Figures for the first quarter of 2021 indicate world sales of 1.12 million electric vehicles, almost +145% growth.

The world nickel market in 2021 – Indonesia rising to the top

Around ninety government and industry representatives met online from 23-26 April 2021 for the most recent International Nickel Study Group meetings. The Group reviewed its forecasts for nickel production and use for 2021. This article gives a brief overview of recent developments and is based on the data finalized at the meetings.

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The year 2021 should be marked by a recovery from the Coronavirus (COVID-19) pandemic, albeit at different speeds around the globe. China P. R. was able to control the pandemic and recovered during most of the second half of 2020. Virtually all the rest of the world has relied on vaccination to end the pandemic, with developed countries being more advanced in their rollouts. Recent economic forecasts indicate positive global growth for the current year. INSG revised down its forecast for the nickel market balance for 2021 to a surplus of 45 thousand tonnes (kt) during its April 2021 meetings. Primary nickel production in 2021 is expected to reach 2.718 million tonnes (Mt), while usage is forecast at 2.673Mt. Revised figures for 2020 also indicate a smaller surplus of 108kt, with production rising to 2.494Mt and usage reaching 2.386Mt.

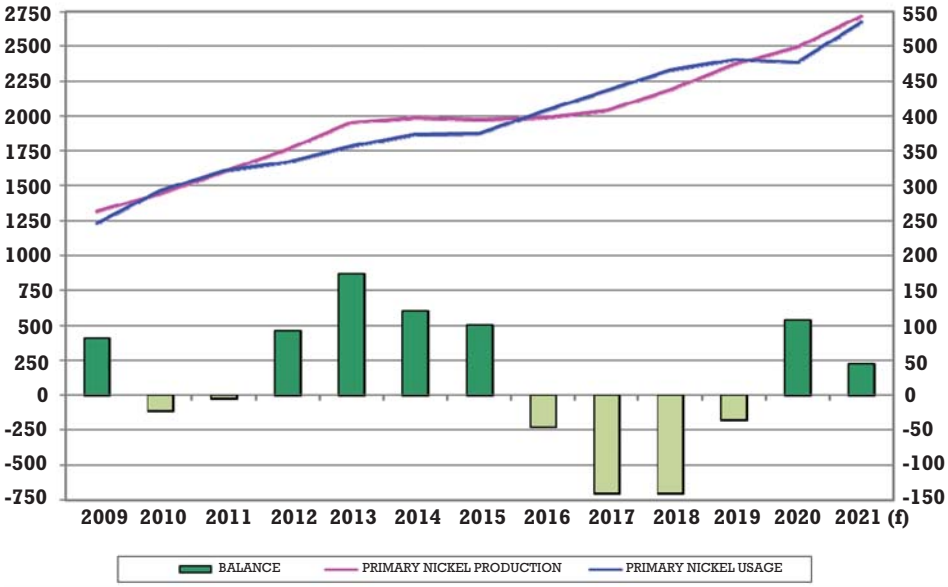
Primary nickel production

In 2021, world primary nickel production is expected to grow by +9%, after increasing +5.3% in 2020. Last year, output rose only in Asia, mainly influenced by Indonesia. However, in the current year, production is likely to increase in all regions except Europe, where output has been adversely affected by problems at Nornickel's mines in Russia.

Asia is the most important region for primary nickel production – more than 67% of output will come from this region. Chinese-backed nickel pig iron (NPI) projects in Indonesia will continue to ramp up in 2021 and the country will become the number one producer globally, with primary nickel production expected to reach 945kt (an increase of around +50%, y-o-y). Producer Tsingshan announced in early March that it will supply 60kt (gross) of nickel matte, from converted NPI, to Huayou and 40kt (gross) to CNGR over the period of a year starting from October 2021. This intermediate product will be further processed to produce car batteries. This will result in another use for NPI (other than stainless steel) as well as an additional feed stream for the battery sector.

