supply nickel to Tesla (NASDAQ: TSLA), Ford Motor Co. (NYSE: F), Northvolt, and more recently General Motors (NYSE: GM). Vale's stock currently trades on a 2023 PE of only 5.97 and an indicative 2023 dividend yield of 6.6%.

Norilsk Nickel was the leading global nickel producer in 2020 with 236,000t. Being a Russian company 2022 has not been kind for investors in Nornickel with the stock price plunging and stock trading being suspended from all Western stock exchanges. Nornickel recently stated: "MMC Norilsk Nickel shares are listed on the Moscow and on the Saint-Petersburg Stock Exchanges, ADRs are accepted for trading on the Saint-Petersburg Stock Exchange."

Glencore PLC (LSE: GLEN | OTC: GLCNF) ranked the number 3 leading global nickel producer in 2020 with 110,000t of production. Glencore's 2022 production for the first 9 months of the year was 81,600t, 15% up on the same period in 2021.

BHP Group Limited (NYSE: BHP) is ranked 4th in 2020 with 80,000t of nickel production. BHP's Nickel West mine has been ramping up operations in recent times with ore sent to BHP's Kwinana Nickel Refinery which can produce 100,000tpa of nickel sulphate. BHP is looking to grow their nickel business and recently announced a takeover offer of OZ Minerals Limited (ASX: OZL) (who themselves have an option deal to acquire Havilah Resources' Kalkaroo Project in SA that contains copper, gold and cobalt).

BHP's Nickel West operations in Western Australia



Source: BHP website

Others — Other key global nickel producers include Jinchuan Group (HK: 2362), Sumitomo Metal Mining Co. (TYO: 5713 | OTC: SMMYY), Anglo American (LSE: AAL | OTC: AAUKF), Eramet (OTC: ERMAY), Sherritt International (TSX: S | OTC: SHERF), IGO Limited (ASX: IGO | OTC: IIDDY), Panoramic Resources (ASX: PAN | OTC: PANRF), Nickel Industries Limited (ASX: NIC | OTC: NICMF), Nickel 28 Capital Corp. (TSXV: NKL), Mincor Resources (ASX: MCR | OTC: MCRZF), and a few more.

Closing remarks

2022 was a great year for the nickel sector. 2023 looks like being a bit tougher as a global slowdown looms and as new Indonesia supply comes online; however, looking out this decade it looks hard to see where the 60 new nickel mines needed will come from.

There are several exciting nickel juniors working to fill the impending nickel supply gap this decade. Some are <u>ii8 members</u> <u>here at InvestorIntel</u>, such as <u>Power Nickel (TSXV: PNPN)</u>, so feel free to read up on them over the upcoming Christmas break.