High-pressure acid leaching (HPAL) projects in Indonesia are progressing. The most advanced of those projects are: PT Halmahera (37kt), PT Huaqai (60kt) and PT QMB New Energy (50kt). The first of these started trial production

World primary nickel production, usage and market balance



Source: INSG (April 2021)

in April, while the second is scheduled to do the same by the end of the year. PT QMB New Energy is scheduled to be commissioned in 2022.

In 2020, China was the world's top producer with 750kt of production. However, this will decrease by around 100kt in 2021 due to a reduction in available feed for NPI production as a consequence of Indonesia imposing an export ban on unprocessed nickel ore from January 2020. China's main ore supplier is the Philippines and the country is currently looking for alternative sources, such as Brazil, Guatemala, the Ivory Coast, New Caledonia and Zambia. Nevertheless, these will not be sufficient to support the same production levels as in recent years. Chinese NPI will decrease, but on the other hand nickel sulphate production is expected to increase.

In Africa, South African Thakadu Battery Materials commissioned its battery-grade nickel sulphate refinery in March. The plant has an annual capacity of 30kt and is planning to produce 16kt this year. Thakadu will refine crude nickel sulphate supplied by Sibanye-Stillwater and other sources. Also in March, the Ambatovy operation in Madagascar restarted and is planning to ramp up production over the coming months. On the mining side, CMB in Ivory Coast and Munali mine (CNM) in Zambia restarted production in 2018 and 2019, respectively.

In the Americas, Vale is expected to increase production, both in Brazil (Onça Puma) and in Canada. Last year, Brazilian Atlantic Nickel's Santa Rita mine restarted production, while Solway's Fenix mine's permit in Guatemala was suspended in February 2021.

In Europe, the flooding at Nornickel's 2 mines at the beginning of the year affected primary nickel production in both the Russian Federation and Finland. The company announced in mid-May that mining at the Oktyabrsky mine had returned to full capacity and that the Taimyrsky mine production restart was

"More than 67% of output will come from Asia in 2021"

scheduled for early June. Terrafame in Finland is currently preparing to commission its Battery Chemicals plant, where they will produce nickel sulphate from their own sources to supply to car batteries. Larco in Greece was put up for sale with six initial bids received for the lease of its smelting plant.

In Oceania, in Australia, Ravensthorpe (FQM) restarted production in 2020, Savannah North (Panoramic) is scheduled to recommence next August, and the Nova mine (IGO) is currently ramping up. In addition, BHP's guidance indicates an increase of primary nickel production.

In March, Glencore temporarily reduced production at Murrin Murrin due to a malfunction at an acid plant at the site. Elsewhere, there are some uncertainties regarding New Caledonia (how much material will be processed in the region and how much ore will be allowed to be exported). In March, Vale concluded the sale of the Goro operation (Vale New Caledonia, VNC) to Prony Resources consortium (local parties 51%, Prony Resources / Agio Global 30%, Trafigura 19%) with Vale keeping rights to long-term nickel supply from VNC.

Primary nickel usage

World nickel usage has been growing since 2009, however, INSG assesses that usage decreased by 0.8% in 2020 but will rebound strongly in 2021 with an increase of 12% and with growth forecast in all regions.

Asia has been increasing its relevance regarding primary nickel usage – in 2020, the region surpassed 82% of global usage. As a reference, Asia's share in 2010 was "only" 63%. Further growth of almost 13% is anticipated in the region in 2021. Demand in China, which uses more than half of the world's primary nickel, is forecast to increase by +4.3% in 2021, after rising +6.3% in 2020. After starting production of stainless steel in 2017, Indonesia became the second most important nickel user in 2020, with usage reaching 210kt (+23%), surpassing that of Japan, and increasing by a substantial +73% in 2021.

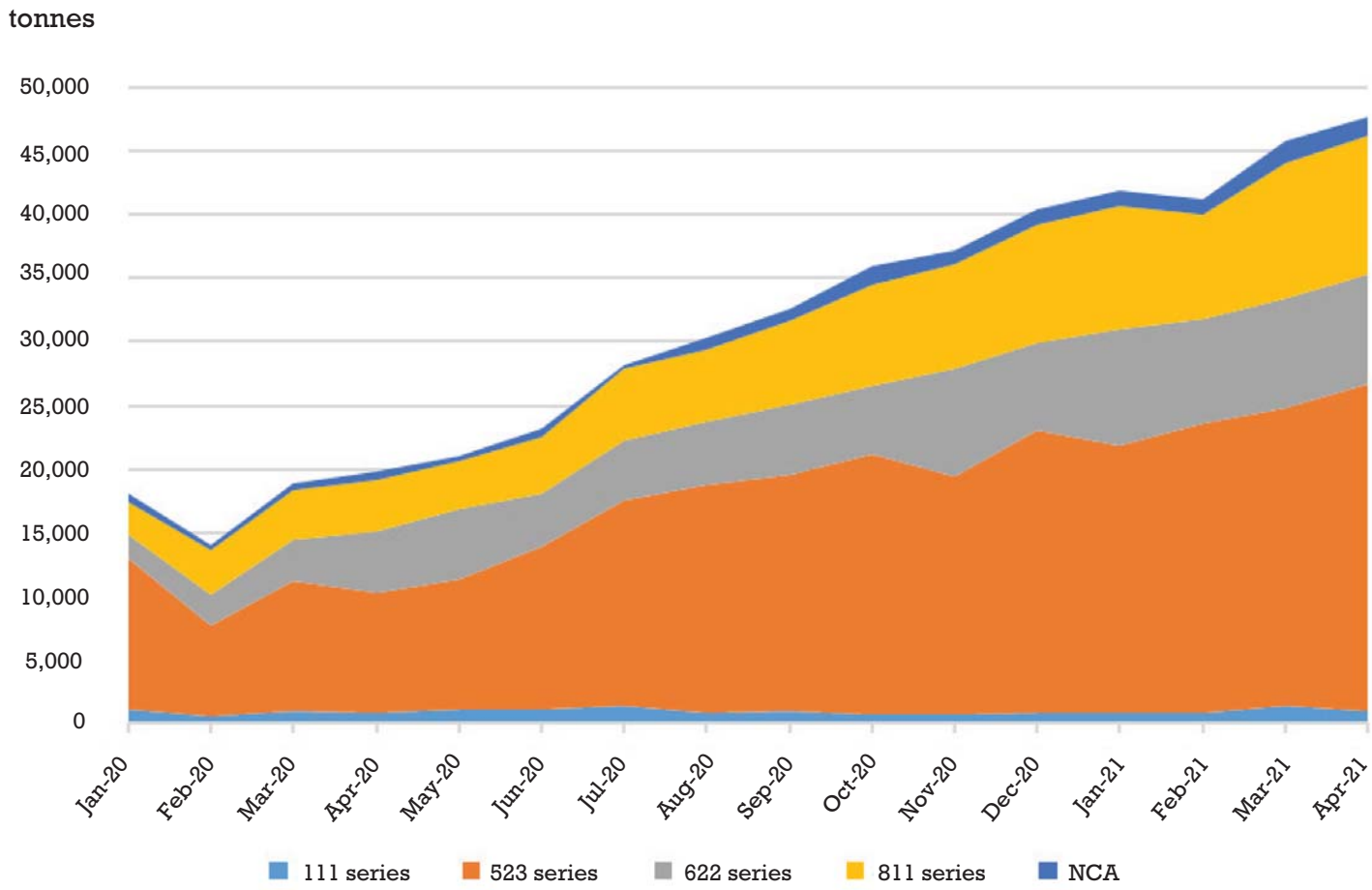
Nickel usage in Europe is expected to increase by +9% in 2021, after decreasing by almost -15% last year. In Africa, demand is forecast to grow by +8%, while in the Americas it will increase by +6%.

The stainless steel sector remains the most important first-use market for nickel, accounting for more than 70% of nickel usage in both 2020 and 2021.

The International Stainless Steel Forum (ISSF) released production figures for 2020 showing that "stainless steel melt shop production decreased by 2.5% year–on–year to 50.9 million metric tons", after growing by +2.9% year-on-year to 52.2 million metric tonnes in 2019. Preliminary figures for world stainless steel consumption showed a decrease of -2.1% in 2020 and preliminary forecast figures (subject to revisions) indicated an increase of 10.6% in 2021. These figures show slower demand from the stainless steel sector in 2020 but higher in 2021, in line with the lower world economic performance last year and with the recovery expected for the current year.

The growing electrification of vehicles will result in increased demand for nickel in order to produce the required number of lithium batteries and it is likely that the proportion of the market accounted for by this sector should increase significantly over the coming years.

Production of Ternary Precursors – China



Source: Mysteel

Electric vehicles (EV) world sales reached 3.12 million in 2020 (+41% growth), after increasing by 9.5% in 2019. Growth in 2020 was mainly driven by Europe with +142%, followed by China P. R. with +8%. The remaining regions combined recorded a less than +4% increase. The sector has exhibited resilience during the pandemic, especially compared to the sales of internal combustion engine (ICE) cars. As mentioned in our previous articles, EV sales have been influenced by factors such as government subsidies, possible fines in Europe (for example, if the average of an automaker's total vehicle sales (ICE+xEV) exceeds a certain limit of grams per kilometer of CO2 emissions), and the effects of the pandemic. The Chinese government reduced subsidies by 50% from July 2019, but after a very weak first quarter in 2020, it then decided to slow the rate of reductions until 2022. Sales in the country still had negative growth in 2020-Q2, but recovered strongly in the second half. Sales in Europe were strong all year, apart from a temporary reduction in March (-15%). Preliminary figures for the first quarter of 2021 indicate world sales of 1.12 million EVs, almost +145% growth. Sales in China P. R. reached almost 490 thousand vehicles (+288%), followed by Europe with just below 460 thousand (+100%).

In China, production of ternary precursors used to produce different types of nickel-containing batteries has been rising since February 2020, reaching almost 320kt in 2020. China accounted for over 2/3 of world production. In the first 4 months of 2021, production grew to 177kt, meaning an increase of +150%. NCM811 and NCM622 have gained market share, representing 22% and 20%, respectively, for the available months for 2021, increasing from 20% and 17% for the same months of last year.

Nickel prices and stocks

The London Metal Exchange (LME) nickel price (close, cash settlement) trended upwards from a low of 11,055 USD/t at the end of March 2020, to a peak of 19,689 USD/t by the end of February 2021 – its highest level since May 2014. In early March Tsingshan announcement of plans to convert NPI to matte probably contributed to a sharp reduction of 2,400 USD/t over two consecutive days. Average monthly prices were 18,568 USD/t for February, 16,461 USD/t in March and 16,481 USD/t in April.

Combined LME and Shanghai Futures Exchange (SHFE) nickel stocks remained relatively stable, between 257kt and 273kt since the end of the first quarter 2020. Before this date, there was an unstable period from the end of October 2019, with a strong decline, followed by a recovery.

The market followed opposing trends in different periods of time. After hovering between 37kt and 27kt at the beginning of 2020, SHFE stocks have fallen significantly from just under 35kt in mid-August 2020 to 7.9kt at the end of April 2021 – the lowest level recorded since the contract started in 2015. Drawdowns were most pronounced between November and the end of January (from 30kt to about 13kt) and from mid-March until the end of April. In contrast, LME stocks have risen from 229kt in April 2020 to 262kt at the end of April 2021. Two noticeably large increases took place: one in the first two days of March 2021, of nearly 11kt, and another one of close to 5.8kt in mid-April.